MUSKOKA HERITAGE AREAS PROGRAM

A Project of the District Municipality of Muskoka and the Muskoka Heritage Foundation
10 Pine Street, Bracebridge, Ontario P1L 1N3

NATURAL HERITAGE EVALUATION OF MUSKOKA

FEBRUARY, 1994

Prepared By

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EXECUTIVE SUMMARY AND RECOMMENDATIONS

The purpose of this report is to integrate and summarize the results of three years of field data collection related to the natural heritage of Muskoka. This final report builds on seven previous interim reports from the Heritage Areas Program, including:

- 1990, 1991, and 1992 Field Program Reports;
- a Severn Corridor study sponsored jointly by Simcoe County;
- a biotic study of the Georgian Bay coast;
- surficial geology mapping and recommendations from the Ontario Geological Survey; and
- a Scenic Areas study carried out in 1992.

Selection of Heritage Areas is based on a set of selection criteria, which were developed and reviewed early in the project. The full criteria and their application are described in Chapter 1 of this report. For Natural Heritage Areas, the relevant criteria can be summarized as:

- distinctive/unusual landform features
- representative landform types
- regional hydrological systems
- biotic representation
- high diversity of species or communities
- high quality/low disturbance
- habitat for rare species
- wildlife/fish concentrations
- large size or linkages
- biogeographic significance
- scenic value

As part of the final integration phase, these criteria and their application were reviewed to ensure they were applied consistently. The criteria are supported by an analysis of vegetation community representation, a plant species/area graph, a scoring system for Atlantic Coastal Plain vegetation, and a series of updated appendices on species rarity. The application of the scenic criteria is based on a public survey of viewer preferences, together with an analysis of nominated sites and corridors.

Because of this review, in the case of any discrepancies with the previous reports, this report should be considered the governing document.

For the purposes of biological evaluation, 74 candidate areas were visited at least once in the field, as well as 121 scenic site candidates. A total of 48 candidates meet two or more criteria to qualify as Natural Heritage Areas. These Areas cover a total of 25,500 hectares, or approximately 6% of Muskoka's land base. Approximately half of the total extent of Natural Heritage Areas is on Crown land.

Natural Heritage Sites are generally smaller than Areas, and identify a single feature of interest through one of the biotic, abiotic, or scenic criteria. These sites are included on the mapping, and biotic and abiotic sites are briefly described in this report.

Natural Heritage Areas and Sites are grouped for presentation within nine Subdistricts, each of which has similar landform, climate, and vegetation characteristics, as shown on Figure 4 at the end of Chapter 2.

More detailed mapping and descriptions of all Areas and Sites are included in the background reports, and in open files maintained at the District Municipality.

For most of the biotic candidates involving private land, landowners were contacted through the Stewardship Program of the Muskoka Heritage Foundation to obtain permission to enter for field work. Landowners have also been provided with a brief summary of findings for their candidate, and asked to voluntarily participate in future protection of significant values. Three candidates were dropped because landowner refusal for access prevented data collection. Overall, 88% of the 562 landowners contacted gave permission for field access.

RECOMMENDATIONS:

Based on the information gathered over the past three years, it is recommended:

1. That the 48 Natural Heritage Areas identified in Summary Table A be recognized by the Council of the District Municipality of Muskoka for incorporation under the relevant sections of the District Official Plan.

2. That the 11 biotic and 9 abiotic Natural Heritage Sites identified in Summary Table B be recognized by the Council of the District Municipality of Muskoka for incorporation under the relevant sections of the District Official Plan.

3. That the Scenic Corridors and Sites identified through the Scenic Areas study be accepted for information, and that additional policy work be undertaken by the District Municipality to identify potential mechanisms to protect Muskoka's scenic quality.

4. That priority for further field work to document natural values be given, when landowners permit, to Quarry Island, Kennedy Point, and Brandy Creek Wetland.

5. That where Heritage Areas and Sites include Crown land, the Ministry of Natural Resources integrate their heritage values into resource management plans.

6. That the Ministry of Natural Resources give priority to Heritage Areas in evaluating wetlands and identifying Areas of Natural and Scientific Interest in Muskoka, where appropriate.

7. That ongoing private land stewardship be strongly encouraged in Heritage Areas and Sites through the Muskoka Heritage Foundation; and where possible in future, through the

Georgian Bay Trust Foundation, the Lake of Bays Heritage Foundation, and the North Muskoka-Huntsville Heritage Foundation.

8. That the members of the Technical Steering Committee for the Heritage Areas Program, or some equivalent group, continue to review as necessary the future status of Heritage Areas and Sites, and proposed boundary changes, or proposed new candidates.

9. That the District Municipality maintain an open file for each Heritage Area and Site, containing maps, species lists, and other relevant information, and that these open files be upgraded as information becomes available.

SUMMARY TABLE A:
CRITERIA FULFILLED BY RECOMMENDED NATURAL HERITAGE AREAS

	ABIOTIC			BIOTIC								
	Distinctive Landform	Landform Representation	Hydrology	Representation	Diversity	Quality	Rare Species	Wildlife and Fish	Size and Linkages	Biogeographic	Scenic	Size (Ha)
	A1	A2	A3	B1	B2	B3	B4	B5	B6	B7	C7	
Coastal Barrens												
Pine Islands				X		X	X					50
Moreaus Bay							X	X			X	445
Longuissa Bay						X	X	X		X		421
Gibson River			X			X	X		X		X	495
Bone Island					X		X					573
McCrae Lake		X				X	X		X	X		1170
Severn Corridor												
Potato Island							X	X				241
Severn Outlier		X		X						X		11
Lost Channel	X			X	X	X	X		X	X	X	905
Neipage Lake			X	X	X	X	X					525
Lower Swift Slope				X	X		X			X	X	7
Lion's Head				X			X			X	X	4
Moose Lake				X	X		X			X		105
McLean Bay				X			X	X			X	65
Ellison Bay				X	X	X	X	X		X	X	75
Clipsham's Wood					X		X	X		X		8
Gibson												
Lower Moon River							X	X			X	570
Gray Rapids				X		X	X	X			X	300
Concession Lake			X			X	X					485
Bala Bog			X		X	X	X	X				425
Deer Lake Complex		X		X	X		X	X	X	X	X	4540
Loon Lake			X	X	X	X	X					550
Morrison Lake				X	X		X	X		X		425
Muskoka Lakes												
Bruce Lake Marshes			X		X		X			X		174
Clark's Pond				X	X		X	X		X	X	259
Eilean Gowen Is.				X	X		X	X		X		107
Well's Creek						X	X	X		X		158
Scarcliffe Bay				X						X	X	11
Victoria Highlands												
Jevin's Lake	X			X	X		X					188

SUMMARY TABLE A:
CRITERIA FULFILLED BY RECOMMENDED NATURAL HERITAGE AREAS

	ABIOTIC			BIOTIC								
	Distinctive Landform	Landform Representation	Hydrology	Representation	Diversity	Quality	Rare Species	Wildlife and Fish	Size and Linkages	Biogeographic	Scenic	Size (Ha)
	A1	A2	A3	B1	B2	B3	B4	B5	B6	B7	C7	
S. Three Mile Lake				X	X		X	X				338
Kahshe Barrens					X		X	X	X	X		4290
Riley Lake Barrens				X	X	X	X					384
Lewisham Wetland			X	X		X	X		X			640
Algonquin Beaches												
S. Muskoka Canyon					X		X	X		X	X	49
Sharpe's Creek				X	X		X			X	X	60
Cooper's Pond	X				X		X	X		X		570
Beaumont Bay					X	X	X	X		X		220
East River Delta	X			X	X		X	X	X	X		297
Novar Peat Forest	X		X	X	X		X	X		X		347
Magnetawan												
Axe Lake Peatland		X	X	X		X	X		X	X		607
Lake Of Bays												
Spring Creek			X	X	X	X	X	X	X			402
Shack Creek			X	X	X	X	X			X		500
Fawn Lake			X	X		X						400
Langmaid's Island					X	X		X			X	55
Britannia Esker		X				X						130
Lower Oxtongue R.	X					X	X	X			X	172
	X											
Oxtongue												
Big East River		X	X	X	X	X	X	X	X	X	X	2590
Dwight Peat Forest	X		X	X		X	X			X		115
Total Area												25,458
% of areas meeting criteria	19	10	29	60	54	48	90	52	21	56	35	

SUMMARY TABLE B:
CRITERIA FULFILLED BY RECOMMENDED NATURAL HERITAGE SITES

	ABIOTIC			BIOTIC								
	Distinctive Landform	Landform Representation	Hydrology	Representation	Diversity	Quality	Rare Species	Wildlife and Fish	Size and Linkages	Biogeographic	Scenic	Size (Ha)
	A1	A2	A3	B1	B2	B3	B4	B5	B6	B7	C7	
Axe Creek Modern Alluvial Deposit		X										60
Bella Lake Glaciofluvial Outwash Deposit		X										125
Bella Lake Till Unit		X										150
Fairy Lake Wave Cut Notch	X											5
Port Cunnington Intrusive	X											5
Port Severn Lacustrine Deposit		X										11
Raymond Fine-grained Glaciolacustrine Deposit		X										350
Sage Creek Subaquatic Fan		X										90
Wood Lake Bedrock-Drift Complex		X										60
Bass Island A.P.C.F.							X					0.4
Coldwater Lake/Swan Lake							X					104
Gaunt Bay and Upper Moon River A.C.P.F.							X			X		2
Gibson River Valley					X		X					90
Muldrew Creek					X		X			X		140
Musquash River A.C.P.F. Sites							X					50
North Muskoka Canyon								X				123
Poison Sumac Swamp				X								1.5
Port Cunnington Wetland					X							50
Wadis Creek Marsh						X						10
Westermain Wood						X						179
Total Area												1605.9

1.0 INTRODUCTION

The Muskoka Heritage Areas Program was established to identify the best examples of the District's natural and cultural heritage, using a systematic, objective evaluation process, and to seek mechanisms for the protection of these heritage landscapes.

The results of this Program are intended to be used as a basis for three distinct types of protection programs:

i) incorporation of recommended Heritage Areas within the relevant sections of the District of Muskoka Official Plan, in order to influence future planning decisions;

ii) development of a long-term private land stewardship program for significant natural landscapes in Muskoka, to work directly with landowners on cooperative protection techniques;

iii) incorporation of recommended Heritage Areas within Crown land management documents as areas of concern, to ensure that their ecological values are protected during future management activities.

This report summarizes the results of a critical review and evaluation of the results of all field work carried out on the natural heritage aspects of the Program, including the abiotic, biotic, and scenic components. This report should be viewed as the governing document in all matters related to recommended boundaries of natural Heritage Areas and Sites, application of criteria, and evaluation of sensitivity. Cultural heritage aspects of the Program will be documented separately in the final report of the Archaeological Master Plan study.

1.1 APPROACH

Selection of Objectives and Criteria:

In order to evaluate candidate areas as consistently as possible, a set of objectives and criteria were developed prior to any field work taking place. These criteria were based on a review of similar criteria used elsewhere in southern Ontario for the assessment of natural landscapes, with modifications where necessary to reflect the character of the Muskoka area.

A working set of criteria were reviewed in December 1989 at a workshop of approximately 30 representatives of resource agencies, local residents, and invited experts. These criteria were subsequently approved for use by Muskoka District Council in March 1990. As part of the program integration phase in early 1993, several minor modifications have been made to these working criteria.

These objectives and criteria are presented in Table 1; a detailed explanation of their application is included in Section 1.4.

Table 1

DISTRICT OF MUSKOKA
HERITAGE AREAS SELECTION CRITERIA
March 1993

ABIOTIC CRITERIA:

Objective: *To identify a system of physical landscapes that incorporate the full diversity of bedrock, surficial, and aquatic landform types and features within Muskoka.*

A1. The area has landform features or elements that are distinctive or unusual in the District, Ontario, or Canada.

A2. The area is representative of at least one landform type, process, or phase of development not adequately represented within existing protected areas.

A3. The area contributes to regional hydrological systems through ground or surface water storage or protection or enhancement of water quality.

BIOTIC CRITERIA:

Objective: *To identify in a systematic way the best examples of the full range of Muskoka's biological heritage, including both aquatic and terrestrial habitats critical to the survival of healthy populations of native wild species.*

B1. The area contributes to the full range of biotic representation in Muskoka by including community types of limited distribution.

B2. The area exhibits high diversity of native flora and fauna, either at the species or community level.

B3. The area contains biotic communities of unusually high quality or showing little recent disturbance.

B4. The area provides habitat for species of plants or animals that are rare, threatened, or endangered in the District, Ontario, or Canada.

Table 1 (continued)

B5. The area serves as a breeding, shelter, or feeding site for significant seasonal concentrations of wildlife or fish.

B6. The area is large enough to support species requiring extensive undisturbed habitats, or provides linkages between other significant natural areas.

B7. The area contains species or biotic communities of biogeographic significance, including those that are disjunct or at the limits of their distribution.

CULTURAL CRITERIA:

Objective: *To identify a system of significant cultural landscapes and features within Muskoka, including historic and contemporary elements.*

C1. The area is representative of an historic or prehistoric theme or process significant to the development of Muskoka.

C2. The area contains sites or landscapes associated with well-known events or people, or distinctive ethnic groups.

C3. The area contains buildings, artifacts, travel routes, or landscape patterns of relative antiquity or duration.

C4. The area exhibits cultural characteristics unusual or unique to Muskoka, possessing high artistic values, or embodying distinctive examples of a type, period, or method of construction.

C5. The area contains elements that reflect the distinctive values, attitudes, traditions, and lifeways of the people of Muskoka.

C6. The area has high archaeological potential, or known archaeological significance.

C7. The area contains sites or landscapes with patterns of form, line, colour, or texture that together present outstanding scenic value.

Study Supervision:

Ongoing supervision of the study process was the responsibility of a Steering Committee, which included representatives of:

District Municipality of Muskoka
Muskoka Heritage Foundation
Ministry of Natural Resources, Central Region
Ministry of Natural Resources, Bracebridge Area
Mohawks of Gibson First Nation (1991 onwards)

The Steering Committee met approximately four times per year. Day-to-day supervision of the program was provided by Bobolink Enterprises of Washago, Ontario, under contract to the District.

Detailed review of technical aspects of the biotic program was provided by a technical committee, which met as required to recommend criteria interpretations, status of rare species, boundary delineations, and similar matters. Both committees reviewed all program reports in draft form. Draft reports were also reviewed by several outside experts familiar with various aspects of Muskoka's natural heritage.

Cultural aspects of the program were assisted by a Cultural Advisory Committee, which included representatives from each of the local municipalities in Muskoka, as well as native groups and the Muskoka Pioneer Village.

Use of Existing Information:

One of the first steps in the Program was the compilation of any existing information about Muskoka's natural heritage. Included among this documentation was:

- published and unpublished MNR documents, including Sensitive Areas reports, provincial park reconnaissance studies, earth and life science ANSI descriptions, and park planning reconnaissance studies of Algonquin Region.

- Canadian Parks Service reports and studies on Georgian Bay Islands National Park and the Trent-Severn Waterway.

- Geological data provided by Dr. A.J. Davidson of the Geological Survey of Canada, and in several published reports.

- A computer record of locations of all known provincially rare plant locations within Muskoka, provided by the National Museum of Canada.

- A published study of Atlantic Coastal Plain Flora in Ontario, including many Muskoka sites (Keddy and Sharp, 1989).

- A scattering of other published sources of relevant information, including materials from the Conservation Data Centre, the Breeding Bird Atlas of Ontario and other articles specific to Muskoka.

- A wide range of published and unpublished historical documents, including information on a small number of known archaeological sites in Muskoka, for use in the cultural components of the Program.

As the biotic study progressed, an additional major piece of related information was made available, in the form of draft Life Science reports for Site Districts 5E-7 and 5E-8 (Brunton, 1991 a,b). As well, information from wetland evaluations carried out for the Ministry of Natural Resources was incorporated as it became available.

1.2 SUMMARY OF FIELD WORK

Field work related to the Heritage Areas Program was carried out in a series of seasonal studies, each of which has been documented in individual reports. These studies include surficial geology, biotic components, archaeological, and scenic areas.

Selection of Candidates:

Candidate study areas were selected on the basis of:

i) local knowledge of significant or interesting features;

ii) previous records of rare species from the National Museum Atlas of Rare Vascular Plants, the Ontario Herpetofaunal Summary, or the Ontario Breeding Bird Atlas;

iii) distinctive or unusual landform features which could be combined with potential biotic or scenic significance;

iv) representation of abiotic or biotic types not adequately represented within existing protected areas, with a particular emphasis on upland forest sites;

v) candidates identified during previous studies for potential park status, ANSI designation, or Atlantic Coastal Plain species occurrence;

vi) discussions with local resource managers, including forestry and wildlife staff, to identify good-quality candidates;

vii) candidates identified directly by field staff through air photo analysis or field survey;

viii) scenic area candidates nominated by the public or identified by staff as preferred landscape types;

ix) geological candidates identified during field mapping of surficial geology features;

x) draft archaeological potential mapping prepared as part of the Archaeological Master Plan study.

In most cases, biotic candidates received a quick reconnaissance assessment (usually one day) to determine if further field work was warranted. A fly-over of a number of sites by small plane also assisted in identifying features of potential interest for additional field work.

Surficial Geology Studies:

A survey of surficial geology deposits across most of Muskoka was carried out by the Ontario Geological Survey, together with identification of representative and special areas to be considered for protection. This work is published in four reports:

Muskoka Heritage Areas Program: Quaternary Geology Component; by A.F. Bajc. Ontario Geological Survey, 1992.

Quaternary Geology of the Huntsville-Bracebridge Area: Open File Map 161, by A.F. Bajc and A.P. Henry, Ontario Geological Survey, 1991.

Quaternary Geology of the Penetanguishene and Christian Island Areas: Open File Map 194., by A.F. Bajc and J.T. Paterson, Ontario Geological Survey, 1992.

Quaternary Geology of the Gravenhurst Area: Open File Map 195, by A.F. Bajc and J.T. Paterson, Ontario Geological Survey, 1992.

Mapping at a scale of 1:50,000 was produced from airphoto analysis and from the results of field testpits, hand augering and probing, and examination of bedrock outcrops and natural and manmade exposures. Candidates for Heritage Area status were recommended on the basis of representation of the full range of surficial geology types present, as well as unusual or special features.

Biotic Field Work:

Much of the biotic field work was carried out by crews under the direct supervision of the Program Coordinator. These field crews operated for the warm-weather months of three years, and produced the following reports:

Results of 1990 Field Program; by Ron Reid, Don Sutherland, Bob Bowles, Linda Sober, and Steve O'Donnell. Muskoka Heritage Areas Program, Report No. 1, 1991.

Results of 1991 Field Program; by Ron Reid, Bonnie Bergsma, Bob Bowles, Adriane Pollard, Dan Whittam, and Andrew White. Muskoka Heritage Areas Program, Report No. 2, 1992.

Results of 1992 Field Program; by Bonnie Bergsma, Ron Reid, Terry Rasmussen, and Genevieve Taeger. Muskoka Heritage Areas Program, Report No. 3, 1993.

Additional biotic field work was carried out by professional consultants on behalf of the Program, within specific geographic areas. These two studies are documented in:

Georgian Bay Township Candidate Heritage Area Inventory and Evaluation; by Geomatics International, 1992.

Identification of Natural Heritage Areas along the Severn River Corridor; by James Kamstra, Gartner Lee Limited, 1992.

Wherever possible, biotic field work was designed to provide site visits early in the season, during the bird breeding season, and during the late summer season. Areas known or suspected to have Atlantic Coastal Plain Flora (A.C.P.F.) were visited in late summer when these species are most visible. Some candidates were visited in successive years to complete coverage.

Suitable routes for field visits were determined in part by access opportunities. For each candidate, the goal was to visit all distinctive habitats and features noted from airphoto analysis. Field data were recorded on pre-printed sheets for vascular plants, birds, amphibians and reptiles, mammals, butterflies, dragonflies and damselflies, and mushrooms. Original lists were made available from R.L. Bowles and R.E. Whiting and J. Goltz. MNR files were checked to determine any known records of fish, deer yards, or significant species occurrences.

Data on bird life was generally limited to birds observed in suitable habitat during their breeding season, although evidence of breeding was noted wherever possible. Photographs and/or voucher plant specimens were taken where field identity was questionable. Vegetation communities were identified and mapped using categories adapted from the Canadian Vegetation Classification System (Strong et al., 1990). Nomenclature largely follows Morton and Venn, 1990.

Data from field checklists were entered on computer records using dBase IV, proofread by field staff, and merged into composite lists for each candidate at the end of the field season.

Scenic Areas Study:

A study of the application of the scenic criteria for Muskoka is documented in the report:

Muskoka Scenic Evaluation; by David Berney and Ron Reid. Muskoka Heritage Areas Program, 1993.

This project measured public response to a "Scenic Muskoka" questionnaire, to determine public preferences for various landscape types, and to solicit specific nominations for scenic areas. The project then used field surveys to evaluate and document the nominated areas, and to identify additional similar landscapes that would meet expressed public preferences.

All scenic candidates were evaluated to determine if they met a District-wide level of significance, with the assistance of a set of scenic criteria. Scenic features are presented as Sites, which are limited in size, and Corridors, which usually follow public roads or waterways.

Cultural Heritage Study:

A separate consultant's study of the cultural heritage of Muskoka is scheduled for completion in early 1994. This major study includes sections on land-based and marine archaeological heritage, built heritage and cultural landscapes, oral history, intangible heritage, and cultural facilities. Initial work has been summarized in:

> Final Phase 1 Report of the Master Plan of Archaeological Resources of the District Municipality of Muskoka; by D.A. Robertson and R.F. Williamson, Archaeological Services Inc., 1992.

Landowner Contact:

Landowner contact was an integral part of the Heritage Areas Program, with the intent of building positive landowner relations from the beginning of the program. Landowner contact was carried out by the staff of the Muskoka Heritage Foundation Stewardship Program, as their contribution towards the Heritage Areas Program.

Landowner contact was carried out within those biotic candidate areas where the most extensive field work was expected. Land ownership mapping and addresses of owners were obtained from assessment records. Landowners were contacted initially by mail, then by telephone, to obtain permission to carry out field work on their properties. In addition, owners of cottage lots or adjacent properties were contacted with an information letter, briefly explaining the program.

Near the end of the field season, landowners were again contacted to distribute site summaries of the results of field work, and to arrange personal meetings where possible. The site summaries also contained relevant habitat sheets and information on wildlife species typically found on the site, along with sheets explaining the criteria for the program and Muskoka geological and glacial history.

Over the course of three field seasons, a total of 562 landowners were contacted, with 88% giving permission for field survey access. A full description of the landowner contact process is contained in:

Report on the Landowner Contact Component of the Muskoka Heritage Areas Program: Field Work 1990 - 1992; by Janet Grand et al., Muskoka Heritage Foundation, 1992.

1.3 INTEGRATION

After all field work was completed, an integration phase was used to critically review and evaluate the natural heritage aspects of the Program, including the abiotic, biotic, and scenic components.

Several activities were included within the integration phase:

* the bringing together of information from all of the natural heritage studies listed above to review consistency and to identify overlapping values (e.g. areas which include scenic, geological, and biological values on the same land base);

* a review of boundaries to ensure a consistent approach, and a re-calculation of area size where necessary;

* development of a representational matrix for Muskoka, to identify communities not well represented within a system of protected areas;

* development of a graph of plant species richness versus area to provide an index of biotic diversity for each area;

* a review of working lists of species rarity, to provide an updated listing incorporating the results of all field work;

* a review and clarification of the Selection Criteria, together with an expanded documentation of their application;

* a review of the application of the updated Selection Criteria to each candidate area, to ensure consistent evaluation;

* documentation of the results of this analysis in this final report.

As a result of this review and analysis, the application of criteria to individual Heritage Areas presented in this report may differ somewhat from earlier field reports. As well, some of the specifics may differ, such as the listing of rare species. In all cases, **this report should be viewed as the governing document**, since it provides the final recommendations of the Heritage Areas Program after a thorough review of all previous work.

This report is intended to provide a summary of the natural heritage values of the recommended candidates. Further information on individual areas is contained in a set of open files at the District Municipality. For most Heritage Areas, these files include all

technical information collected, species lists, maps of vegetation communities and significant features, landowner maps, and 1:10,000 scale maps of boundaries.

Boundary Delineation:

Tentative site boundaries were established using air photo analysis and preliminary site visits. Boundaries were refined and confirmed during field study, with buffer zones incorporated where necessary to protect sensitive ecological areas. Although final boundary delineation was made on Ontario Base Maps at a 1:10,000 scale, all boundaries must be considered approximate.

In defining boundaries, the following guidelines were used:

i) boundaries should incorporate the full range of natural heritage features present;

ii) boundaries should follow the edge of significant geological features or habitat types;

iii) where no habitat boundary is apparent, boundaries should follow watershed or sub-watershed limits, ridges, or other distinctive topographical features;

iv) where appropriate, boundaries should follow cultural delineations such as roads, railways, or hydro lines;

v) in some cases, boundaries may be influenced by property boundaries, particularly between Crown and private lands, although this is a secondary consideration;

vi) boundaries should generally exclude developed and agricultural areas, although scattered residences or cottages may occasionally be included within large candidates;

vii) minor intrusions of other habitats should be incorporated if they have a direct or indirect ecological influence on the area;

viii) boundaries for scenic areas should incorporate the immediate viewshed, but not mid-range or distant views.

1.4 EVALUATION OF CANDIDATE AREAS

Initial evaluation of candidate areas took place after each field season, using the geological and biological data collected to date. During the integration phase, all candidates were re-evaluated, using the more complete data base and comparative analyses then available. Assessment of the significance of individual candidate areas was carried out through the application of the selection criteria listed in Table 1.

In order to reflect a differentiation based on degree of significance, candidates are recommended in two categories. Within Natural Heritage **Areas**, at least two of the selection criteria are met fully. In Natural Heritage **Sites**, a specific feature of interest is present, on a clearly-defined site of limited extent. These Sites, which meet a single criterion, are documented in this report in abbreviated form.

Application of Criteria:

Abiotic Criteria:

In association with surficial geology mapping undertaken in the District of Muskoka, the Ontario Geological Survey made recommendations on geological features for inclusion under this program (Bajc, 1992). As well, previously published information on earth science ANSIs or other sites of geological interest was reviewed.

Criterion A-1: Distinctive Landform

The area has landform features or elements that are distinctive or unusual in the District, Ontario, or Canada.

An evaluation of landform features that qualify as distinctive or unusual was based largely on expert opinion. As part of his documentation of surficial geology of Muskoka, Andy Bajc identified three candidates which he termed "exceptional landscapes and geological features". Other candidates meeting this criterion were identified on the basis of Earth Science ANSI status or previously-published information.

Criterion A-2: Representative Landform

The area is representative of at least one landform type, process, or phase of development not adequately represented within existing protected areas.

As part of the development of an Earth Science Systems Plan for the Algonquin Region (1981 b), Constance Spek reviewed the representation of geological features and types in the region's parks and nature reserves. The only suggested addition within Muskoka, exposures of breccias caused by meteorite impact at Skeleton Lake, has since been added to the ANSI system.

A more detailed review of geological features within Muskoka is provided in the Ontario Geological Survey report by Andy Bajc (1992). On the basis of two years of field work, Bajc identifies representative candidates for the following categories:

Precambrian bedrock
- Algonquin Highland
- Georgian Bay Fringe

Paleozoic bedrock
Bedrock-drift complex
Till

Glaciofluvial ice-contact stratified drift
- esker complex
- subaquatic fan
Glaciofluvial outwash deposits
Coarse-grained glaciolacustrine deposits
Fine-grained glaciolacustrine deposits
Coarse-grained lacustrine deposits
Fine-grained lacustrine deposits
Older alluvial deposits
Swamp and organic deposits
Modern alluvial deposits

Where these candidates do not fall within existing protected areas (such as parks), they are identified as Heritage Areas or Sites.

Criterion A-3: Hydrology

The area contributes to regional hydrological systems through ground or surface water storage or protection or enhancement of water quality.

The application of this criterion, related to a contribution to regional hydrological systems, was limited to candidates which clearly act as source areas for one or more streams (such as Lewisham Wetlands), or where broad undisturbed floodplains act to protect water quality (e.g. the Big East River valley). Since no detailed hydrological studies were carried out, this criterion was applied conservatively.

Biotic Criteria:

Criterion B-1: Representation

The area contributes to the full range of biotic representation in Muskoka by including community types of limited distribution.

One of the aims of the Heritage Areas Program is to have the full range of biotic community types represented within a system of protected areas. This criterion is partially addressed through the MNR Life Science studies for Site Districts 5E-7 and 5E-8, currently in draft form (Brunton 1991a, 1991b). In general, any of the provincially significant life science ANSIs identified through these studies meet this criterion.

As well, a matrix of landform/microclimate/community type representation for Muskoka has been developed to identify vegetation associations of limited distribution (see Appendix 2). This matrix is based on the vegetation community descriptions for each candidate, and adapts the MNR life science matrix approach which relates vegetation to particular sets of biophysical variables. For lowland sites, the matrix reflects the wetland classes used in the "System for Evaluating Wetlands in Northern Ontario" (OMNR 1992), plus work on conifer wetlands and peatlands by Sims and Bobbette (1987) and Jeglum (1991).

Each candidate was given a numbered code, prefixed by S for Severn corridor watershed, G for Georgian Bay watershed, and M for Muskoka watershed, as shown in Appendix 1. For each area, individual vegetation descriptions were categorized in terms of their vegetation community type and their matrix position. Community types with only one or two occurrences in all the Heritage Areas were considered significant, and fulfilled this criterion (see Appendix 2).

Criterion B-2: Diversity

The area exhibits high diversity of native flora and fauna, either at the species or community level.

In applying this criterion at the species level, it was recognized that diversity (as measured by the number of species) is also to some degree a function of area. A quantitative analysis was made, based on this relationship.

For each candidate the total number of native plant species was plotted against the area of the candidate, and a linear regression analysis was made using the computer program Harvard Graphics. A trend line of this relationship was plotted for all candidates on the graph (see Figure 1a). Since the majority of the sites were under 1000 ha in area, the regression analysis was made for the 54 sites in this range (Figure 1b). The average number of species per site was 211 with a standard deviation of 95.5. The correlation was weak, with a coefficient of 0.42. Those candidates which plotted above the trend line qualified under Criterion B-2 as having high diversity.

Vegetation community mapping was used to define community diversity, which is usually related to topographic (landform) variability and size. A candidate with a large number of distinct vegetation communities, or with a high degree of interspersion among communities (measured qualitatively), was considered diverse. For example, this criterion was used to recognize the diversity of wetland communities within the Bruce Lake Marshes candidate.

A diverse community structure usually supports a high species diversity. However, field data showed that the converse is not always true - some candidates with relatively limited community diversity (such as Novar Wetland) showed strong species diversity within the wetland communities.

Criterion B-3: Quality and Disturbance

The area contains biotic communities of unusually high quality or showing little recent disturbance.

A natural area fulfilled this criterion if it was in excellent condition, with little or no recent evidence of extensive disturbance, particularly related to human activity. The percentage of introduced vascular plant species was also noted as a rough measure of disturbance. While most of the candidates have a 10-15% ratio of introduced plants, a few fell well outside this range. Dwight Conifer Peat Forest, for example, had no recorded non-native plants; the Port Severn Outlier had 30% introduced plants (see Appendix 1).

Plant Species Diversity / Area
MUSKOKA

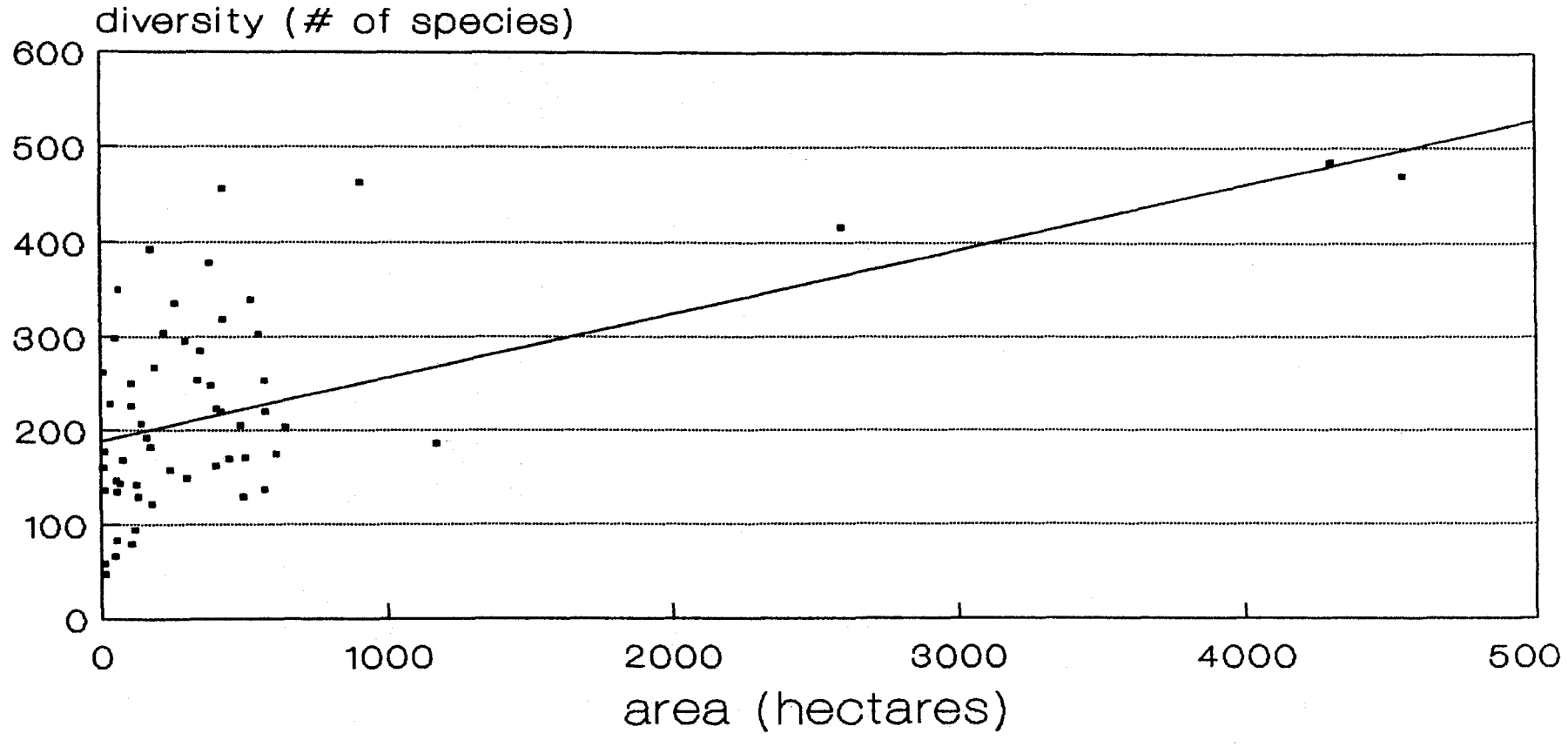


FIGURE 1a: Relationship of Number of Native Plant Species to the Area of the Heritage Areas and Sites. Points above the trend line have a greater species diversity than would be expected for the size of the area.

bmb

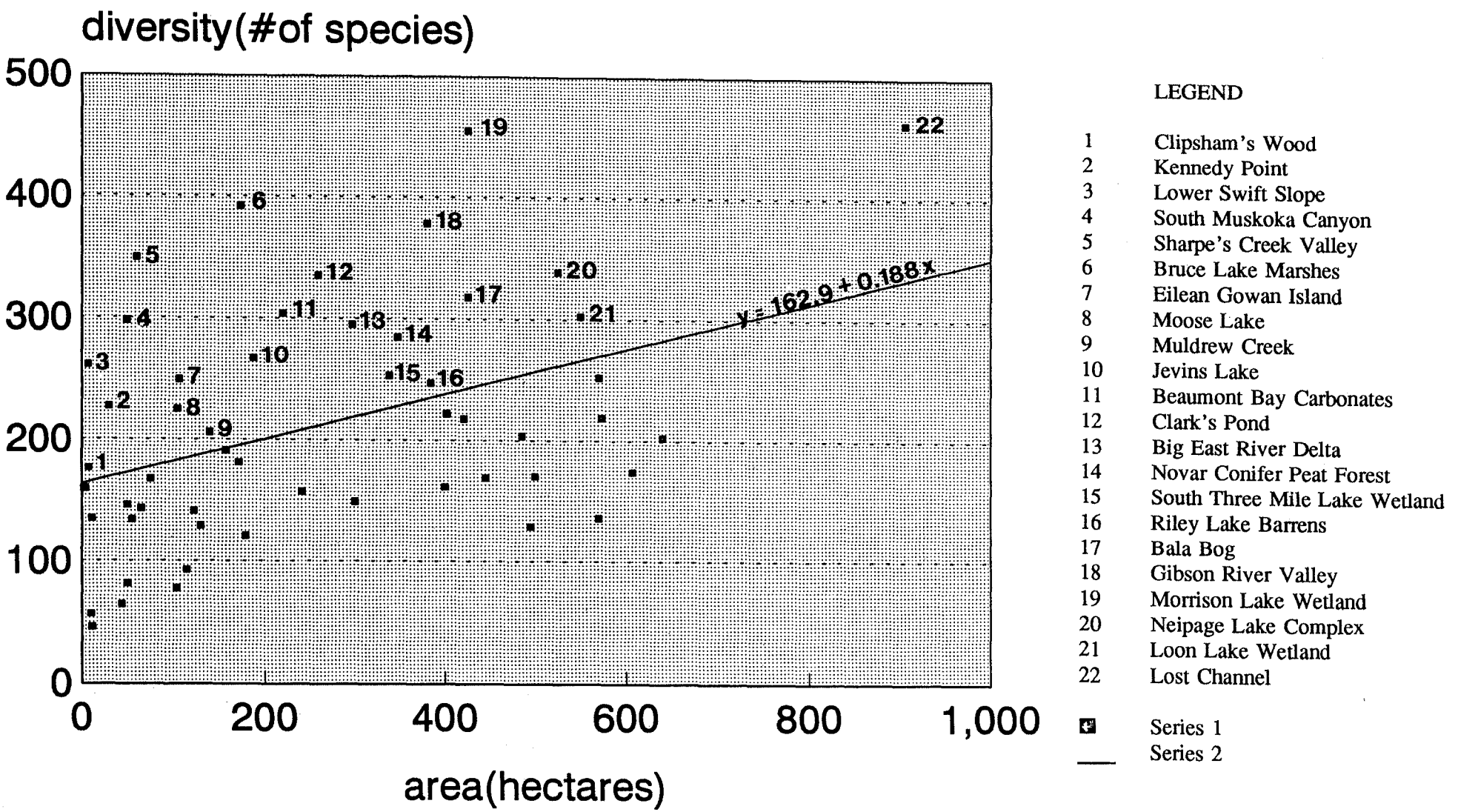


FIGURE 1b: PLANT SPECIES DIVERSITY/AREA

The relationship of number of the native plant species to the area of the Heritage Areas and sites under 1000 hectares. Points above the linear regression trend line have a greater species diversity than would be expected for the size of the area.

The quality of biotic features in a candidate was judged on maturity, abundance, or successional stages present, relative to the District as a whole. For instance, mature hardwood forest on good sites could qualify under this criterion, since these conditions are scarce in Muskoka. A wetland complex with good examples of a wide range of successional stages would also qualify.

Criterion B-4: Rare Species

The area provides habitat for species of plants or animals that are rare, threatened, or endangered in the District, Ontario, or Canada.

Species considered rare, threatened, or endangered on a national, provincial, or regional (i.e. Muskoka District) level have been identified in the rare species lists published as a companion to this report (Bowles and Bergsma, 1993). Most natural areas in Muskoka will support a few uncommon species, and often one or two regionally rare species. As well, some of the species with a national or provincial designation, such as Red-shouldered Hawk, Eastern Bluebird, and Eastern Massasauga, are fairly common in parts of Muskoka. Therefore, the presence of a single rare species could not be used to automatically qualify a candidate under this criterion.

As a general guide, this criterion was used **as a determining factor** in judging a candidate's status only when more than a single nationally or provincially rare species, or at least three regionally rare species, are present. However, exceptions have been made in the case of known disjunct or isolated populations, such as the single Muskoka occurrence of Broad Beech Fern. In all cases, consideration of ecological distribution and the characteristics of the species in question play a part in applying this criterion.

Rare species included within the Atlantic Coastal Plain Flora (A.C.P.F.) grouping were not used on their own to fulfill this criterion, since these same species would score highly in the analysis for Criterion B-7. However, if they occur within an area meeting two other criteria, they are listed as rarities.

Regionally uncommon species have also been identified in the Companion Report and for each candidate. Uncommon species, however, do not fulfill this criterion.

Criterion B-5: Fish and Wildlife Concentrations

The area serves as a breeding, shelter, or feeding site for seasonal concentrations of wildlife or fish.

For the most part, this criterion was applied to known seasonal concentration areas for fish spawning, colonial bird nesting, and migratory bird staging areas. It can also be applied to core deer yards, if there is evidence of regular use over a number of years. Most of the data base for application of this criterion was provided by MNR Fish and Wildlife files.

Criterion B-6: Extensive Size or Linkages

The area is large enough to support species requiring extensive undisturbed habitats, or provides linkages between other significant natural areas.

To qualify under the size criterion, a candidate must be sufficiently large to support species requiring extensive undisturbed areas, such as Lynx. It could also include large, unfragmented areas of homogenous natural communities, such as rock barrens or wetlands. A candidate would have to be over 600 ha to be considered under the size criterion. The linkage provision is used only where there is evidence that valleys or other habitats were acting as corridors for species movement, or where adjacent uplands had been cleared of natural habitats.

Criterion B-7: Biogeographic Significance

The area contains species or biotic communities of biogeographic significance, including those that are disjunct or at the limits of their distribution.

This criterion recognizes the value of the gene pool which exists in species and community types at the limit of their geographic ranges. Muskoka is situated in a region of many species' limits, both north and south, as well as east and west. Viable plant and wildlife populations at their limits play an important role in maintaining a strong and diverse flora and fauna, because of the selection pressures operating on species under environmental stress. Disjunct populations (those separated from the species' main range) can be of considerable scientific interest as to their origins and survival strategies.

Areas which contain a good representation of prairie, boreal, or southern affinity species satisfied this criterion, as did habitat for disjunct species and community types at their distributional limit.

Atlantic Coastal Plain Flora (A.C.P.F.) communities are a special element of Muskoka shorelines and are of considerable biogeographic interest because of their remnant and disjunct nature. However, as shown in Appendix 3, these communities are not rare in Muskoka, since at least 45 sites have one or more coastal plain species. To compare their biogeographic significance, candidates with any of the 23 coastal plain species were ranked using a formula developed by Keddy and Sharp (1989). A score of 4-10 was considered insignificant; 11-25 as low significance; 26-49 as moderate significance; and over 50 as high significance, meeting this criterion fully.

Cultural Criteria:

Cultural criteria have been applied to the Muskoka landscape through the development of an Archaeological Master Plan for Muskoka, published separately. The one exception is those sections of the scenic areas study which relate primarily to the natural landscape.

Criterion C-7: Scenic Landscapes

The area contains sites or landscapes with patterns of form, line, colour, or texture that together present outstanding scenic value.

This criterion was applied through the scenic areas study described previously (Berney and Reid, 1993), which tested public preferences and documented a range of scenic types and landscapes. Only candidates which have been field visited and documented, and which have scenic character relating primarily to the natural landscape (as opposed to a church, for example) are included under this criterion.

2.0 MUSKOKA'S NATURAL HERITAGE: AN OVERVIEW

2.1 GEOLOGY AND GEOMORPHOLOGY

The bedrock of Muskoka, which is close to the surface throughout much of the District, is in a relatively consistent section of the Canadian Shield known as the Grenville Province. Most of the rock is Late to Middle Precambrian in age, and its typical banded appearance identifies it as part of the Central Gneiss Belt (Wynne-Edwards, 1972).

These gneissic rocks are acidic in nature, and in Muskoka appear to be largely igneous in origin. Some metasedimentary rocks have been identified in the area northeast of Huntsville (Hewitt, 1967). As shown in Figure 2 (modified from Bajc, 1992), the bedrock in Muskoka can be divided into a series of domains and subdomains, on the basis of geophysical characteristics, rock assemblages, structural styles and metamorphic overprints (Davidson, et al., 1985).

During its long history, this bedrock has suffered much folding, with areas of deformation especially intense along the subdomain boundaries. The series of northwest-southeast-trending ridges around the Muskoka Lakes originated by differential erosion of folded rocks (Chapman, 1975). A series of bedrock faults, often in a southwest-northeast direction, also influences local drainage patterns in many areas.

Small areas of plug-like mafic to ultramafic intrusions are scattered across Muskoka. One of the more notable of these intrusions of basic rocks is the exposure of peridotite near Port Cunnington, which has been intensely weathered to an unknown depth (Bajc, 1992).

The contact line with overlying Paleozoic rocks lies just to the south and west of Muskoka. However, two small outliers of these much younger rocks have been found within Muskoka - one forming Quarry Island, and the other a small knoll of Paleozoic limestone along the Honey Harbour Road about 1 km west of Hwy 69 (Liberty, 1969).

Fragments of limestone and other Paleozoic rocks found in the glacial sediments south of Skeleton Lake provide evidence that another outlier existed on the bottom of the lake prior to the last glacial advance (Vasco, 1987). It is uncertain whether this outlier still exists below the lake. These outliers are thought to be evidence of a much more extensive overlay of Paleozoic rocks in this area that has been weathered and scraped away.

Skeleton Lake is also of geologic interest because its circular depression appears to be the eroded remnants of a meteorite impact crater which formed during the early Paleozoic period (Waddington and Dence, 1979).

The pattern of unconsolidated materials found on top of Muskoka's bedrock has been heavily influenced by the withdrawal of the last glacial ice sheet approximately 11,000 years ago. A large glacial lake, Lake Algonquin, covered much of Muskoka for approximately 1000 years, and resulted in many subaquatic deposits in the western three-quarters of the District. The

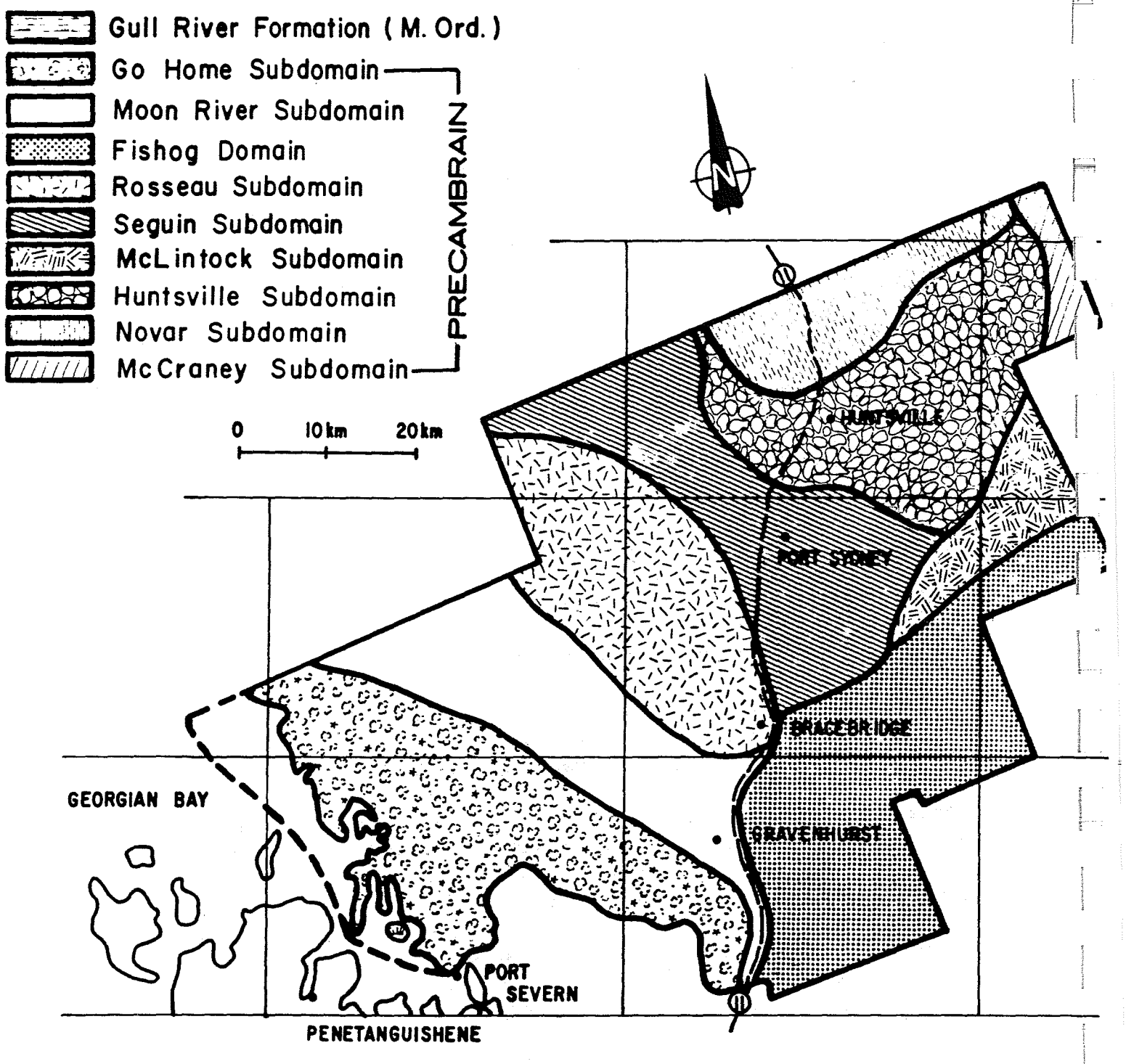


FIGURE 2

BEDROCK GEOLOGY OF THE DISTRICT MUNICIPALITY OF MUSKOKA

northeastern corner of the District, from the Huntsville-Port Sydney-Bracebridge area eastwards, stood above the level of Lake Algonquin and is unaffected by glacial lake processes.

Large areas of the Georgian Bay Fringe within Muskoka contain thin, discontinuous drift deposits, or no drift at all on top of bare bedrock. The combined actions of glacial ice and water washing has removed much of the overburden from these areas, leaving only small remnants of tills, sands, and gravels. Typically these landscapes have closely-spaced bedrock ridges separated by wetlands.

In the Algonquin Highland section of Muskoka, larger areas of ground moraine have been mapped. The till deposits here are commonly a thin, highly-weathered veneer over bedrock, with thicker sections in bedrock troughs or to the lee of bedrock hills. Several types of till occur, all generally loose and sandy, but with varying degrees of stone content.

As the glacier melted, it discharged large volumes of water and sediments down a series of routes to the south, as shown in Figure 3 (modified from Bajc, 1992). This discharge has resulted in deeper sandy deposits along the Big East River, both branches of the Muskoka River, the Highway 11 corridor, and the Black River. Four small esker complexes within Muskoka have also been identified by Bajc (1992), together with ice-contact deltas at the mouth of feeder conduits such as the Big East.

Finer sediments deposited in quiet waters laid down the varved clays and silts found in many of the agricultural areas along the Highway 11 corridor through Muskoka. At least 15 metres of silt and clay occurs along the Sharpe Creek valley east of Bracebridge. Antevs (1925) reported the occurrence of nearly 800 rhythmites (layers thought to be deposited annually) in a clay pit along this valley.

Peat and muck deposits are abundant throughout Muskoka, both in the swales between bedrock ridges and along many streams and lakes. While the depth and maturity of organic deposits are highly variable, peat deposits up to 12 metres in thickness have been documented along Brandy Creek (Bajc, 1992).

2.2 CLIMATE AND HYDROLOGY

The climate of Muskoka is classed as moist continental, with short warm summers and long cold winters. Close to Georgian Bay, seasonal temperature extremes are modified by the effects of the prevailing westerly winds off Georgian Bay. In the northeastern section of the District, the added elevation of the Algonquin Dome (340 metres higher elevation than Georgian Bay) produces a distinctly cooler climate.

For example, summer is typically between 200 and 205 days long along Georgian Bay, but only 190 days long in Algonquin. Winter averages 145 days along the coast, 168 days long in Algonquin (Crowe et al., 1979). As might be expected, water temperatures are also several degrees cooler in the highlands compared to lakes closer to the coast.

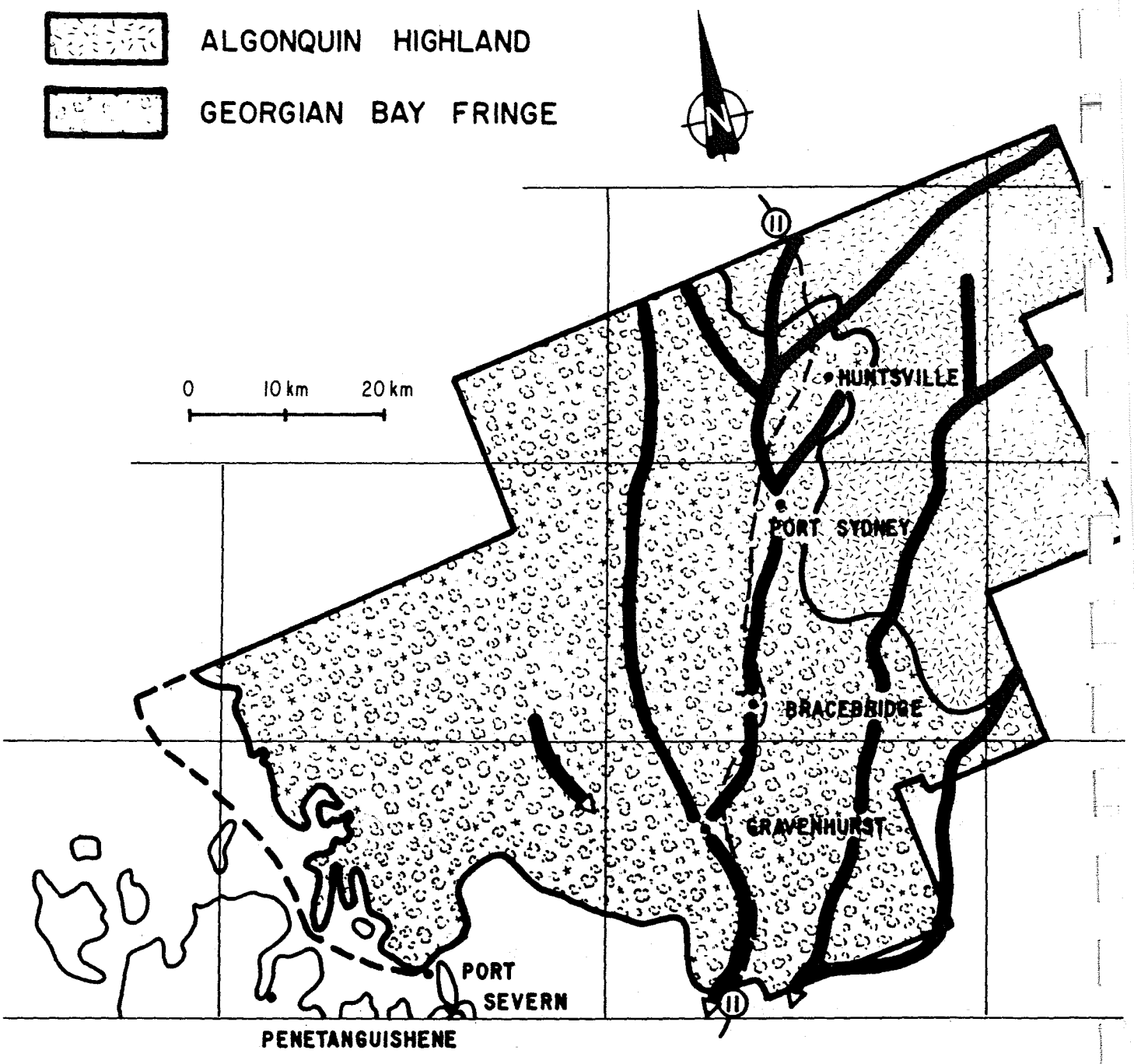


FIGURE 3

Major Meltwater Discharge Routes Across the District Municipality of Muskoka. Those Areas on the Algonquin Highland are Subaerially Deposited Systems Whereas Those on the Georgian Bay Fringe are Subaqueously Deposited.

Precipitation gradually diminishes from west to east in the District. Winter snowfall along the coast, at close to 300 cm per year, is the heaviest known in southern Ontario.

One of the most prominent features of the Muskoka landscape is the abundance of waterways. A series of large and small lakes dominates the central part of the District, most with irregular, rocky shorelines and relatively deep, oligotrophic basins. Throughout the District, isolated, palustrine and riverine wetlands are abundant, often influenced by beaver activity. A wide range of peatland development stages are evident, with the acidic, nutrient-poor conditions strongly favouring the development of poor fens, and coniferous swamp forests. Marshes and deciduous swamp forests are less common, and relatively unproductive compared to such habitats further to the south.

These lakes and wetlands are connected by a twisting network of streams and rivers, often bedrock-controlled and with dark-stained waters. The largest river system is the Muskoka River, with two main branches both rising in Algonquin Park. The upper sections of the River often follow sand-floored rocky valleys with a relatively steep gradient of 1.8 metres per km (Chapman, 1975). The upper sections of the Big East River, one of the Muskoka's larger tributaries, shows a distinctive trellised pattern. The central sections of the Muskoka River are incised up to 20 metres deep in beds of lacustrine sand and varved clays. Below Bala, the river splits into the Moon and the Musquash, and threads its way through bare rock ridges to Georgian Bay.

A small section of the easterly part of Muskoka drains into the Black River watershed, which runs southward to join the Severn River at Washago. The lower Severn River, which forms much of the southern boundary of Muskoka, draws a substantial part of its waters from the limestone-floored regions to the south. This is one of very few places in Ontario where calcareous water, with its distinctive green colour, flows onto the Canadian Shield. The resulting waterway, as well as being an important recreation route, is rich in aquatic macrophytes.

2.3 VEGETATION

Muskoka is included within the Georgian Bay forest district (4d) of the Great Lakes-St. Lawrence Forest Region, as defined by Rowe (1972). This snowbelt, high precipitation forest district supports mixed stands of tolerant hardwoods and conifers on upland sites. A broad range of vegetation community types has been identified in the site matrix (Appendix 2), which relates the vegetation to landforms, drainage, and microclimate. The more common associations can be briefly described in three groups. Descriptions are made using species common names. Reference to latin names can be found in the companion volume of Flora and Fauna of Muskoka as well as individual site species lists maintained in open files at the District Municipality of Muskoka.

Upland Forests:

On the deeper tills and sands which are especially characteristic in the easterly sections of Muskoka, deciduous forests dominated by Sugar Maple have developed. Other tree species

commonly present include American Beech, Red Maple, Yellow Birch, White Ash, and Red Oak. A dense understory is often present, with tall shrubs including Striped Maple, Beaked Hazel, Hobble-bush, and Serviceberries. Forest herbs include spring ephemerals such as Trilliums, Trout Lily, Carolina Spring Beauty, Round-lobed Hepaticas, Fringed Polygala and several fern species.

Where bedrock is close to the surface, White Pine and Red Oak assume a stronger position. On deep soils with a coarse texture, White Spruce can become a dominant. Eastern Hemlock and Balsam Fir are often components on cooler, moister sites.

Most of the better-drained sites on clays or silts have been cleared for farmland. However, where mature forests remain, they have a similar composition, usually with a stronger representation of Eastern Hemlock, Yellow Birch, Black Cherry and Basswood. More nutrient rich sites, often associated with clay soils, support additional understory species such as Maidenhair Fern, Wild Leek, Christmas Fern, White and Red Baneberries, Blue Cohosh, Virginia Waterleaf and many woodland grasses and sedges.

On upland sites that have been previously logged or burned, a diverse mix of successional communities can be found. These communities often have a strong representation of Large-toothed Aspen or Trembling Aspen, together with White Birch. Other trees often present include Red Maple, Sugar Maple, Black Cherry, and White Pine. A dense sub-canopy of young saplings is often present, with a poorly-developed herbaceous layer.

On the ridges of open bedrock that are common in southern Muskoka, savanna-like communities of scattered Red Oak respond to these hot, harsh conditions. White Oak or White Pine are sometimes a major presence in these communities, together with subdominant Red Maple, White Ash and White Birch. Common Juniper is often an important component, forming a dense, low spreading shrub layer intermixed with Sweetfern, Serviceberries and Staghorn Sumacs. In bedrock cracks and depressions, Sheep Sorrel, Hair-grass, Pale Corydalis, Early Saxifrage, Pussytoes and Poverty Grass provide a limited herbaceous layer. Lichens establish on the exposed rock faces.

On shallow, sandy soils such as those commonly found along Georgian Bay, a mixed open forest of White Pine and Red Oak is characteristic. Associated tree species may include Red Pine, Red Maple, Black Cherry, and White Oak. The understory is open, and is typified by Low Blueberry, Spinulose Wood Fern, Fly Honeysuckle, and Wild Lily-of-the-valley. In a few places where intense fires have exposed sandy soils, even-aged forests of White and Red Pine have developed.

Swamps, Bogs and Fens:

A wide range of wooded wetland communities can be found in Muskoka. On clay and sandy substrates, deciduous forest swamps commonly include Red and Silver Maple, Black Ash, and American Elm. Mixed communities, including these broadleaf species plus Eastern White Cedar and less commonly Balsam Fir, also occur.

Coniferous swamp forests are common in most parts of Muskoka, usually on organic mats at least one metre thick. Black Spruce is a dominant in many of these community types, often associated with Tamarack and Balsam Fir. A dense shrub understory of Speckled Alder, Labrador Tea, Northern Wild Raisin, Mountain Holly, and Red-osier Dogwood is often present. The ground layer often has a carpet of Sphagnum and other mosses, with Yellow Clintonia, Canada Mayflower, Bunchberry, Starflower, Goldthread, and other herbaceous wildflowers.

More nutrient poor peatlands support poor fens, including floating shrub mats of Leatherleaf and Sweet Gale, herb-rich mats with Virginia Chain Fern and Pitcher Plants and open graninoid mats. Scattered, stuned Black Spruce or Tamarack are often present on the open mats. These poor fens are usually ringed by an Alder-Black Spruce thicket swamp and a zone of open water up to 2 metres in width called a "lagg". Wild Calla and other aquatic submergents and energents occupy this zone.

Thicket swamps or "carrs" are a common component of wetland systems in Muskoka, often along the transition zone to drier ground. Alder thickets and Winterberry-Mountain Holly-Wild Raisin carrs are especially common. In the southern section of the District, Buttonbush-Silky Dogwood-Water Willow thickets also occur.

Marsh Communities:

Along the edges of lakes and ponds, marsh communities often soften the transition from water to land. In deeper water zones, submerged aquatic communities and floating-leaved species such as Bullhead Lily, Water Shield, and various Pondweeds occur. Deep emergent marsh with Cattails, Bulrushes, and infrequently Wild Rice gives way in shallower waters to more diverse emergent marsh communities of Pickerelweed, Rushes, Bur-reed, and Sedges. On seasonally-flooded drier sites, beaver meadows of Canada Bluejoint, Boneset, Rough-stemmed Goldenrod, and other herbs occur, often with scattered shrubs of Meadowsweet and Sweet Gale.

One shoreline community which is relatively widespread in Muskoka is Atlantic Coastal Plain Flora, typified by Virginia Meadow-beauty, Slender Yellow-eyed Grass, Water Wort, and related species. This disjunct community typically occurs on sandy shorelines where fluctuating water levels prevent the invasion of shrubby species that might otherwise occupy the site.

2.4 WILDLIFE

The varied habitats of Muskoka support a wide array of wildlife, including some 174 species of nesting birds, 54 mammals, 36 reptiles and amphibians, 70 butterflies, and 89 dragonflies and damselflies. Complete species lists are included in a companion to this report (Bowles and Bergsma, 1993).

As with Muskoka's vegetation, this diversity of wildlife reflects the District's role as a zone of ecological transition. A substantial number of species reach their northern limits here, such

as Willow Flycatcher, Yellow-throated Vireo, Cerulean Warbler, Black-crowned Night Heron, and Eastern Fox Snake.

Even more species from the forests of the north reach their southern range in Muskoka. These include several large mammals such as Moose, Black Bear, Fisher, and Lynx, which are frequent residents of Muskoka, but scarce to the south. Many birds of the northern forest reach the limit of their breeding range here also, including Gray Jay, Spruce Grouse, Common Raven, Black-backed Woodpecker, Cape May Warbler and Bay-breasted Warbler.

This transition effect is strengthened by the higher elevation and cooler temperatures in the northeastern parts of the District, and by the moderating effects of Georgian Bay to the west. A number of reptiles and such birds as Prairie Warbler and Common Tern occur in Muskoka only in the vicinity of Georgian Bay and the Severn corridor.

The extensive areas of specialized habitats present in some parts of Muskoka make the District a stronghold for species that are rare elsewhere. For example, Five-lined Skink is common on the rock barrens of southern Muskoka, but is considered rare or uncommon in most other parts of Ontario. The core of the Prairie Warbler's restricted range is in the Juniper-rich barrens along Georgian Bay. Red-shouldered Hawk, a nationally and provincially rare species, is scattered within the hardwood forests of Muskoka.

2.5 DEFINITION OF SUBDISTRICTS

To provide a clearer overview of the variable nature of the natural landscape within Muskoka, it is useful to briefly describe a series of biophysical subdistricts, each one having relatively uniform landforms and vegetation associations. These nine subdistricts, as shown on Figure 4, are slightly modified from those described in reports by Dan Brunton for site districts 5E-7, 5E-8, and 5E-9 (1991a, 1991b, 1991c).

Coastal Barrens Subdistrict:

This narrow band along the Georgian Bay shore includes the off-shore islands and the immediate coastal area. It is relatively low in elevation (below 200m ASL), with a climate that is cool and moist because of the proximity of the Bay. Soils are very thin; extensive bedrock barrens with pine-capped ridges are typical, with a few pockets of lacustrine sand and many areas of organic wetland development in bedrock depressions.

Several plant species are associated with this Great Lakes shoreline area, including Kalm's St. John's Wort, Yellow Flax, Prairie Loosestrife, Northern Meadow Spike-moss, Bird's-eye Primrose, Pringle's Aster, Tall Cordgrass, and the sedge *Carex garberi* (Macdonald, 1986). Fox Snake, Eastern Massasauga, Map Turtle, and Prairie Warbler all have their Muskoka range concentrated within this subdistrict. This specialized habitat in southeastern Georgian Bay harbours the greatest diversity of reptiles and amphibians in the province.

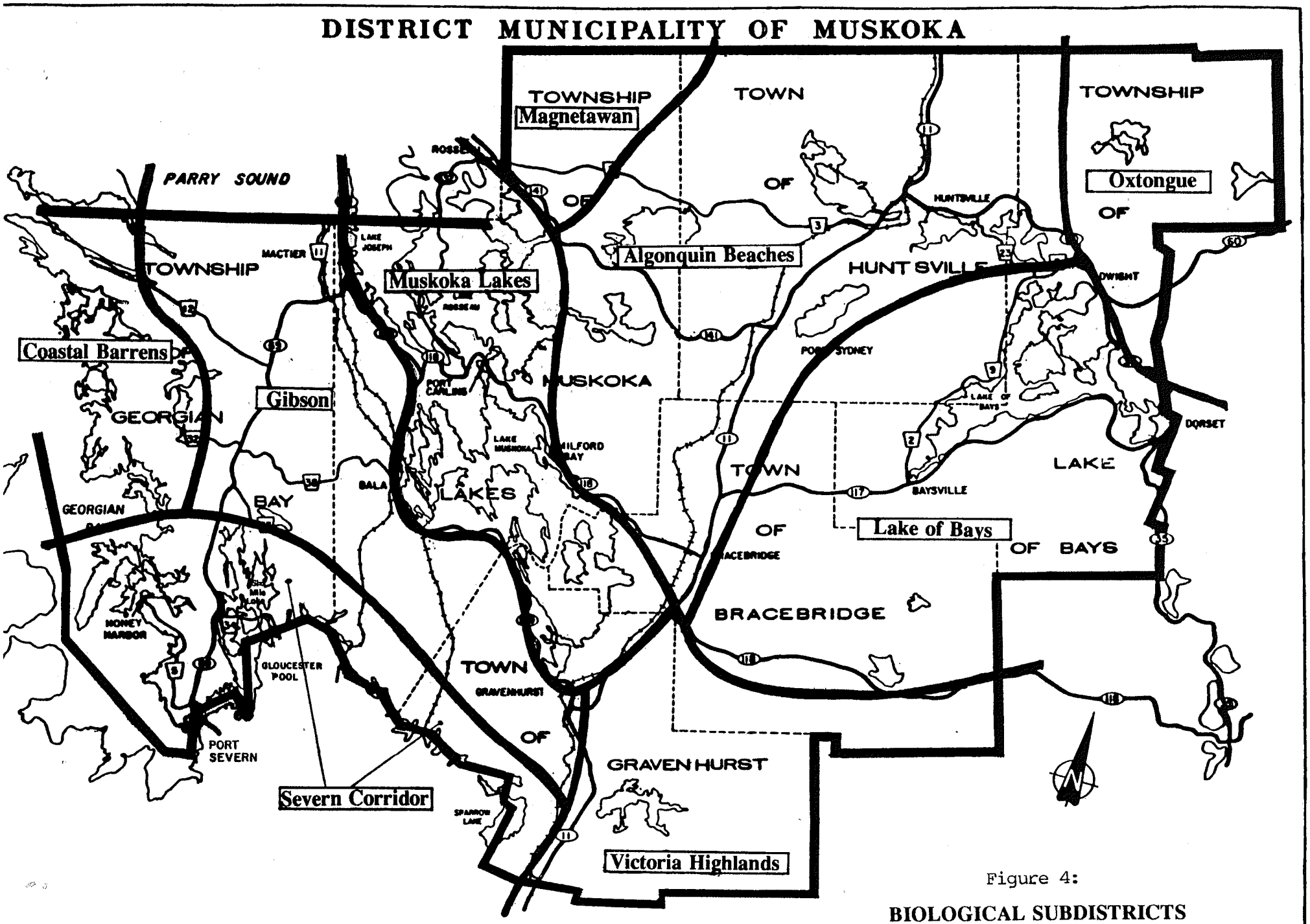


Figure 4:

BIOLOGICAL SUBDISTRICTS

Severn Corridor Subdistrict:

The Severn corridor includes the rolling gneissic rocklands along the Severn River from Sparrow Lake to Georgian Bay, plus the area along Severn Sound to Beausoleil Island. Sections of deeper silt and clay east of Sparrow Lake and in the Port Severn area have been largely cleared for agriculture. Most of the rocklands and shallow till areas remain in early successional mixed forest, with frequent small wetland areas.

This subdistrict includes several anomalies for the District of Muskoka. Two small outliers of Paleozoic limestone occur within the subdistrict in the Honey Harbour vicinity, with resulting distinctive floral elements. Beausoleil Island contains extensive accumulations of sands and gravels from the Nipissing Phase, some 4000 to 8000 years ago. Together with such geological features as shorebluffs, wave-cut notches, and boulder laggs, the island supports mature late-successional hardwood and mixed forest.

As a result of calcareous waters from the south flowing over the edge of the Canadian Shield, the Severn River contains an extraordinary wealth of aquatic plants, reputed to display the richest diversity of aquatic plants in Canada. As well, the south-facing slopes along the river are rich in southern plant species such as Groundnut, Carolina Cranesbill, Racemed Milkwort, Autumn Willow, and the bulrush *Scirpus Fluviatilis*. Several prairie species are also present along the corridor, including Big Bluestem, Cord Grass, Prairie Dropseed, Indian Grass and Switch Grass (Kamstra, 1992).

Gibson Subdistrict:

This subdistrict is characterized by extensive areas of low-lying gneissic rockland, mixed with areas of shallow sandy till and a few pockets of deeper till. Pine-Oak barrens are common where soils are thin; early successional coniferous and mixed forest occur widely; some late successional hardwood forest is present. Complex development of wetlands is abundant throughout the subdistrict, often in linear basins with occasional extensive peatland. Some areas have been historically disturbed by agriculture.

The flora and fauna of the subdistrict show strong southern affinities, with some forest associations dominated by White Oak. Other southern communities include Fragrant Sumac-Downy Arrowwood shrub thicket, Bur Oak-Silver Maple-Snowberry swamp forest, Poison Sumac swamp, and Buttonbush-Silky Dogwood-Water Willow low shrub marsh. Southern species are well represented in the herbaceous flora as well, with Ebony Spleenwort and various species of Tick Trefoils.

The Gibson subdistrict also contains strong representation of Atlantic Coastal Plain flora, such as Two-cupped Pondweed and Eaton's Grass, which occurs along many sandy-peaty shorelines in this area. As well, Virginia Chain Fern, a coastal plain associate, is a common element in peaty wetlands in the subdistrict. On the dry rock barren habitats, Five-lined Skinks can be commonly found.

Muskoka Lakes Subdistrict:

This subdistrict is characterized by the rocky shores, bays, and islands of Lakes Joseph, Rosseau, and Muskoka. Elevations are relatively low, at 225-290m ASL. Thin to moderately-thin till soils support young to mature late successional upland deciduous and mixed forests. Wetlands are uncommon along the major lakes, while beaver pond and bedrock depression wetlands are common elsewhere. Although habitats are more fragmented in this subdistrict than elsewhere in Muskoka, there are many pockets of Atlantic Coastal Plain shorelines, southern forest associations, inland disjunct prairie or Great Lakes shoreline species, and clay soils supporting rich and unusual associations.

Shoreline areas have a long history of disturbance for recreational and cottaging uses. The interspersion of water and land, the rocky, rolling landscape, and the frequency of interesting architecture make this a highly-valued scenic landscape.

Magnetawan Subdistrict:

A small section of this subdistrict extends into the northwestern corner of Muskoka. It features a rolling landscape of shallow to deep till with many small rock outcrops. Late successional deciduous and mixed forests occupy richer sites. Organic deposits are numerous. Flora and fauna of the subdistrict show some influences from Georgian Bay.

Victoria Highlands Subdistrict:

This subdistrict includes extensive bedrock barrens at a relatively low elevation (210-290m ASL), with a hot, dry climate. Pine-Oak and graminoid-heath barrens are commonly interspersed with low shrub peatlands and swamp linear wetlands; drainage is severely disrupted by topography and beaver activity.

Two bands of deeper glaciolacustrine sands cross the subdistrict, and patches of thin tills occur in some parts. These sites are mostly occupied by successional deciduous and mixed forests; some limited clearing for agriculture has occurred.

Extensive shallow peatlands occur in some sections, with a mix of bog, fen, and swamp communities. Atlantic coastal plain and southern affinities are present among the flora, including occurrences of Arrow Arum, Arethusa, Bearberry, White Oak, and Butternut.

Lake of Bays Subdistrict:

This rolling landscape of shallow to deep till increases in topographic contrast towards the east. Frequent outcrops of gneissic bedrock are present, with some mafic intrusions. Moderate elevation (240-395m ASL) and cooler, wetter climate result in northern influences in flora and fauna, such as White Birch - Eastern White Cedar forest with an understory of Yellow Clintonia, Hobblebush, Clubmosses, and Mountain Maple.

Late successional deciduous and mixed forests occur widely on deeper till soils on rugged slopes and on loam-filled lower areas. Extensive peatlands occur in depressions, with Black Spruce conifer swamps, thicket swamps, and meadow marshes common.

Algonquin Beaches Subdistrict:

This extensive area includes most of the former shoreline features associated with glacial Lake Algonquin. Level sand, clay, and gravel deposits of glaciolacustrine origins occur throughout the subdistrict, especially along the Highway 11 corridor. Along parts of the Big East and North Muskoka Rivers, these deposits are quite deep. Considerable sections of the richer soils have been cleared for agriculture; the towns of Bracebridge and Huntsville and shoreline cottage development have also disturbed vegetation patterns.

Rugged mounds of Precambrian bedrock are strongly in evidence throughout the subdistrict, especially towards the east. Peatlands and other wetlands are frequent and often extensive, with a tendency towards more northern conifer swamps. Sites in this subdistrict show a rich assemblage of aquatic, marsh, and poor fen vegetation, including several relict sites of Atlantic coastal plain vegetation.

Some members of the flora occur in Muskoka primarily in association with the relatively rich, fine-textured soils of this subdistrict, such as New England Sedge, Nodding Trillium, Bloodroot, Smith's Melic Grass, Marsh Marigold, and Bayonet Rush.

Oxtongue Subdistrict:

This subdistrict, which is part of Site District 5E-9, occupies the highest, coolest section of Muskoka adjacent to Algonquin Park. Topography is rugged, with a shallow to deep mantle of coarse-textured tills supporting tolerant Sugar Maple-Eastern Hemlock-Yellow Birch forests, with White Spruce locally significant on moist slopes. Conifer swamp peatlands, submergent/floating aquatic wetlands, and boggy creek shores are frequent but not usually extensive.

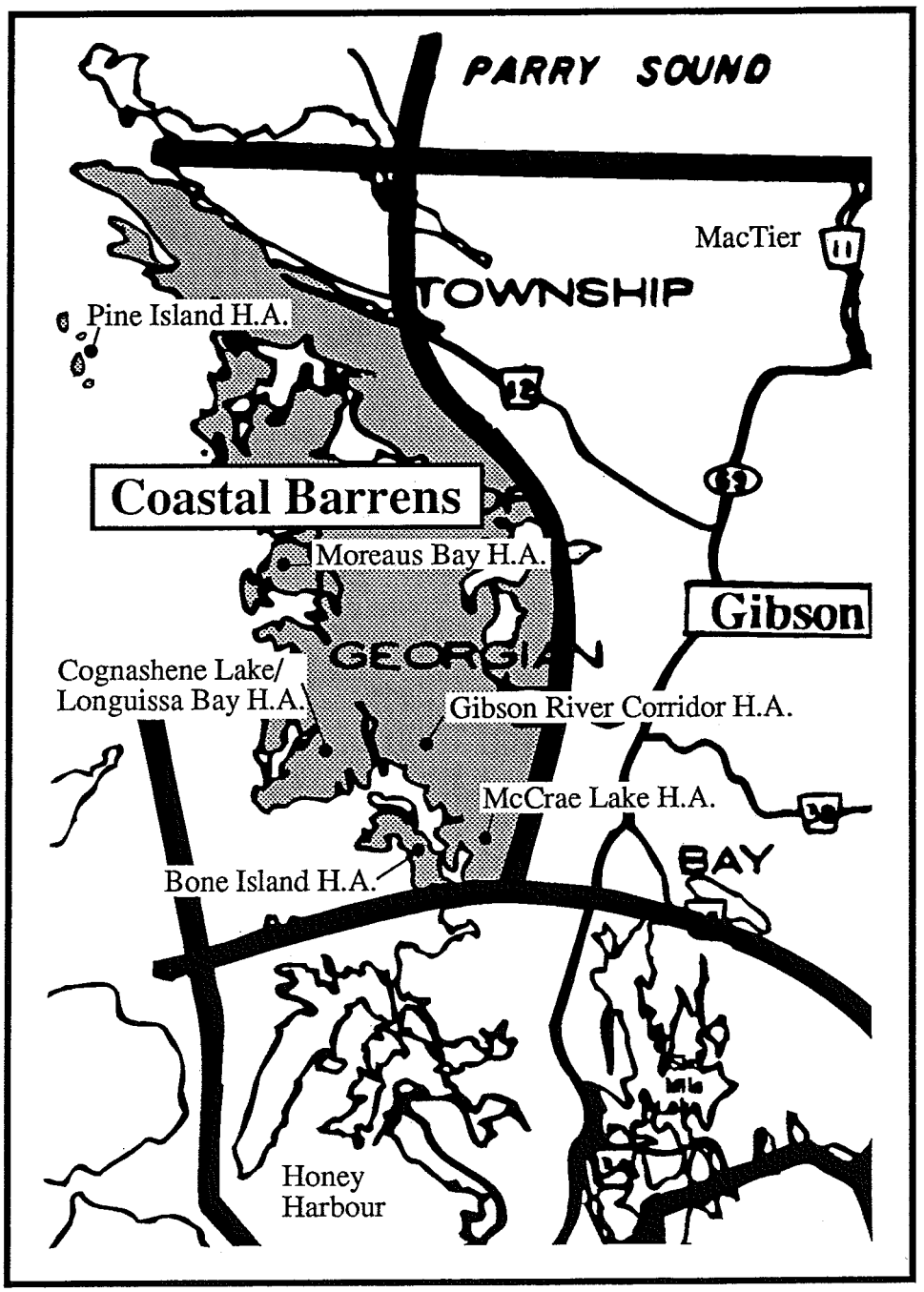
Flora and fauna shows a strong northern affinity, with such species as Spruce Grouse, Black-backed Woodpecker, and Red-backed Vole. Shoreline granite cliffs harbour unusual arctic-alpine species such as Fragrant Cliff Fern.

Forestry activities are extensive in this subdistrict; other human disturbances are relatively light.

3.0 INDIVIDUAL AREA AND SITE DESCRIPTIONS

3.1 COASTAL BARRENS SUBDISTRICT
3.2 SEVERN CORRIDOR SUBDISTRICT
3.3 GIBSON SUBDISTRICT
3.4 MUSKOKA LAKES SUBDISTRICT
3.5 VICTORIA HIGHLANDS SUBDISTRICT
3.6 ALGONQUIN BEACHES SUBDISTRICT
3.7 MAGNETEWAN SUBDISTRICT
3.8 LAKE OF BAYS SUBDISTRICT
3.9 OXTONGUE SUBDISTRICT

3.1 COASTAL BARRENS SUBDISTRICT



BONE ISLAND UTM Ref. 17TNV905765

Gibson Township, Georgian Bay Area: 573 ha
Status: Recommend Heritage Area

Site Characteristics

Bone Island is a large island in southeastern Georgian Bay, in a protected area south and east of Musquash Channel. Its irregular shape results in a long shoreline perimeter and numerous protected bays and inlets. Pink feldspar and black hornblende outcrops are common in the interior as well as along the rocky shorelines.

The dominant vegetation community is dry open rock barrens with a savanna-like appearance chararacterized by Common Juniper, grasses, lichens and sparse tree cover. This habitat and the associated wet pockets support several rare species of birds, reptiles and plants.

Deeper soils supporting climax deciduous forests can be found in depressions where glacial till was deposited. Two large areas support mixed Pine-Oak forest and White Pine coniferous forest. The dry-mesic moisture regime and low nutrient status of these forest types create low species diversity and a sparse understory.

Two large beaver ponds are present on the island as well as numerous seasonal ponds. These wetlands provide important breeding habitat for many amphibians and reptiles. Some of the more protected bays have accumulated a deep layer of fine silts supporting coastal plain flora and other significant shoreline flora and fauna.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	219 native ; 12 introduced
	4 A.C.P.F. with a score of 18 (Low)
Birds	35 observed during breeding season
Mammals	3
Herpetofauna	21 including 13 species from National Parks Survey

Significant Natural Values and Selection Criteria Met

1. **Diversity** - (B2) The area has a very high herpetofaunal species richness, with twenty-one species occurring. Southeastern Georgian Bay is considered one of the richest areas in the province for reptiles and amphibians. Some of these species, such as the Eastern Fox Snake and the Mudpuppy, have a Muskoka distribution restricted to the Georgian Bay coastline.

2. **Rare Species** - (B4) Bone Island provides habitat for the following rare species:

Wildlife

Necturus maculosus	Mudpuppy [RR]
Sternotherus odoratus	Stinkpot [RR]

Clemmys guttata Spotted Turtle [NR PR RR]
Heterodon platirhinos Eastern Hognose Snake [PR]
Elaphe vulpina gloydi Eastern Fox Snake [PR RR]
Sistrurus c. catenatus Eastern Massasauga Rattlesnake [NR PR]
Dendroica discolor Prairie Warbler [NR PR]

Vascular Plants
Carex buxbaumii Brown Sedge [RR]
Carex interior Inland Sedge [RR]
Panicum ovale American Panic Grass [RR]
Physocarpus opulifolius Ninebark [RR]
Sagittaria graminea var cristata Grass-leaved Arrowhead [NR PR]
Sphenopholis intermedia Slender Wedge Grass [RR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, the regionally uncommon amphibians were found.

Ownership and Disturbance

The majority of Bone Island is privately owned, consisting of large lots (4-10 ha) beginning at the shoreline and running inland to the middle of the island. Dumping of household and inorganic debris was noted at the back of many cottage lots. Some of the rare species are located on shorelines. As cottagers develop beach fronts for recreational use, there will be increasing disturbance to the shoreline features.

Georgian Bay Islands National Park owns two centrally located lots, totalling about 14 hectares. The concentration of rare species and heavy visitor use on this area is cause for concern. Recommendations have been made to designate the southwestern portion of the National Park area as an Environmentally Sensitive Site.

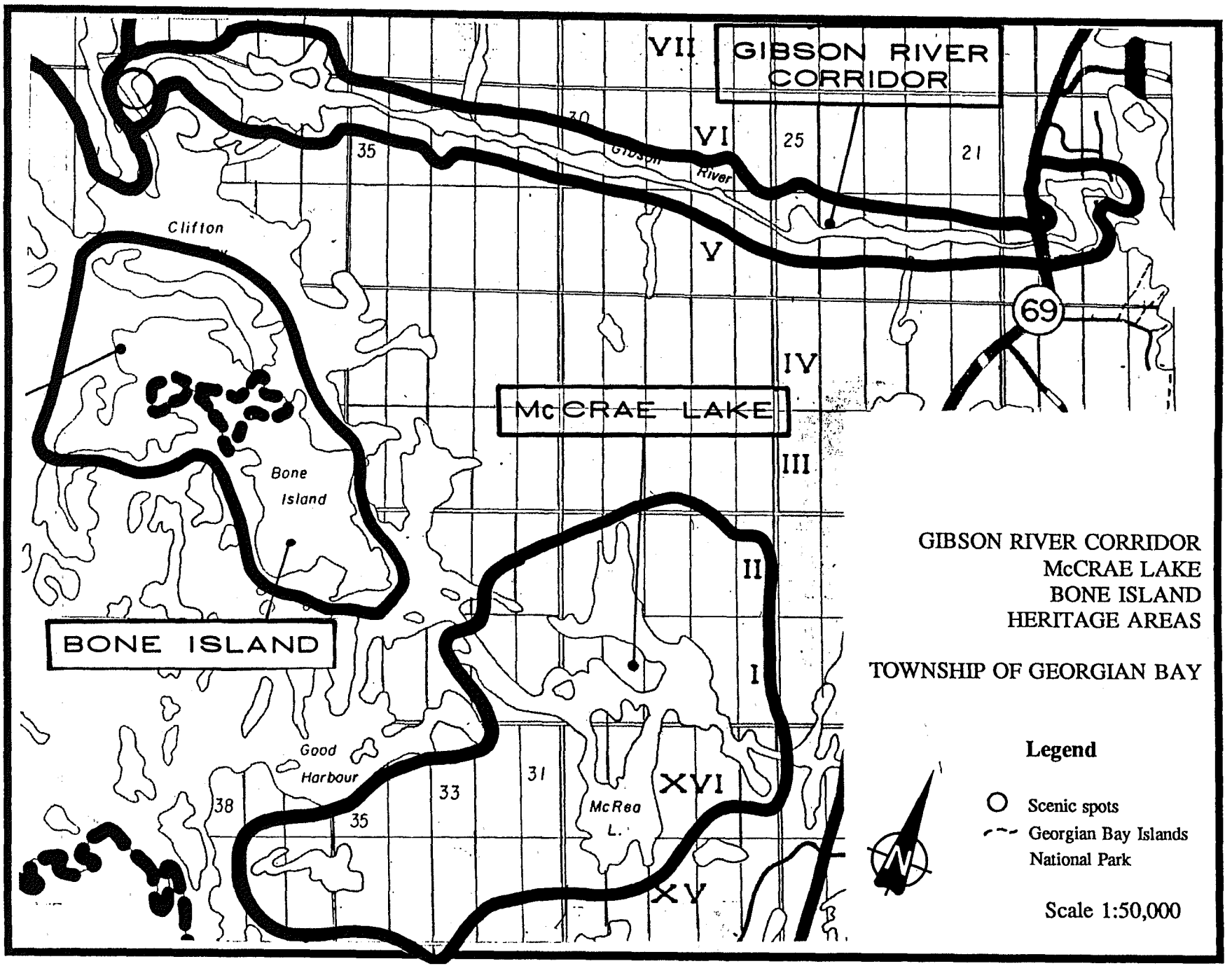
Recently a large (approx. 60 ha) section of Bone Island was donated to the Georgian Bay Trust Foundation.

Sensitivity

The sensitivity of Bone Island relates primarily to the important breeding habitats for herpetofauna and Prairie Warblers. The shoreline ecology which supports numerous rare flora and fauna and some Atlantic Coastal Plain Flora is also vulnerable to increased density of cottage development.

Major Sources of Information

Bajc, & Paterson, 1992 b; Geomatics International, 1992; Keddy, & Sharp, 1989.


VII
GIBSON RIVER CORRIDOR
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McCRAE LAKE
BONE ISLAND
Clifton
Bone Island
Good Harbour
McRea L.
Gibson River
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GIBSON RIVER CORRIDOR
McCRAE LAKE
BONE ISLAND
HERITAGE AREAS
TOWNSHIP OF GEORGIAN BAY
Legend
Scenic spots
Georgian Bay Islands National Park
Scale 1:50,000

COGNASHENE LAKE/LONGUISSA BAY UTM Ref. 17TNV860795

Gibson Township, Georgian Bay Area: 421 ha
Status: Recommend Heritage Area

Site Characteristics

This site consists of the upper end of Longuissa Bay which terminates in an extensive lowland and wetland complex, and an arc of beaver-controlled wetlands and dry Oak barren upland areas joining the top end of Cognashene Lake. Longuissa Bay can be divided into two sections. The southern half of the bay is typical of the Georgian Bay shore with thin soils on Precambrian bedrock. The northern half of the bay is characterized by exposed gneiss sloping directly into the water and small bays with sandy-peaty soils. Shallow, fluctuating water levels support a continuous band of emergent vegetation along this shoreline, including Atlantic Coastal Plain Flora, plus a large Wild Rice stand and a rich variety of floating and submerged aquatic plants.

Deeper, sandy soils along the shoreline of the wetland at the top of Longuissa Bay support rich Sugar Maple-Beech-Ironwood-Basswood deciduous forests and mixed Pine-Oak-Aspen forests.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	218 native ; 5 introduced
	12 A.C.P.F. with a score of 59 (High)
Birds	26 observed during breeding season
Mammals	5
Herpetofauna	7

Significant Natural Values and Selection Criteria Met

1. **Quality and Disturbance** - (B3) Climax deciduous forest of this quality is rare in the Georgian Bay region due to the predominance of shallow soils and exposed bedrock. The wetland at the top of Longuissa Bay has a high species richness of aquatic plants. Twenty species of aquatic plants characteristic of open water habitats were recorded, including five species of Bladderworts, six species of Pond Weeds and two Naiads.

2. **Rare Species** - (B4) The Longuissa Bay area provides habitat for the following rare species:

Wildlife
Phalacrocorax auritus Double-crested Cormorant [RR]
Vascular Plants
Elatine minima Water Wort [PR]
Najas gracillima Naiad [NR PR RR]
Panicum ovale American Panic Grass [RR]

Pedicularis canadensis Wood Betony [RR]
Platanthera blephariglottis White Fringed Orchis [PR]
Polygonum careyi Carey's Knotweed [PR]
Polygonum scandens Climbing False Buckwheat [RR]
Potamogeton bicupulatus Two-cupped Pondweed [NR PR]
Potamogeton vaseyi Vasey's Pondweed [RR]
Triadenum virginicum Marsh St. John's Wort [PR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, thirteen species of vascular plants were recorded as regionally uncommon.

3. **Fish and Wildlife Concentrations** - (B5) The large wetland at the top of Longuissa Bay, composed of floating macrophytes and Wild Rice, provides an important fish spawning area and waterfowl staging area.

4. **Biogeographic Significance** - (B7) The Longuissa bay shoreline contains a high significance of representation for Atlantic Coastal Plain Flora, supporting twelve species with a score of 59. It ranked number six of ten sites with high significance.

Ownership and Disturbance

The area is largely Crown land ownership, with approximately 24% privately owned. The privately owned section includes the Longuissa Bay area, where the most significant natural features are located.

Previous disturbances include logging and aggregate extraction in the area of deciduous forest. The area was selectively logged and therefore has retained most of its original character. The area of aggregate extraction was localized, leaving a small highly visible disturbed area. The rest of the inland areas remain relatively undisturbed.

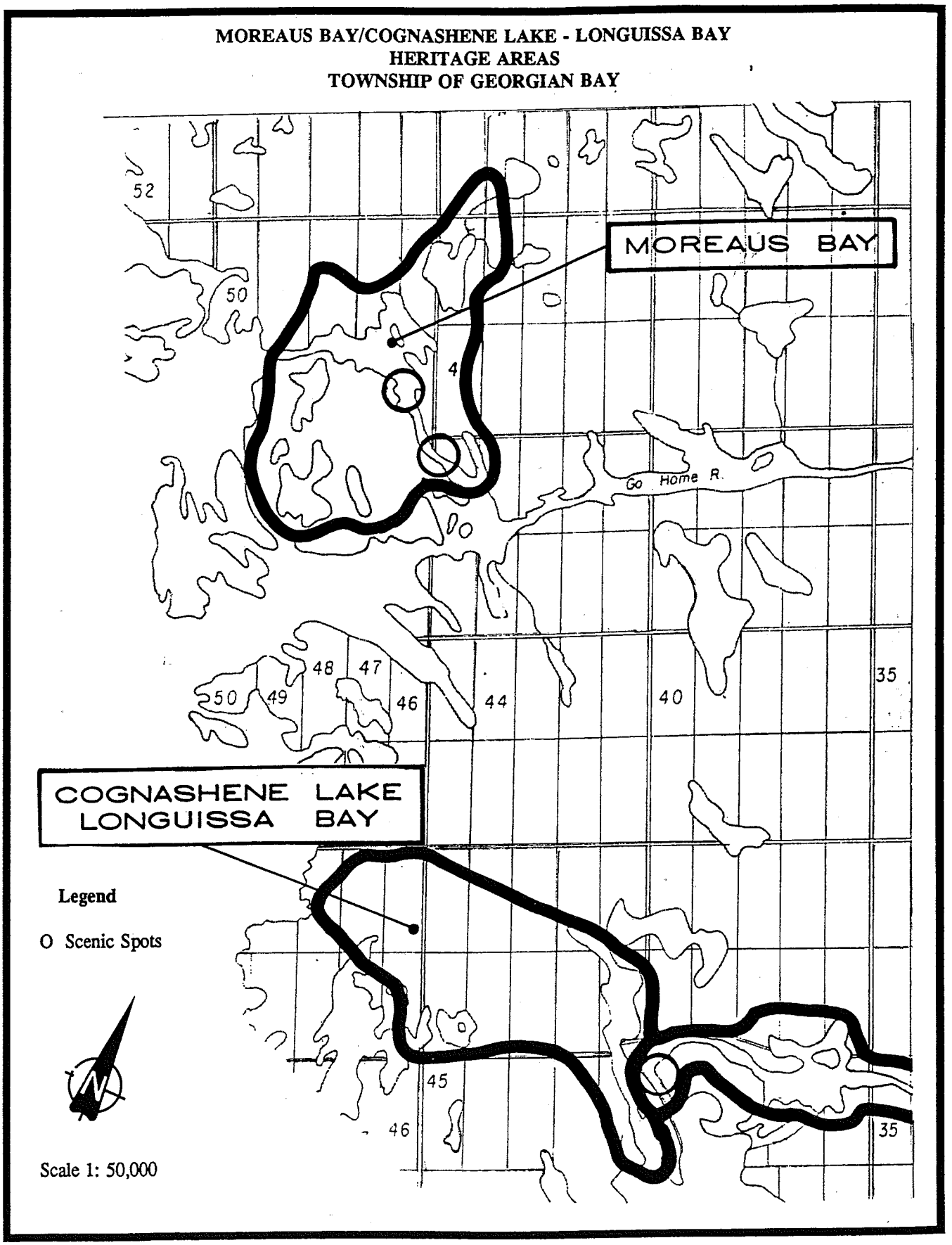
Sensitivity

The sensitivity of this site is related to the coastal plain shoreline and Wild Rice and aquatic macrophyte shallow water communities of the large wetland complex at the top of Longuissa Bay. Suitable policies related to the protection of shorelines for A.C.P.F. and other wetland species, including fish habitat protection should be followed. The quality of the climax deciduous forests should not be compromised by inappropriate development or resource extraction.

Major Sources of Information

Bajc, & Paterson, 1992 b; Geomatics International, 1992; District Municipality of Muskoka 1985 Sensitive Areas Schedules; Keddy, & Sharp, 1989.

MOREAUS BAY/COGNASHENE LAKE - LONGUISSA BAY
HERITAGE AREAS
TOWNSHIP OF GEORGIAN BAY



GIBSON RIVER CORRIDOR UTM Ref. 17TNV935803

Gibson Township, Georgian Bay Area: 495 ha
Status: Recommend Heritage Area

Site Characteristics

The Gibson River corridor flows west from Gibson Lake for some six kilometres, joins the larger Musquash River which enters from Go Home Lake to the north and continues for another three kilometres into the Musquash Channel on Georgian Bay. The overall drop in elevation is less than 10 metres, mostly occurring at four small falls and rapids.

The Gibson River sub-watershed has a natural flow regime unregulated by dams. The river is generally 10 to 20 metres wide with depths ranging from several metres during spring flooding to a few centimetres in mid-summer. This fluctuation permits a wide shoreline of sandy-peaty soils to support a rich assemblage of shoreline vegetation communities and Atlantic Coastal Plain Flora.

Uplands along the corridor have thin, discontinuous drift cover, and sections of exposed gneissic bedrock. Forests along the eastern four kilometres of the river are mainly coniferous and mixed with a strong component of White Pine, Red Pine and Red Oak. Eastern Hemlock forests are dominant on the cooler north-facing slopes. A few sections of Sugar Maple-Beech-Red Oak climax deciduous forest are also present where soils are deeper and richer. Rock barrens dominate the rest of the river corridor closer to Georgian Bay. Inland marshes and shrub thickets are present in backshore bays and low-lying areas.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	129 native ; 3 introduced
	4 A.C.P.F. with a score of 21 (Low)
Birds	20 observed during breeding season
Mammals	6
Herpetofauna	7
Butterflies	2

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) The Gibson River is an undisturbed river system which acts as a floodplain for waters flowing out of Gibson Lake.

2. **Quality and Disturbance** - (B3) Only 2.3% of the vascular plants species recorded from the study area are introduced. This reflects the integrity of the natural communities within this river corridor. The unregulated water levels of the Gibson River support natural assemblages of shoreline and coastal plain vegetation communities showing little recent disturbance.

3. **Rare Species** - (B4) The Gibson River Corridor provides habitat for the following rare species:

Wildlife

Mergus serrator Red-breasted Merganser [RR]
Sterna caspia Caspian Tern [NR PR]

Vascular Plants

Carex novae-angliae New England Sedge [PR]
Elatine minima Water Wort [PR]
Isoetes lacustris Lake Quillwort [RR]
Isoetes xharveyi Quillwort [RR]
Myriophyllum heterophyllum Various-leaved Water Milfoil [RR]
Panicum rigidulum Panic Grass [NR PR]
Petasites frigidus Sweet Coltsfoot [RR]
Rubus canadensis Thornless Blackberry [RR]
Sagittaria graminea var cristata Grass-leaved Arrowhead [NR PR]

In addition, one bird and eight plant species were recorded as Regionally Uncommon.

4. **Size and Linkage** - (B6) The Gibson River is a natural river corridor, providing a linkage of shoreline and valley slope from Gibson Lake to the Musquash Channel of Georgian Bay.

5. **Scenic Landscapes** - (C7) The waterfalls and rapids along the Musquash, particularly where the river begins to flow south into the channel, have been identified as having high scenic values.

Ownership and Disturbance

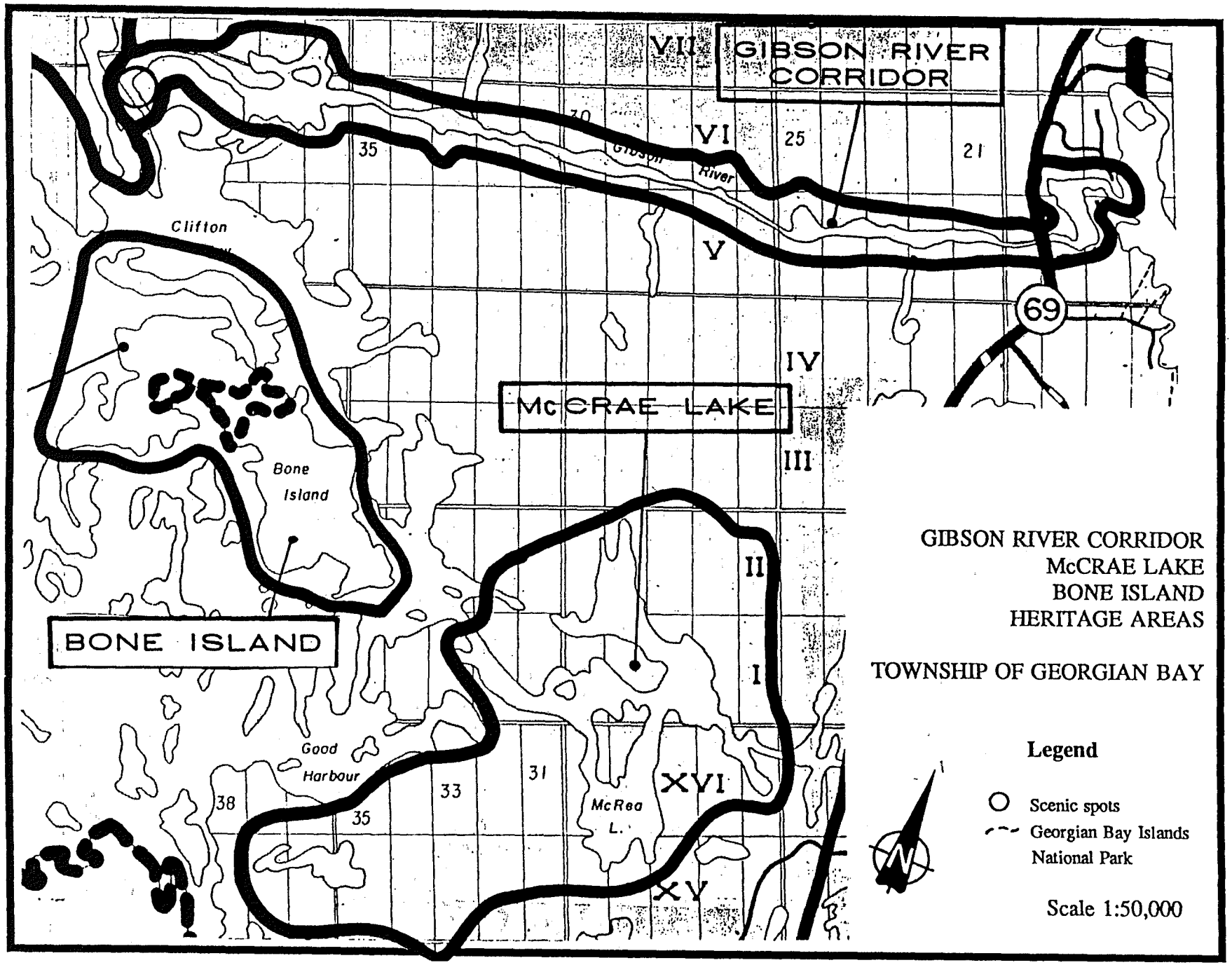
The area is approximately 50% Crown land, with most along the interior stretch of the Gibson River. A few private cottage lots are present just west of Highway 69. The rest of the privately owned land is located along the lower Musquash River portion of the corridor; however, a major part of this area was recently donated to the Nature Conservancy of Canada. Past logging has occurred in the area and influenced the present day landscape but recent disturbances are low. Increasing cottage development pressures plus unregulated use of campsites along the river (which is part of the Gibson River - McCrae Lake canoe route) is evident as trampling and vegetation removal in some areas.

Sensitivity

The sensitivity of this site is related to the hydrological functioning of the river corridor and shoreline ecology. The natural fluctuating water levels are critical to the maintenance of shoreline communities. As well, the continuity of undisturbed habitats along the floodplain and valley is a significant feature of this area which should not be disrupted. The adjacent forests provide habitat, shelter and buffer for the river corridor defined in part by slope and aspect. Disturbances in these valley areas would compromise the natural values present.

Major Sources of Information

Bajc, & Paterson, 1992 b; Berney, & Reid, 1993; Geomatics International, 1992; Keddy, & Sharp, 1989.


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Gibson River
Clifton
Bone Island
Good Harbour
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GIBSON RIVER CORRIDOR
McCRAE LAKE
BONE ISLAND
HERITAGE AREAS
TOWNSHIP OF GEORGIAN BAY
Legend
Scenic spots
Georgian Bay Islands National Park
Scale 1:50,000

McCRAE LAKE UTM Ref. 17TNV942745

Baxter Township, Georgian Bay Area: 1170 ha
Status: Recommend Heritage Area

Site Characteristics

The McCrae Lake area is set in a weakly broken Precambrian bedrock plain that has been washed bare of much of its surficial materials. Most of the upland area consists of warmer than normal bare rock knolls with Common Juniper and clumps of stunted Red Oak, White Oak, and White Pine. Where pockets of dry sandy till occur, a young forest of Red Oak, White Pine, Eastern Hemlock, Red Maple and Large tooth Aspen can be found.

Small depressions in the bedrock have fostered the development of Virginia Chain Fern poor fens and Tamarack-Black Spruce swamps on organic soils. The frequent beaver ponds through the area typically have floating-leaved aquatics, including Waterlilies. The shallow shoreline waters of McCrae Lake itself have dense beds of Eurasian Water Milfoil on a sandy bottom.

McCrae Lake passes waters from Six Mile Lake westwards into Georgian Bay, while the smaller Bear's Head Lake receives water only from local tributaries and wetlands.

Flora and Fauna

Total numbers of species recorded were:

Vascular plants	190 native; 7 introduced
	9 A.C.P.F. with a score of 44 (Moderate)
Birds	25 recorded during breeding season
Mammals	6
Herpetofauna	9
Butterflies	6

Significant Natural Values and Selection Criteria Met

1. **Landform Representation** - (A2) An earth science survey of the site (Spek, 1978) revealed biotite gneisses that are "very representative of the type of metasedimentary gneiss encountered in this part of the Ontario Gneiss Segment". These rocks have not been severely deformed and therefore display good compositional layering. As well, one outcrop displays excellent tight metamorphic folding and a pegmatite dike.

2. **Quality and Disturbance** - (B3) The biotic communities present represent the full range of communities typical of the southern Georgian Bay coastal zone, and show little disturbance from their natural state. The relatively low ratio of non-native plants, at 3.6%, is evidence of this quality.

3. **Rare Species** - (B4) The McCrae Lake area provides habitat for the following rare species:

Wildlife
Dendroica discolor Prairie Warbler [NR PR] *
Elaphe vulpina gloydi Eastern Fox Snake [PR RR] **
Sistrurus c. catenatus Eastern Massasauga [NR PR] **
Vascular Plants
Asplenium trichomanes Maidenhair Spleenwort [RR] ***
Carex folliculata Long Sedge [PR]
Panicum rigidulum Panic Grass [NR PR]
Petasites frigidus Sweet Coltsfoot [RR]
Platanthera blephariglottis White Fringed Orchis [PR]
Pterospora andromedea Pinedrops [PR RR]
Sagittaria graminea var. cristata Grass-leaved Arrowhead [NR PR]
Sisyrinchium angustifolium Stout Blue-eyed Grass [RR]
Streptopus amplexifolius Clasping-leaved Rose Twisted Stalk [RR]
Triadenum virginicum Marsh St. John's Wort [PR]
Xyris difformis Slender Yellow-eyed Grass [PR]

* from Hanna, 1979
** from MacDonald, 1985
*** from Simpson, 1977

In addition, field investigations and past records identify a number of regionally-uncommon species, including 21 plants, one bird, and two herptiles. Caspian Terns, a nationally and provincially rare species, were seen feeding within the area, but are not known to breed there. There are historic records of a Peregrine Falcon nest on McCrae Lake as well (Simpson, 1977).

4. **Size and Linkage** - (B6) At 1170 ha, the McCrae Lake area provides a relatively large natural complex. Its shape and geographic location make it largely self-buffering from edge effects, providing suitable habitat for species requiring large undisturbed conditions.

5. **Biogeographic Significance** - (B7) McCrae Lake includes a significant number of southern species close to the northern edge of their range, including White Oak, Buttonbush, Downy Arrowwood, Woodland Sunflower, Red Cedar, Ebony Spleenwort, and Squawroot.

A number of species with eastern affinities are also found within the site, including nine Atlantic Coastal Plain species.

Ownership and Disturbance

Almost the entire site is Crown land. Parts are included in the McCrae Lake Wilderness Area established in 1960; the former McDonald Bay Park Reserve designated in 1965; and the Bearshead-Buckshoof Lakes Regional ANSI identified in 1985. A recent life science study of Site District 5E-7 has again recommended part of the area as a Regional ANSI (Brunton, 1991 a). The area has been disturbed in the past by logging and by the construction of a dam

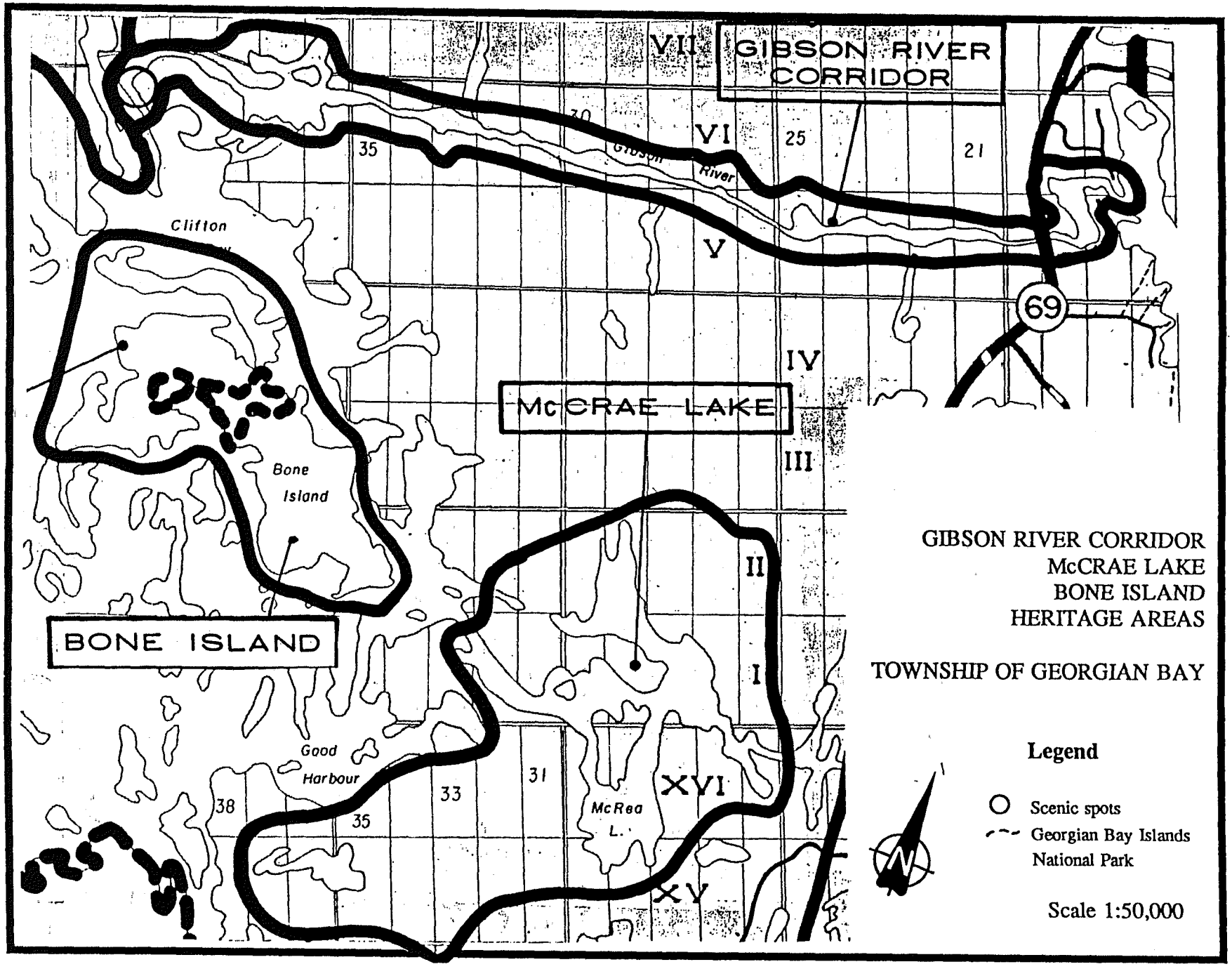
just upstream on MacDonald Lake. The only recent disturbances arise from intensive use of shoreline campsites associated with a canoe route through the area.

Sensitivity

The natural values of this area could be compromised by construction of cottage roads, shoreline developments, or utility corridors. Because of the harsh conditions on the bedrock ridges, any future logging should be carefully regulated. Increasing unregulated campsite use is having a negative impact on parts of the area, pointing out a need for better controls and maintenance for this recreational use.

Major Sources of Information

Geomatics, 1992; Brunton, 1991 a; MacDonald, 1986; Keddy and Sharp, 1989; Hanna, 1979; Simpson, 1977.


VII
GIBSON RIVER CORRIDOR
VI
V
IV
III
II
I
XVI
XV
McCRAE LAKE
BONE ISLAND
Clifton
Bone Island
Good Harbour
McRea L.
Gibson River
35
25
21
31
33
38
69
GIBSON RIVER CORRIDOR
McCRAE LAKE
BONE ISLAND
HERITAGE AREAS
TOWNSHIP OF GEORGIAN BAY
Legend
Scenic spots
Georgian Bay Islands National Park
Scale 1:50,000

MOREAUS BAY UTM Ref. 17TNV833843

Freeman and Gibson Townships, Georgian Bay Area: 445 ha
Status: Recommend Heritage Area

Site Characteristics

This site, situated in the Go Home Bay area of Georgian Bay, consists of one large island, plus bays, channels and lakes behind this island. Uneven, impermeable bedrock knolls and ridges, some with shallow sandy till, alternate with low wetland areas characterized by poor drainage.

On Big Island, beaver dams have created three shallow lakes; Galbraith Lake, Loudon Lake and Burwash Lake, plus numerous other marsh and poor fen wetlands.

Sand Run Channel, Moreaus Bay, Pittsburgh Channel and Iron City Bay behind Big Island make up an extensive area of sheltered shoreline. The waters are generally less than two metres deep with levels controlled by Georgian Bay. A shallow gradient from shore has predominantly sandy or gravelly soils, with peat accumulations. These conditions are ideal for Atlantic Coastal Plain Flora. Distinct bands of shoreline vegetation communities run parallel to the shoreline and correlate to the moisture gradient.

Tate Lake was formed by a large beaver dam with drainage flowing through a small channel to the south into Iron City Bay. The north end of Tate Lake is a large marsh area.

The dominant upland vegetation community types are dry Oak barrens with a savanna like appearance due to the predominance of grasses, lichen covered rocks and Common juniper; mixed Pine-Oak forests on dry-mesic soils with a semi-open canopy; and successional ie. Common juniper deciduous forests dominated by Large-tooth Aspen, White Birch and Red Maple.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	169 native; 2 introduced
	9 A.C.P.F. with a score of 42 (Moderate)
Birds	22 observed during breeding season
Mammals	5
Herpetofauna	3
Butterflies	2

Significant Natural Values and Selection Criteria Met

1. **Rare Species** - (B4) The Moreaus Bay area provides habitat for the following rare species:

Wildlife
Mergus serrator Red-breasted Merganser [RR]
Sterna caspia Caspian tern [NR PR]
Vascular Plants
Elatine minima Water Wort [PR]
Galium boreale Northern Bedstraw [RR]
Isoetes lacustris Lake Quillwort [RR]
Linum medium Yellow Flax [NR PR]
Lobelia kalmii Brook Lobelia [RR]
Megalodonta beckii Beck's Bur Marigold [RR]
Panicum ovale American Panic Grass [RR]
Polygonum careyi Carey's knotweed [PR]
Sanicula marilandica Black Snakeroot [RR]
Xyris difformis Slender Yellow-eyed Grass [PR]
In addition, eleven vascular plant species were recorded as regionally uncommon.

2. **Fish and Wildlife Concentrations** - (B5) Moreaus Bay is classified by MNR as a sensitive area based on the shallow nature of the bay which is surrounded by marsh, the diverse fish community, and excellent potential Pike, Muskellunge and Bass spawning habitat.

3. **Scenic Landscapes** - (C7) Pittsburgh Channel was identified as having a high scenic value, as an attractive narrow waterway accessible to boaters.

Ownership and Disturbance

Much of the Moreaus Bay area is undeveloped and protected by a private conservation group. Three cottages are present on the north shore of Moreaus Bay at Sand Run, and one cottage is located on the west shore of Pittsburgh Channel.

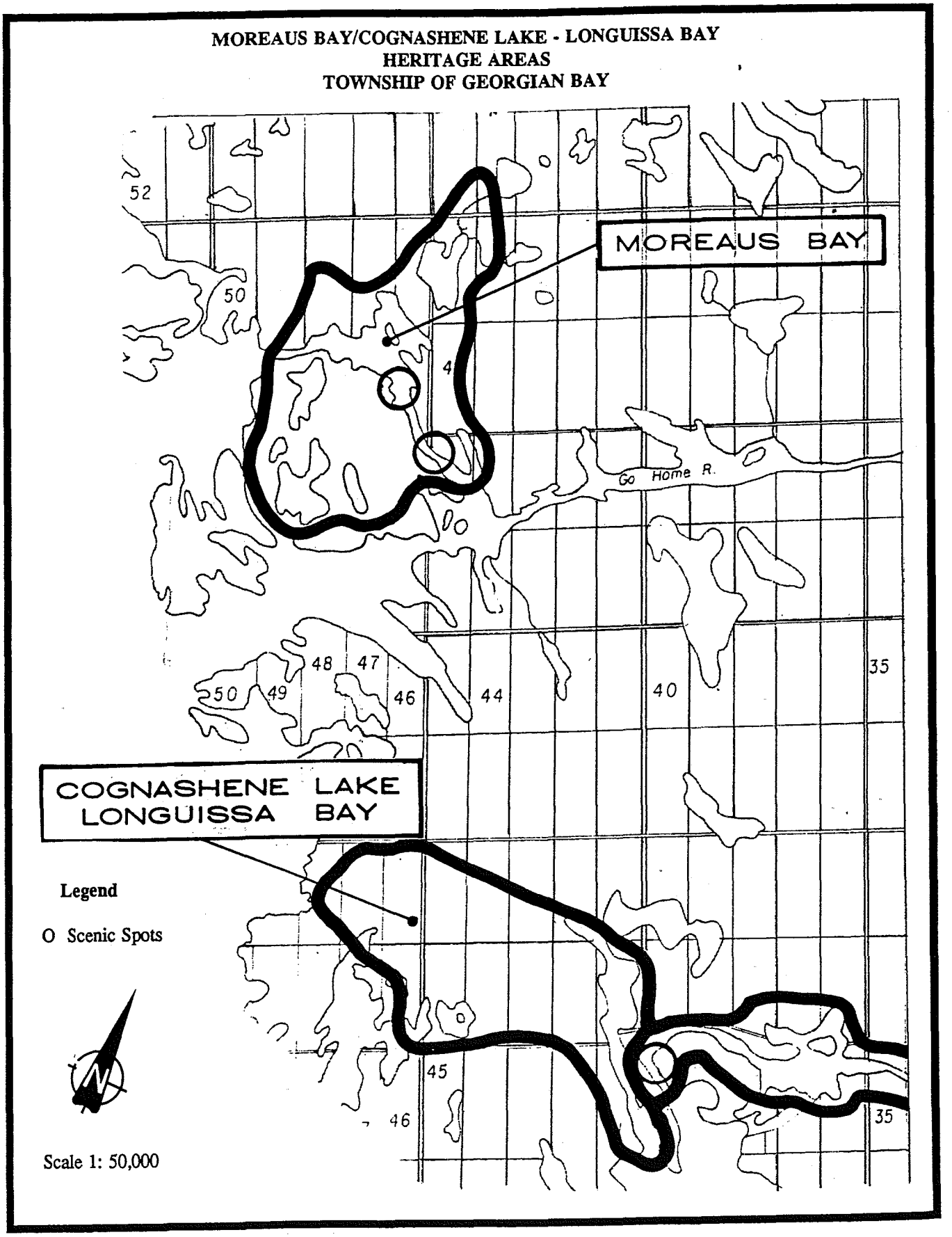
Sensitivity

The sensitivity of this site is related to the potential fish breeding habitat and the inland lakes and peatlands which provide habitat for the rare plant species, including shoreline habitat for Atlantic Coastal Plain Flora. Suitable policies related to the protection of shorelines for A.C.P.F. and fish habitat protection should be followed. Inland wetlands should follow provincial policy guidelines for wetlands. Disturbances to the forests and barrens adjacent to the wetlands should be minimal within a buffer zone defined by slope and aspect.

Major Sources of Information

Berney, & Reid, 1993; Geomatics International, 1992; Keddy, & Sharp, 1989; Kor, & Miller, 1987; Tomlinson, 1983.

MOREAUS BAY/COGNASHENE LAKE - LONGUISSA BAY
HERITAGE AREAS
TOWNSHIP OF GEORGIAN BAY



PINE ISLANDS UTM Ref. 17TNV770981

Freeman/Gibson Townships, Georgian Bay Area: approx. 50 ha
Status: Recommend Heritage Area

Site Characteristics

This site is situated approximately five kilometres off the shore of the Georgian Bay mainland. It consists of six large and many small, barren granite islands. During periods of high water levels, the smaller islands may be shoals at or below the water surface.

The barren rock of the islands results in rapid run-off of rainfall and wave splash so that the area remains quite dry overall. This rugged habitat supports few species of plants and animals. The vegetation is characterized by pioneering herbaceous species growing in thin coarse soils in narrow rock crevices. Several shallow basins have allowed a layer of soil to accumulate, which holds moisture and supports more robust plant species such as Winterberry. Small stands of White Pine are present on some of the Pine Islands. The provincially and regionally rare Black-crowned Night Heron plus Herring Gulls are reported as breeding on the islands.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	10 native; 0 introduced 1 A.C.P.F. with a score of 6 (Insignificant)
Birds	4 observed during breeding season; two records from a National Parks Survey
Herpetofauna	2

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) The Pine Islands represent an Offshore Island Open Rock Barrens habitat unique to the District of Muskoka. It falls into the warmer/sand/arid position on the environmental matrix.

2. **Quality and Disturbance** - (B3) The remoteness of these islands has kept them free from human disturbances. No introduced plant species were recorded from these islands. The islands provide quality habitat for both the Black-crowned Night Heron and the Herring Gull.

3. **Rare Species** - (B4) The Pine Islands area provides habitat for the following rare species:

Wildlife
Nycticorax nycticorax Black-crowned Night Heron [PR RR]
Vascular Plants
Polygonum careyi Carey's Knotweed [PR]
In addition one species of turtle was recorded as regionally uncommon.

Ownership and Disturbance

Three islands are owned by the Canadian Parks service. Land ownership on the other islands has not been determined. Due to the remoteness of the islands, no human disturbance is evident.

Sensitivity

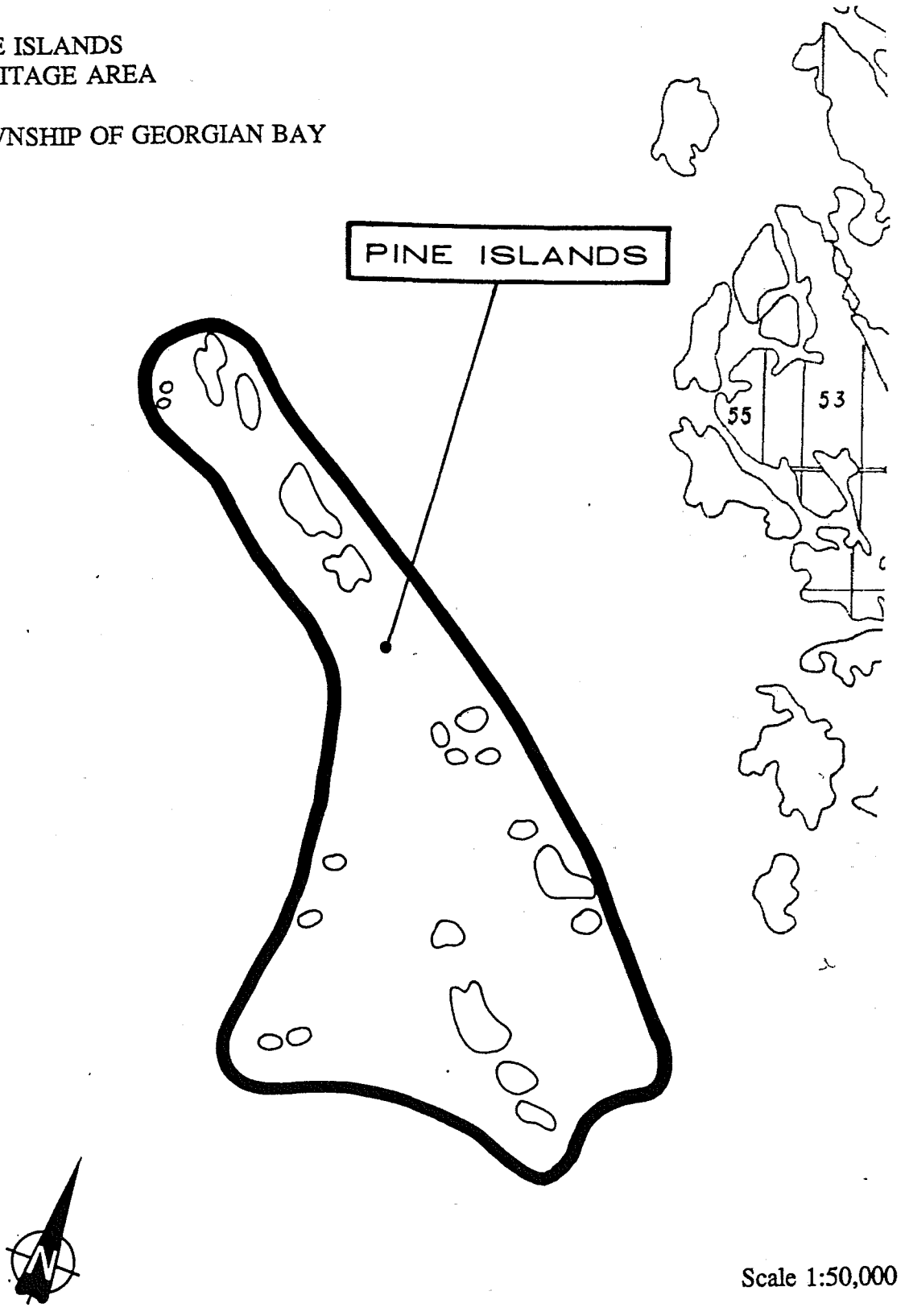
The sensitivity of this site is related to the unique representation of the rugged, barren habitat which supports the only known colony of Black-crowned Night Herons in Muskoka. The pioneering plant communities are important components of the island ecology and are easily disturbed. These islands should be left undisturbed, as any form of development would compromise the significant values present. The three islands which are part of the Georgian Bay Islands National Park (GBINP) have been recommended by Geomatics for designation as an Environmentally Sensitive Site.

Major Sources of Information

Bajc, & Paterson, 1992 b; Geomatics International, 1992.

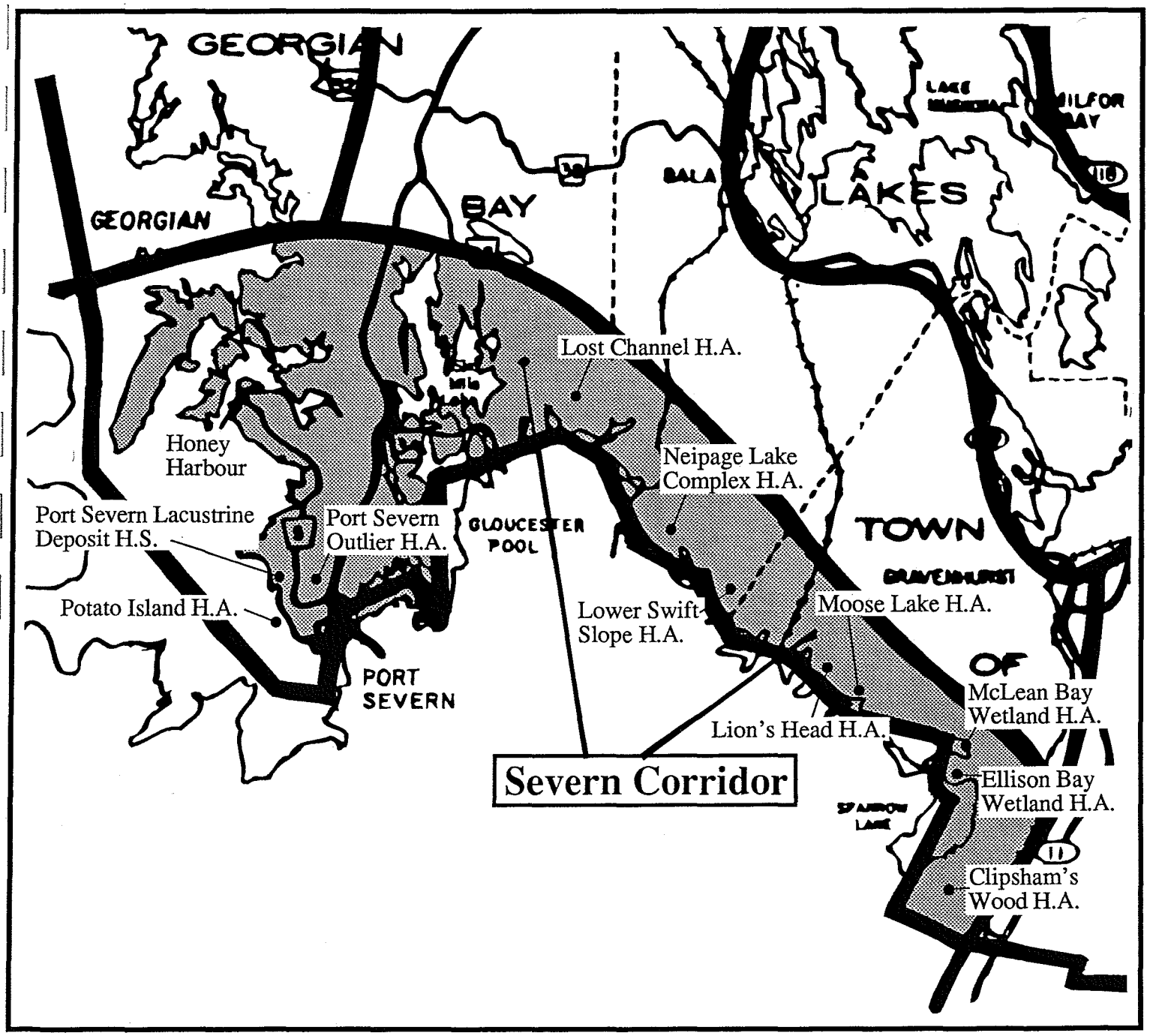
PINE ISLANDS
HERITAGE AREA

TOWNSHIP OF GEORGIAN BAY



Scale 1:50,000

3.2 SEVERN CORRIDOR SUBDISTRICT



CLIPSHAM'S WOOD UTM Ref. 17TPV297629

Morrison Township, Gravenhurst Area: 7.5 ha
Status: Recommend Heritage Area

Site Characteristics

This site situated just south of the Kahshe River and east of Sparrow Lake is a fairly typical Sugar Maple-Beech woodlot in a relatively rich setting. The area is on bedrock-drift complex, largely underlain by glaciolacustrine fine-grained deposits of silt and clay. The combination of silty-clay soils in a warmer microclimate make this site an ideal location for the establishment of species with more southern affinities. Notable among the flora is the presence of Broad Beech Fern (*Phegopteris hexagonoptera*), a nationally and provincially rare Carolinian species.

The site is bordered on the western and southern ends by a large, low-lying wet meadow. There are no streams flowing through the site, only areas of surface runoff and ephemeral pools. The northern end of the site has surface water present creating swamp-like conditions.

Flora and Fauna

Total numbers of species recorded were:

Vascular plants	176 native; 20 introduced
Birds	22 observed during breeding season
Mammals	2
Herpetofauna	4

Significant Natural Values and Selection Criteria Met

1. **Diversity** (B2) - The total number of native plant species related to the size of the area is higher than expected for Muskoka as shown in Figure 1.

2. **Rare Species** - (B4) Clipsham Woods provides habitat for the following rare species:

Vascular Plants
Chenopodium simplex Maple-leaved Goosefoot [RR]
Elymus virginicus Virginia Rye [RR]
Hydrophyllum virginianum Virginia Waterleaf [RR]
Laportea canadensis Wood Nettle [RR]
Phegopteris hexagonoptera Broad Beech Fern [NR PR RR]
Triosetum aurantiacum Feverwort [RR]

In addition, 16 species of vascular plants were identified as regionally uncommon.

3. **Wildlife Concentrations** - (B5) The area is part of a medium-sized deer yard, with the Eastern Hemlock - Canada Yew forest adjacent to an open meadow providing suitable habitat.

4. **Biogeographic Interest** - (B7) Many of the vascular plant species which occur in Clipsham's Wood are more commonly found in rich locations in southern Ontario. The best example is the small disjunct population of Broad or Southern Beech Fern which was discovered in 1983 by Goltz, Britton and Whiting (1984). This record is 125 km north of the nearest collection site in the Carolinian forest. Other species at a northern limit in Muskoka are Virginia Waterleaf, Virginia Rye, Wood Nettle, Feverwort, Carrion Flower and Large Flowered Bellwort. The uncommon Snowberry and Bur Oak have distributions in Muskoka largely associated with clay-based soils.

Ownership and Disturbance

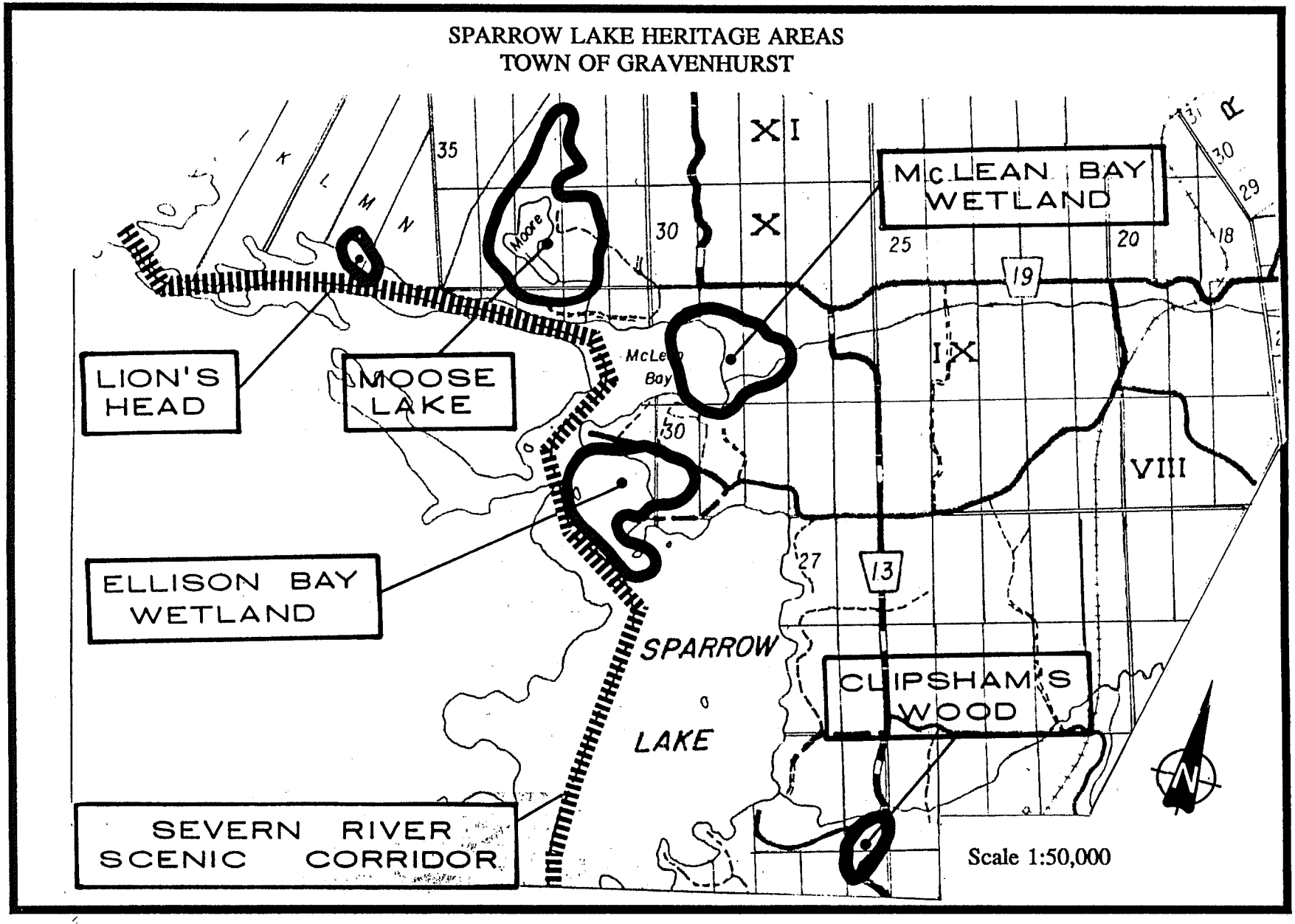
This small woodlot is privately owned. The area has a number of localized disturbances including an old trail and dumpsite and a larger open area with introduced grasses and Mossy Stonecrop. This suggests the previous existence of an old homestead. Recent disturbances include a private road to a new home at the southern end of the site. This road is very close to the population of Broad Beech Fern. The owners are aware of the significant features of this site.

Sensitivity

The sensitivity of this site is related to the presence of rare species in a rich woodlot ecosystem, particularly Broad Beech Fern. Apparently this fern does not tolerate environmental disturbances, especially those affecting soil and moisture requirements (Goltz, Britton and Whiting, 1984). Policies to keep this woodlot intact should be developed.

Major Sources of Information

Bajc and Henry, 1991; Bergsma, et al., 1993; Goltz, Britton and Whiting, 1984; OMNR, 1989 deer yard surveys; Reid, et al., 1991.


SPARROW LAKE HERITAGE AREAS
TOWN OF GRAVENHURST
McLEAN BAY WETLAND
LION'S HEAD
MOOSE LAKE
ELLISON BAY WETLAND
SEVERN RIVER SCENIC CORRIDOR
CLIPSHAMS WOOD
SPARROW LAKE
McLean Bay
Moore
XI
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N
Scale 1:50,000

ELLISON BAY WETLAND UTM Ref. 17TPV268655

Morrison Township, Gravenhurst Area: 75 ha
Status: Recommend Heritage Area

Site Characteristics:

Ellison Bay is located along the Severn River, in the northwest corner of Sparrow Lake. The shallow bay, which is from 2 - 5 metres deep, has a sandy bottom and shorelines, interspersed with several small precambrian bedrock islands. The relatively alkaline waters in the bay support an unusually high diversity of aquatic plants, with extensive stands of Wild Rice, Pickerelweed and Slender Bulrush, and beds of dense submergent vegetation.

The sandy shorelines of the site support a band of herbaceous grasses and shrub thickets. This is backed by a band of Silver Maple-Red Maple swamp, which grades into mature deciduous forests of Red Oak, Sugar Maple, and White Pine, with pockets of Pine and Eastern Hemlock. On the arid bedrock ridges which characterize the easterly section of the site, open oak woodlands and rock barrens with scattered Common Juniper and Red Cedar are found.

Flora and Fauna

Total number of species recorded were:
Vascular Plants 167 native; 20 introduced
1 A.C.P.F. with score of 5 (Insignificant)

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) The submerged aquatic communities of Ellison Bay Wetland provide an excellent example of a Neutral Mesotrophic Shallow Open Water community (warmer/sand/open water), found elsewhere in Muskoka only in the adjacent McLean Bay site. As well, the Wild Rice community here, while one of three known in Muskoka, is assessed by Brunton (1991b) as "the best and largest example of Wild Rice marsh vegetation in Site District 5E-8".

The upland Red Cedar-Common juniper rock barren community (warmer/rock/very dry) is an additional vegetation type not well represented elsewhere in Muskoka.

2. **Diversity** - (B2) Sparrow Lake is known to harbour an unusually rich complement of aquatic plant species. Ellison Bay Wetland is one of the best areas of the lake displaying this diversity, with at least 15 species of pondweeds (*Potamogeton* spp.) known from the bay.

3. **Quality and Disturbance** - (B3) The Wild Rice beds of Ellison Bay Wetland are exceptional for their extent and intactness. They may be the same populations described by pioneer field naturalist John Macoun in the 1880's, which would be historically significant as well.

As well, the mainland portion of the site contains very mature deciduous forest, with Red Oaks from 0.6 - 1.2 metres in diameter, perhaps the largest individual specimens in Muskoka.

4. **Rare Species** - (B4) The area provides habitat for the following rare species:

Vascular Plants
Bidens discoidea Small Beggar-Ticks [NR PR]
Carex conoidea Field Sedge [PR RR]
Cyperus squarrosus Umbrella Sedge [RR]
Juglans cinerea Butternut [RR]
Panicum tuckermanii Grass [RR]
Panicum virgatum Switch Grass [RR]
Penstemon hirsutus Hairy Beard Tongue [RR]
Scirpus heterochaetus Slender Bulrush [NR PR RR]
Sporobolus heterolepis Northern Dropseed [PR RR]

As well, 12 species of regionally-uncommon plants have been identified within this site.

5. **Fish and Wildlife Concentrations** - (B5) Ellison Bay Wetland is recognized as a regionally significant staging area for waterfowl, and as an important spawning and nursery habitat for sport fish.

6. **Biogeographic Interest** - (B7) The area includes several communities and species more typical of richer more southerly regions. Of note is a rich Buttonbush - Silky Dogwood thicket along the edge of the marsh, which includes such southern species as Sweet-flag, Stiff Arrowhead, and Greenbrier. In the Silver Maple swamp, the presence of Climbing Poison Ivy is also more typical of less acidic substrates to the south. Red Cedar trees are also more southern calcicoles, which are uncommon in Muskoka. According to Brunton (1991 b), nowhere else in Site District 5E-8 does Red Cedar form a significant element of the forest cover.

7. **Scenic Landscapes** - (C7) Ellison Bay Wetland is part of the Severn River system, which has been identified as a corridor of high scenic value.

Ownership and Disturbance

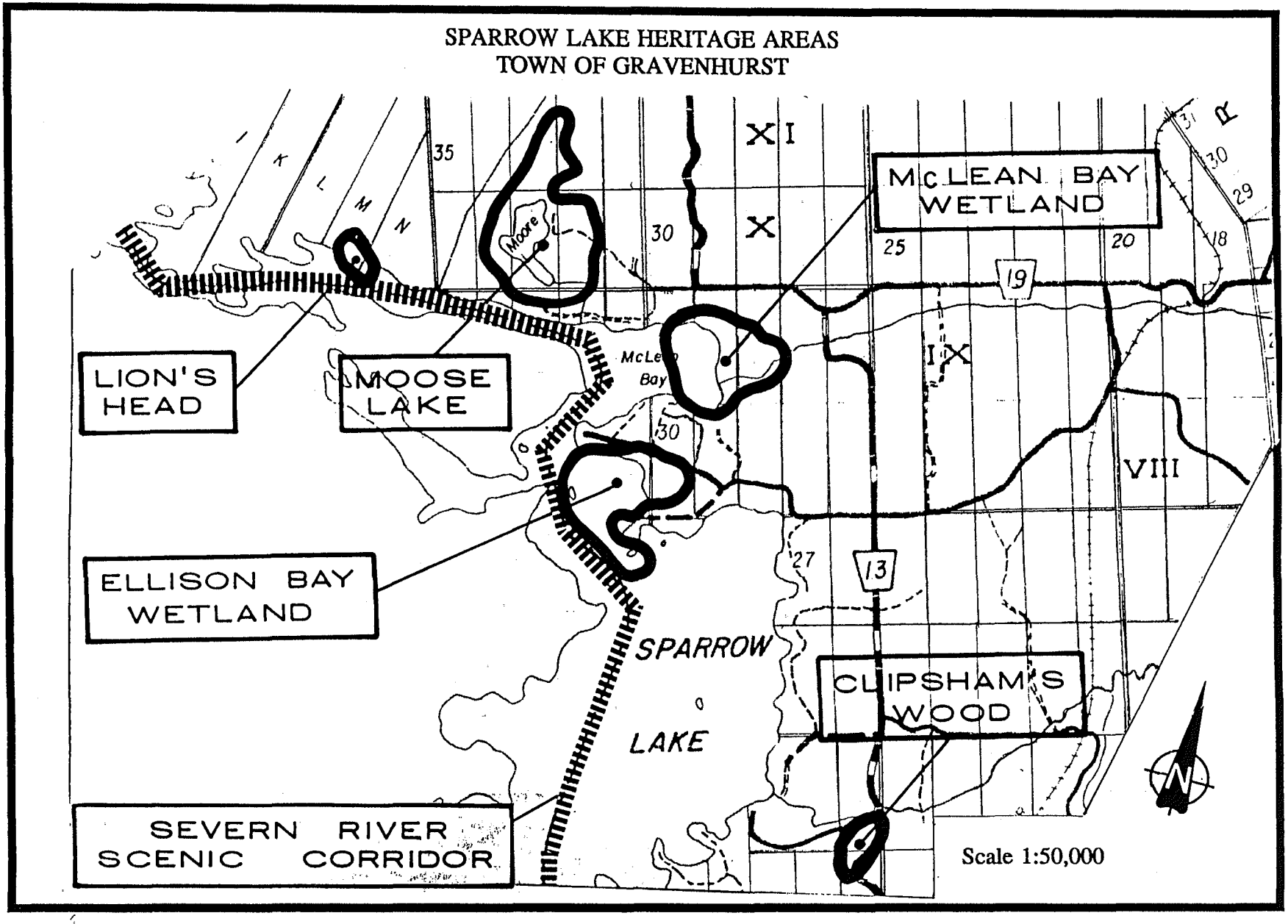
The land-based sections of the Ellison Bay area are entirely privately owned, with cottages along several sections of the adjacent upland. Boat channels used by local cottagers cross the Wild Rice beds, and shoreline protection works in front of some cottages have eliminated shoreline habitats. Sparrow Lake and the main channel of the Trent-Severn Waterway abut the area, with heavy summer boat traffic. In some sections of the upland forests within the site, selective cutting of hardwoods has created recent disturbance.

Sensitivity

The natural values of this area could be seriously disrupted by dredging or filling within the wetland areas. The aquatic and shoreline sections are included within the Sparrow Lake Marsh class 1 wetland (Ferguson and Boyd, 1986), and most of the area has also been recommended as a provincially significant ANSI (Brunton, 1991 b). These designations, together with ongoing landowner contact in adjacent upland areas, should help to assure its future. Logging of the mature upland forests should be discouraged, and powerboats discouraged from entering the Wild Rice beds.

Major Sources of Information

Kamstra, 1992; Ferguson and Boyd, 1986; Brunton, 1991 b; Berney and Reid, 1993.


SPARROW LAKE HERITAGE AREAS
TOWN OF GRAVENHURST
McLEAN BAY WETLAND
LION'S HEAD
MOOSE LAKE
ELLISON BAY WETLAND
SEVERN RIVER SCENIC CORRIDOR
CLIPSHAMS WOOD
SPARROW LAKE
McLean Bay
Moore
19
13
Scale 1:50,000

LION'S HEAD UTM Ref. 17TPV238666

Wood Township, Muskoka Lakes Area: 4 ha
Status: Recommend Heritage Area

Site Characteristics

This small site is located on a south-facing slope adjacent to the Severn River. This warm dry microclimate supports a rich complement of southern species, with some prairie elements. The greatest concentration of southern species grow in open locations just above the wave wash zone.

The vegetation on Lion's Head consists primarily of open White Oak and Red Oak woodland, with many gaps resulting from bedrock outcrops. Open outcrops with sandy deposits occur along the shore. A somewhat moister woodland of Red Oak and Red Maple grows where soil is deeper.

Flora and Fauna

Total numbers of species recorded were:
Vascular Plants 159 native; 11 introduced

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) Lion's Head contains two communities which are of limited distribution elsewhere in Muskoka - a Spartina Dry-sand Prairie community (warmer/sand/arid), and a South-facing Rock Shoreline association (warmer/rock/wet). This site was identified as the most significant example of these habitats along the Severn corridor (Kamstra, 1992).

2. **Rare Species** - (B4) The Lion's Head area provides habitat for the following rare species:

Vascular Plants:
Acalypha virginica Three-seeded Mercury [RR]
Allium canadense Wild Garlic [RR]

Bromus kalmii Kalm's Chess Brome [RR]
Carex conoidea Field Sedge [PR RR]
Ceanothus herbaceus Narrow-leaved New Jersey [RR]
Cyperus diandrus Two Stamen Umbrella Sedge [RR]
Desmodium canadense Showy Tick Trefoil [RR]
Elymus virginicus Virginia Rye [RR]
Hypericum punctatum Spotted St. John's Wort [RR]
Juncus secundus One-sided Rush [NR PR RR]
Panicum virgatum Switch Grass [RR]
Penstemon hirsutus Hairy Beard Tongue [RR]

Platanthera psycodes Smaller Purple Fringed Orchis [RR]
Selaginella apoda Meadow Spike Moss [RR]
Sporobolus asper Rough Dropseed [NR PR RR]
Sporobolus heterolepis Northern Dropseed [PR RR]

In addition, 18 species of regionally uncommon vascular plants were documented.

3. **Biogeographic Significance** - (B7) Lion's Head includes among its flora many species at the northern edge of their range, including two species (One-sided Rush and Northern Dropseed) previously unknown in Muskoka.

4. **Scenic Landscapes** - (C7) The Severn River, which incorporates the Lion's Head area, has been identified as a corridor of high scenic value.

Ownership and Disturbance

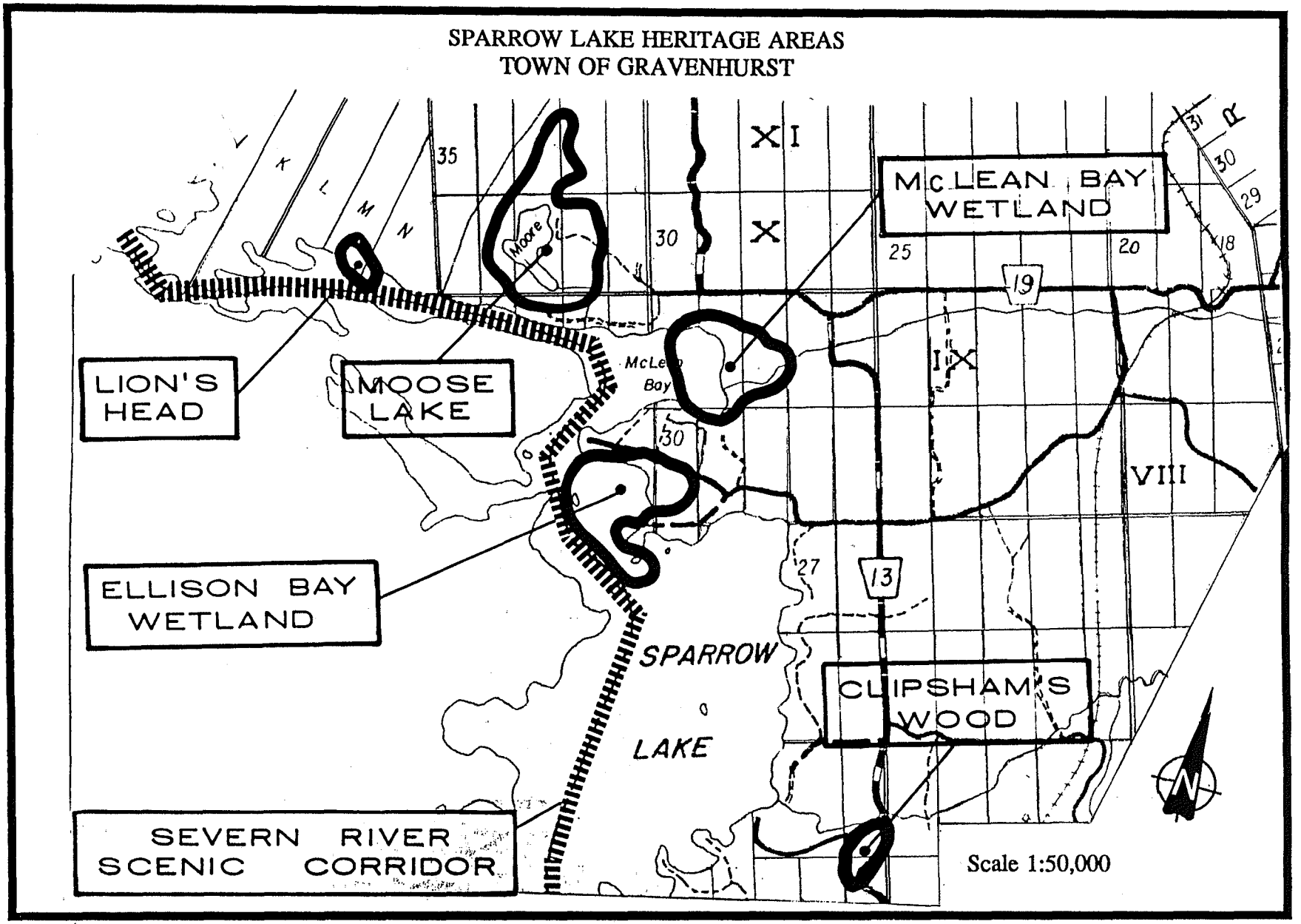
The area is privately owned, and is likely to be under heavy pressure for future cottage development. Although there are cottages nearby on both sides of Lion's Head, the site is little disturbed at present.

Sensitivity

The significant plant species associated with this site are sensitive to trampling and mowing, and would almost inevitably be destroyed by cottage or residential development. Protection of the limited watershed area reaching to the top of the ridge will provide buffering to the small but highly significant plant concentrations closer to the shoreline.

Major Sources of Information

Kamstra, 1992.


SPARROW LAKE HERITAGE AREAS
TOWN OF GRAVENHURST
McLEAN BAY WETLAND
LION'S HEAD
MOOSE LAKE
ELLISON BAY WETLAND
SEVERN RIVER SCENIC CORRIDOR
CLIPSHAMS WOOD
SPARROW LAKE
McLean Bay
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Scale 1:50,000

LOST CHANNEL UTM Ref. 17TPV048727

Wood Township, Muskoka Lakes Area: 905 ha
Status: Recommend Heritage Area

Site Characteristics

The Lost Channel area is a major complex of wetlands and thin-soiled uplands roughly bounded by the Severn River, Pretty Channel, and Lost Channel. Much of the central area is relatively flat, with a thin discontinuous drift of glacial tills over gneissic bedrock ridges. Well-defined bedrock valleys occur along Pretty Channel and the central and western portions of Lost Channel.

The area is drained by small creeks, much affected by beaver activity. Original flow levels along the main channels have been significantly altered by water control of the Trent-Severn Waterway for navigation and hydro-electric generation. The amount of water now flowing through Lost Channel is minimal, probably a fraction of what it once was.

While open rock barren communities are found in some sections, especially along Pretty Channel, much of the uplands in this site support mixed and coniferous forests. Mixed stands of White Pine, Red Oak, and Red Maple give way to Large-tooth Aspen, White Birch, and White Pine on earlier successional sites, and to late successional Maple-Beech-Eastern Hemlock forests on deeper soils. Coniferous forests include White and Red Pine on dry sites, Eastern Hemlock on mesic, north-facing slopes, and Balsam Fir on moister soils.

A wide range of wetland communities occur within this area, including recent beaver ponds, older ponds with abundant floating-leaved and submergent aquatic vegetation, extensive poor fens of several types, including shrub, and herbaceous and treed beaver meadows, and wet deciduous swamp forest with Red Maple and some Black Ash.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	462 native;
	40 introduced;
	7 A.C.P.F with a score of 33 (Moderate)
Birds	58 observed during breeding season
Mammals	5
Herpetofauna	18
Butterflies	9

Significant Natural Values and Selection Criteria Met

1. **Landform Feature** - (A1) A steep, sheer-walled gorge appoximately 10 metres deep is found along the narrow section of Lost Channel in the northern portion of the site. This gorge is considered an uncommon landform feature in Muskoka.

2. **Representation** - (B1) The area includes two communities not well represented elsewhere in Muskoka. A graminoid poor fen community (normal/organic/very wet), characterized by the presence of the sedges *Carex magellancia* and *Carex limosa*, occurs as one of the wetland communities. A cool, wet-mesic forest dominated by Balsam Fir (cooler/sand/wet-mesic) is especially unusual in this part of Muskoka, and is poorly represented elsewhere in the District.

3. **Diversity** - (B2) The number of native vascular plant species found in the Lost Channel area is well above the expected for Muskoka, as shown in Figure 1. This plant diversity is exceeded in Muskoka only by one other, much larger Heritage Area. It is also exceeded in nearby Big Chute ANSI (largely in Simcoe County), which has been much more extensively studied. The Lost Channel area also shows a good diversity of herptile species, with eleven amphibians and seven reptiles documented.

4. **Quality and Disturbance** - (B3) The interior of the Lost Channel area is well-buffered from disturbance, and provides high-quality examples of many of the ecological communities typical of southern Muskoka.

5. **Rare Species** - (B4) The Lost Channel area provides habitat for the following rare species:

Wildlife
- *Necturus maculosus* Mudpuppy [RR]
- *Heterodon platirhinos* Eastern Hognose Snake [PR]
- *Sistrurus c. catenatus* Eastern Massasauga [NR PR]

Vascular Plants
- *Allium canadense* Wild Garlic [RR]
- *Arabis laevigata* Smooth Rock Cress [RR]
- *Asplenium trichomanes* Maidenhair Spleenwort [RR]
- *Bidens discoidea* Small Beggar-Ticks [NR PR]
- *Bromus kalmii* Kalm's Chess Brome [RR]
- *Carex backii* Sedge [RR]
- *Carex comosa* Bristly Sedge [RR]
- *Desmodium canadense* Showy Tick Trefoil [RR]
- *Elymus riparius* River-bank Rye [RR]
- *Hypericum punctatum* Spotted St. John's Wort [RR]
- *Isoetes Xeatonii* Eaton's Quillwort [NR PR RR]
- *Myriophyllum heterophyllum* Various-leaved Water Mil-foil [RR]
- *Platanthera blephariglottis* White Fringed Orchis [PR]
- *Platanthera psycodes* Smaller Purple Fringed Orchis [RR]
- *Potamogeton perfoliatus* Pondweed [RR]
- *Pycnanthemum virginianum* Virginia Mountain Mint [RR]
- *Salix serissima* Autumn Willow [RR]
- *Sanicula marilandica* Black Snakeroot [RR]
- *Sisyrinchium mucronatum* Slender Blue-eyed Grass [RR]
- *Solidago ptarmicoides* Upland White Aster [RR]
- *Sphenopholis intermedia* Slender Wedge Grass [RR]

Triadenum virginicum Marsh St. John's Wort [PR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, regionally uncommon species found within the area include 46 vascular plants, two birds, and three herptiles.

6. **Size and Linkage** - (B6) The Lost Channel area provides a relatively large natural complex, particularly in the context of the Severn River corridor. Its shape and geographic location make it largely self-buffering from edge effects, thereby providing habitat conditions for species requiring interior conditions.

7. **Biogeographic Significance** - (B7) One species of particular biogeographic interest is Eaton's Quillwort, which is known in Canada only in the vicinity of Big Chute (Varga, 1988). This aquatic species occurs in Pretty Channel and in a bay along the Severn River, and was also found in the lower section of Lost Channel.

8. **Scenic Landscapes** - (C7) Parts of this area touch upon the Severn River, which has been identified as a corridor of high scenic value. As well, Pretty Channel has been identified as an area of exceptional scenic attractiveness, related to its natural shorelines and fast waters.

Ownership and Disturbance

The Lost Channel area is approximately 90% Crown land, with cottages along the Severn River and upper Lost Channel sections of the shoreline just outside the Heritage Area boundary. The area was cut over in the past century, but has regenerated into fairly mature forest since then. Several snowmobile trails cross the area, and boat traffic is heavy in the adjacent waterways. However, the vast majority of this large area is intact and undisturbed.

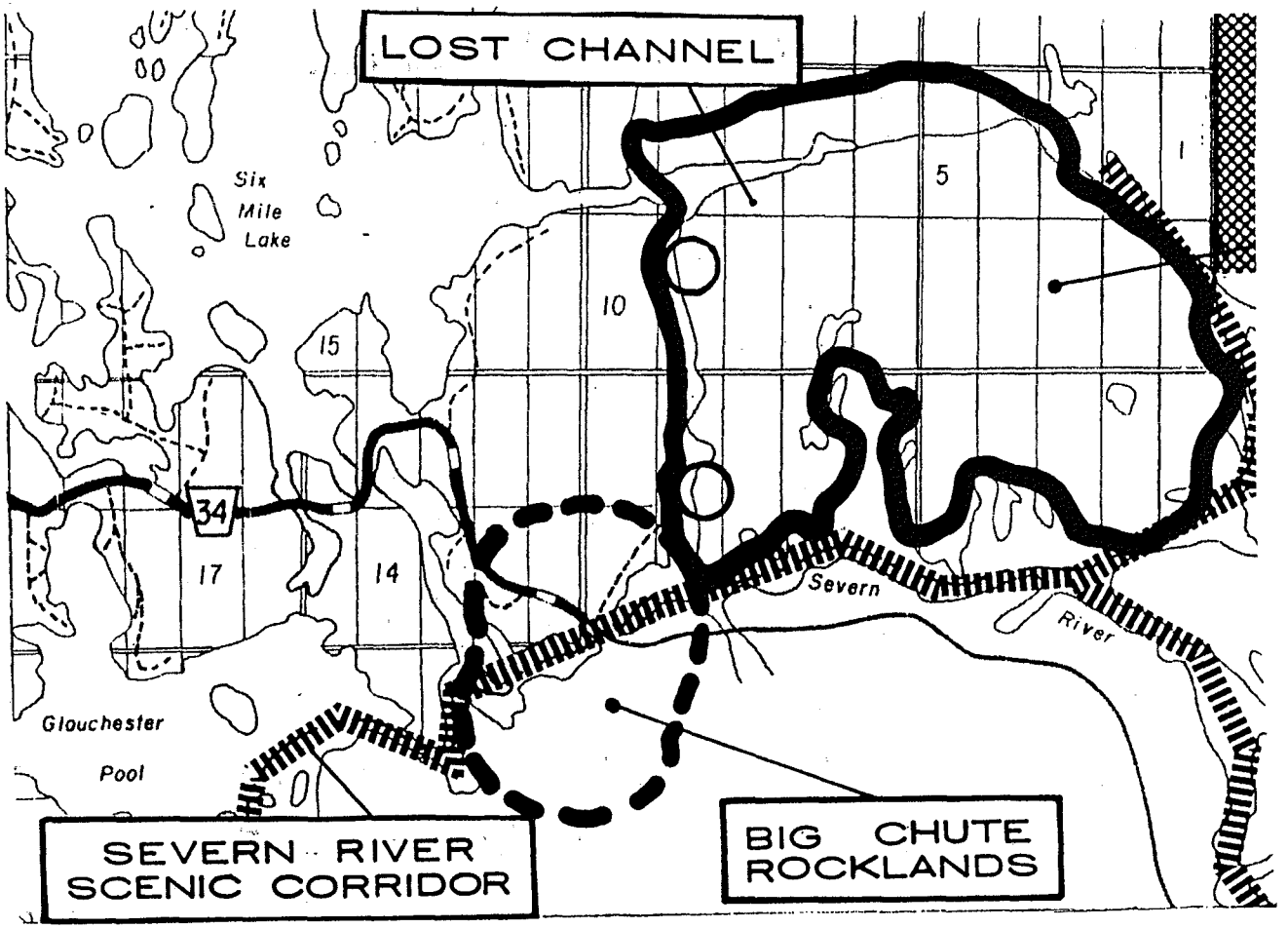
Sensitivity

Since one of the values of the Lost Channel area is its size and intactness, its value would be diminished by the intrusion of roads, utility corridors, or other developments in the interior. Most of the forested area is located on thin, nutrient-poor soils, making it sensitive to excessive disturbance through logging. The rare aquatic plants associated with this site could be affected by physical impacts such as dock construction, or alteration of water levels. Finally, the scenic values of the area, most notably along Pretty Channel, are vulnerable to excessive or badly designed development.

Major Sources of Information

Kamstra, 1992; Bajc and Paterson, 1992 b; Berney and Reid, 1993; MacDonald, 1986; Varga, 1988.

LOST CHANNEL
HERITAGE AREA
TOWNSHIP OF GEORGIAN BAY



Scale 1:50,000

LOWER SWIFT SLOPE

UTM Ref. 17TPV151682

Wood Township, Muskoka Lakes
Status: Recommend Heritage Area

Area: 7 ha

Site Characteristics

The Lower Swift Slope is a rather steep, southwest-facing slope extending in a narrow strip about 700 metres downstream from the Swift Rapids Lock. The area has a warm, dry microclimate and numerous gneissic bedrock exposures. Where there is sufficient soil, a White and Red Oak woodland has developed.

This slope harbours a number of southern and prairie type plant species with very restricted distribution in Muskoka, with the highest concentration found on a small peninsula jutting into the river. The greatest diversity and most of the significant species are found just above the wave wash zone, low on the slope.

Flora and Fauna

Total numbers of species recorded were:
Vascular Plants 261 native; 36 introduced

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) Lower Swift Slope is one of two Heritage Areas providing representation of a South-facing Rock Shoreline with prairie species (warmer/rock/wet), an association that is not well-represented elsewhere in Muskoka.

2. **Diversity** - (B2) Lower Swift Slope has a higher than expected number of native plant species relative to size than other sites in Muskoka, as shown in Figure 1.

3. **Rare Species** - (B4) The area provides habitat for the following rare species:

Vascular Plants
Allium canadense Wild Garlic [RR]
Anemone virginiana Thimbleweed [RR]
Bromus kalmii Kalm's Chess Brome [RR]
Carex conoidea Field Sedge [PR RR]
Ceanothus herbaceus Narrow-leaved New Jersey Tea [RR]
Desmodium canadense Showy Tick Trefoil [RR]
Hypericum punctatum Spotted St. John's Wort [RR]
Pedicularis canadensis Wood Betony [RR]
Penstemon hirsutus Hairy Beard Tongue [RR]
Rhus aromatica Fragrant Sumac [RR]
Sanicula marilandica Black Snakeroot [RR]
Thalictrum dasycarpum Purple Meadow Rue [RR]

In addition, 29 regionally-uncommon species of vascular plants were documented within this small site.

4. **Biogeographic Significance** - (B7) Lower Swift Slope includes among its flora several species at the northern edge of their range, including Groundnut, Narrow-leaved New Jersey Tea, Panicled Tick-trefoil, Broad-leaved Grass, and Fragrant Sumac.

5. **Scenic Landscapes** - (C7) The Severn River, which is immediately adjacent to the Lower Swift Slope, has been identified as a corridor of high scenic value.

Ownership and Disturbance

Approximately 70% of the area is privately owned; the remainder is Crown land. No cottages have been built along this stretch of the river, probably due to the steep slopes. Boat traffic around the locks is very heavy, creating considerable wake. Picknickers occasionally land on the small point, and a crude hut has recently been constructed there.

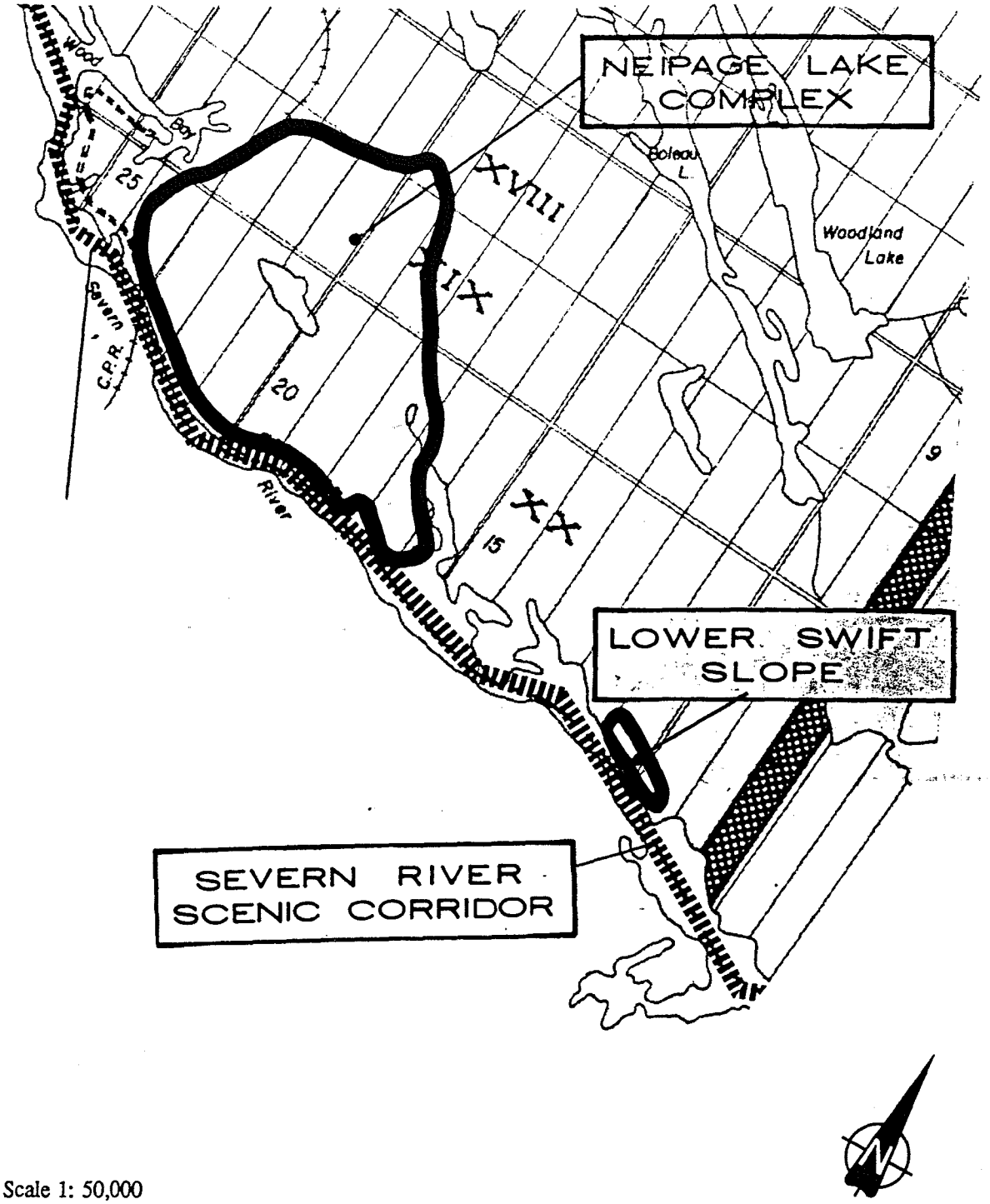
Sensitivity

Many of the rare plants within this area, especially those concentrated near the water's edge, are sensitive to destruction by future development activities, or even by excessive trampling. Information signs to discourage intensive use of the small point could be helpful.

Major Sources of Information

Kamstra, 1992; Berney and Reid, 1993.

NEIPAGE LAKE COMPLEX/LOWER SWIFT SLOPE
HERITAGE AREAS
TOWNSHIP OF MUSKOKA LAKES



Scale 1: 50,000

McLEAN BAY WETLAND UTM Ref. 17TPV271667

Morrison Township, Gravenhurst Area: 65 ha
Status: Recommend Heritage Area

Site Characteristics

McLean Bay is a shallow bay of clear, relatively calcareous water in the northwesternmost part of Sparrow Lake. Because of the influence of the Severn River waters arising largely in the limestone-based watersheds to the south, Sparrow Lake has a rich submersed aquatic flora. The shallow waters of McLean Bay support a community that is rich in pondweeds, Water Starwort, Water Mil-foils, Waterweed, and Eel Grass.

Along the shore is a narrow marsh fringe of emergent species, with sections of taller marsh supporting cattails and shrubs such as Buttonbush, Sweet Gale, Winterberry, and Silky Dogwood. On the fine-grained glaciolacustrine deposits that extend inland from the end of the bay along South Beaver Creek, a Silver Maple-Red Maple swamp forest is found.

Flora and Fauna

Total numbers of species recorded were:
Vascular Plants 143 native; 8 introduced
1 A.C.P.F. with score of 4 (Insignificant)

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) McLean Bay Wetland provides an excellent example of a Neutral Mesotrophic Shallow Open Water community (warmer/sand/open water), which is not well represented elsewhere in Muskoka.

2. **Rare Species** - (B4) The area provides habitat for the following rare species:

Vascular Plants
Carpinus caroliniana Blue Beech/Hornbeam [RR]
Platanthera flava Pale Green Orchis [RR]
Scirpus fluviatilis River Bulrush [RR]
Scirpus heterochaetus Slender Bulrush [NR PR RR]

In addition, 15 species of regionally-uncommon plants have been identified within this site.

3. **Fish and Wildlife Concentrations** - (B5) McLean Bay Wetland is locally known as a migratory staging area in spring and fall for significant numbers of waterfowl.

4. **Scenic Landscapes** - (C7) McLean Bay Wetland is part of the Severn River system, which has been identified as a corridor of high scenic value.

Ownership and Disturbance

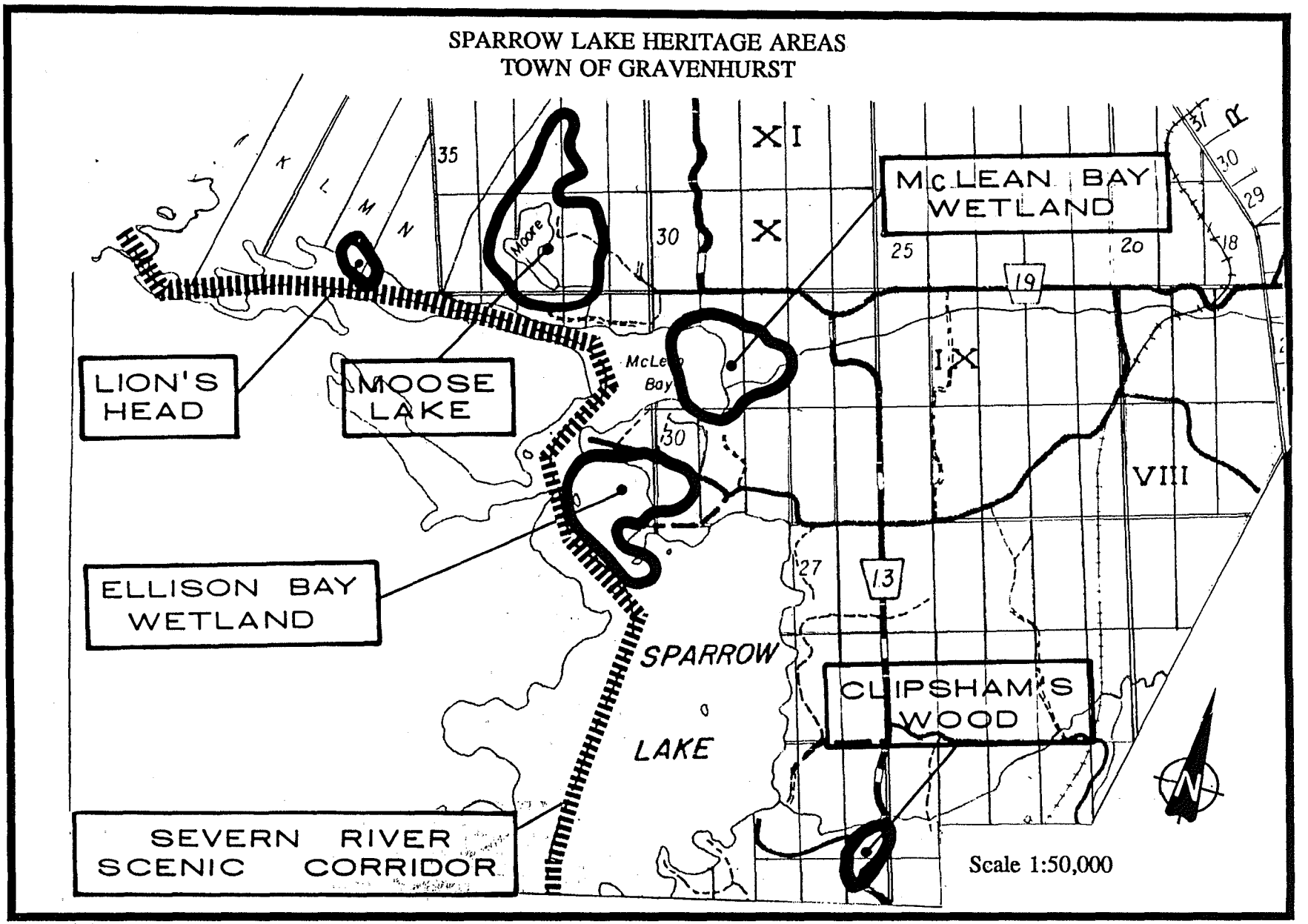
The land-based sections of McLean Bay Wetland are entirely privately owned, primarily by one family who have protected its significant natural features. Boat traffic along the Severn brings some degree of disturbance to the site, and the adjacent uplands along the bay are heavily cottaged. Otherwise, the area shows little recent disturbance.

Sensitivity

The natural values of this area could be destroyed by dredging or filling associated with development within the wetland or the bay. However, the aquatic and shoreline sections are included within the Sparrow Lake Marsh class 1 wetland (Ferguson and Boyd, 1986), so should be protected by provincial policy. Development within the adjacent wooded swamp should also be discouraged.

Major Sources of Information

Kamstra, 1992; Ferguson and Boyd, 1986; Bajc and Paterson, 1992 a.


SPARROW LAKE HERITAGE AREAS
TOWN OF GRAVENHURST
LION'S HEAD
MOOSE LAKE
McLEAN BAY WETLAND
ELLISON BAY WETLAND
SEVERN RIVER SCENIC CORRIDOR
CLIPSHAMS WOOD
SPARROW LAKE
McLean Bay
Moose
XI
X
IX
VIII
35
30
25
20
19
13
27
Scale 1:50,000

MOOSE LAKE UTM Ref. 17TPV252673

Morrison Township, Gravenhurst Area: 105 ha
Status: Recommend Heritage Area

Site Characteristics

Moose Lake is a small lake, about 20 ha in size, which drains south into the Severn River via a slow-flowing creek blocked by a beaver dam. In the tea-coloured, acidic waters of the lake, the abundant submersed vegetation is dominated by Purple Bladderwort, with other species in shallower waters. Atlantic Coastal Plain species occur along the shorelines, with Water Wort and Two-cupped Pond Weed along sandy shorelines on the south and east sides of the lake. Several floating mats around the perimeter of the lake support Slender Yellow-eyed Grass and White Fringed Orchis.

The surrounding upland is rolling gneissic ridges with thin or non-existent soils. Most of this upland supports an open savannah-like woodland of White and Red Oak and White Pine, with a fairly large stand of Jack Pine near the south end of the lake.

Flora and Fauna

Total numbers of species recorded were:

Vascular plants	225 native; 15 introduced
	10 A.C.P.F. with a score of 49 (High)
Birds	47 observed during breeding season
Mammals	4
Herpetofauna	10
Butterflies	13

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) The Jack Pine Rock Barrens community (normal/sand/dry) found south of the lake is the only example of this ecological association recorded within the Muskoka Heritage Areas system.

2. **Diversity** - (B2) The total number of native plant species recorded for the Moose Lake area related to its size is higher than expected for Muskoka, as shown in Figure 1.

3. **Rare Species** - (B4) The Moose Lake area provides habitat for the following rare species:

Wildlife
Buteo lineatus Red-shouldered Hawk [NR PR]
Clemmys guttata Spotted Turtle [NR PR RR] *
Heterodon platirhinos Eastern Hognose Snake [PR] *
Euphyes dion Dion Skipper [PR RR]
Hesperia leonardus Leonardus Skipper [PR]

Vascular Plants
Elatine minima Water Wort [PR]
Panicum spretum Eaton's Grass [PR]
Platanthera blephariglottis White Fringed Orchis [PR]
Potamogeton bicupulatus Two-cupped Pond Weed [NR PR]
Triadenum virginicum Marsh St. John's Wort [PR]
Xyris difformis Slender Yellow-eyed Grass [PR]
* reported by landowners

In addition, 14 species of vascular plants, three birds, and one snake were recorded as regionally uncommon.

4. **Biogeographic Significance** - (B7) The Atlantic Coastal Plain Flora associated with this area ranked highly in a uniform scoring system (10th of all sites in Muskoka), demonstrating good representation of these disjunct eastern seaboard species.

As well, the Jack Pine stand found within this area is of particular interest because of its southern location and isolation from other Jack Pine populations.

Ownership and Disturbance

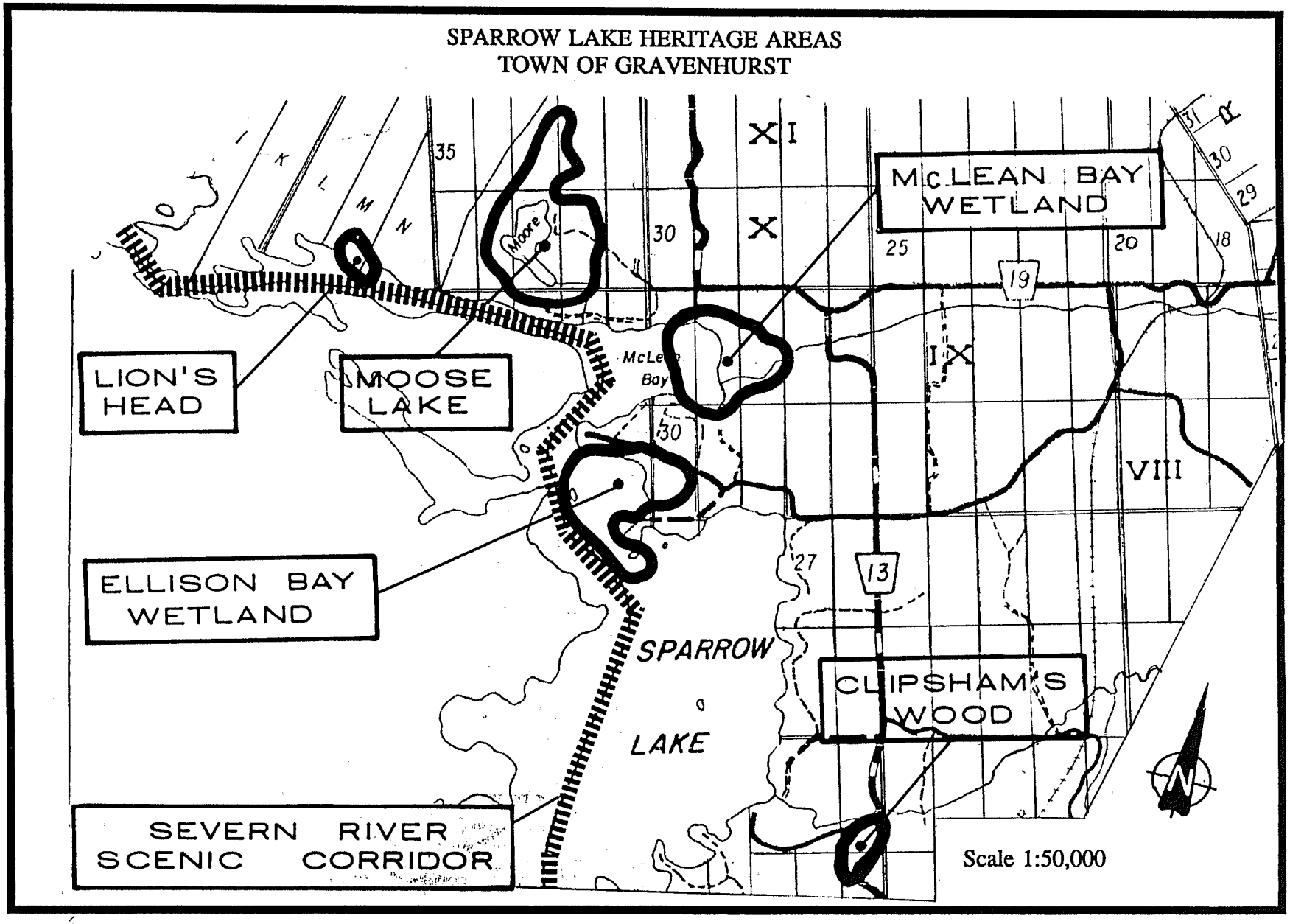
The area is 90% privately owned, with several cottages clustered along one section of the lakeshore. The remainder of the lake, and the watershed which is included within the Heritage Area, has seen little recent disturbance.

Sensitivity

The specialized vegetation of the lake shore is vulnerable to disturbance by further cottage development, particularly in the pockets of sandy shoreline. Some of the known rare species, such as Spotted Turtle, are also considered intolerant of disturbance. The rock barren communities are also sensitive to excessive disturbance by logging or other activities that could affect the shallow overburden, most notably in the Jack Pine area.

Major Sources of Information

Kamstra, 1992.


SPARROW LAKE HERITAGE AREAS
TOWN OF GRAVENHURST
McLEAN BAY WETLAND
LION'S HEAD
MOOSE LAKE
ELLISON BAY WETLAND
CLIPSHAMS WOOD
SEVERN RIVER SCENIC CORRIDOR
SPARROW LAKE
McLean Bay
Moore
XI
X
IX
VIII
35
30
25
20
18
29
27
19
13
N
Scale 1:50,000

NEIPAGE LAKE COMPLEX

UTM Ref. 17TPV112707

Wood Township, Muskoka Lakes
Status: Recommend Heritage Area

Area: 525 ha

Site Characteristics

This extensive area just north of the Severn River includes three bog lakes and their immediate watersheds, set within a complex of gneissic ridges and low wetland areas. Because of the undulating terrain but low overall relief, surface drainage is poor, and often impeded by beaver activity. Most of the area drains south into the Severn through seven permanent streams; the most northerly wetland area drains northwards into the Gibson River system.

Much of the upland area is exposed Precambrian bedrock supporting mesic to dry mixed forests of Sugar Maple, Red Oak, and White Pine, or Large-tooth Aspen and Red Maple early successional. In the more southerly sections of the site, deeper pockets of glacial drift support deciduous forests, together with smaller stands of White Pine, Red Pine and Eastern Hemlock forest.

In low-lying areas, peat deposits representing virtually all stages of peat bog development have accumulated. Neipage Lake has an extensive open spagnum mat, supporting a range of shrub and herbaceous poor fen communities that are also conspicuous at the two other main lakes and in some of the other ponds. Scattered Black Spruce and Tamarack are common throughout the area. In beaver ponds and open water areas, floating-leaved and submergent aquatic plants such as Waterlilies, Water-shield, and Bladderworts predominate.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	339 native; 22 introduced
	6 A.C.P.F. with a score of 29 (Moderate)
Birds	71 observed during breeding season
Mammals	7
Herpetofauna	13
Butterflies	19

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) The extensive wetlands within this complex act as headwaters for at least eight permanent streams, and act to regulate the release of surface and ground waters into the surrounding hydrological system.

2. **Representation** - (B1) The area provides representation of an Oak-Maple-Black Cherry Open Forest (warmer/sand/dry-mesic) community which is not well represented elsewhere in Muskoka.

3. **Diversity** - (B2) As shown in Figure 1, the Neipage Lake Complex has a diversity of native vascular plants relative to its size that is higher than the expected for Muskoka.

4. **Quality and Disturbance** - (B3) The area contains Sphagnum dominated poor fens of several types and nearly all stages of successional development, including graminoid, several types of herbaceous and shrub open treed and closed treed treed forest. Beaver meadow wetlands are also present at various successional stages. This sequence of wetland types provides a high quality example of wetland succession with very little human disturbance.

5. **Rare Species** - (B4) The Neipage Lake Complex provides habitat for the following rare species:

Wildlife
Buteo lineatus Red-shouldered Hawk [NR PR]
Sistrurus c. catenatus Eastern Massasauga [NR PR]
Wallengrenia egerement Northern Broken Dash [RR]
Euphyes dion Dion Skipper [PR RR]
Hesperia leonardus Leonardus Skipper [PR]
Vascular Plants
Bidens discoidea Small Beggar-Ticks [NR PR]
Epilobium palustre Marsh Willow-Herb [RR]
Pedicularis canadensis Wood Betony [RR]
Platanthera blephariglottis White Fringed Orchis [PR]
Polygonum arifolium Halberd-leaved Tearthumb [PR RR]
Polygonum careyi Carey's Knotweed [PR]
Scirpus hudsonianus Bulrush [RR]
Utricularia geminiscapa Hidden-fruited Bladderwort [PR RR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, regionally uncommon species found within the area include 23 species of plants, four birds, and three herptiles. The nationally and provincially rare Caspian Tern was also seen within the area, but almost certainly did not breed there.

Ownership and Disturbance

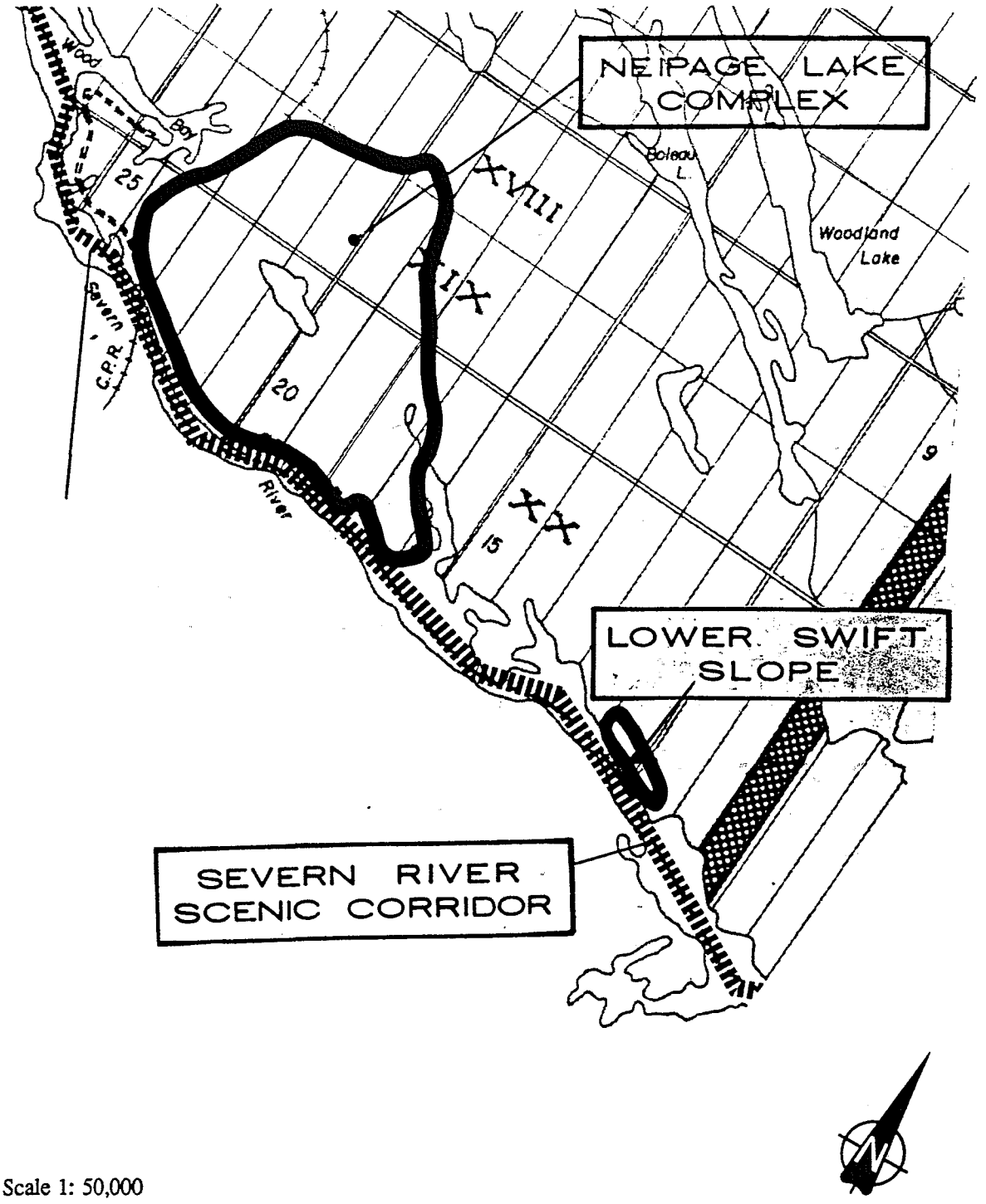
The Neipage Lake Complex area is approximately 95% Crown land. Except for several snowmobile trails across the area, there is little evidence of human activity away from the railway line and Severn River. The area apparently was burned in the last century, but the vegetation is well recovered by now. Moderate cottage development has occurred along the Severn River, just outside the area's boundary.

Sensitivity

Because the bog lakes within this area are unlikely to attract cottage development, threats to the future integrity of the Complex are unlikely. Road construction and intensive logging within the area should be avoided, in order to prevent fragmentation of the natural communities and sediment impacts to the wetlands.

Major Sources of Information - Kamstra, 1992; MacDonald, 1986; Bajc and Paterson, 1992.

NEIPAGE LAKE COMPLEX/LOWER SWIFT SLOPE
HERITAGE AREAS
TOWNSHIP OF MUSKOKA LAKES



Scale 1: 50,000

PORT SEVERN OUTLIER UTM Ref. 17TNV987620

Baxter Township, Georgian Bay Area: 11 ha
Status: Recommend Heritage Area

Site Characteristics

Port Severn Outlier is a small raised dome of limestone, located west of Hwy 69 along the Honey Harbour Road. This outcrop, composed of limestone of the Gull River formation, is one of two known Paleozoic outliers in Muskoka District (Bajc, 1992).

The weathered surface of the bedrock displays joints and fractures widened by the processes of groundwater and surface water dissolution. Vegetation is early successional, recovering from former pasturing use, with sections of open White Oak-White Pine-Balsam Poplar woodland and shrub thickets of Chokecherry, Staghorn Sumac, American Bittersweet and Poison Ivy mat covering large portions of the area. A Red Cedar-Common juniper barrens occupies part of the site.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	46 native including 3 regionally uncommon; 20 introduced
Butterflies	5 including Eastern Black Swallowtail *Papilio polyxenes asterius* [RR]

Significant Natural Values and Selection Criteria Met

1. **Representative Landform** - (A2) Bajc (1992) identified this outlier as the best example of Paleozoic Bedrock within Muskoka District, indicating the former existance of a more extensive cover of these younger rocks in the region. From a geological point of view, the outlier is relatively undisturbed.

2. **Representation** - (B1) Despite its small size, Port Severn Outlier contains two vegetation communities not well-represented elsewhere in Muskoka - a Chokecherry-Poison Ivy shrub thicket (warmer/sand/very dry), and a Red Cedar-Common juniper open rock barrens (warmer/rock/very dry).

3. **Biogeographic Significance** - (B7) Several of the plant species found on the Outlier are calciphiles, including Red Cedar, Glaucous Honeysuckle, and Viper's Bugloss. Downy Arrowhead, another shrub found on site, is approaching its northern limit of distribution at this site.

Ownership and Disturbance

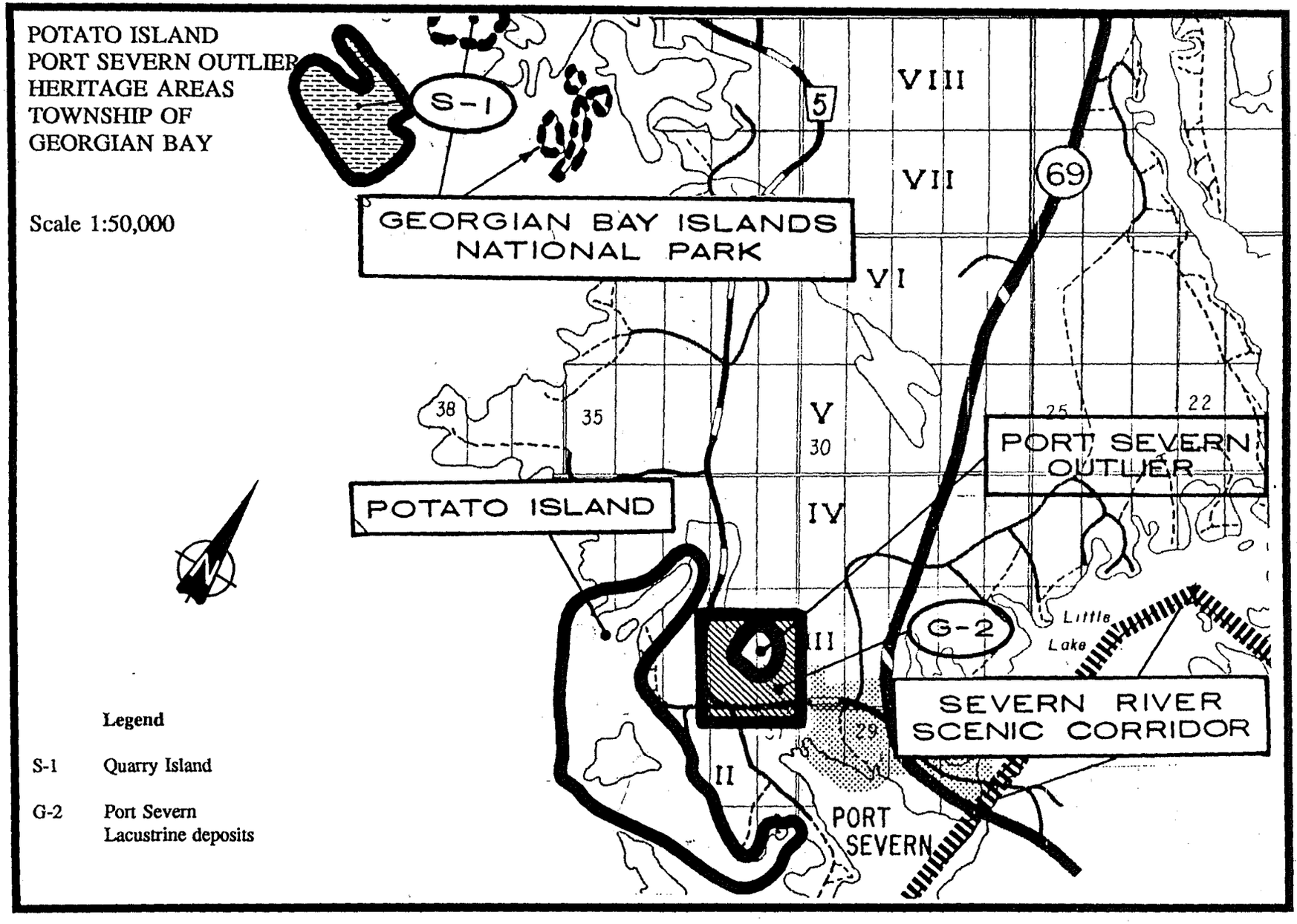
The entire area is privately owned. Agricultural use and a recent residential development occupy adjacent lands. The site has been severely disturbed from past agricultural use, as indicated by the occurrance of over 30% non-native flora.

Sensitivity

The existing vegetation on the site will likely continue to develop and diversify with protection from further grazing. The limestone itself should be protected from future quarrying or other development. The small escarpments that surround the outlier should also be protected from filling or grading, to maintain the scientific value of the outlier.

Major Sources of Information

Bajc, 1992; Reid et al, 1992.


POTATO ISLAND
PORT SEVERN OUTLIER
HERITAGE AREAS
TOWNSHIP OF
GEORGIAN BAY
Scale 1:50,000
S-1
5
VIII
VII
69
GEORGIAN BAY ISLANDS
NATIONAL PARK
VI
38
35
V
30
25
22
PORT SEVERN
OUTLIER
POTATO ISLAND
IV
II
G-2
Little
Lake
SEVERN RIVER
SCENIC CORRIDOR
29
II
PORT
SEVERN
Legend
S-1 Quarry Island
G-2 Port Severn
Lacustrine deposits

POTATO ISLAND UTM Ref. 17TNV980606

Baxter Township, Georgian Bay Area: 241 ha
Status: Recommend Heritage Area

Site Characteristics

Most of the Potato Island natural area consists of extensive shoreline wetlands along the Severn Sound area of Georgian Bay. In the shallow waters around the island and along the shore, a wide band of well-developed wetland communities occur. Typically, at the land's edge there is a fringe of Meadowsweet and Sweet Gale, followed by a shoreline band of Canada Bluejoint, Tussock Sedge, and other herbs, with large stands of Cattails and Bulrushes in the open water. In the large bay to the northwest, a mix of aquatic vegetation is dominated by Spatterdock, Pickerel-weed and Wild Rice.

Potato Island itself and the small areas of upland included within this site have variable depths of soil over exposed Precambrian rocks. Much of the upland has been disturbed in the past.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	171 native; 19 introduced
	1 A.C.P.F. with score of 4 (Insignificant)
Birds	36 observed during breeding season
Mammals	4
Herpetofauna	9
Butterflies	7

Significant Natural Values and Selection Criteria Met

1. **Rare Species** - (B4) The Potato Island area provides habitat for the following rare species:

Wildlife
Elaphe vulpina gloydi Eastern Fox Snake [PR RR] *
Polioptila caerulea Blue-gray Gnatcatcher [RR]
Sterna caspia Caspian Tern [NR PR]
Vascular Plants
Astragalus canadensis Milk Vetch [RR] *
Calamintha arkansana Low Calamint [RR] *
Cardamine concatenata Cut-leaved Toothwort [RR] *
Carex blanda Woodland Sedge [RR]
Carex cephalophora Head-like Sedge [RR]
Carex crawei Crawe's Sedge [RR] *
Carex garberi Garber's Sedge [RR]
Collinsia parviflora Blue-eyed Mary [PR RR] *

Floerkea proserpinacoides False Mermaid [RR] *
Gentianopsis virgata Smaller Fringed Gentian [RR] *
Juglans cinerea Butternut [RR] *
Lemna trisulca Star Duckweed [RR]
Linum medium Yellow Flax [NR PR]
Lobelia kalmii Brook Lobelia [RR]
Ranunculus fascicularis Early Buttercup [RR] *
Scirpus fluviatilis River Bulrush [RR] *
Scirpus smithii Smith's Bulrush [NR PR RR] *
Selaginella apoda Meadow Spike Moss [RR] *
Triosteum aurantiacum Feverwort [RR]
* reported by Goltz (1992)

In addition, regionally uncommon species found within the area include 15 vascular plants, two birds, one frog and one turtle. Least Bittern, a nationally, provincially, and regionally rare species, were known historically to nest within the area, but their present status is uncertain. Other rare birds including Yellow-crowned Night Heron and Yellow-headed Blackbirds have been seen within the area but no breeding evidence confirmed (Goltz, 1992).

2. **Fish and Wildlife Concentrations** - (B5) Shoreline areas within this area provide nursery habitat for Muskellunge (O.M.N.R., Parry Sound Area). The shallow waters and marshlands are an important staging area for migratory ducks in spring, most notably Canvasback, Greater Scaup, and Ringneck Ducks (Goltz, 1992).

Ownership and Disturbance

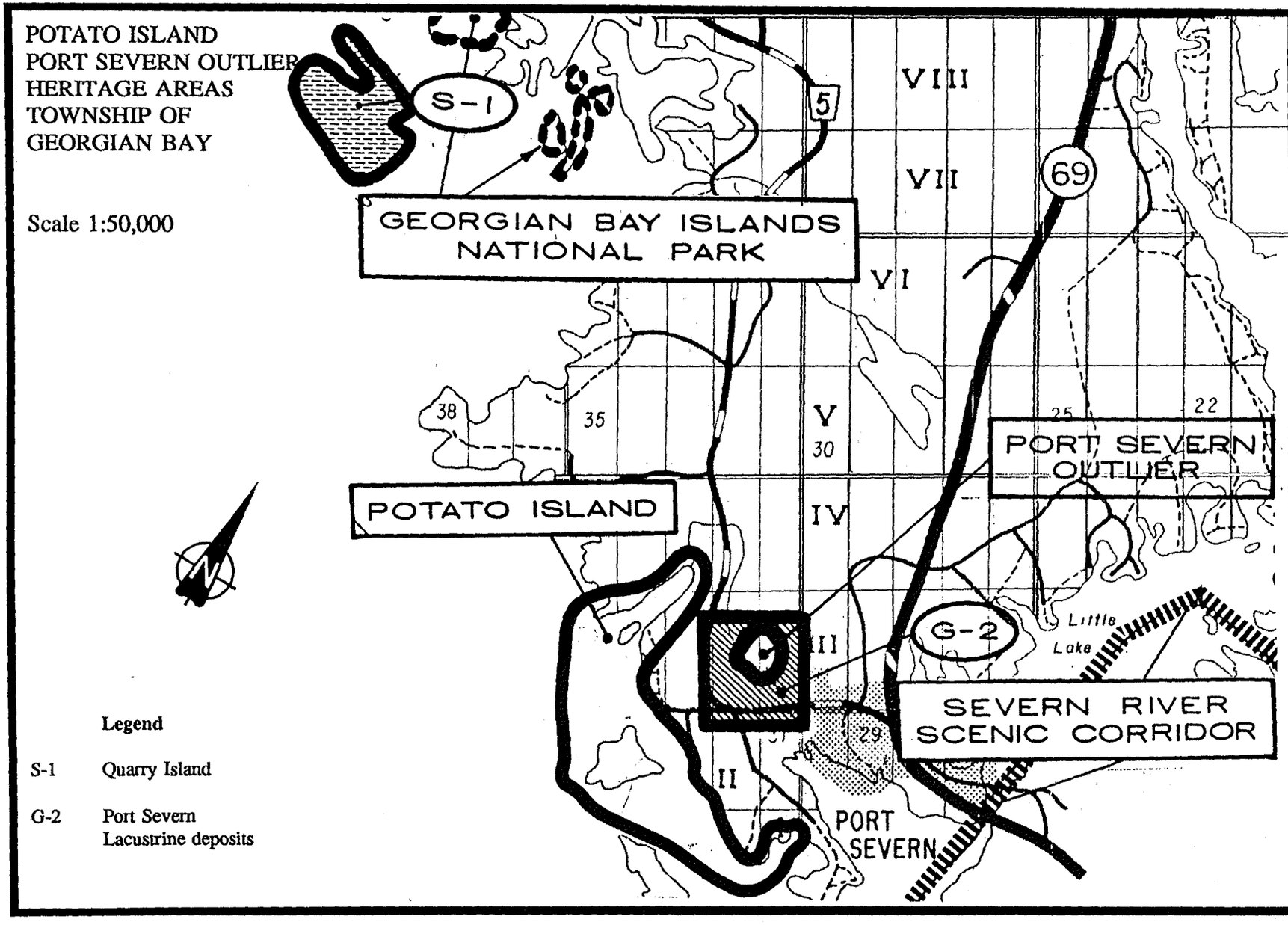
The upland parts of the area are privately owned, while the offshore waters are Crown lands. Considerable disturbance has taken place in the uplands, including Potato Island which has a causeway, two cabins, and areas of planted non-native trees. The wetland areas are affected by the wake and noise disturbances of heavy boat traffic further offshore.

Sensitivity

Further cottage developments along the immediate shoreline of the wetland areas, together with dredging and vegetation removal, could seriously affect the values of this site.

Major Sources of Information

Geomatics International, 1992; Goltz, 1992.


POTATO ISLAND
PORT SEVERN OUTLIER
HERITAGE AREAS
TOWNSHIP OF
GEORGIAN BAY
Scale 1:50,000
S-1
GEORGIAN BAY ISLANDS NATIONAL PARK
5
69
VIII
VII
VI
V
IV
II
38
35
30
25
22
PORT SEVERN OUTLIER
POTATO ISLAND
G-2
Little Lake
SEVERN RIVER SCENIC CORRIDOR
29
PORT SEVERN
N
Legend
S-1 Quarry Island
G-2 Port Severn Lacustrine deposits

PORT SEVERN LACUSTRINE DEPOSIT UTM Ref. 17TNV599110

Baxter Township, Georgian Bay Area: 80 ha
Status: Recommend Heritage Site

Site Characteristics

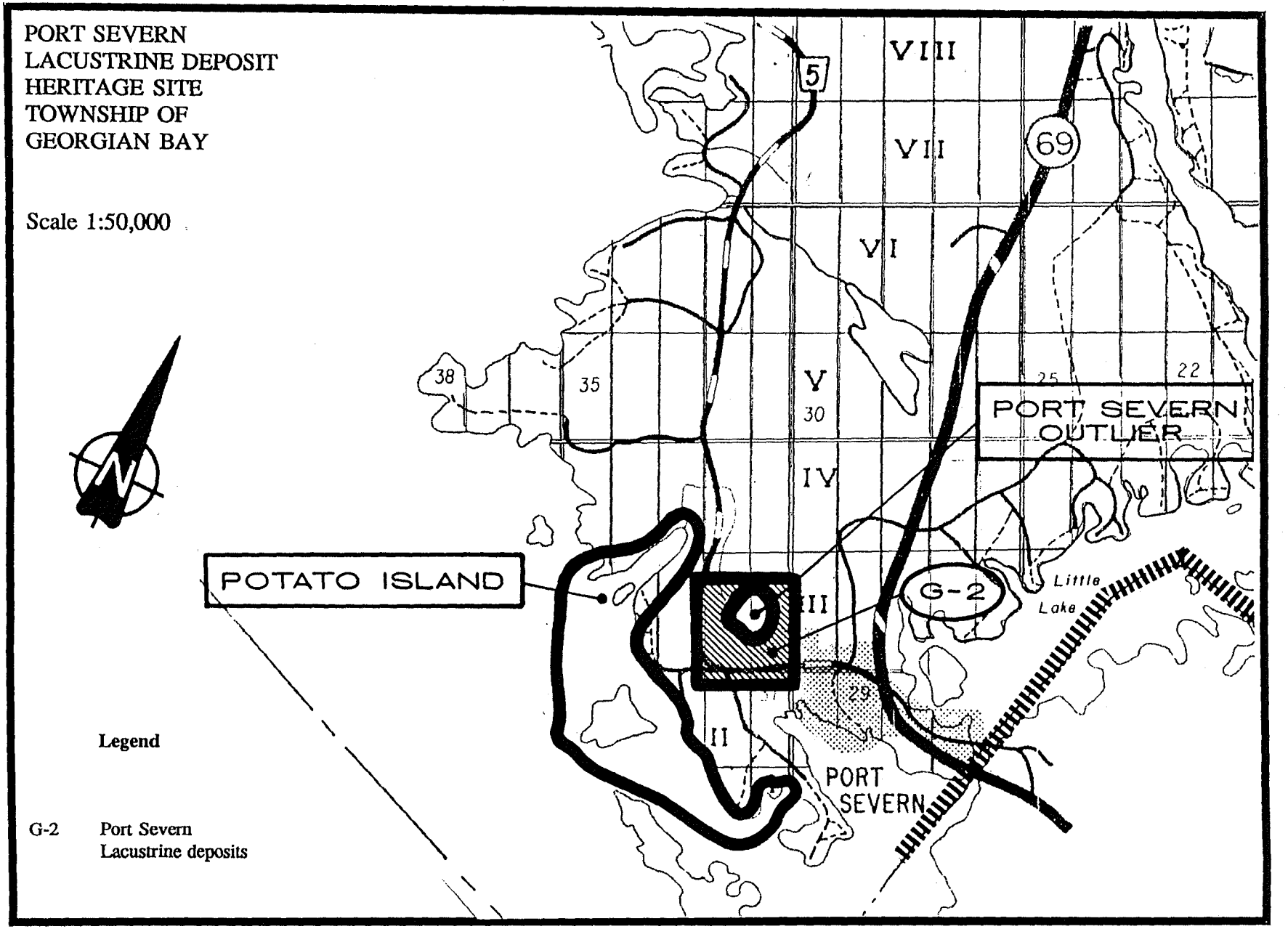
This site is a flat lake plain of fine-grained silty and clayey lacustrine deposits, interrupted only by small Precambrian outcrops and a Paleozoic outlier. Most of the area is currently cleared as farmland.

Significant Natural Values and Selection Criteria Met

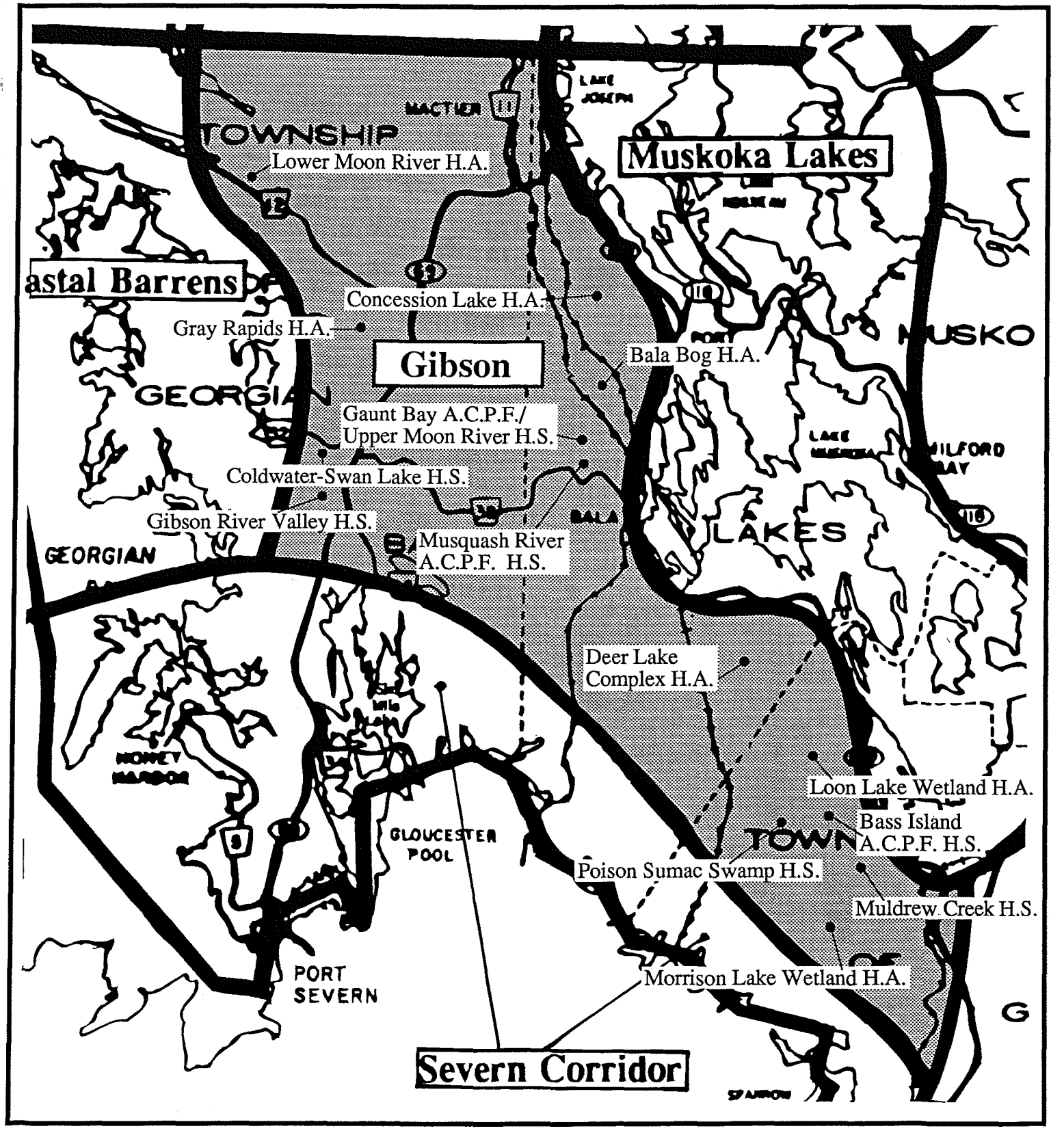
1. **Landform Representation** - (A3) This site was selected by Bajc (1992) as the most extensive deposits of fine-grained, Nipissing Phase lacustrine sediments in Muskoka.

Ownership, Disturbance and Sensitivity

This site is privately owned. A small area of this deposit should be protected from development to represent this landform type. the physiographic expression of the landform is most easily recognized if the lands are left cleared of trees.


PORT SEVERN
LACUSTRINE DEPOSIT
HERITAGE SITE
TOWNSHIP OF
GEORGIAN BAY
Scale 1:50,000
VIII
VII
VI
V
IV
III
II
5
69
38
35
30
25
22
PORT SEVERN
OUTLIER
POTATO ISLAND
G-2
Little
Lake
29
PORT
SEVERN
Legend
G-2 Port Severn
Lacustrine deposits

3.3 GIBSON SUBDISTRICT



BALA BOG UTM Ref. 17TPV053893

Medora Township, Muskoka Lakes Area: 425 ha
Status: Recommend Heritage Area

Site Characteristics

This site is situated within the Muskoka watershed system in the Georgian Bay physiographic area. The dominant landscape is that of an extensive wetland with deep organic deposits supporting poor fen, swamp and marsh associations, which discharge slowly in three directions - to the south via a small stream to Gaunt Bay; to the west into the Haggart Creek System; and to the north into the Medora Creek drainage system. The surrounding upland areas are largely White Pine-Red Oak barrens on shallow, coarse glacial till on a broken bedrock plain, with frequent exposures of gneissic bedrock at the surface.

The largest open beaver pond in the site contains a floating leatherleaf shrub mat as an island within the pond. The shoreline is surrounded by a dense Speckled Alder-Holly-Winterberry thicket swamp association. A second beaver pond is gradually being filled in by a floating sphagnum mat with Virginia Chain Fern, Sweet Gale, Holly and scattered Tamarack. In the more consolidated areas the successional sequence moves to a tall shrub thicket and finally to a Black Spruce and Tamarack dominated conifer swamp. The beaver pond system draining south consists of a series of open graminoid marshes dominated by *Carex utriculata*, Sweet Gale and other sedges.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	318 native ; 47 introduced
	5 A.C.P.F. with a score of 23 (Low)
Birds	47 observed during breeding season
Mammals	8
Herpetofauna	11
Butterflies	24
Dragonflies	6
Mushrooms	34

Significant Natural Values and Selection Criteria Met

1.**Hydrology** - (A3) The wetlands contribute to regional hydrological systems through the storage of ground water and the gradual release into tributary streams to the north, south and west.

2. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than expected for Muskoka as shown in Figure 1. The area also supports a high diversity of butterflies.

3. **Quality and Disturbance** - (B3) The wetland communities within this site provide quality examples of the successional sequence from open graminoid marsh to ericaceous shrub poor fen and conifer swamp forest. While 12.9% of the plants were introduced, these species were largely found along the boundary of the area. The interior wetland area has little distubance and remains high quality.

4. **Rare Species** - (B4) The Bala Bog area provides habitat for the following rare species:

Wildlife
Polygonia faunus Green Comma [RR]
Erynnis lucilius Columbine Dusky Wing [PR]
Vascular Plants
Acalypha virginica Three-seeded Mercury [RR]
Anemone virginiana Thimbleweed [RR]
Bartonia paniculata Screwstem [NR PR RR] *
Epilobium palustre Marsh Willow-Herb [RR]
Listera australis Southern Twayblade [NR PR]
Platanthera blephariglottis White Fringed Orchis [PR]
Scrophularia lanceolata Figwort [RR]
* Collected by Goltz, 1975

In addition, four species of vascular plants, one bird, two snakes and one butterfly were recorded as regionally uncommon.

5. **Fish and Wildlife Concentrations** - (B5) A small colony of Great Blue Herons is active in one of the beaver ponds in the site.

Ownership and Disturbance

The area is privately owned with less than 1% Crown land located along the western boundary. The area is buffered by the difficulty in gaining vehicle access across the railway lines to the north and south. Planting of introduced conifers has occurred in small patches on former farmlands along the southern edge. A cranberry marsh is located on the eastern edge of the area. There has been little disturbance to the interior of the site.

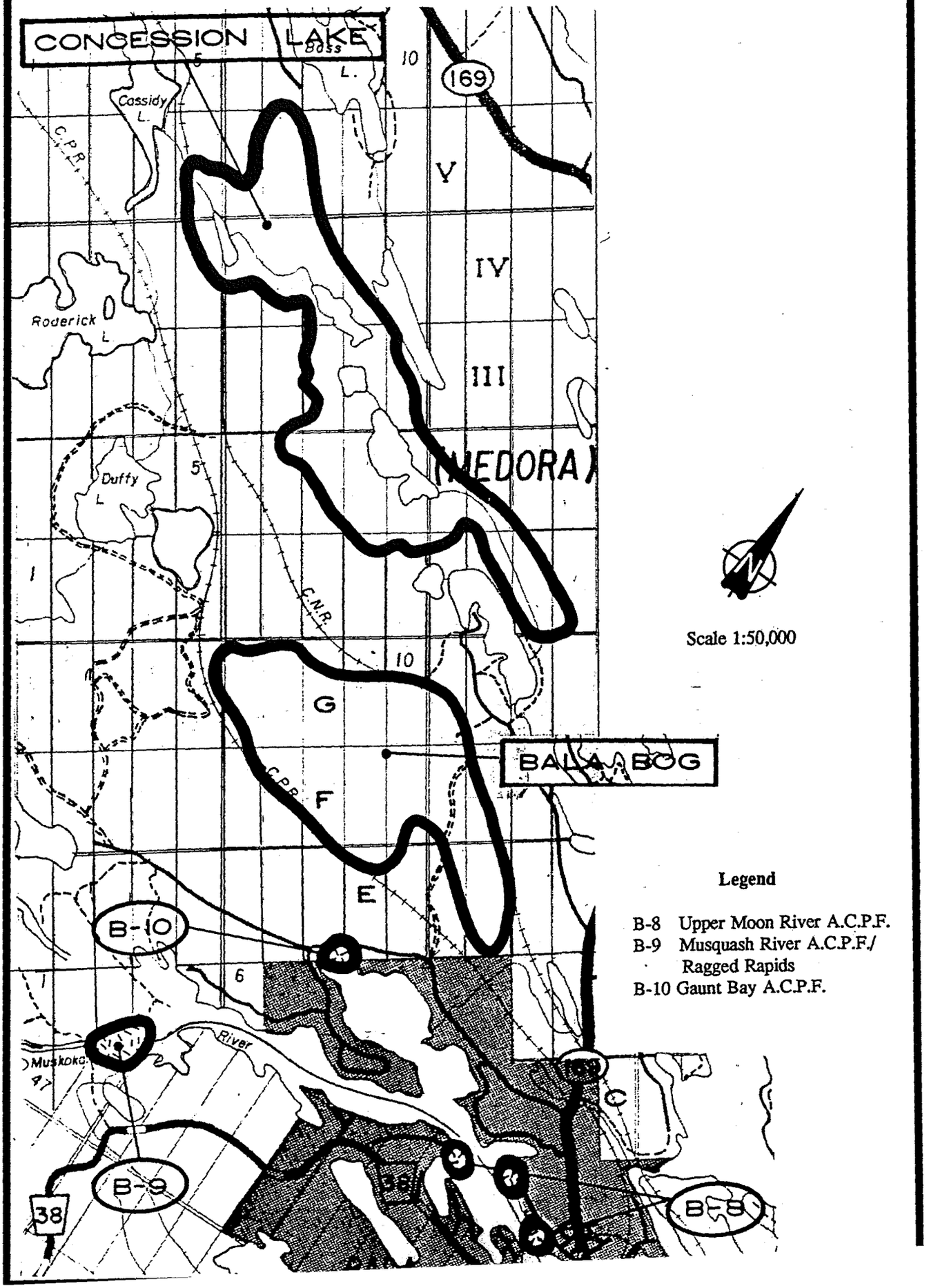
Sensitivity

The sensitivity of this site is related to the hydrological functioning of the wetland ecology. Suitable policies related to wetland protection should be followed. The surrounding rock barrens are sensitive to disturbances which would affect the shallow overburden and stability of the groundcover.

Major Sources of Information

Kor & Miller, 1987; Reid, et al., 1991.

BALA BOG/CONCESSION LAKE
HERITAGE AREAS
TOWNSHIP OF MUSKOKA LAKES



CONCESSION LAKE UTM Ref. 17TPV041925

Medora Township, Muskoka Lakes Area: 485 ha
Status: Recommend Heritage Area

Site Characteristics

Concession Lake is the largest of three lakes, including Stevenson and Speiran, which form part of a headwater wetland complex draining into Medora Lake and from there to Lake Muskoka. The lakes occupy lowland areas of swamp and organic deposits and are flanked by bedrock ridges supporting rock barren pine-oak communities. Mixed Sugar Maple-Eastern Hemlock and Sugar Maple - Beech with Red Maple, White Ash and White Birch deciduous stands occupy areas of deeper till.

Beaver ponding is common throughout the area, with dams controlling the water levels and flow between the lakes. The northern end of the wetland complex, north of Speiran Lake, is dominated by a dense Black Spruce - Tamarack conifer swamp forest. Speiran Lake is in the process of filling in with dense aquatic vegetation and shrub thickets. Stevenson Lake contains areas of open water with an island-like ring of floating shrub mat and Virginia Chain Fern poor fen. Concession Lake is mainly open water with a few wet sedge-grass meadow marshes and shrub thickets filling in shallow bays. Most of the shallow, gently sloping shoreline is ideal habitat for Atlantic Coastal Plain marsh communities. Concession Lake exits to Medora Creek at a beaver dam. The creek is fairly wide for most of its length with a soft shoreline of heath and shrub species dominated by Sweetgale, Glossy Buckthorn and Water Willow. The deeper portion of the creek supports a dense floating aquatic community of Fragrant Waterlily and Watershield, submergent aquatics and dead trees. Blanding's Turtles were abundant in this creek and a small wetland area to the west of Concession Lake.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	204 native; 21 introduced
	9 A.C.P.F. with a score of 45 (Moderate)
Birds	29 observed during breeding season
Mammals	9
Herpetofauna	14
Butterflies	7

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) As the headwater area for a bay of Lake Muskoka, this wetland complex functions as a source and provides some water quality enhancement and storage.

2. **Quality and Disturbance** - (B3) There has been very little development on the lakes, even though much of the land is under private ownership. The landowners restrict boating to canoes or rowboats only and have a strong sense of stewardship toward the area. The quality of the wetland and rock barren communities is good, and although not diverse, the flora and

fauna represent a good mixture of common and uncommon to rare species. Shoreline habitat on Concession Lake supports a moderate representation of Atlantic Coastal Plain Flora. Four small deer yards occur in the areas where Eastern Hemlock-Sugar Maple groves are present.

3. **Rare Species** - (B4) Concession Lake provides habitat for the following rare species:

Wildlife
Heterodon platirhinos Eastern Hognose Snake [PR]*
Sistrurus c. catenatus Eastern Massassauga [NR PR]*
* Reported by landowners
Vascular Plants
Panicum spretum Eaton's Grass [PR]
Platanthera blephariglottis White Fringed Orchis [PR]
Rhexia virginica Virginia Meadow Beauty [NR PR]
Triadenum virginicum Marsh St. John's Wort [PR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, one butterfly, one snake, one salamander and two species of vascular plants were recorded as regionally uncommon.

Ownership and Disturbance

Approximately one-third of the area is Crown land, with the remainder in private ownership. Minimal disturbance was observed in the area including the shoreline of Concession Lake which is virtually undeveloped. One disturbance to the area is the invasion of Glossy or European Buckthorn (*Rhamnus frangula*) along Medora Creek and the lower end of Concession Lake.

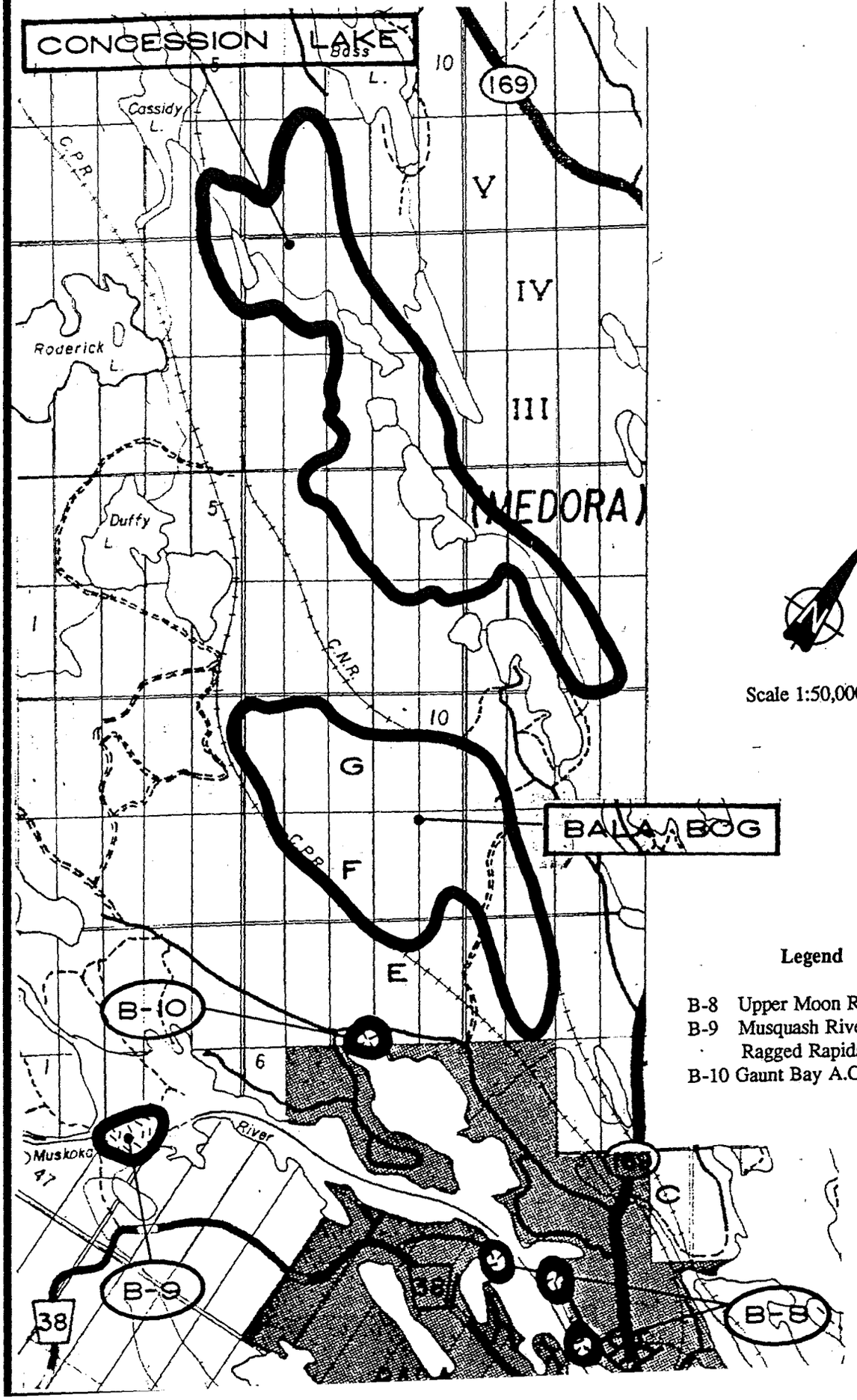
Sensitivity

The sensitivity of this site is related to the hydrological function of the wetland, the shoreline supporting coastal plain flora and the rock barren communities which provide habitat for rare species. Suitable policies related to protection of shorelines for A.C.P.F. and provincial policy guidelines for wetlands should be followed. Disturbances to the barrens adjacent to the wetlands should be minimized within a suitable buffer zone that incorporates sufficient habitat for rare species.

Major Sources of Information

Bergsma, et al., 1993; Kor & Miller, 1987; Reid, et al., 1991; OMNR, deer yard surveys 1988, 1989.

BALA BOG/CONCESSION LAKE
HERITAGE AREAS
TOWNSHIP OF MUSKOKA LAKES



DEER LAKE COMPLEX UTM Ref. 17TPV183803

Wood Township, Gravenhurst
Muskoka Township, Muskoka Lakes Area: 4540 ha
Status: Recommend Heritage Area

Site Characteristics

This area is characterized as a broad expanse of low relief, irregular, barren gneissic bedrock ridges, interspersed with numerous linear, shallow water wetlands and peat-filled depressions. Drainage from major lakes, including Echo, Gullwing, Deer, Pigeon and Pine, is primarily to the northwest into Lake Muskoka (along the direction of ridges). Blocked drainage resulting from the activities of beaver has contributed to the formation of numerous sphagnum dominated wetlands. The most recent glaciation deposited a discontinuous blanket of till over parts of the area in the form of ground moraine, which has led to the development of limited shallow, nutrient-poor, sandy till soils.

The upland sections of the complex consist of extensive dry heath, scrub and graminoid dominated bedrock barrens and Red Oak-White Pine-White Ash treed barrens. A large component of White Oak, typically more southern, forms a co-dominant in parts of this latter association. This hot, open rock barren habitat supports significant populations of Five-lined Skink, Eastern Massasauga and Eastern Hognose Snake. Early successional Large-tooth Aspen associations occur on warm, sandy, till soils, while Red Pine-mixed hardwood woodlands occur on the gneissic rock hillsides and steep boulder slopes along the north shores of Echo Lake and Deer Lake. Shallow sandy soils support a mature White Pine-Large-tooth Aspen-Red Maple mixed woodland. Deeper sandy tills in scattered areas of the site support a mature Eastern Hemlock-Sugar Maple-Beech-Yellow Birch woodland.

Wetlands are common and diverse, with dense open water aquatic vegetation, small lakes with dead standing trees, open Tamarack-Black Spruce-Feathermoss rich fens, floating shrub mats dominated by Leatherleaf and Sweet Gale, open herb-rich Virginia Chain Fern poor fen and open graminoid fen. A large fen northwest of Highland Pond is a particularly rich open habitat, supporting many orchid species, Southern Bog Lemming, plus Sedge Wren, Vesper Sparrow, Savanna Sparrow and Bobolink.

Black Spruce-Tamarack-Sphagnum mixed conifer-broadleaf forest swamps, Red Maple-Silver Maple-American Elm broadleaf forest swamps, Alder thicket swamps and Winterberry-Mountain Holly-Northern Wild Raisin thicket swamps have developed extensively in association with these wetlands.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	470 native ; 58 introduced
	12 A.C.P.F. with a score of 60 (High)
Birds	94 observed during breeding season
Mammals	19 (4 from small mammal trapping)

Herpetofauna	18
Butterflies	28
Dragonflies	8
Mushrooms	34

Significant Natural Values and Selection Criteria Met

1. **Representative Landform** - (A2) The Deer lake area contains the best representative example of Precambrian Bedrock within the Georgian Bay Fringe physiographic region of Muskoka, Consisting of "low relief, northwest-trending ridges of quartzofeldspathic gneisses separated by linear wetlands and peat-filled hollows" (Bajc, 1992).

2. **Representation** - (B1) A major part of the Deer Lake area has been evaluated as a provincially significant wetland and shore complex with a recommendation for ANSI status (Brunton, 1991a). It shows excellent representation of common and rare bedrock and wetland landform-vegetation complexes in a manner not seen elsewhere in Site District 5E-7.

3. **Diversity** - (B2) In part due to its size, the Deer Lake Complex exhibits a high diversity of landforms, vegetation communities and wildlife. It is particularly rich in birds, herpetofauna and butterflies. Total numbers of mammals recorded was one of the highest of all areas inventoried. The known vascular plant list exceeds 500 species, the second-highest total in Muskoka.

4. **Rare Species** - (B4) The Deer Lake Complex provides habitat for the following rare species:

Wildlife
- *Euphyes bimacula* Two Spotted Skipper [PR RR]
- *Wallengrenia egeremet* Northern Broken Dash Butterfly [RR]
- *Synaptomys cooperi* Southern Bog Lemming [PR]
- *Sialia sialis* Eastern Bluebird [NR]
- *Coccyzus americanus* Yellow-billed Cuckoo [RR]
- *Empidonax flaviventris* Yellow-bellied Flycatcher [RR]
- *Accipiter cooperii* Cooper's Hawk [NR PR]
- *Buteo lineatus* Red-shouldered Hawk [NR PR]
- *Vireo philadelphicus* Philadelphia Vireo [RR]
- *Cistothorus platensis* Sedge Wren [RR]

Vascular Plants
- *Botrychium lanceolatum ssp angustisegmentum* Triangle Grape Fern [PR RR]*
- *Eupatorium rugosum* White Snakeroot [RR]
- *Lactuca biennis* Tall Blue Lettuce [RR]
- *Listera australis* Southern Twayblade [NR PR]
- *Panicum spretum* Eaton's Grass [PR]
- *Platanthera blephariglottis* White Fringed Orchis [PR]
- *Potamogeton bicupulatus* Two-cupped Pond Weed [NR PR]
- *Potentilla tridentata* Three-toothed Cinquefoil [RR]

Rhexia virginica Virginia Meadow Beauty [NR PR]
Rubus setosus Bristly Blackberry [RR]
Triadenum virginicum Marsh St. John's Wort [PR]
Viola adunca Hooked-Spur Violet [RR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, four species of butterfly, four snakes, one salamander, four bird species and 40 species of vascular plants were recorded as regionally uncommon.

5. **Fish and Wildlife Concentrations** - (B5) There are at least two heronries present within the area as well as numerous scattered deer yards.

6. **Size and Linkage** - (B6) The large size of the area and undisturbed nature of much of the interior provides suitable conditions for species which require extensive unfragmented habitats.

7. **Biogeographic Significance** - (B7) Notable concentrations of Atlantic Coastal Plain Flora occur along the shorelines of Echo and Gullwing Lakes with several species having a more widespread occurrence in the study area. There are 12 coastal plain species recorded with a score of 60, which ranks number five of ten total sites with high significance.

The occurrence of Three-toothed Cinquefoil near the southwest end of Highland Pond is a boreal species at the southernmost limit of its Ontario range in Muskoka (Soper & Heimburger, 1982).

Yellow-bellied Flycatcher and Philadelphia Vireo are boreal species of extremely local and sporadic occurrence in Muskoka (Prescott, 1987 b).

8. **Scenic** - (C7) Highway 169, which forms the northeastern boundary of the Deer Lake Complex, was identified as a scenic corridor by respondents to a public questionnaire.

Ownership and Disturbance

Most of the interior of the area is Crown land, with about 25% private land mainly in the vicinities of Gullwing, Echo, Pigeon and the eastern end of Pine Lake. Most of the development is in the form of recreational properties with increasing development pressures occurring. Much of the interior of the study area remains relatively intact. Past disturbances such as logging of the White Pine followed by fire has influenced the present day landscape. Natural fire and periodic insect infestations may play an important role in the maintenance of significant successional vegetation communities such as the dry-mesic mixed woodland occupying the barren rock ridges.

Unnatural disturbance such as borrow pits, refuse dumping, hunting and unregulated camping are common along Muskoka Road 13, particularly in the vicinity of Highland Pond. Here, both vehicle and pedestrian traffic have resulted in extensive soil compaction and trampling of vegetation.

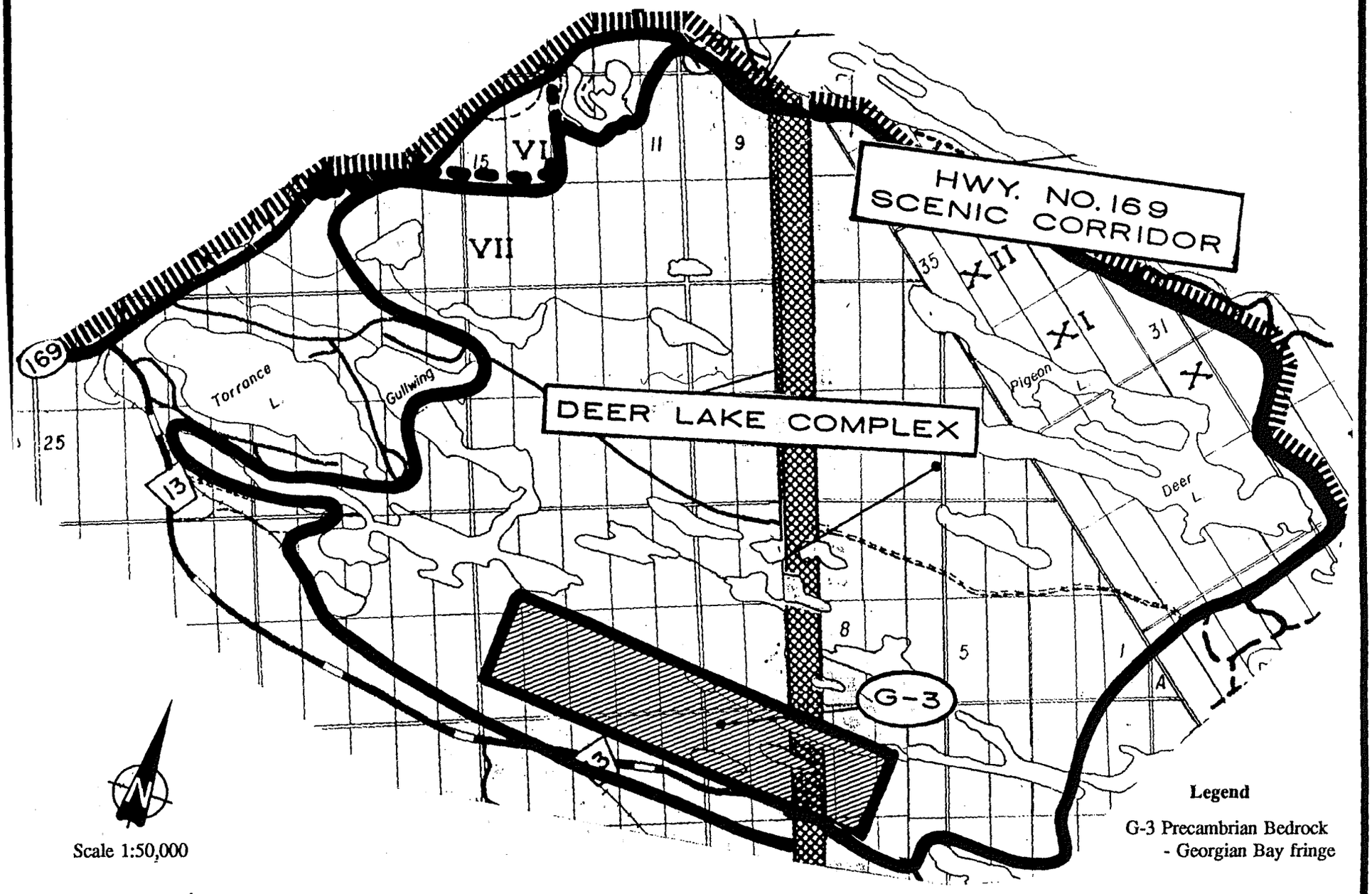
Sensitivity

The sensitivity of this site is related to its extensive unfragmented habitats for a wide range of plant and wildlife species and vegetation associations. Management guidelines and policies should emphasize protection of the unfragmented core area, of rare and significant species and communities, and of shorelines with Atlantic Coastal Plain Flora.

Major Sources of Information

Argus, et al., 1982-87; Bajc, 1992; Berney, & Reid, 1993; Brunton, 1991 a; Brunton, 1980; District Municipality of Muskoka Sensitive Areas Schedules, 1989; Keddy, & Sharp, 1989; Prescott, 1987 b; Reid, et al., 1991; Soper, & Heimburger, 1982.

DEER LAKE COMPLEX
HERITAGE AREAS
TOWNSHIP OF MUSKOKA LAKES/TOWN OF GRAVENHURST



Scale 1:50,000

Legend

G-3 Precambrian Bedrock
- Georgian Bay fringe

GRAY RAPIDS UTM Ref. 17TNV932872

Gibson Township, Georgian Bay Area: 300 ha
Status: Recommend Heritage Area

Site Characteristics

The Musquash river flows north from Highway 69 for about two kilometres and then veers to the west before widening into Gray Lake. Dense Red Maple-Red Oak deciduous forests and mixed forests of Eastern Hemlock-Maple-Oak line the shores of the river. Fluctuating water levels reveal muddy shores which support emergent grass marshes and forb-rich wet meadow marshes, with late summer displays of Red and White Cardinal Flower and Golden Hedge Hessop.

The site takes on a different appearance at Gray Lake, with open water expanses and rocky shorelines. The landform consists of a thin, discontinuous veneer of stony sand over Precambrian bedrock. Open shoreline forests are dominated by White and Red Pine with White and Red Oak. At the west end of Gray Lake a series of waterfalls and rapids spill into Flatrock Lake. Its numerous bays and inlets support wetland communities zoned from open water aquatic macrophytes to shallow emergent herb-rich and rush marshes, merging into shoreline Silky Dogwood-Buttonbush-Water Willow thicket swamps and wet lowland Silver Maple forests. At the west end of Flatrock Lake other sets of rapids and falls spill into Go Home Lake. Numerous small beaver controlled lakes drain into Gray and Flatrock Lakes.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	149 native ; 2 introduced
	5 A.C.P.F. with a score of 25 (Moderate)
Birds	21 observed during breeding season
Mammals	4
Herpetofauna	6
Butterflies	1

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) The Gray Rapids area supports unusual vegetation community types not represented in other Heritage Areas. These communities are the White Pine-White Birch-Silver Maple Bottomland forest (warmer/sand/wet-mesic) and the Silver Maple-Basswood Swamp Forest (warmer/sand/wet). These are located in inlets along the southern edges of Gray and Flatrock Lakes, respectively.

2. **Quality and Disturbance** - (B3) The Gray Rapids area contains vegetation community types which are strongly influenced by the riverine system and by the rocky shorelines of undisturbed lakes. There were only 1.3% introduced species of vascular plants recorded from the area. The quality and mixture of biotic communities is high, with a moderate representation of Atlantic Coastal Plain Flora.

3. **Rare Species** - (B4) The Gray Rapids area provides habitat for the following rare species:

Wildlife
Sistrurus c. catenatus Eastern Massassauga [NR PR] *
Buteo lineatus Red-shouldered Hawk [NR PR] *
Vascular Plants
Corallorhiza striata Striped Coralroot [RR]*
Cynoglossum boreale Northern Wild Comfrey [RR] *
Elatine minima Water Wort [PR] *
Equisetum palustre Marsh Horsetail [RR]
Isoetes tuckermanii Tuckerman's Quillwort [RR]
Panicum rigidulum Panic Grass [NR PR] *
Potamogeton praelongus White-stemmed Pond Weed [RR]
Sisyrinchium angustifolium Stout Blue-eyed Grass [RR] *

* Reported by Goltz, 1992

In addition, one turtle, one bird and fifteen species of vascular plants were recorded as regionally uncommon.

4. **Fish and Wildlife Concentrations** - (B5) The area provides winter habitat for a significant deer population, and is part of the larger Galla Lake Deer wintering area.

5. **Scenic Landscapes** - (C7) The Gray Rapids area provides scenic value in a number of locations. The Musquash River boasts a spectacular display of Cardinal Flower in the late summer (Goltz, 1992); Gray Rapids is identified as a highly scenic rapids and waterfalls. Also identified is a small waterfalls which exits into Log Bridge Inlet from Flatrock Lake named "Boulder Falls" because of the enormous erratic present in the middle of it. Flatrock Lake is a pristine, clear lake with a shoreline dominated by exposed bedrock outcrops supporting an open Red and White Pine forest.

Ownership and Disturbance

The Gray Rapids area is approximately 90% Crown land ownership. There are a few small privately owned cabins on Gray Lake and along the Musquash River. Flatrock Lake is virtually undisturbed, except for a few semi-permanent campsites along the shoreline. The Gray Rapids are unregulated with respect to the flow of water. Small boats and canoes can access Gray Lake, and Flatrock Lake is only accessible by portage. Boaters and fishermen from Go Home Bay frequent the small scenic falls (Boulder Falls) at the east end of the Log Bridge Inlet.

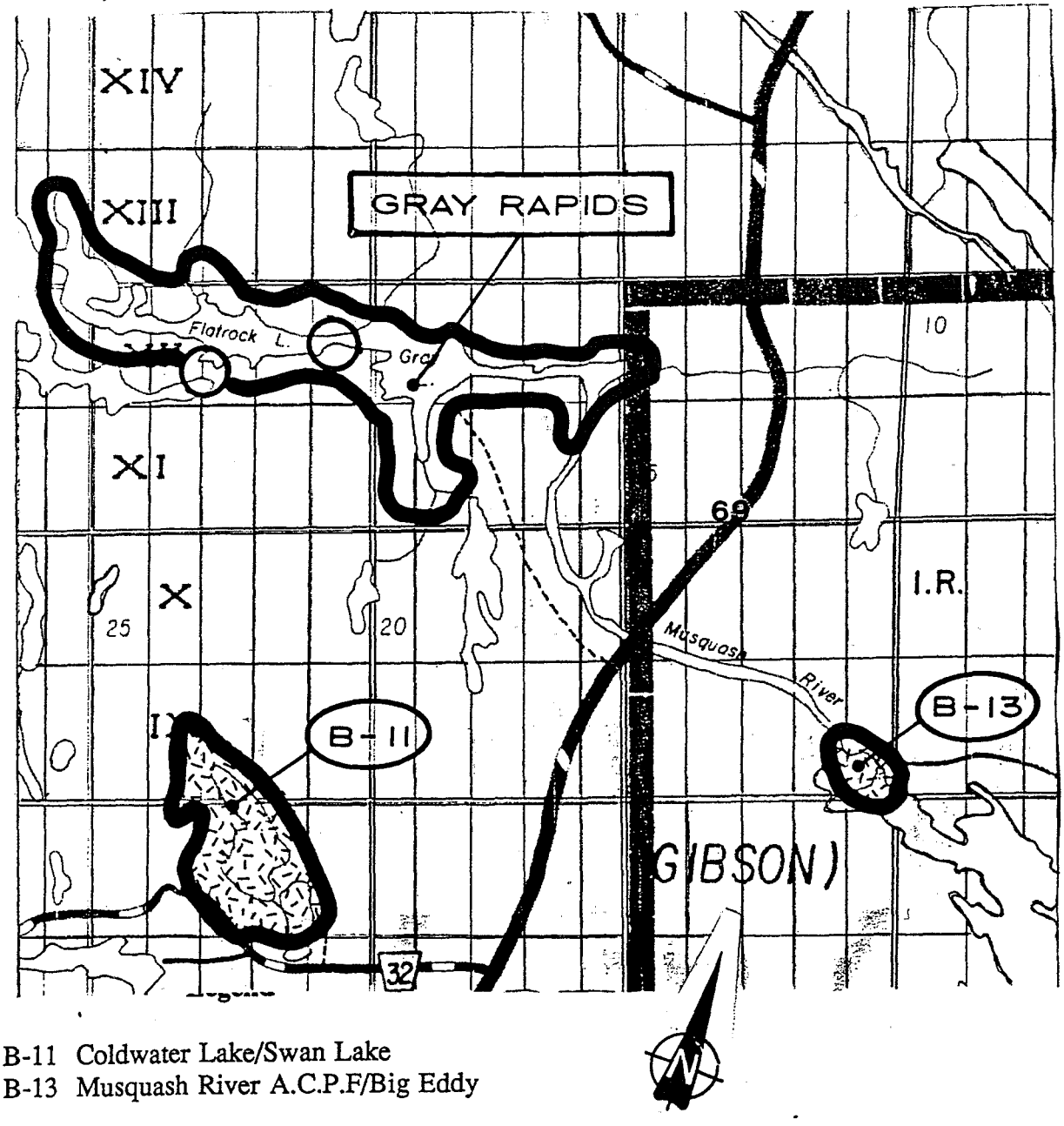
Sensitivity

The sensitivity of this site is related to the lake and riverine shoreline features which support a diverse, high quality assemblage of vegetation community types and high scenic elements. Management guidelines for shorelines should be followed with a forested buffer defined by the slope and aspect of the land. The Gray Rapids falls and Flatrock Lake should be maintained as pristine, natural environments.

Major Sources of Information

Berney & Reid, 1993; Bergsma, et al., 1993; District Municipality of Muskoka 1985, Sensitive Areas Schedules; Goltz, 1992; Kor, & Miller 1987; Parry Sound Sensitive Areas Schedules.

GRAY RAPIDS
HERITAGE AREA
TOWNSHIP OF GEORGIAN BAY



B-11 Coldwater Lake/Swan Lake
B-13 Musquash River A.C.P.F/Big Eddy

O Scenic Spots

Scale 1:50,000

LOON LAKE WETLAND UTM Ref. 17TPV235745

Muskoka Township, Gravenhurst Area: 550 ha
Status: Recommend Heritage Area

Site Characteristics

This wetland occupies several bedrock depressions situated between northwest / southeast trending bedrock ridges. Loon and Turtle Lakes border the wetland on the northern edge and North Muldrew Lake borders on the south.

The wetland extends for several kilometres with drainage flowing west into Loon-Turtle Creek, and thence south into the Severn River system. Two small beaver controlled tributary streams drain into Loon-Turtle Creek from the west.

A diversity of wetland types are present, including wet sedge-grass meadows, Alder - Buttonbush - Water Willow thicket swamps along the drier edges, treed tall shrub thickets, and Black Spruce - Tamarack - Leatherleaf - Sphagnum swamps, in more consolidated areas. Extensive open graninoid and heath poor fens, herb-rich fens dominated by Virginia Chain Fern and floating sphagnum mats support a diversity of representative and unusual peatland flora such as Few-flowered sedge, Arrow-grass, and Mud Sedge.

The bordering bedrock barrens consist of thinly scattered stands of White Pine with Red and White Oak. Small pockets with more mineral soils support early successional White Birch - White Pine - Red Maple - Aspen mixed forests. A number of uncommon flora are found in these barren areas including Plantain-leaved Pussytoe, several species of tick trefoils, Macoun's Cudweed, Snowberry and Broad-leaved Grass.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	303 native; 38 introduced
	5 A.C.P.F. with a score of 23 (LOW)
Birds	60 observed during the breeding season
Mammals	14
Herpetofauna	14
Butterflies	20

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) This wetland has been evaluated as a provincially significant wetland (MNR, 1992) which provides water storage and water quality enhancement functions.

2. **Representation** - (B1) The Pine-Oak Barrens (warmer/rock/dry-mesic) is a community type of limited distribution within the Muskoka due to the presence of White Oak. While White Oak occurs sporadically in other rock barren habitats in the southern portion of

Muskoka, it is usually not a dominant species. The Loon Lake Bog (Wetland) was evaluated as a regionally significant peatland and recommended as a candidate ANSI (Brunton, 1991a).

3. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than expected for Muskoka as shown in Figure 1. In addition, the diversity of bird species was relatively high.

4. **Quality and Disturbance** - (B3) The fen communities present within this area are of unusually high quality as evidenced by the diversity of orchids (6 species) and other vascular plants, and the presence of a good diversity of reptiles, including Spotted Turtle, Four-toed Salamanders and five species of snakes.

5. **Rare Species** - (B4) The Loon Lake Bog provides habitat for the following rare species:

Wildlife
Feniseca tarquinius Harvester Butterfly [RR]
Clemmys guttata Spotted Turtle [NR PR RR]*
Sistrurus c. catenatus Eastern Massassauga [NR PR]
Vireo philadelphicus Philadelphia Vireo [RR]
Vascular Plants
Bartonia paniculata Screwstem [NR PR RR]**
Epilobium palustre Marsh Willow-Herb [RR]
Listera australis Southern Twayblade [NR PR]***
Platanthera blephariglottis White Fringed Orchis [PR]

* Found during MNR 1992 Wetland Evaluation
** Reznicek and Whiting, 1976
*** Whiting and Bobbette 1974

In addition, two species of snake, one salamander, three bird species and twenty-one species of vascular plants were recorded as regionally uncommon.

Ownership and Disturbance

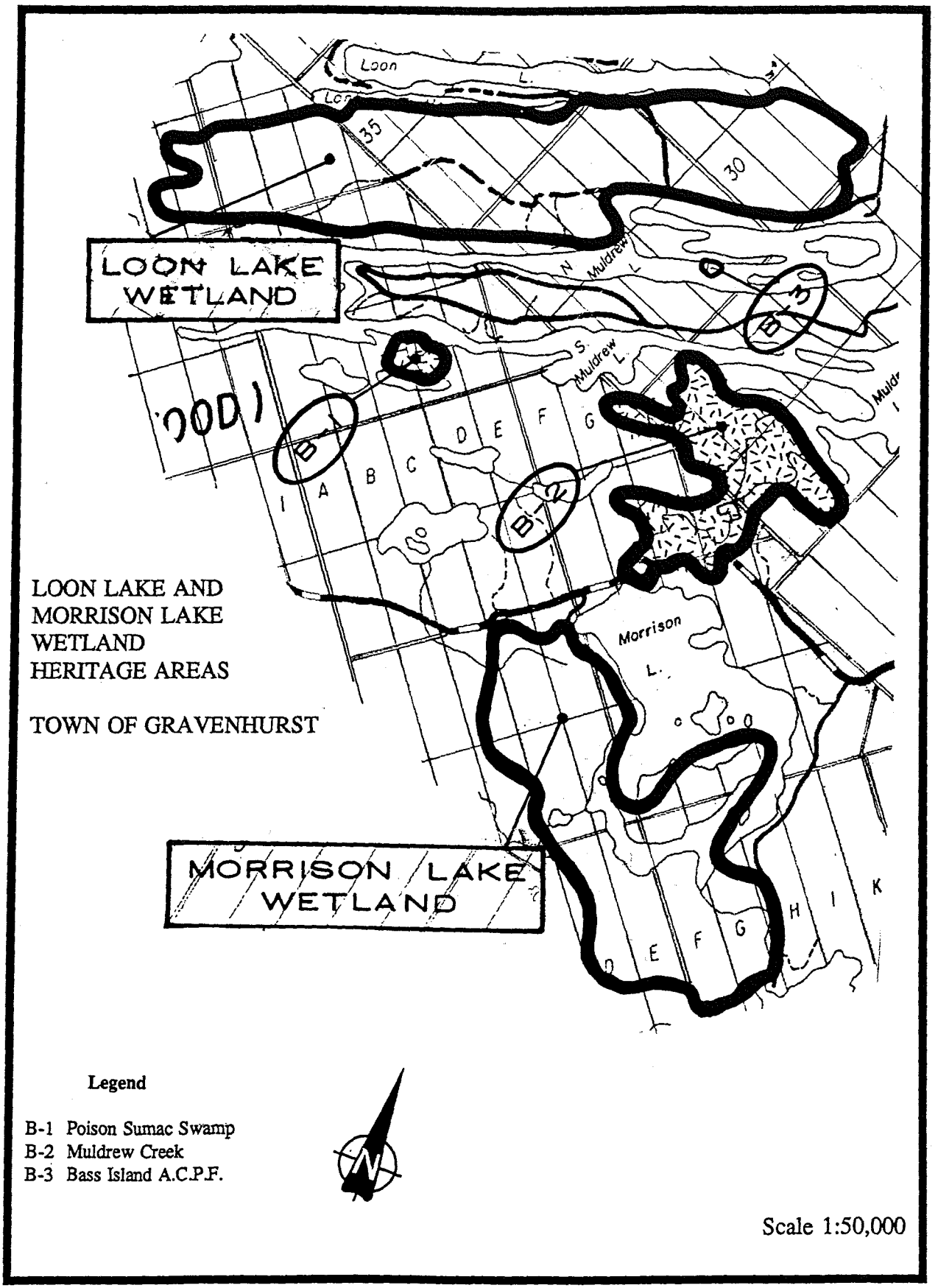
The wetland is approximately 75% Crown land with the private land located adjacent to the lakes. The wetland area has been bisected by a cottage road which crosses to the northern ridge to service Loon and Turtle Lakes. The proximity of cottage communities means some disturbance by noise and traffic during the summer season, but the presence of large mammals suggests that its effect is minimal on most of this site. The wetland itself is in good condition, and has long been known by local naturalists as an excellent spot for botanizing.

Sensitivity

The sensitivity of this site is related to the function of the wetland, in particular as habitat for a number of nationally and provincially significant flora and herpetofauna. The adjacent lands support a community type of limited representation. Both the fen and barren communities are sensitive to disturbances such as trampling. Any future upgrading or additions to roads in the vicinity of the wetland and adjacent lands should be carefully designed to avoid changes to the hydrological regime and should be assessed accordingly to the Implementation Policy Guidelines for Wetlands.

Major Sources of Information

Brunton, 1991a; OMNR, 1992 Wetland Evaluation; Reid, et al., 1991; Reznicek and Whiting, 1976; Whiting and Bobbette, 1974.



LOON LAKE AND
MORRISON LAKE
WETLAND
HERITAGE AREAS

TOWN OF GRAVENHURST

Legend

B-1 Poison Sumac Swamp
B-2 Muldrew Creek
B-3 Bass Island A.C.P.F.

N

Scale 1:50,000

LOWER MOON RIVER

UTM Ref. 17TNV875944

Freeman Township, Georgian Bay
Status: Recommend Heritage Area

Area: 570 ha

Site Characteristics

Moon River is a major waterway draining the Muskoka watershed system into Georgian Bay. A portion of the river between Curtain Chute and Arnolds Bay at Moon Falls, is included in this area as it has "high potential for the representation of a variety of low cliff, bedrock slope and talus slope habitats and a diversity of associated significant river shoreline flora" (Brunton, 1991a).

The geology of the area is typical of the Georgian Bay region. Precambrian bedrock ridges and knolls supporting scrub vegetation of Common juniper, grasses and Staghorn sumac dominate the landscape, particularly near Moon Falls. Elsewhere, the bedrock-drift cover of till is deeper, supporting early to late successional Trembling Aspen, Red Maple, White Birch, Red Oak and White Pine forests, as well as mature Red and White Pine forests on the islands and along the shorelines immediately above Moon River Falls.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	136 native ; 5 introduced
	6 A.C.P.F. with a score of 34 (Moderate)
Birds	10 observed during breeding season
Mammals	1
Herpetofauna	4

Significant Natural Values and Selection Criteria Met

1. **Rare Species** - (B4) The lower Moon River area provides habitat for the following rare species:

Wildlife
Dendroica discolor Prairie Warbler [NR PR] *
Sistrurus c. catenatus Eastern Massasauga [NR PR] *
Vascular Plants
Elatine minima Water Wort [PR]
Panicum rigidulum Panic Grass [NR PR]
Rhexia virginica Virginia Meadow Beauty [NR PR]
Sagittaria graminea var cristata Grass-leaved Arrowhead [NR PR]
Xyris difformis Slender Yellow-eyed Grass [PR]
* Reported by Sinclair, 1992

In addition ten species of vascular plants were recorded as regionally uncommon.

2. **Fish and Wildlife Concentrations** - (B5) The Moon River area is a designated fish sanctuary and spawning area for Muskellenge and Yellow Pickerel.

3. **Scenic Landscapes** - (C7) The area has many cliffs and steep slopes supporting mature Red and White Pine forests, which provide rugged and spectacular scenery. The view from the top of the Moon Falls across the Moon River basin has been identified as having high scenic values.

Ownership and Disturbance

The Moon River area between Curtain Chute and Moon Falls is Crown land. Minor disturbances in the form of fire pits, campsites, garbage and trampling were noted. The area is used by fishermen, campers and small groups of tourists from the community of Moon River. The majority of the area is undisturbed, with only 3.5% introduced species recorded.

Water levels are regulated by hydro-electric installations upriver, impairing the development of a natural shoreline community. During the spring, the Moon Dam is opened to allow for the heavy runoff. The dam is later closed and the water levels restricted. Nevertheless, enough water level fluctuations do occur to support a moderate representation of Atlantic Coastal Plain Flora.

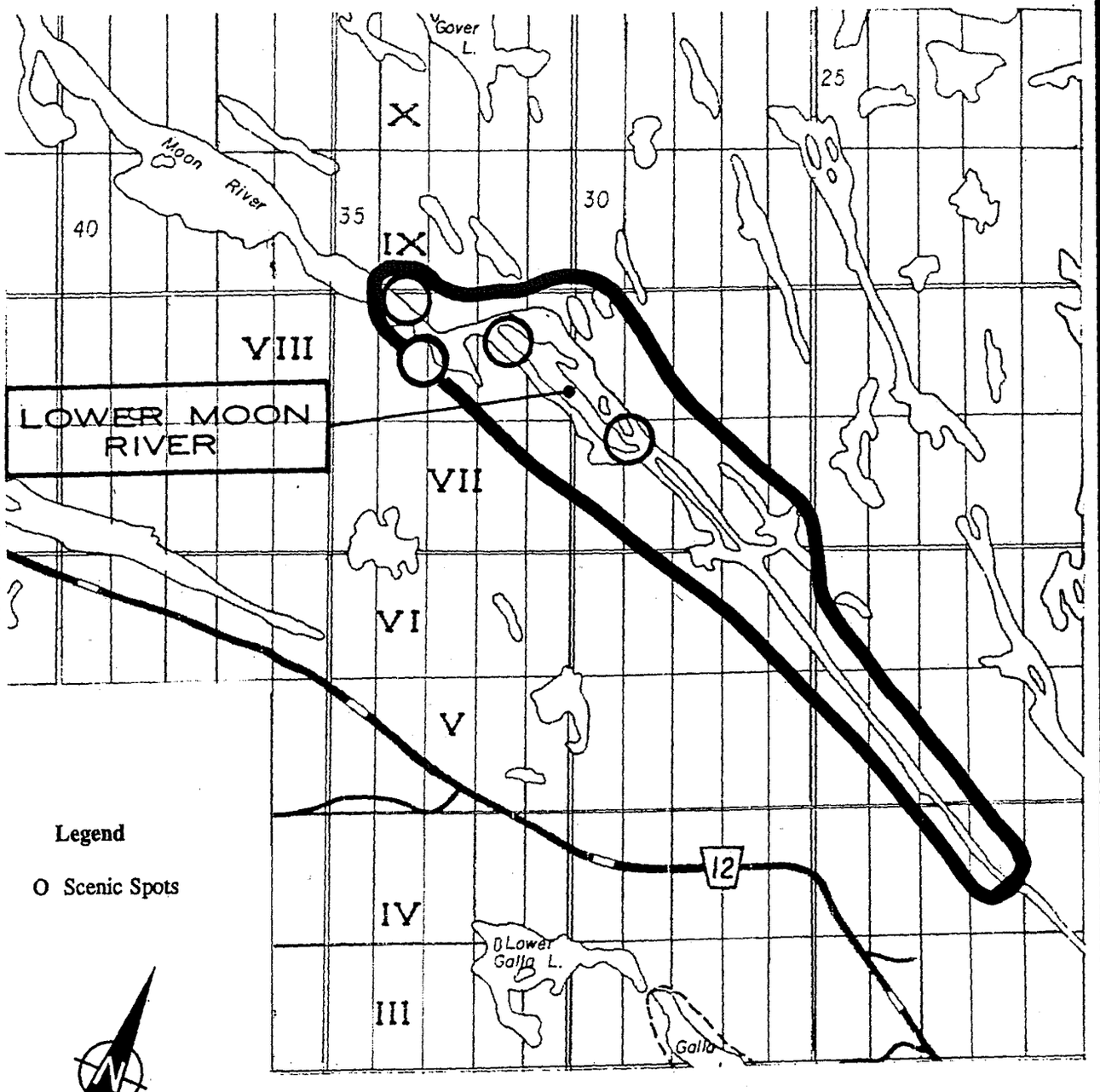
Sensitivity

The sensitivity of this site is particularly related to the area around Moon Falls and the islands above Twin Rapids, where scenic elements, fish habitat values and rare species occurrences are high. Policies related to protection of fisheries values should be followed. There should be no development allowed which would impact upon the scenic values of the area. Protection of habitat for rare species particularly includes rock barrens and shorelines.

Major Sources of Information

Berney, & Reid, 1993; Brunton, 1991a; District Municipality of Muskoka, 1985 Sensitive Areas Schedules; Geomatics International, 1992; Kor, & Miller, 1987; Sinclair, 1992, personal communication.

LOWER MOON RIVER
HERITAGE AREAS
TOWNSHIP OF GEORGIAN BAY



Legend

O Scenic Spots

Scale 1: 50,000

MORRISON LAKE WETLAND UTM Ref. 17TPV215686

Wood Township, Gravenhurst Area: 425 ha
Status: Recommend Heritage Area

Site Characteristics

This site includes a shallow channel of Morrison Lake between Mile Island and the west shore, together with its immediate watershed and most of Morrison Creek as it drains the lake south into the Severn River. The upland areas of the site are gently rolling gneissic bedrock ridges, with a shallow, discontinuous mantle of sandy glacial till. Where the bedrock is most exposed, a dry open rock barren community of White Oak, White Pine, and White Ash occurs. Where some soil is present, a mixed woodland has developed with White Birch, White Pine, and Red Maple. On deeper soils in the north end of the site, the woods are mostly deciduous with Red Maple, Red Oak, White Pine, White Oak, and Basswood.

This site includes a number of shoreline and interior wetlands, including an extensive Red Maple-Black Ash swamp, partially disrupted by beaver activity, in the northern section. Closed to partially open conifer swamps, dominated by Black Spruce and Tamarack, occur in several locations. Wet low shrub swamps are common along the shorelines, with dense stands of Sweet Gale, Winterberry, Mountain Holly, Buttonbush and Swamp Loosestrife or Water Willow. In a few places, low shrubs such as Leatherleaf, Sweet Gale, and Cranberry occur on floating Sphagnum mats.

Within the lake and creek, rich aquatic communities include emergent-submergent marshes dominated by Spikerush, Purple Bladderwort, and Floating Hearts. Other sheltered bays have floating leaved aquatic communities with Pondweed, Water Shield, and Waterlily.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	455 native; 58 introduced
	18 A.C.P.F. with a score of 89 (High)
Birds	65 observed during breeding season
Mammals	19
Herpetofauna	18
Butterflies	24
Dragonflies	7
Mushrooms	25

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) A major portion of this site has been recommended by Brunton (1991 a) as a provincially-significant wetland and shore complex, fulfilling representation needs in Site District 5E-7. As well, the Fragrant Sumac-Downy Arrowhead shrub thicket community (warmer/rock/dry-mesic) found on Mile Island is a community type not well represented elsewhere in Muskoka.

2. **Diversity** - (B2) The diversity of native plants within this site, plotted against area, is significantly higher than expected for Muskoka, as shown on Figure 1. As well, the site shows strong diversity in the numbers of species of mammals, herptiles, and butterflies.

3. **Rare Species** - (B4) Morrison Lake Wetland provides habitat for the following rare species:

Wildlife

Buteo lineatus Red-shouldered Hawk [NR PR]
Empidonax flaviventris Yellow-bellied Flycatcher [RR]
Synaptomys cooperi Southern Bog Lemming [PR] *
Sistrurus c. catenatus Eastern Massasauga [NR PR]
Hesperia leonardus Leonardus Skipper [PR]

Vascular Plants

Bartonia paniculata Screwstem [NR PR RR] *
Bidens discoidea Small Beggar-ticks [NR PR]
Carex backii Sedge [RR]
Carex muhlenbergii Muhlenberg's Sedge [RR]
Carex novae-angliae New England Sedge [PR]
Elatine minima Water Wort [PR]
Myriophyllum heterophyllum Various-leaved Water Mil-foil [RR]
Panicum spretum Eaton's Grass [PR]
Panicum virgatum Switch Grass [RR]
Pedicularis canadensis Wood Betony [RR]
Platanthera blephariglottis White Fringed Orchis [PR]
Polygonum careyi Carey's Knotweed [PR]
Rhexia virginica Virginia Meadow Beauty [NR PR]
Rhus aromatica Fragrant Sumac [RR]
Scrophularia lanceolata Figwort [RR]
Triadenum virginicum Marsh St. John's Wort [PR]
Xyris difformis Slender Yellow-eyed Grass [PR]

* Brunton, August 22, 1990.

In addition, regionally uncommon species found within the site include 30 vascular plants, two birds, and four snakes.

4. **Fish and Wildlife Concentrations** - (B5) Records provided by the Ministry of Natural Resources show a heronry, a deer wintering yard, and several fish spawning sites within the Heritage Area.

5. **Biogeographic Significance** - (B7) The Morrison Lake area is an exceptional site in both richness and quantity of Atlantic Coastal Plain species. Scoring of this site with a ranking system developed by Keddy and Sharp (1989) shows it to have both the highest score and the highest diversity of A.C.P.F. species known in the province.

Other communities within the site show strong southern influences, particularly the open bedrock communities on Mile Island which include Fragrant Sumac, Ebony Spleenwort, Panicled Tick-trefoil, and other southern species.

The occurrence of Yellow-bellied Flycatcher on this site, south of its normal Muskoka range, is also of biogeographical interest.

Ownership and Disturbance

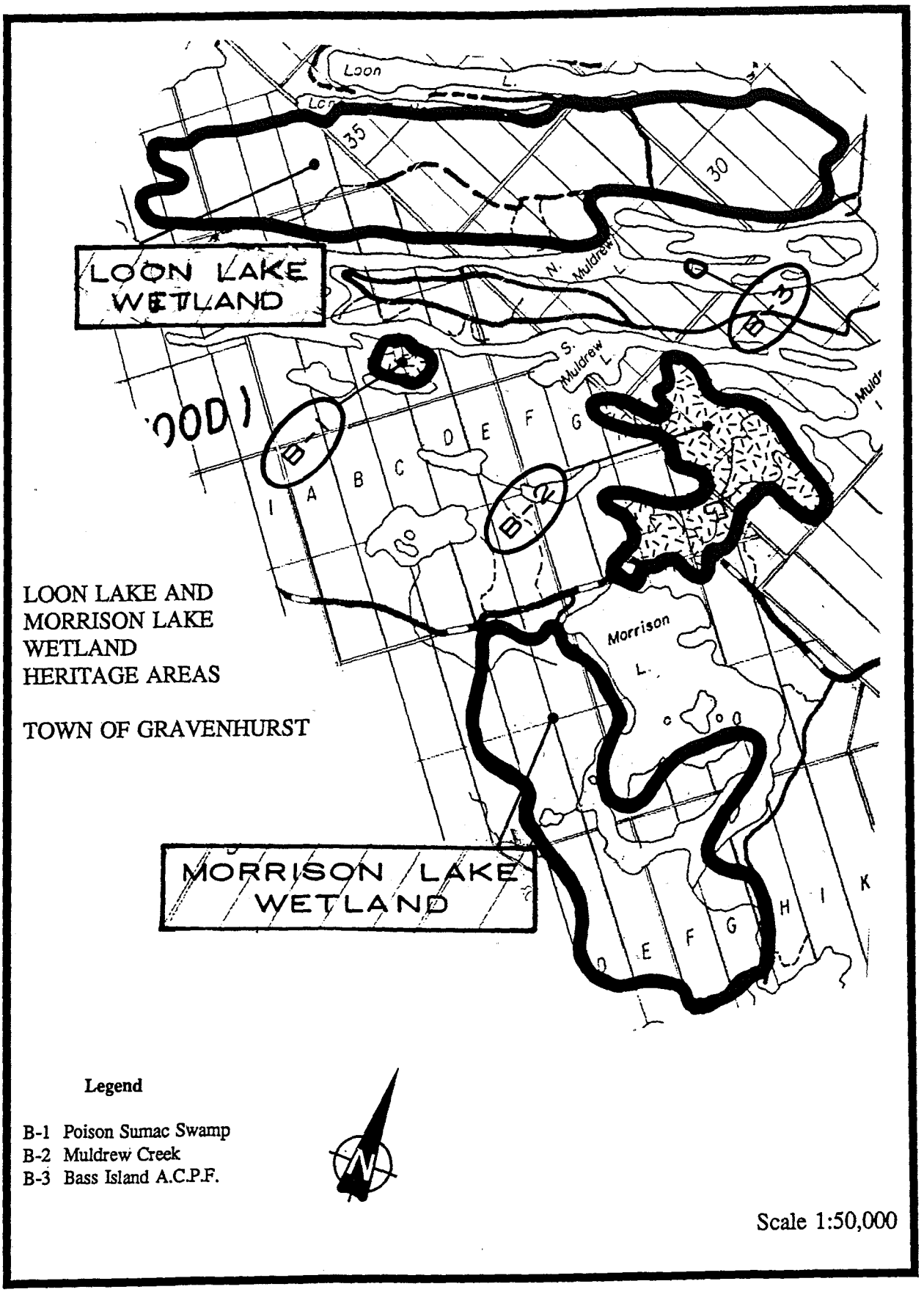
Approximately 60% of this site is privately owned, including a number of small cottage properties along the lakeshore and on Mile Island. Disturbance associated with shoreline development has fragmented many of the Atlantic Coastal Plain communities, although those located along and at the mouth of Morrison Creek are relatively intact. Motor boat use through the area has also disturbed some of the aquatic plant associations. Backshore areas within the site are largely undisturbed.

Sensitivity

The Atlantic Coastal Plain communities of Morrison Lake are especially vulnerable to additional or more intensive shoreline development, and to changes in the natural fluctuations in lake water levels. Disruptions to the hydrology of the lake watersheds and of Morrison Creek should be avoided. Making private landowners aware of the significance of this site, and of ways they can help in its protection, is especially important in this circumstance.

Major Sources of Information

Reid et al, 1991; Brunton, 1991 a; Keddy and Sharp, 1989.


LOON LAKE WETLAND
MORRISON LAKE WETLAND
Loon L.
N. Muldrew L.
S. Muldrew L.
Morrison L.
35
30
B-1
B-2
B-3
A
B
C
D
E
F
G
H
I
K
LOON LAKE AND
MORRISON LAKE
WETLAND
HERITAGE AREAS
TOWN OF GRAVENHURST
Legend
B-1 Poison Sumac Swamp
B-2 Muldrew Creek
B-3 Bass Island A.C.P.F.
N
Scale 1:50,000

BASS ISLAND A.C.P.F. UTM Ref. 17TPV243729

Muskoka Township, Gravenhurst Area: 0.4 ha.
Status: Recommend Heritage Site

Site Characteristics

This small island is located on North Muldrew Lake. It is a rock barren landscape with a shallow, sandy-gravel shoreline supporting few shrubs, plus grass and forb species. Notable among the flora are Atlantic Coastal Plain species of which there were nine. The A.C.P.F. score for this site was 45 which is of moderate significance.

Significant Natural Values and Selection Criteria Met

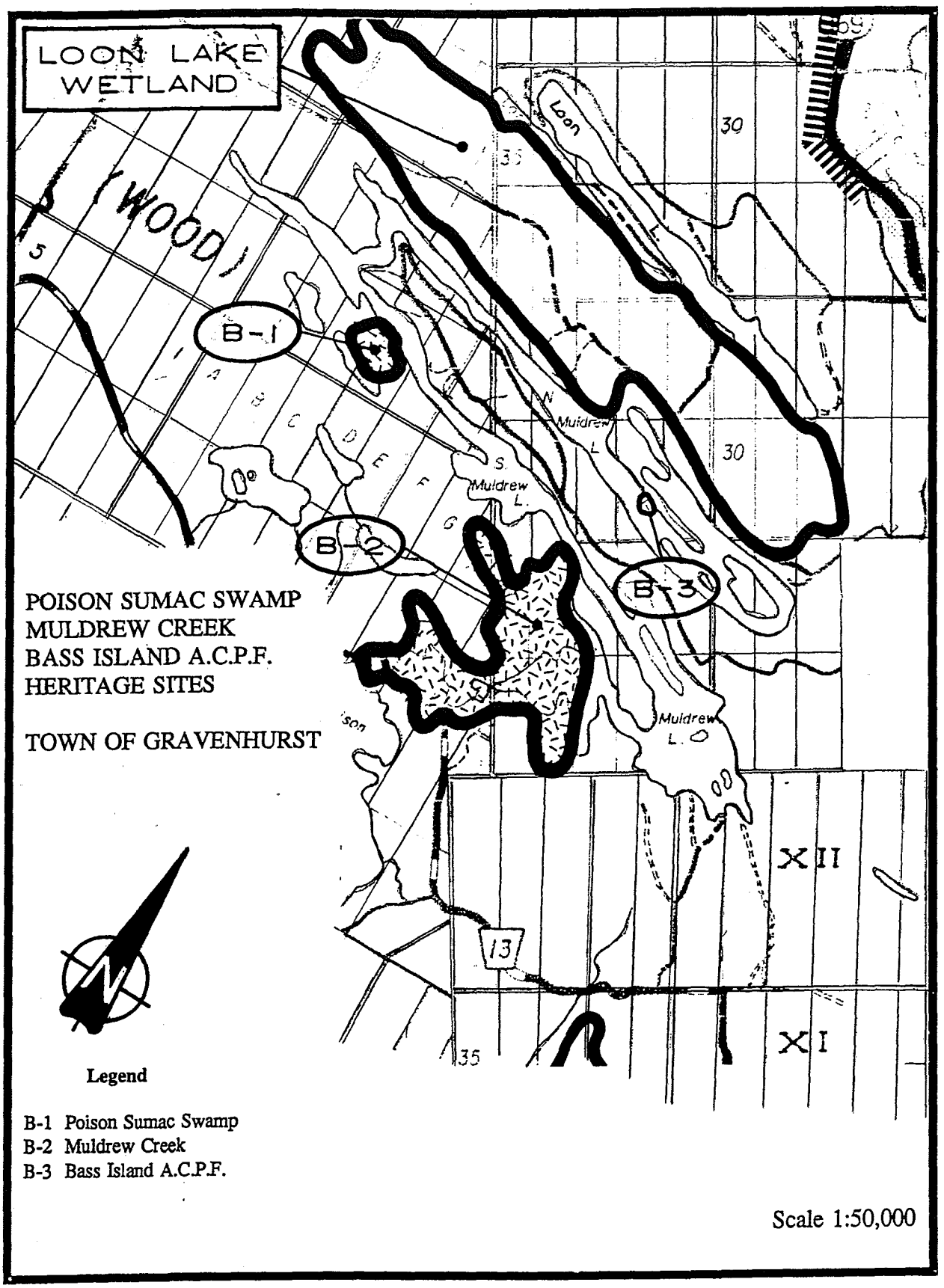
1. **Rare Species** - (B4) Bass Island provides habitat for the following rare species, all which are A.C.P.F.

Panicum spretum Eaton's Grass [PR, RU]
Elatine minima Water Wort [PR]
Rhexia virginica Virginia Meadow Beauty [NR, PR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, there were four species considered regionally uncommon.

Ownership, Disturbance and Sensitivity

Ownership of the island was not available. It is apparently used by local cottagers as a place to burn garbage once a year. This is potentially a great disturbance and threat to the population of rare species on the island. The sensitivity of this site is related to the presence of A.C.P.F. Policies related to protection of habitat for these species should be applied and the cottagers made aware of the significance of this island habitat.



POISON SUMAC SWAMP
MULDREW CREEK
BASS ISLAND A.C.P.F.
HERITAGE SITES

TOWN OF GRAVENHURST

Legend

B-1 Poison Sumac Swamp
B-2 Muldrew Creek
B-3 Bass Island A.C.P.F.

Scale 1:50,000

COLDWATER LAKE - SWAN LAKE UTM Ref. 17TNV945830

Gibson Township, Georgian Bay Area: 104 ha
Status: Recommend Heritage Site

Site Characteristics

This site consists of two shallow lakes connected by a wide channel. A floating shrub mat is present in the large south-western bay of Coldwater Lake. The lake shorelines are undeveloped and contain habitat suitable to support Atlantic Coastal Plain Flora (A.C.P.F.). The surrounding uplands are covered with glacial till and support extensive successional deciduous forests which have developed following logging and/or fire. A small area of rock barren communities is present along the western edge of the lakes.

Two mammals, six birds and 78 species of native vascular flora were recorded during field investigations, including 4 species of A.C.P.F. which obtained a score of 18 (Low representation).

Significant Natural Values and Selection Criteria Met

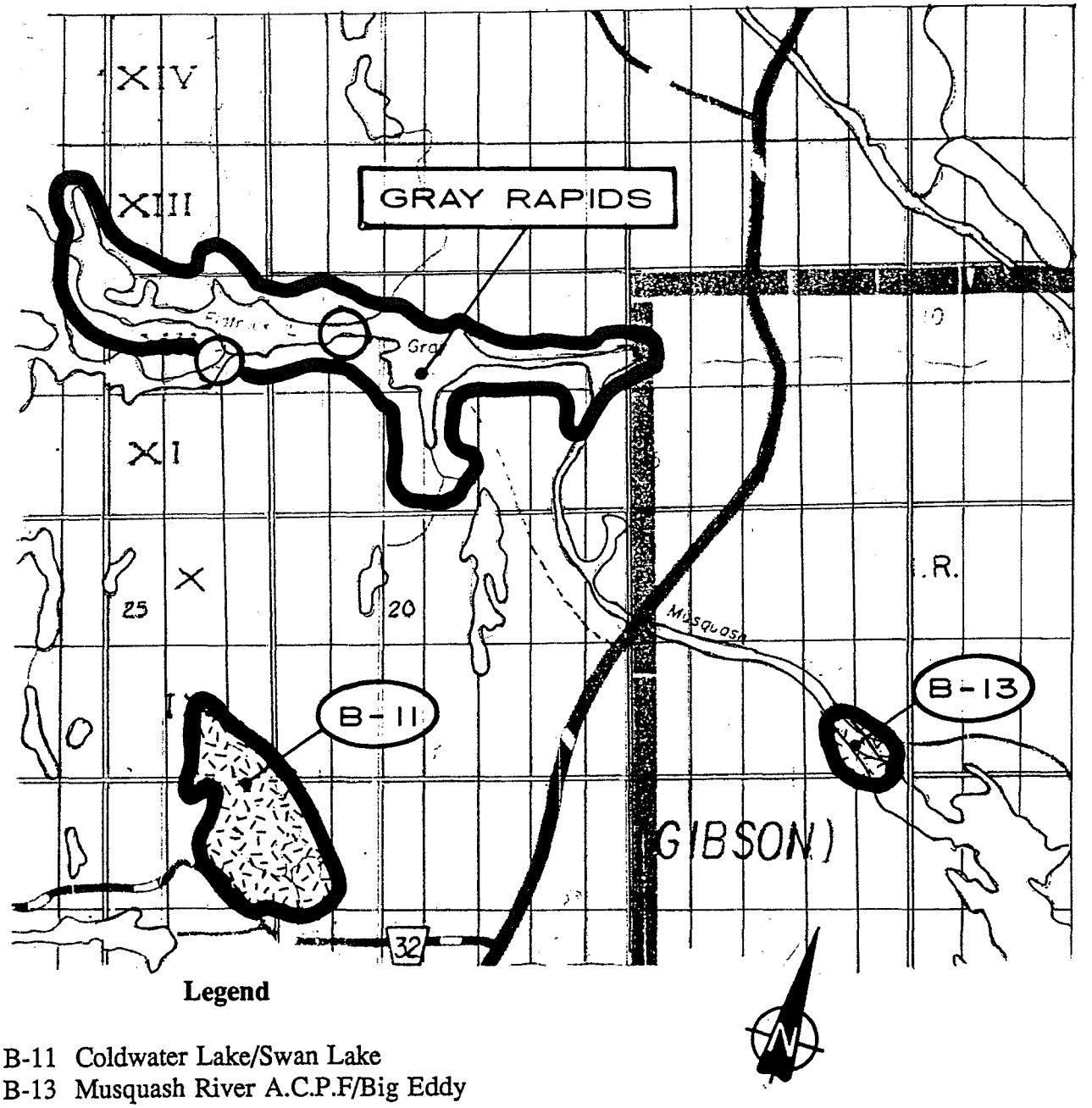
1. **Rare Species** - (B4) The Coldwater Lake - Swan Lake site provides habitat for the following rare species:

Vascular Plants
Sagittaria graminea var. cristata Grass-leaved Arrowhead [NR PR RU]
Xyris difformis Slender Yellow-eyed Grass [PR]

Ownership, Disturbance and Sensitivity

The site is on undeveloped Crown Land. Unregulated camping takes place on the shorelines. The sensitivity of the site relates to the shorelines and bays which support a few coastal plain species, the rare plants and marsh and poor fen wetlands. MNR Management guidelines which deal with protection of sensitive shoreline features by establishing a suitable buffer set-back from the lake should be followed.

COLDWATER LAKE/SWAN LAKE
HERITAGE SITE
TOWNSHIP OF GEORGIAN BAY



Legend

B-11 Coldwater Lake/Swan Lake
B-13 Musquash River A.C.P.F/Big Eddy

O Scenic Spots

Scale 1:50,000

GAUNT BAY AND UPPER MOON RIVER A.C.P.F. UTM Ref. 17TPV058875

Medora Township, Muskoka Lakes Area: 2 ha
Status: Recommend Heritage Site

Site Characteristics

The Gaunt Bay A.C.P.F. site is situated along a portion of undeveloped shoreline in Gaunt Bay below Bala Falls. The substrate consists of glaciolacustrine lake-bottom deposits of sand and clay. The shoreline is shallow and has considerable annual water fluctuations. These conditions are ideal for the development of Atlantic Coastal Plain Flora (A.C.P.F.). In this small stretch of shoreline a total of 15 coastal plain species were recorded, yielding a high score of 78, which ranked second of the ten areas meeting the criteria for coastal plain flora representation.

In addition, this small 2 ha site supported 4 species of herpetofauna, 3 mammals, 159 species of native vascular plants and 16 introduced plant species.

Jim Goltz (1992) reported on three other small areas below Bala Falls. The Upper Moon River A.C.P.F. site encompasses little more than 300 metres of shoreline which supports a number of rare and uncommon shoreline and coastal plain species. These including many of the species listed below plus Pale Green Orchis (*Platanthera flava*) which is considered Regionally Rare.

Significant Natural Values and Selection Criteria Met

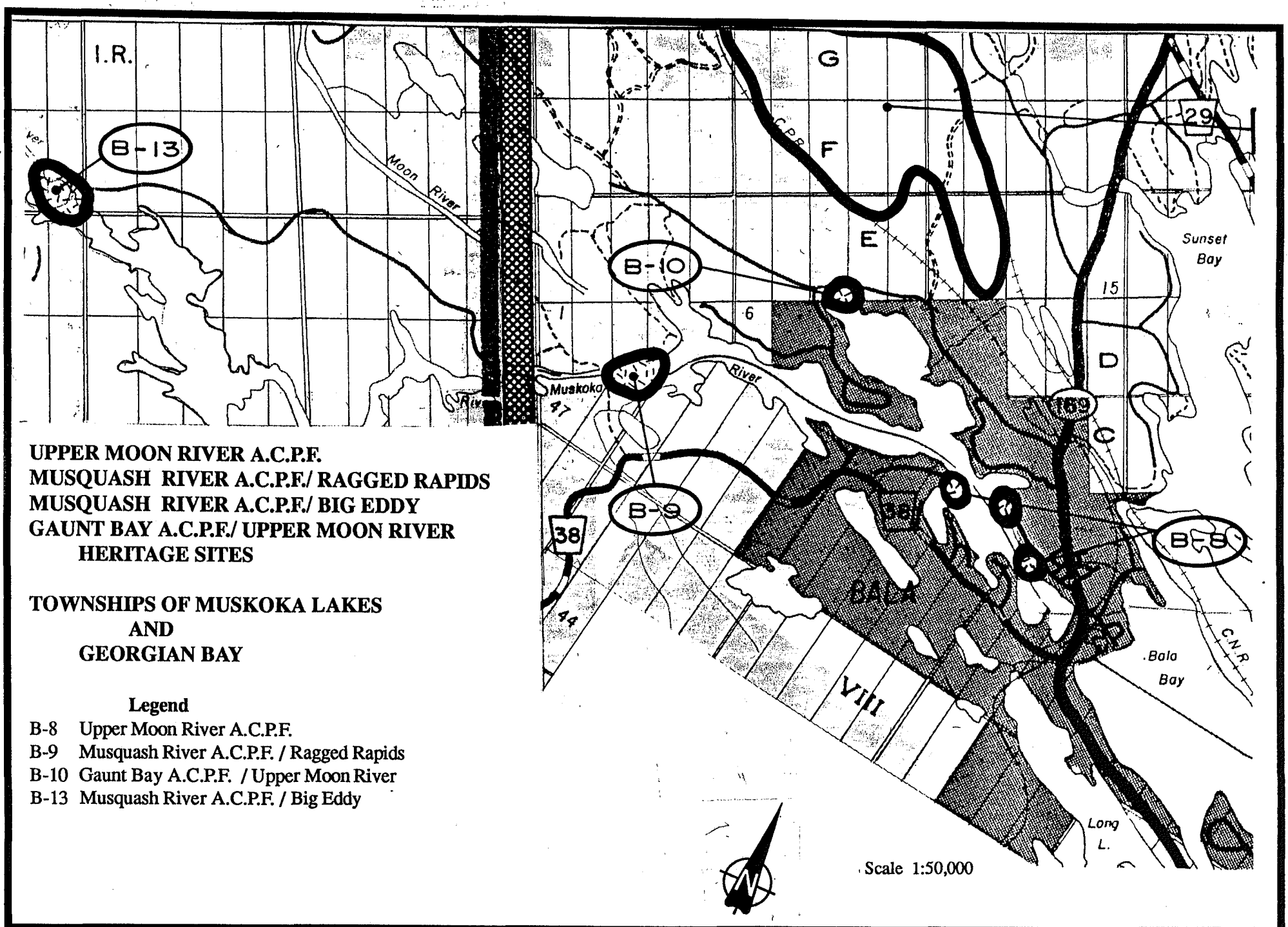
1. **Biogeographic Significance/Rare Species** - (B4) The Gaunt Bay A.C.P.F. site provides habitat for the following rare species of vascular plants:

Bulbostylis capillaris Hair Rush [PR]
**Carex folliculata* Long Sedge [PR]
**Elatine minima* Water Wort [PR]
Eleocharis tenuis Elliptic Spike Rush [RR]
**Linum striatum* Ridged Yellow Flax [NR PR RR]
Panicum spretum Eaton's Grass [PR]
Panicum flexile Wiry Witch Grass [RR]
**Panicum rigidulum* Panic Grass [NR PR]
**Rhexia virginica* Virginia Meadow Beauty [NR PR]
**Triadenum virginicum* Marsh St. John's Wort [PR]
**Xyris difformis* Slender Yellow-eyed Grass [PR]
*Atlantic Coastal Plain Flora

In addition, ten species of vascular plants were recorded as regionally uncommon. The site contains high representation of Atlantic Coastal Plain Flora, a disjunct flora with biogeographic significance.

Ownership, Disturbances and Sensitivity

The shorelines of the upper Moon River and Guant Bay below Bala Falls are heavily developed with private cottage properties. Shoreline alterations for recreational use are the greatest threat to the significant flora in the area. Private stewardship initiatives have the greatest potential to protect the natural shoreline areas. Management guidelines for the protection of coastal plain flora are being developed by the Ministry of Natural Resources.



UPPER MOON RIVER A.C.P.F.
MUSQUASH RIVER A.C.P.F./ RAGGED RAPIDS
MUSQUASH RIVER A.C.P.F./ BIG EDDY
GAUNT BAY A.C.P.F./ UPPER MOON RIVER
HERITAGE SITES

TOWNSHIPS OF MUSKOKA LAKES
AND
GEORGIAN BAY

Legend

B-8 Upper Moon River A.C.P.F.
B-9 Musquash River A.C.P.F. / Ragged Rapids
B-10 Gaunt Bay A.C.P.F. / Upper Moon River
B-13 Musquash River A.C.P.F. / Big Eddy

GIBSON RIVER VALLEY UTM Ref. 17TPV034776

Baxter Township, Georgian Bay Area: 90 ha
Status: Recommend Heritage Site

Site Characteristics

This site is located along the northern boundary of the existing Gibson River Provincial Nature Reserve. It consists of a section of the floodplain of the Gibson River Waterway which flows through a well-defined valley that is partially filled in with alluvial deposits.

The vegetation along the river floodplain complex is described as a large wet meadow surrounded by rock barrens and upland deciduous forest on deep soils (Kamstra, 1992). The floodplain appears to be an important Eastern Massassauga rattlesnake habitat. Two snakes were observed on one day in July, 1991.

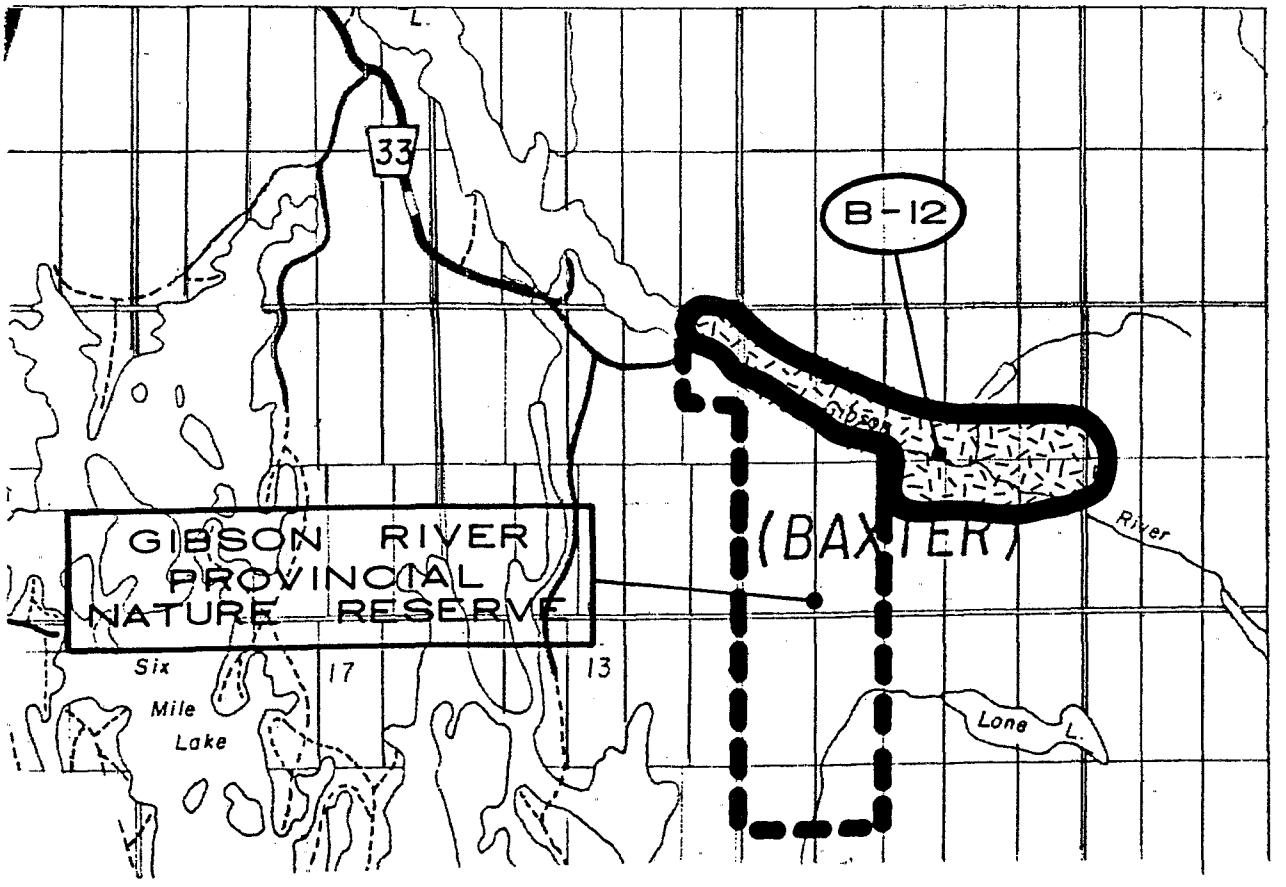
Significant Natural Values and Selection Criteria Met

1. **Diversity / Rare Species** - (B4) There were more species of reptiles (9) and amphibians (9) recorded in the Gibson River area than in any other area within the Severn River Corridor. This includes the observation of the nationally threatened (COSEWIC) Eastern Massassauga rattlesnake which moves between floodplain wet meadow and adjacent dryland sites.

Ownership, Disturbance and Sensitivity

The area along the Gibson River Valley is crown land and is located adjacent to approximately 380 ha of protected land - the Gibson River Provincial Nature Reserve. Disturbance to the area is minimal with only few ATV/snowmobile trails in the reserve. The sensitivity of the site is related to the protection of suitable floodplain wetland and adjacent upland habitat for the Eastern Massassauga rattlesnake and other herptiles.

GIBSON RIVER VALLEY
HERITAGE SITE
TOWNSHIP OF GEORGIAN BAY



Legend

B-12 Gibson River Valley

Scale 1:50,000

MULDREW CREEK UTM Ref. 17TPV232710

Wood and Muskoka Townships, Gravenhurst Area: 140 ha.
Status: Recommend Heritage Site

Site Characteristics

This site is situated in the vicinity of Muldrew Creek, which flows from South Muldrew Lake into the north end of Morrison Lake. Muldrew Creek flows through a sizable deposit of glaciolacustrine fine-grained silt and clay between Red Maple-Red Oak rock barren outcrops. Small, narrow pockets of wetlands underlain by organic deposits occur along the shoreline and backshore areas of South Muldrew Lake, supporting marsh, swamp, leatherleaf shrub and Virginia Chain Fern poor fens, and Atlantic Coastal Plain Flora communities. The creek and surrounding forest supports an assemblage of plants with southern affinities often found in clay soils such as Broad-leaved Grass, Ebony Spleenwort, Virginia Creeper, several species of Tick Trefoils, Bur Oak and Buttonbush - Silky Dogwood - Water Willow shrub thicket.

There were 186 species of vascular plants recorded including one nationally rare, five provincially rare, one regionally rare and 18 regionally uncommon species. Twelve coastal plain species were present along shorelines of south Muldrew Lake, obtaining a high significance score of 57. Thirty-eight bird species, four mammals, nine species of reptiles and amphibians including the Massassauga Rattlesnake (threatened COSEWIC) and an abundance of minnows, were also recorded.

Significant Natural Values and Selection Criteria Met

1. **Biogeographic Significance / Rare Species / Diversity** - (B4) The Muldrew Creek area provides habitat for the following rare species:

Wildlife
Sistrurus c. catenatus Eastern Massassauga [NR PR]
Vascular Plants
Desmodium nudiflorum Tick Trefoil [RR]
**Elatine minima* Water Wort [NR]
**Panicum spretum* Eaton's Grass [PR]
**Rhexia virginica* Virginia Meadow Beauty [NR PR]
**Triadenum virginicum* Marsh St. John's Wort [PR]
**Xyris difformis* Slender Yellow-eyed Grass [PR]
**Atlantic Coastal Plain Flora*

The twelve coastal plain species present in the area received a score of 57 making it the seventh of ten sites with high representation of this floristic element. The location of this site close to the Severn River Corridor and within an area underlain by clay deposits, provides uncommon habitat which supports species with a more southern distribution.

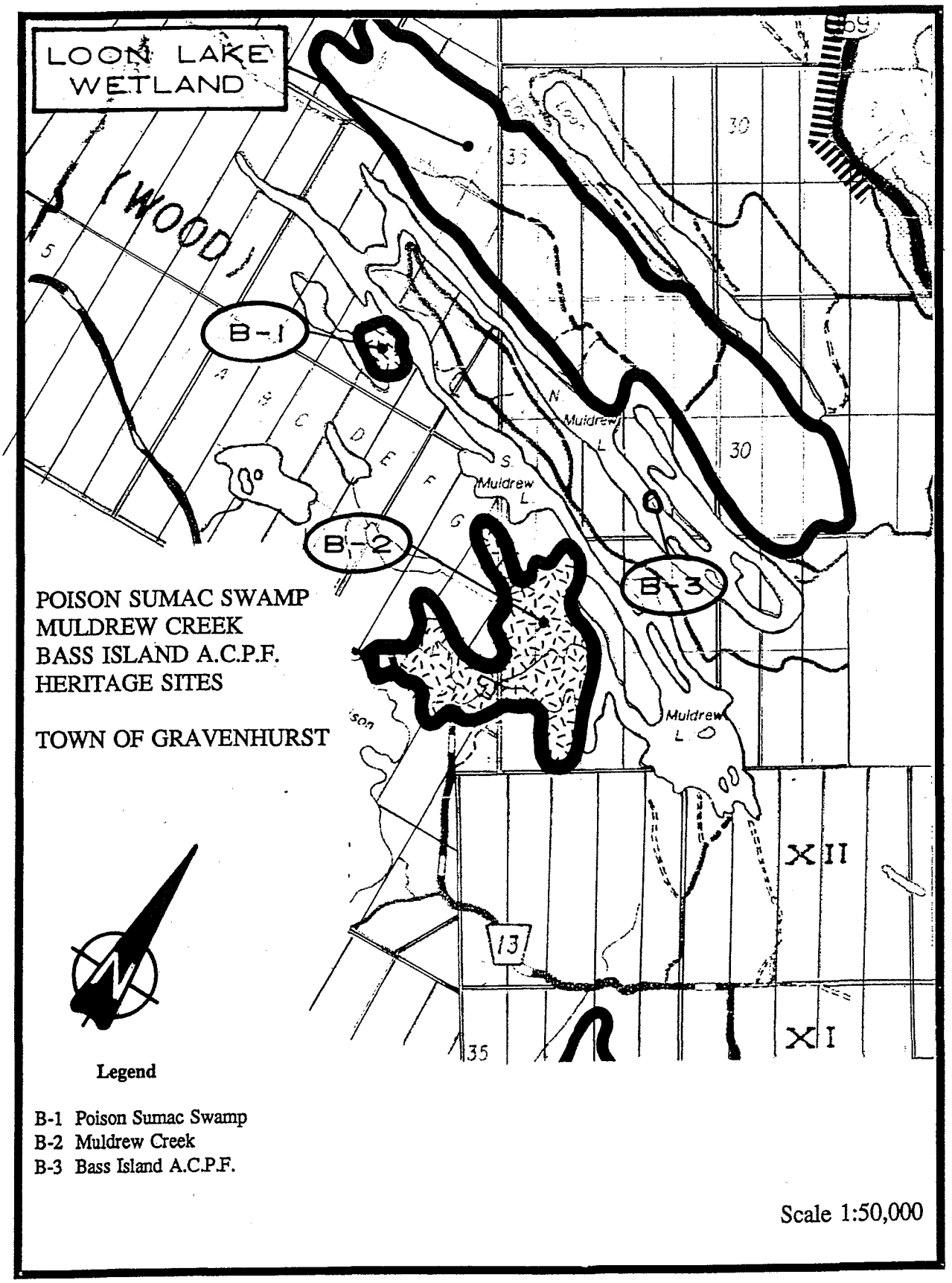
Most of these species are represented at the adjoining Morrison Lake wetland Heritage Area. the diversity of native plant species relative to the sites area was slightly higher than expected as shown in Figure 1.

Since this site shares representation with Morrison Lake wetland and the criteria were only weakly met, it was not recommended as a Heritage Area.

Ownership, Disturbance and Sensitivity

This area, which is privately owned, lies between two heavily populated lakes, Morrison and Muldrew. It thus has some disturbances associated with lakeshore development and recreational uses. A farmstead along the creek contains areas of old field with introduced plant species. An established canoe portage route around a small control dam at the Muldrew Lake exit minimizes impacts to the surrounding forest. South Muldrew Lake is the least developed part of Muldrew Lake, largely due to the presence of swamp land in this section.

The sensitivity of this site is related to the shoreline and wetland areas which support A.C.P.F. and uncommon vegetation associations. Policies related to protection of wetland values, and a suitable buffer incorporating adjacent mature forest should be established.



POISON SUMAC SWAMP
MULDREW CREEK
BASS ISLAND A.C.P.F.
HERITAGE SITES

TOWN OF GRAVENHURST

Legend

B-1 Poison Sumac Swamp
B-2 Muldrew Creek
B-3 Bass Island A.C.P.F.

Scale 1:50,000

MUSQUASH RIVER A.C.P.F.

UTM Ref. 17TPV033857 and 17TNV982858

Wood Township, Muskoka Lakes
Gibson Township, Georgian Bay
Status: Recommend Heritage Site

Area: 50 ha

Site Characteristics

Two sites are located along the Musquash River adjacent to Hydro Power stations at Ragged Rapids and Big Eddy. Water levels are controlled by dams which regulate flows along this stretch of the river. The topography of the area is rocky with areas of shallow sandy-gravel shorelines supporting emergent marsh vegetation. Three species of Atlantic Coastal Plain Flora were located at these sites yielding a score of 20. While this score constitutes a low representation for significance, all three species are considered Nationally or Provincially Rare.

Fifty species of vascular plants were recorded from the two shoreline sites. Colourful displays of Cardinal Flower and Golden Hedge-Hyssop line the shorelines in the latter part of summer.

Significant Natural Values and Selection Criteria Met

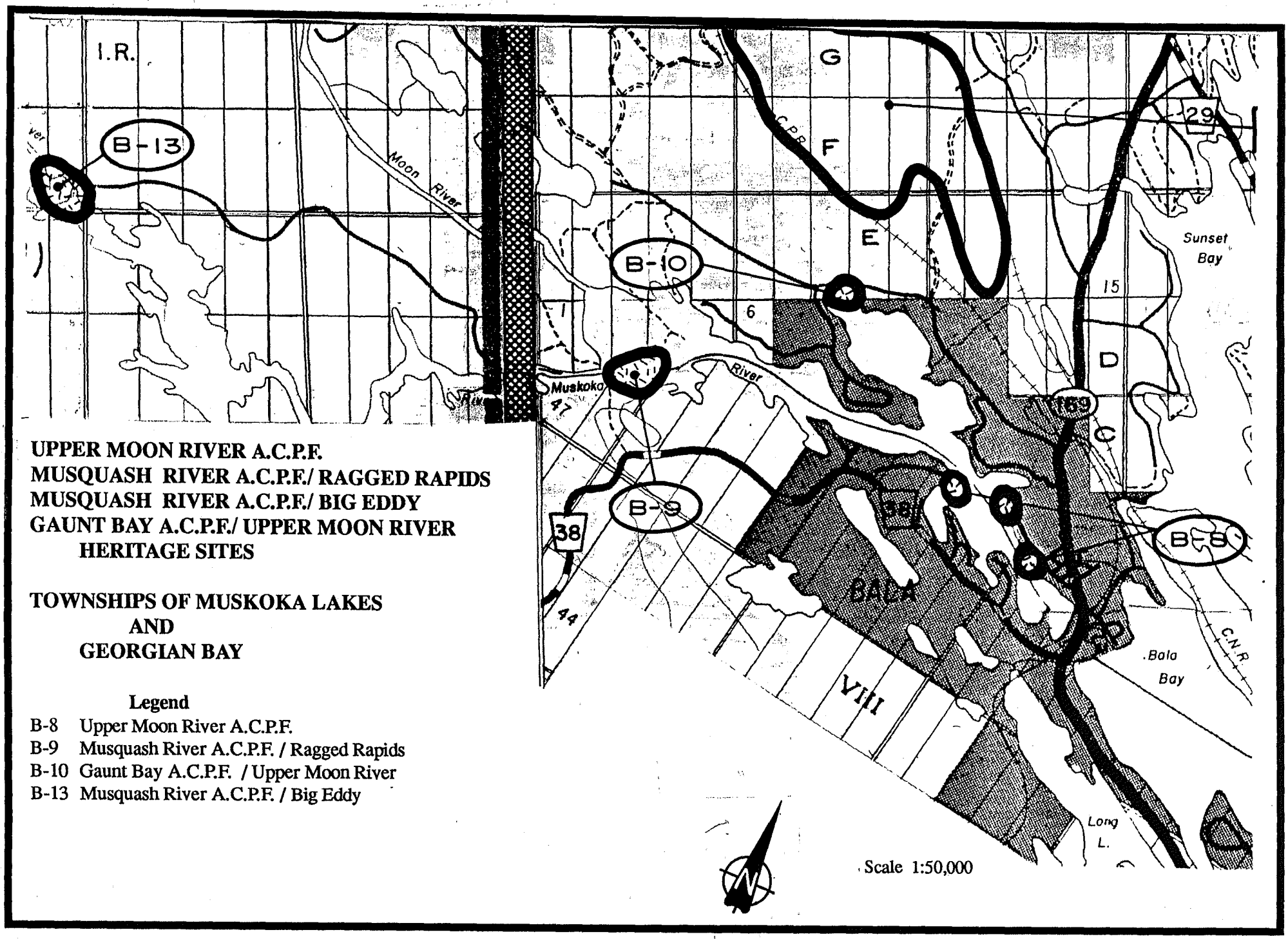
1. **Rare Species** - (B4) Ragged Rapids and Big Eddy sites provide habitat for the following rare vascular plant species:

Panicum rigidulum Panic Grass [NR PR]
Rhexia virginica Virginia Meadow Beauty [NR PR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, two species were recorded as regionally uncommon, including Golden Hedge-Hyssop, which is mainly distributed downstream from Bala Falls and along the inland rivers of Georgian Bay.

Ownership, Disturbance and Sensitivity

These sites are located within the boundaries of the Gibson First Nation lands. The coastal plain flora are maintained in part by fluctuating water levels which are controlled by the Hydro dams. Regulation of water levels by Ontario Hydro should consider impacts on the coastal flora element where possible.



UPPER MOON RIVER A.C.P.F.
MUSQUASH RIVER A.C.P.F./ RAGGED RAPIDS
MUSQUASH RIVER A.C.P.F./ BIG EDDY
GAUNT BAY A.C.P.F./ UPPER MOON RIVER
HERITAGE SITES

TOWNSHIPS OF MUSKOKA LAKES
AND
GEORGIAN BAY

Legend

B-8 Upper Moon River A.C.P.F.
B-9 Musquash River A.C.P.F. / Ragged Rapids
B-10 Gaunt Bay A.C.P.F. / Upper Moon River
B-13 Musquash River A.C.P.F. / Big Eddy

POISON SUMAC SWAMP UTM Ref. 17PV215734

Wood Township, Gravenhurst Area: 1.5 ha.
Status: Recommend Heritage Site

Site Characteristics

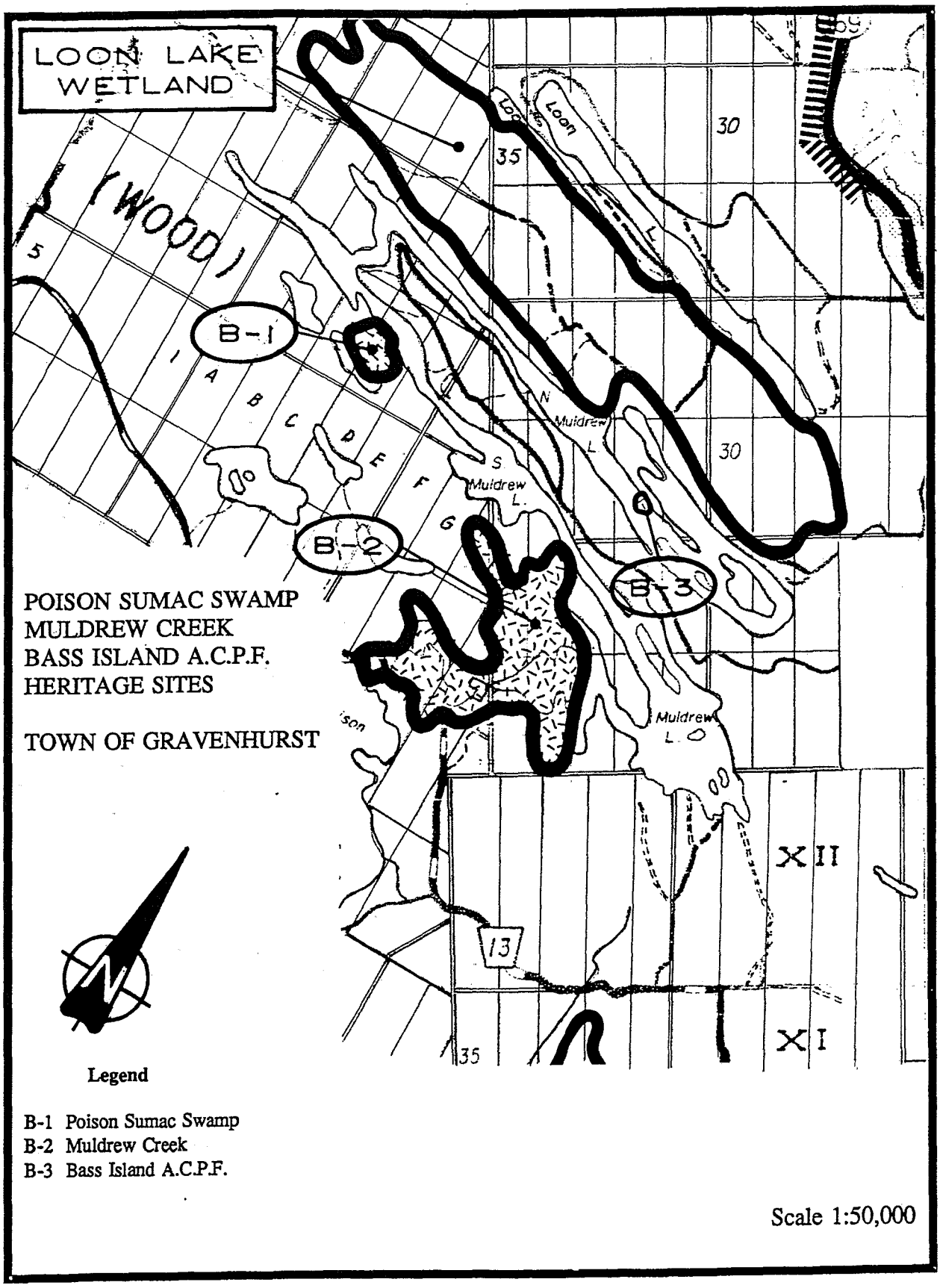
This site is situated in the vicinity of Lower Eagle Lake. It is the only known location in Muskoka for Poison Sumac (*Rhus vernix*) which has the status of regionally rare. The population occurs in an area of tall shrub thicket swamp adjacent to a portage route between Middle Muldrew Lake and Lower Eagle Lake.

Significant Natural Values and Selection Criteria Met

1. **Representation** - The area represents a vegetation community type with limited occurrence in the District of Muskoka and thus contributes to the full range of biotic representation. The vegetation community falls into the warmer/organic/very wet class of the site type matrix.

Ownership, Disturbance and Sensitivity

Ownership of this site was not determined. The existing portage route bissects the area. The sensitivity of the site is related to the presence of a community type of limited representation and also represents a single occurrence of a regionally rare species with poisonous properties. Disturbance to the community should be minimized which may mean relocating the portage trail around the community to protect both it and the people who may unknowingly come in contact with the plant.



POISON SUMAC SWAMP
MULDREW CREEK
BASS ISLAND A.C.P.F.
HERITAGE SITES

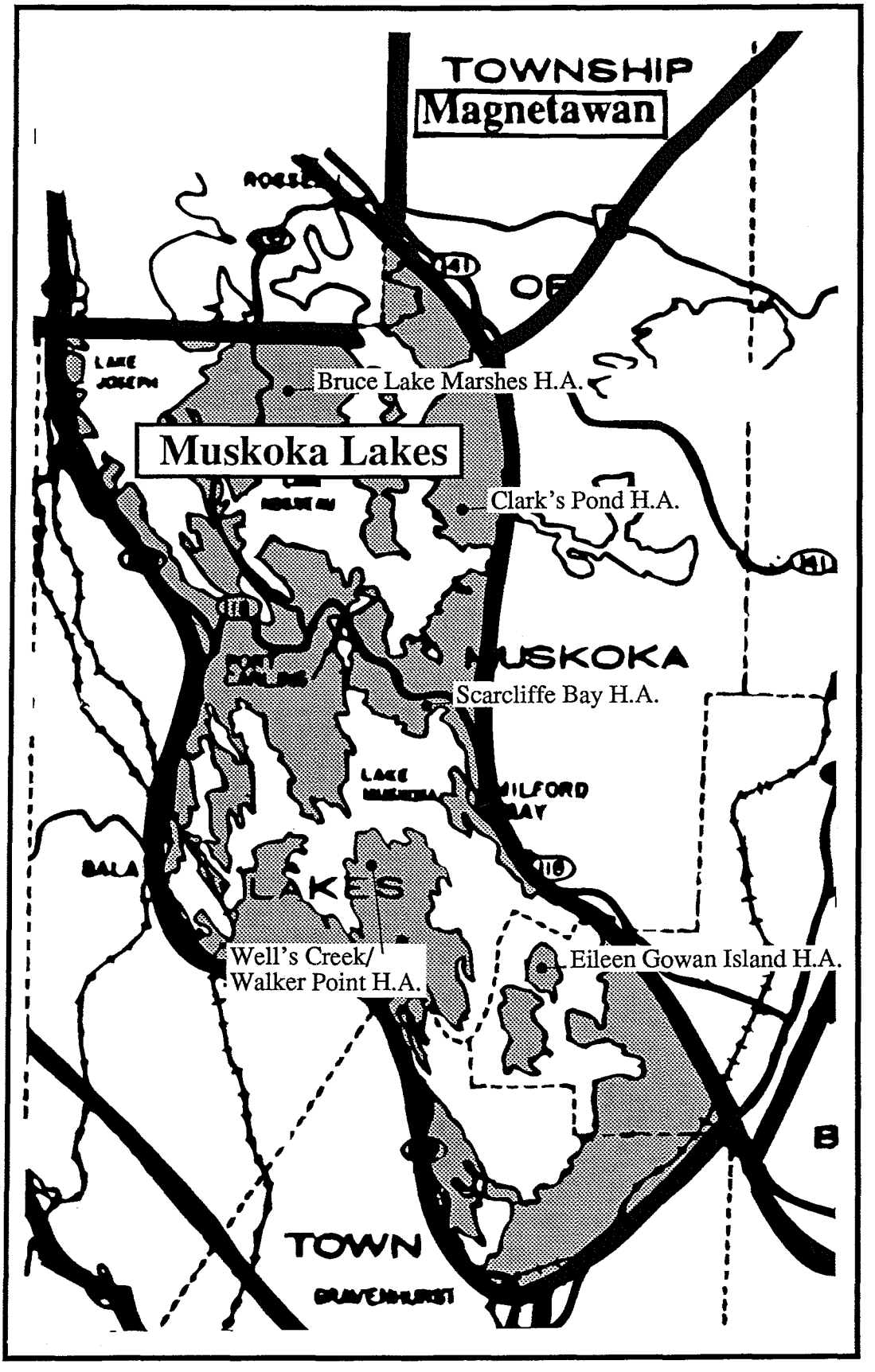
TOWN OF GRAVENHURST

Legend

B-1 Poison Sumac Swamp
B-2 Muldrew Creek
B-3 Bass Island A.C.P.F.

Scale 1:50,000

3.4 MUSKOKA LAKES SUBDISTRICT



BRUCE LAKE MARSHES UTM Ref. 17TPA047027

Medora Township, Muskoka Lakes Area: 174 ha
Status: Recommend Heritage Area

Site Characteristics

This site follows a watercourse from a large inland lake (Bruce Lake) draining west toward the Joseph River (Lake Joseph) over a broad expanse of peat-filled lowland between bedrock ridges. Beaver have impeded the flow along this course, creating a series of beaver ponds, marsh, swamp and poor fen wetlands within the enclosing upland.

The geology of the area is characterized by roughly parallel, gneissic bedrock ridges, covered by a thin mantle of sandy glacial till deposits. The soils are generally shallow, with numerous exposures of barren bedrock supporting dry Red Oak-White Pine-White Ash treed barrens and dry-mesic White Oak-Red Oak open woodlands. In places where the soils are deeper, late successional Eastern Hemlock-Sugar Maple-Red Oak mixed forests are present.

The beaver pond closest to Bruce Lake is maintained by a large beaver dam with a culvert installed to prevent flooding up into Bruce Lake. It supports a classic beaver pond association with floating-leaved aquatics, emergent shoreline vegetation, shrub-rich Sweet Gale marsh and Speckled Alder thicket swamp. South of this pond is an extensive Black Ash-Red Maple broadleaf swamp forest, which is seasonally flooded.

The stream flows through a narrow opening between deciduous Sugar Maple-Ironwood and mixed upland forests into a second pond complex. The mud banks of two beaver dams in the narrows support two provincially rare plant species, Carey's Knotweed and Halberd-leaved Tearthumb. A large open flooded area supports an extensive Cattail marsh, plus Speckled Alder thicket swamp and beaver pond. North of this impoundment is an area of Tamarack-Black Spruce-Leatherleaf-Sphagnum conifer swamp forest and low shrub poor fen.

Downstream, below another dam, the slow-moving stream flows between the slopes of a small valley dominated by rock barrens. It then fans out into a beaver wet meadow and herb-rich marshy area before joining the Joseph River.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	392 native ; 57 introduced
	1 A.C.P.F. with a score of 6 (Insignificant)
Birds	46 observed during breeding season
Mammals	8
Herpetofauna	12
Butterflies	14

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) The sequence of beaver impoundments and wetlands along this small stream contribute to the regional hydrological system through the storage and retention of surface and ground water. In addition, these wetlands likely contribute to enhancement of water quality by filtering out nutrients and other pollutants coming downstream from Bruce Lake.

2. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than expected for Muskoka as shown in Figure 1. This high diversity is a reflection of the diverse assemblage of plant community types, many of them wetlands, within the area.

3. **Rare Species** - (B4) The Bruce Lake Marsh area provides habitat for the following rare species:

Wildlife
Rana palustris Pickerel Frog [RR]
Coccyzus americanus Yellow-billed Cuckoo [RR]
Vascular Plants
Cardamine concatenata Cut-leaved Toothwort [RR]
Carex backii Sedge [RR]
Carex brevior Shorter Sedge [RR]
Carex novae-angliae New England Sedge [PR]
Carex pallescens Pale Sedge [RR]
Gnaphalium sylvaticum Wood Cudweed [RR]
Heracleum lanatum Cow Parsnip [RR]
Polygonum arifolium Halberd-leaved Tearthumb [PR RR]
Polygonum careyi Carey's Knotweed [PR]

In addition, one amphibian, four species of birds and twenty-one species of vascular plants were recorded as regionally uncommon.

4. **Biogeographic Significance** - (B7) The population of provincially and regionally rare Halberd-leaved Tearthumb is at a northern limit of its provincial distribution (Pryer, 1987).

Two eastern species are represented by several populations within the study area. The provincially rare New England Sedge is present in mesic mixed woodlands. The regionally rare Wood Cudweed is confined in its Ontario distribution to the Algonquin uplands of northeastern Muskoka, southeastern Parry Sound, northern Haliburton and Algonquin Provincial Park.

A minor Atlantic Coastal Plain element was represented by the provincially rare Carey's Knotweed.

Ownership and Disturbance

The area is privately owned with both permanent and seasonal residences situated along the north edge of the area. Muskoka Road 7 crosses the northeast perimeter of the area at the outlet of Bruce Lake. Active maintenance of the beaver dam at the south end of the easternmost pond is carried out through placement of a culvert by members of the Muskoka Field Naturalists. A snowmobile trail traverses north to south through the central portion of the area. Woodland rock barren communities, in the vicinity of the Joseph River at the west end of the area, exhibit considerable evidence of past disturbance. A prevalence of non-native herbaceous species, including Orchard Grass, suggests the area was once farmed. There was 12.7% introduced plant species recorded from the study area.

Several abandoned borrow pits are located along the northern perimeter of the study area, bordering the gravel secondary road. These mesic to wet (seasonally inundated) sand pits support a variety of herbaceous and graminoid species including Northern Yellow-eyed Grass (*Xyris montana*), Rose Pogonia and Sheep Laurel.

Natural disturbance and alteration of the wetland ecology by beaver has depleted the supply of their major food source, Trembling Aspen. The future implications may be loss of the beaver for a period of time, with natural succession altering the vegetation community types and potentially resulting in loss of suitable habitat for rare species.

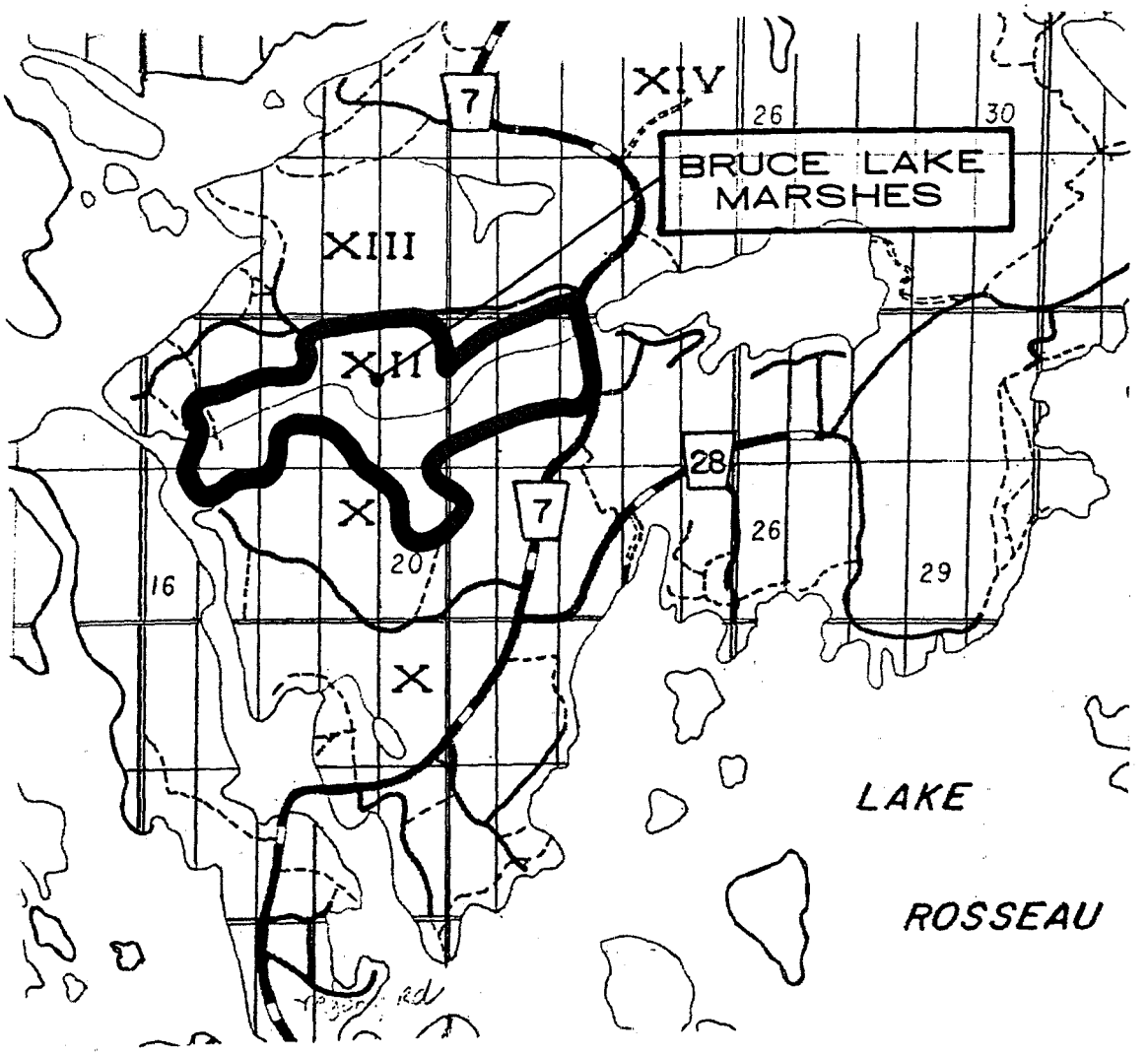
Sensitivity

The sensitivity of this site is related to the hydrological functioning of the wetland ecology, which is strongly influenced by the activities of beaver throughout this wetland complex. Suitable policies related to wetland protection should be followed. Management of the beaver impoundments within this area should recognize the important role of periodic adandonment and renewal of beaver ponds in natural succession, particularly in maintaining suitable conditions for some species of rare plants.

Major Sources of Information

Brunton, 1991b; Kor, & Miller, 1987; Pryer, 1987; Reid, et al., 1991.

BRUCE LAKE MARSHES
HERITAGE AREAS
TOWNSHIP OF MUSKOKA LAKES



Scale 1:50,000

3. **Rare Species** - (B4) The Clark's Pond area provides habitat for the following rare species:

Wildlife
Coccyzus americanus Yellow-billed Cuckoo [RR]
Buteo lineatus Red-shouldered Hawk [NR PR]
Rana palustris Pickerel Frog [RR]
Vascular Plants
Armoracia lacustris Lake Cress [RR]
Carex backii Sedge [RR]
Carex comosa Bristly Sedge [RR]
Cerastium nutans Nodding Chickweed [RR]
Chenopodium simplex Maple-leaved Goosefoot [RR]
Elatine minima Water Wort [PR]
Gnaphalium obtusifolium Sweet Everlasting [RR]
Potamogeton illinoensis Illinois Pond Weed [RR]
Triadenum virginicum Marsh St. John's Wort [PR]
Triodanis perfoliata Venus Looking Glass [RR]

In addition, two species of birds, five species of reptiles and amphibians and twenty-five species of vascular plants were recorded as regionally uncommon.

4. **Fish and Wildlife Concentrations** - (B5) Yellow Pickerel are known to spawn at the outlet of Clark's Pond, in the fast water below the dam. The Eastern Hemlock mixed forests with Canada Yew understory provide deer wintering areas. An active turkey vulture nest was discovered in the talus cliffs along the north shore of Clark's Pond in August of 1993, by the local cottagers/landowners and confirmed by B. Bergsma. While turkey vultures are not rare, nest locations are rarely confirmed.

5. **Biogeographic Significance** - (B7) The Clark's Pond area contains plant communities and species which are at their distributional limits. The woodland community with White Oak as the dominant species is unusual this far north. This community also supports two regionally rare species (Venus Looking Glass and Sweet Everlasting), both of which are at their northern range limits.

The regionally rare Yellow-billed Cuckoo is near the northern edge of its range, occupying the deciduous wooded swamp habitat at the fringe of agricultural land along the Dee River.

Western Fescue (*Festuca occidentalis*), a disjunct western grass species, while eastern seaboard disjuncts include three common Atlantic Coastal Plain species.

6. **Scenic Landscapes** - (C7) The view from the concrete dam at Clark's Falls is identified as having high scenic value, particularly related to the fast water tumbling down into Lake Rosseau and to the pristine nature of Clark's Pond.

CLARK'S POND UTM Ref. 17TPA136035

Watt Township, Muskoka Lakes Area: 259 ha
Status: Recommend Heritage Area

Site Characteristics

This site is centered around Clark's Pond, a relatively deep undeveloped lake, and the Dee River which feeds into it from the east. The river has a gentle gradient between Rostrevor Road and its outlet to Lake Rosseau at Clark's Falls. Several small seasonal streams also feed into the lake. Beavers are active along the river, maintaining one large dam.

On the glaciolacustrine deposits of silt, sand and clay along the Dee River floodplain, communities of Alder thicket swamp and Red Maple-Silver Maple-Black Ash swamp forest have developed. To the north, sandy glacial tills on some of the uplands support a rich Sugar Maple-mixed hardwood forest, ideal habitat for the Red-shouldered Hawk. Bedrock ridges and slopes with shallow to non-existent soils display a White Pine-mixed Oak forest type, unusual because of the presence of White Oak. The cool north facing slope along the south shore of the lake supports an Eastern Hemlock-White Pine forest community on steep boulder talus. The rocky shoreline provides habitat for Pickerel Frogs. At the north end of the site, a poorly drained bedrock depression has developed a White Pine-mixed hardwood swamp forest on sphagnum.

Several sheltered bays around the pond contain Bur-reed and grass marshes. Nearshore waters contain a sparse submerged aquatic community with the pondweed, *Potamogeton spirillus* and Water Wort.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	335 native ; 49 introduced
	3 A.C.P.F. with a score of 16 (Low)
Birds	73 observed during breeding season
Mammals	11 (4 from small mammal trapping)
Herpetofauna	15
Butterflies	14

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) The White Oak-White Pine open rock barrens community (warmer/rock/dry-mesic) is of limited distribution within Muskoka.

2. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than expected for Muskoka as shown on Figure 1. The area also has a high diversity of birds and herpetofauna.

Ownership and Disturbance

The area is privately owned with most of the property belonging to one family. They have maintained the area in its natural state and allowed natural succession to proceed on former farm land by Clark's Falls. The majority of the site is undisturbed with no development. However, human impacts are evident in the habitats at the boundary edges, in particular the drier White Oak-White Pine barren woodlands. These woodlands, which harbour the majority of the rare and uncommon plant species, are especially sensitive to trampling.

Approximately 13% introduced plant species were noted in the lake. The area and surrounding land is part of a canoe route and is a popular spot for fishermen, sightseers and cross-country skiers. In the past few years, the small thicket swamp in the bay below the falls has been invaded by Purple Loosestrife. This has the potential to be carried into the area and establish in the marshy bays of Clark's Pond.

The Dee River-Clark's Pond water route frequently becomes euthrophic during mid-to-late summer due to heavy upstream nutrient loading in a system which is already naturally enriched.

Sensitivity

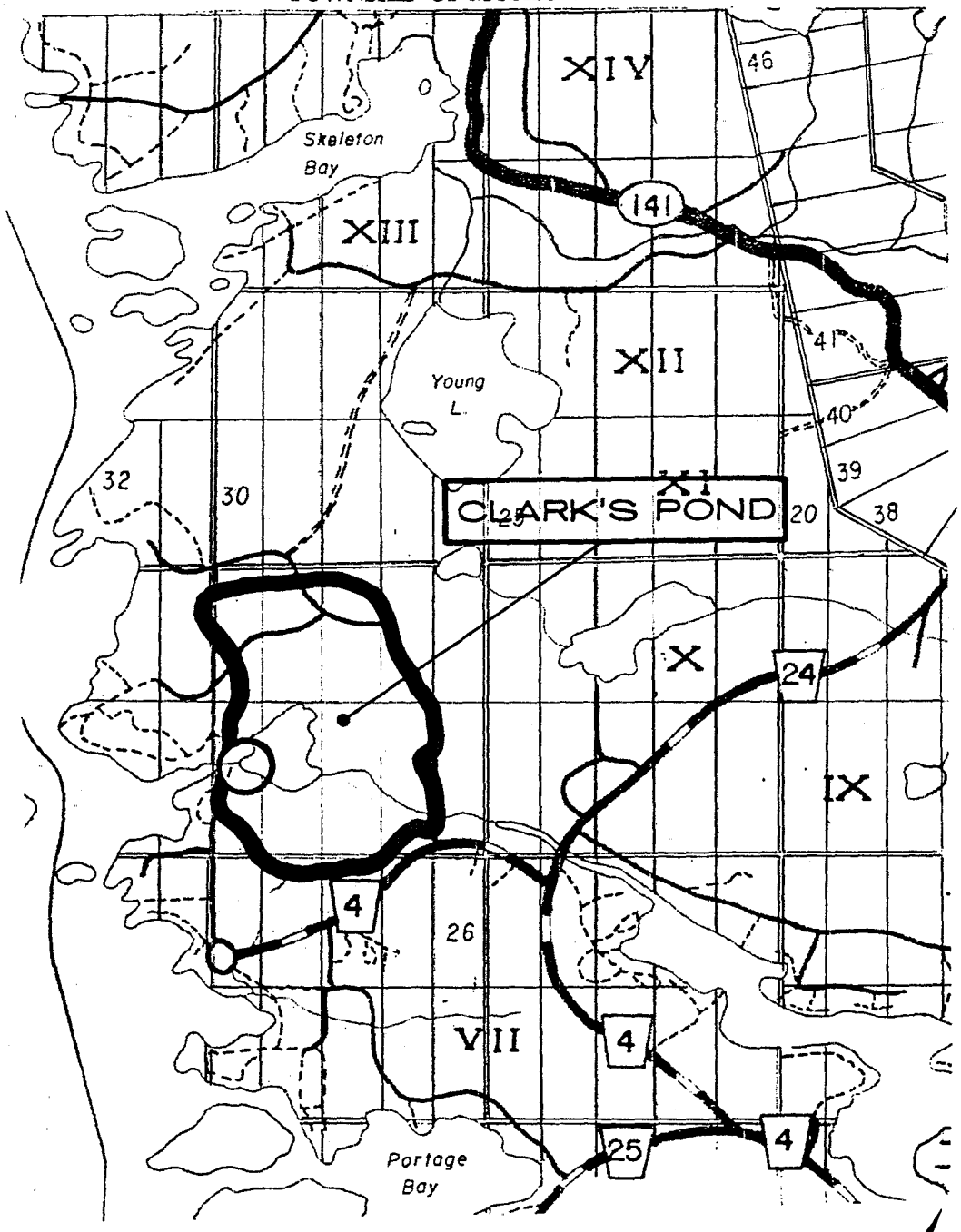
The sensitivity of this site is especially related to the vegetation community and plant species at their northern range limits and of limited distribution within Muskoka. This site also supports several regionally rare species of flora and fauna. Management guidelines should ensure the protection of both rare species and distinctive vegetation community habitats, particularly the White Oak-White Pine woodland community surrounding most of Clark's Pond. The thin soils in this habitat make it especially vulnerable to minor disturbances such as trampling and vegetation removal.

Long-term protection strategies to maintain the natural shorelines around Clark's Pond are also needed to protect the aesthetic, wildlife, and diversity values of this area.

Major Sources of Information

Berney, & Reid, 1993; Brunton, 1991 b; District Municipality of Muskoka, 1985 Sensitive Area Schedules; Kor, & Miller, 1987; OMNR 1988 Deer Wintering Aerial Survey Maps; OMNR, Bracebridge Area office, 1992; Reid, et al., 1991 .

CLARK'S POND
HERITAGE AREA
TOWNSHIP OF MUSKOKA LAKES



Legend

O Scenic Spots

Scale 1:50,000

EILEAN GOWAN ISLAND UTM Ref. 17TPV245870

Muskoka Township, Bracebridge Area: 107 ha
Status: Recommend Heritage Area

Site Characteristics

This large island is located on Lake Muskoka, east of Bracebridge. It is a good example of post-logging, mature, late successional deciduous and mixed forest (Sugar Maple, Eastern Hemlock, Yellow Birch, American Beech) on acidic tills of varying depths. Some sections of thin soils with exposed rock support Red and White Oak open woodland, while low-lying pockets are dominated by tall thicket shrubs or wet grass meadow. Along parts of the adjacent shore, especially on the spits extending westward, several Atlantic Coastal Plain species are present as well as a small stand of Jack Pine.

Flora and Fauna

Total numbers of species recorded were:

Vascular plants	254 native; 28 introduced
	10 A.C.P.F. with a score of 51 (High)
Birds	33 observed during breeding season
Mammals	7
Herpetofauna	5
Butterflies	6

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) The small stand of Jack Pine is a community type with limited representation in other Heritage Areas in Muskoka. The site type matrix position is normal/sand/dry.

2. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than expected for Muskoka, as shown in Figure 1.

3. **Rare Species** - (B4) Eilean Gowan Island provides habitat for the following rare species:

Wildlife
Sylvilagus floridanus Eastern cottontail [RU]
Vascular plants
Carex conoidea Field Sedge [PR RR]
Chenopodium simplex Maple-leaved Goosefoot [RR]
Elatine minima Water Wort [PR]
Linum striatum Ridged Yellow Flax [NR PR RR]
Panicum spretum Eaton's Grass [PR]
Triadenum virginicum Marsh St. John's Wort [PR]
Xyris difformis Slender Yellow-eyed Grass [PR]
In addition, 13 species of vascular plants were recorded as regionally uncommon.

4. **Fish and Wildlife Concentrations** - (B5) Approximately 50% of the island is a deer yard. Shallow waters between Baxter Island and the westernmost spit are habitat for Lake Trout spawning.

5. **Biogeographic Significance** - (B7) The emergent beaches or spits extending off the western shoreline of the island contain a high significance of representation for Atlantic Coastal Plain Flora, with a score of 51 (10 species).

Ownership and Disturbance

The entire shoreline is surrounded by cottage development. A hydro service line set-back from the shoreline also surrounds the island. Inside of this hydro cut, in the interior of the island, is a nature reserve which was recently donated to the Muskoka Heritage Foundation. The forest has regenerated from past logging over 60 years ago. The understory is heavily grazed in areas by deer. There were 10.1% introduced species recorded.

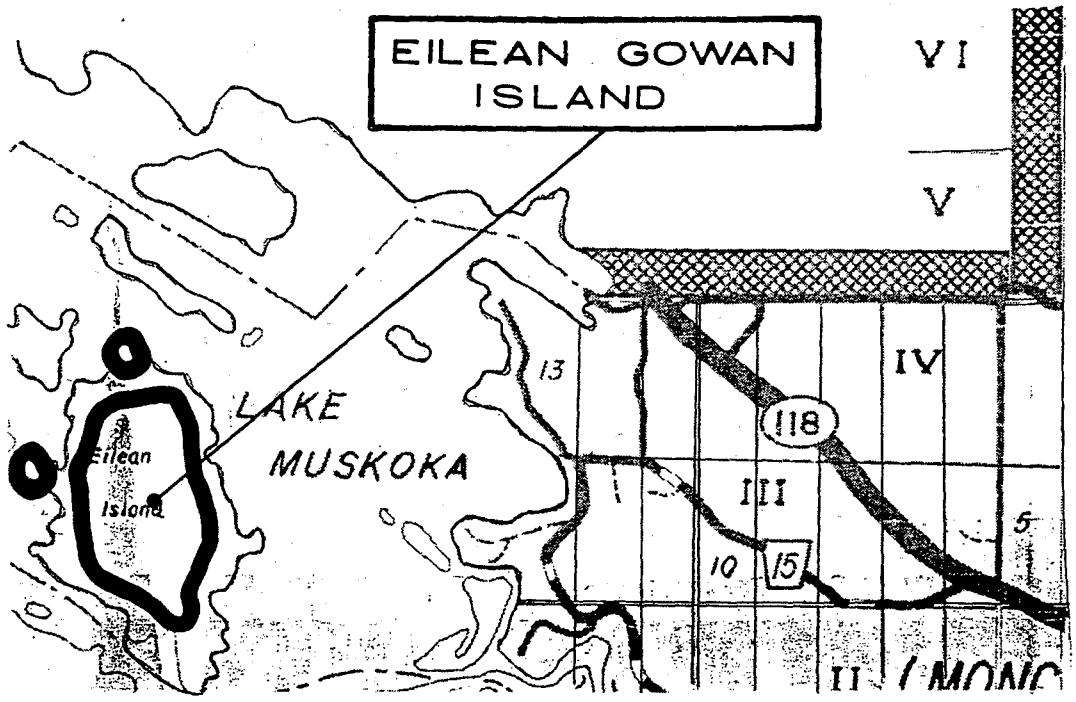
Sensitivity

The sensitivity of this site is related primarily to the small shoreline spits which harbour significant flora and fish spawning habitat, plus an association of limited representation. Policies related to protection of fish habitat and A.C.P.F. conservation should be followed. The values present in the interior woodland (diversity, deer yard and mature forest) are relatively self-sustaining providing no dramatic charges occur. Management of the island as a nature reserve should aim at maintaining or enhancing the significant natural values.

Major Sources of Information

Brunton, 1991b; Keddy & Sharp, 1989; District Municipality of Muskoka, 1985 Sensitive Areas Schedules; OMNR, 1988, 1989 deer yard surveys; Reid, et al., 1991.

EILEAN GOWAN ISLAND
HERITAGE AREA
TOWN OF BRACEBRIDGE



Scale 1:50,000

SCARCLIFFE BAY UTM Ref. 17TPV167954

Monck Township, Muskoka Lakes Area: 11 ha
Status: Recommend Heritage Area

Site Characteristics

This site is situated south of Port Carling along the shores of the creek flowing between Brandy Lake and Scarcliffe Bay of Lake Muskoka. Some of the best examples of silty and clayey glaciolacustrine plains in the District of Muskoka are found in this general area in low-lying sites surrounding present day lakes (Bajc, 1992). A distinctive riparian community dominated by Water Willow (*Decodon verticillatus*), with Buttonbush and Silky Dogwood subdominants, and Silver Maple - American Elm late successional lowland forest may be partly influenced by the clay soils.

The creek tends to be flooded in the spring with the flow reduced to almost nothing by midsummer. A beaver dam present about half-way along the length of the creek helps to maintain flooded conditions. The swamp, marsh and lowland forest communities are enclosed by sloping hillsides with mixed forests dominated by White Pine, Red Oak, Eastern Hemlock and White Birch.

Flora and Fauna

Total numbers of species recorded were:

Vascular plants	135 native; 11 introduced
Birds	36 observed during breeding season
Mammals	6
Herpetofauna	4
Fish	5

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) There are three vegetation community types in this site with limited representation in other Heritage Areas. The most significant is the Shrub-rich (Water Willow) shallow emergent marsh (warmer/clay/very wet) which dominates the thicket swamp and lines both banks of the creek. A second unique community is a White Pine-Black Ash-Oak-Red Maple bottom land forest (normal/sand/wet-mesic). This community type is transitional between swamp and lowland forest and contains a number of regionally uncommon flora. A third community type represented is a disturbed Poison Ivy shrub thicket (warmer/sand/very dry) between Hwy 118 and the creek. The extent and quality of this community is notable.

2. **Biogeographic Significance** - (B7) Many of the plant species dominating this riparian complex are indicators of southern regions. The list includes Poison Ivy, Silky Dogwood, Buttonbush, Silver Maple, False Nettle, White Oak and Water Willow. The representation of

southern aquatic associations was important in the recommendation of this site for candidate regional ANSI status (Brunton, 1991 b).

3. **Scenic Landscapes** - (C7) The area was nominated as a scenic site due to the extensive Water Willow community along the creek which turns a brilliant red in the autumn, and is easily visible from the Highway.

Ownership and Disturbance

This site is privately owned. It's location adjacent to the Highway 118 corridor and in the heart of cottage country makes it susceptible to disturbance. The creek is buffered by upland forest on all but the northern side. The northern boundary follows the highway, with a narrow buffer area to the creek. Spring runoff with salt and sand would have the greatest impact on the wetland, since all runoff will flow directly into the system. Fishing for Northern Pike is popular at the entrance to the creek at Brandy Lake, while Smelt and Bullfrog harvesting is locally significant.

Introduced species of plants are most abundant on the northern shore. Despite the disturbances, this area is of relatively good quality, indicated by the presence of bullfrogs and numerous fish species. Most of the wetland is undisturbed. The beaver dam may be artificially maintained.

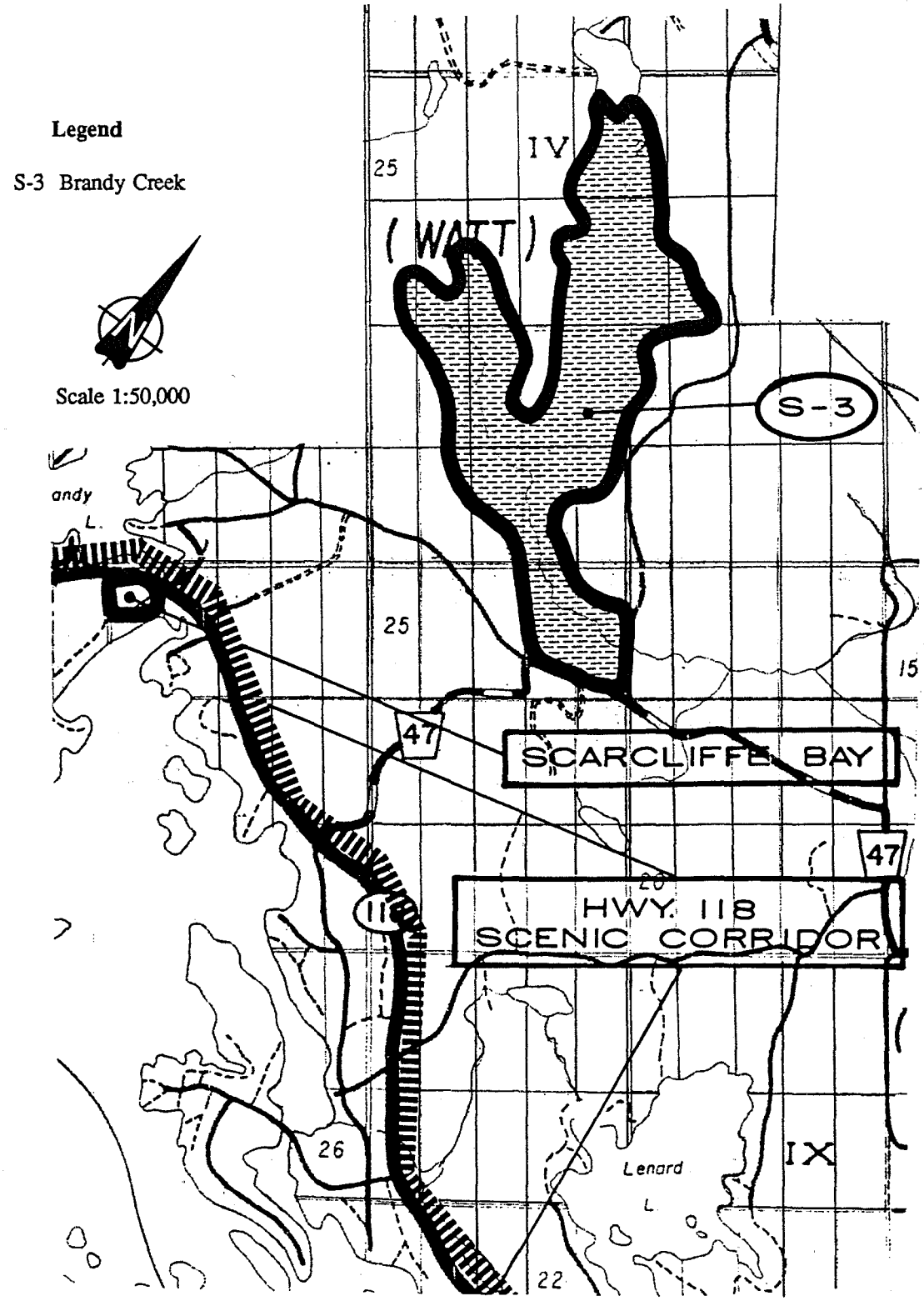
Sensitivity

The sensitivity of this site is related to the function and ecology of the wetland. Suitable policies related to wetland protection should be followed. This includes protection of a vegetated buffer area on the slopes enclosing the wetland. Improper water level management may have deleterious consequences for the ecology of some species.

Major Sources of Information

Bajc, 1992; Bergsma et al, 1993; Brunton, 1991b; OMNR, Bracebridge Area office, fisheries data.

SCARCLIFFE BAY
HERITAGE AREA
TOWNSHIP OF MUSKOKA LAKES



WELL'S CREEK/WALKER POINT UTM Ref. 17TPV174885

Wood Township, Muskoka Lakes Area: 158 ha
Status: Recommend Heritage Area

Site Characteristics

This site is situated on an undeveloped bay of Lake Muskoka. Wells Creek begins from an inland shallow wetland area underlain by organic deposits. The creek follows a small area of glaciolacustrine deltaic deposits of sand and fine gravel. Rich Eastern Hemlock-Beech-Sugar Maple forests surround the creek valley, on deposits of shallow to deep till over bedrock. Closer to the bay the creek enters an area of localized clay and silt deposits supporting a Black Ash-Basswood-Red and Silver Maple-American Elm deciduous forest.

On the western slope of the bay is a narrow band of very mature mixed and deciduous forest, with large specimens of Red Oak (max. dbh=38.0 cm), White Ash (max. dbh=23.6 cm), American Beech (max. dbh=31.4 cm), Sugar Maple (max. dbh=35.2 cm), and Red Maple (max. dbh=23.7 cm) mixed with White Birch, Basswood, Eastern Hemlock, Ironwood and Striped Maple. The understory consists of an exceptionally rich herbaceous and sedge groundcover.

The narrow bay supports a diverse mixture of floating and submerged aquatic macrophytes, including Floating Hearts, bladderworts, and pond weeds. The shallow shorelines are dominated by Pickerelweed, Bullhead Lily and Three-way Sedge. Backshore areas support a thicket swamp grading into bottomland forest. The rich wetland supports a corresponding diversity of herpetofauna, especially frogs and turtles.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	191 native ; 9 introduced
	2 A.C.P.F. with a score of 8 (Insignificant)
Birds	31 observed during breeding season
Mammals	5
Herpetofauna	10

Significant Natural Values and Selection Criteria Met

1. **Quality and Disturbance** - (B3) The Wells Creek area supports mature, late successional, deciduous and mixed woods plus a narrow, undisturbed bay with a high diversity of aquatic vegetation. The remnant old growth forest along the bay contains a mix of mature tree specimens. Compared with nine other sites where tree diameter breast measurements were taken, the Red Oak, Beech and Red Maple were the largest individuals. In an area that is otherwise densely populated with cottages along the shoreline, the bay and creek system running through rich forests, provide important, high quality wildlife habitat.

2. **Rare Species** - (B4) The Wells creek area provides habitat for the following rare species:

Wildlife
Buteo lineatus Red-shouldered Hawk [NR PR]*
Vascular Plants
Pilea pumila Clearweed [RR]
* Nesting location recorded by OMNR, Bracebridge District

In addition, two species of herpetofauna and nine species of vascular plants were recorded as regionally uncommon.

3. **Fish and Wildlife Concentrations** - (B5) A heronry of fifteen nests, with at least three active, was located on a small inland pond. The herons feed in the narrow bay on Lake Muskoka, which was noted as "teeming with polywogs". Nesting of the nationally and provincially rare Red-shouldered Hawk has been documented and confirmed annually by the M.N.R.. Wells Creek is also part of the Walker Point deer wintering area.

4. **Biogeographic Significance** - (B7) Some of the flora found in the Wells Creek area have southern affinities and/or are often associated with clay based soils. This includes species such as Bur Oak, Silver Maple, Water Willow or Swamp Loosestrife, Buttonbush and Snowberry. The Map Turtle identified in the bay of Lake Muskoka is an inland range limit for this species, which is more common in the Georgian Bay vicinity.

Ownership and Disturbance

Although the area is all privately owned, there is presently no development on any of the land. Snowmobile trails run through the central portion of the site. The narrow bay is largely undisturbed. A cottage access road runs through the site, immediately beside the old growth forest. The other side of this road has been logged and is heavily disturbed. A portion of bottomland forest on the eastern side of the bay was once farmland. There is a high percentage of introduced species in this part of the site, as well as a large area of Poison Ivy.

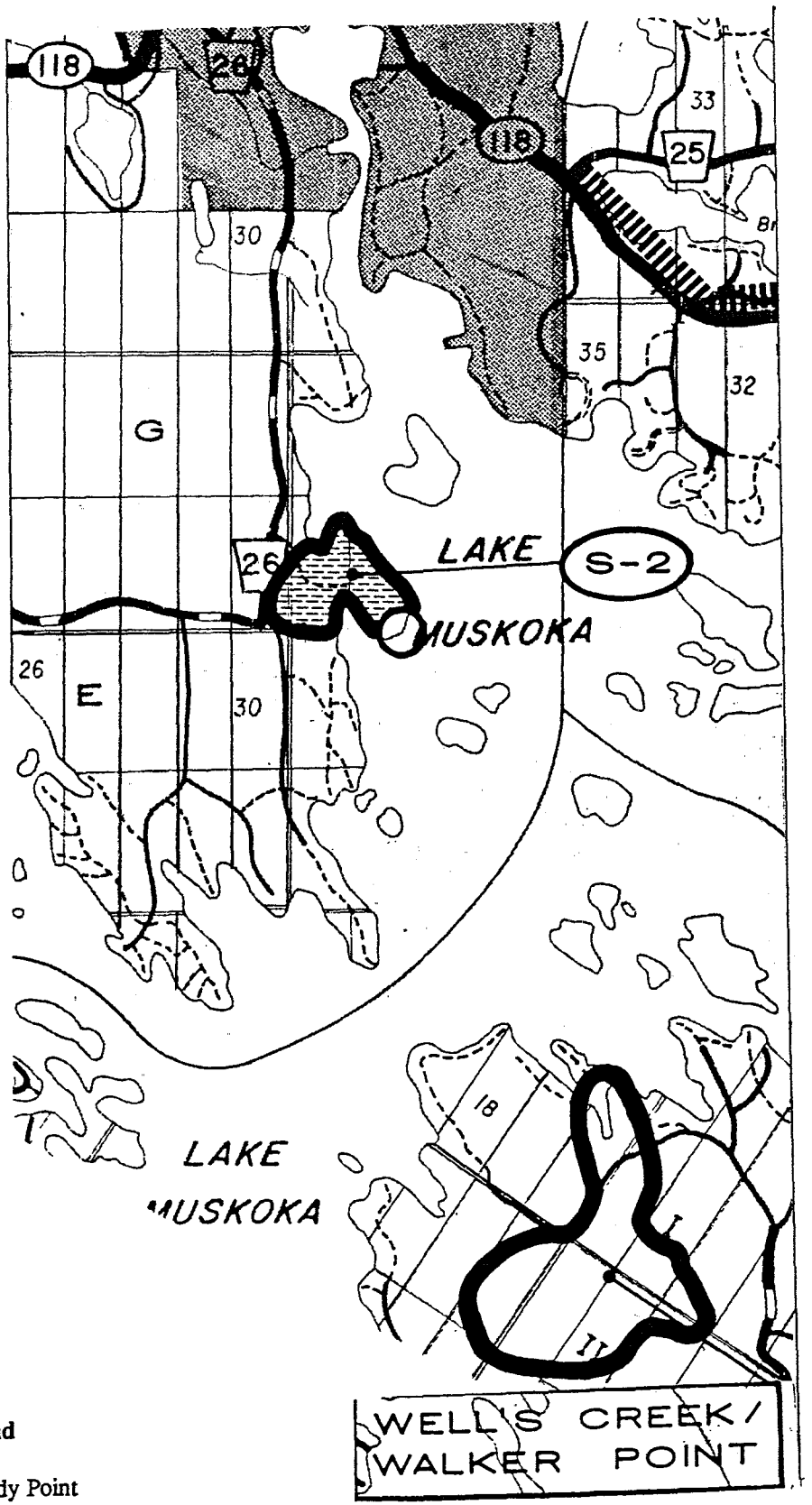
Sensitivity

The sensitivity of this site is related to the wildlife habitat values of the mature, rich forest and wetland which support Red-shouldered Hawk, a heronry, an old growth forest and a diversity of herpetofauna, aquatic plants and plant species associated with rich soils and southern habitats. Existing management guidelines for heronries and Red-shouldered Hawk should be followed. The small remnant old growth forest should be left undeveloped. The quality of the small wetland bay should not be compromised by inappropriate development or recreational uses.

Major Sources of Information

Bergsma, et al., 1993; District Municipality of Muskoka, 1985 Sensitive Areas Schedules; Kor, & Miller, 1987; OMNR, 1986 Deer Aerial Survey Maps, Bracebridge Area Office.

WELL'S CREEK/WALKER POINT
HERITAGE AREA
TOWNSHIP OF MUSKOKA LAKES

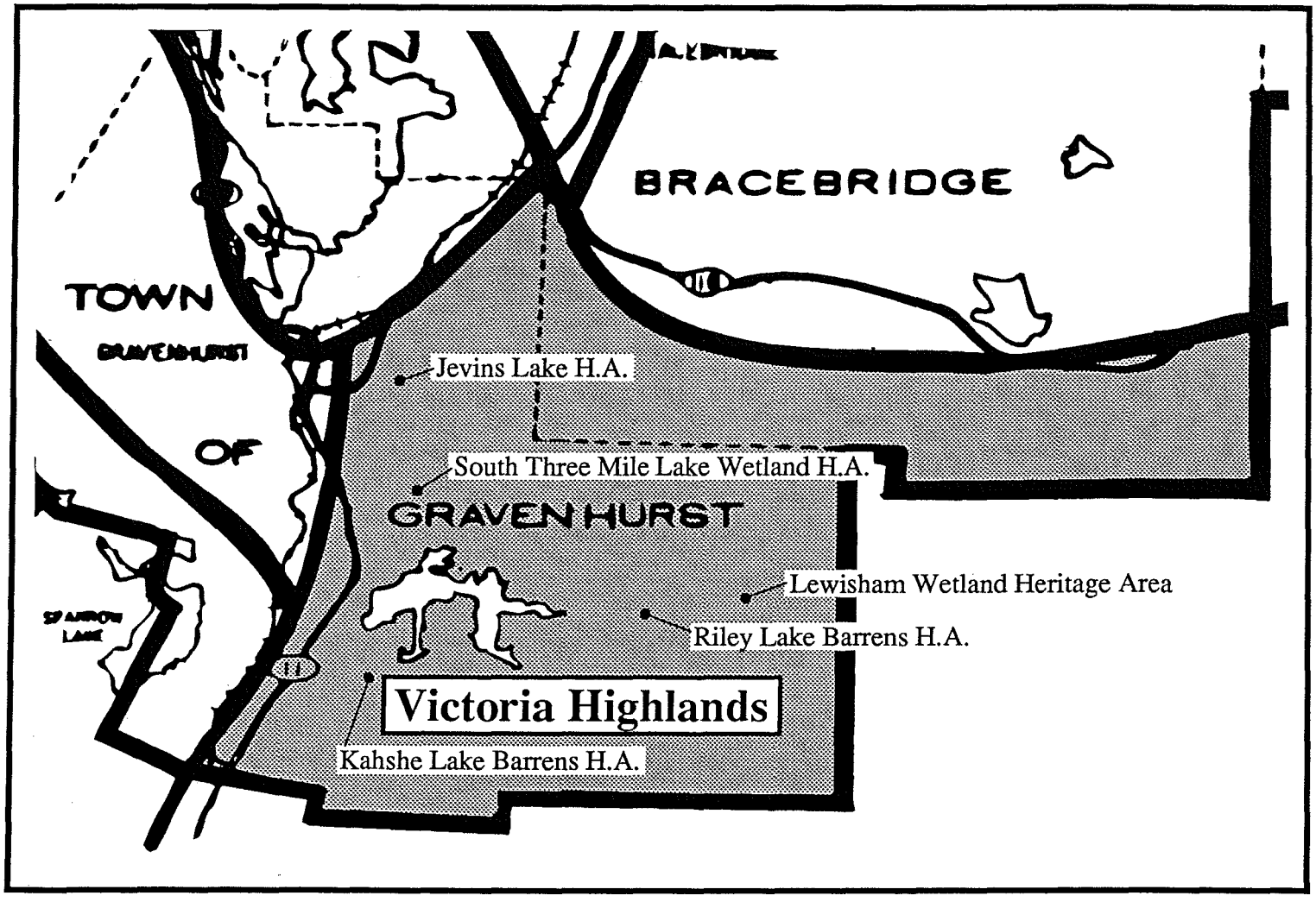


Legend

S-2 Kennedy Point
O Scenic Spot

Scale 1:50,000

3.5 VICTORIA HIGHLANDS SUBDISTRICT



JEVINS LAKE UTM Ref. 17TPV304732

Morrison and Muskoka Townships, Gravenhurst Area: 188 ha
Status: Recommend Heritage Area

Site Characteristics

This site is located southeast of Gravenhurst, adjacent to Highway #11. The long, narrow lake-filled depression is relatively deep with coniferous swamp forest, floating sphagnum mats, emergent marsh, and low shrub vegetation dominated by Sweet Gale along the shorelines. Bedrock ridges rise from the lakeshore supporting Pine-Oak barren communities. The barren ridges alternate with marshy graninoid swales, beaver ponds and Virginia Chain Fern poor fens situated in wet depressions underlain by organic deposits.

Surface drainage into Jevins Lake comes mainly from the northeast slope. A series of small creeks, ponds formed by beaver dams and wet depressions drain to the lake. Jevins Lake flows into Cornall Lake to the south along a small creek slowed by beaver dams.

The northeastern end of the site is underlain by somewhat deeper soils which support Red Maple, White Birch, White Pine mixed forests succeeding to Sugar Maple - Beech. In this section are three potholes carved into gneissic bedrock.

Flora and Fauna

Total numbers of species recorded were:

Vascular plants	267 native; 38 introduced
	5 A.C.P.F. with a score of 22 (Low)
Birds	45 observed during the breeding season
Mammals	3
Herpetofauna	10
Butterflies	5

Significant Natural Values and Selection Criteria Met

1. **Distinctive Landform** - (A1) The potholes northeast of Jevins Lake have been identified as an exceptional geological feature within the District of Muskoka (Bajc, 1992). The potholes are clustered along the edge of a gneissic bedrock ridge, with the rims of two intersecting. They range from 1 to 3 m in diameter and 0.5 to 5 m in depth. The deeper potholes are infilled with water and dead forest litter and presumably extend several meters beyond the water line. Based on their location, the potholes are probably sub-glacial in origin, created by the spinning action of stones as a major outburst of water flowed under the ice in late glacial times.

2. **Representation** - (B1) The muddy shoreline of Jevins Lake contains a area of herb-rich shallow emergent marsh dominated by Arrow Arum or Tuckahoe (*Peltandra Virginica*) (normal/organic/very wet). This disjunct population has been present at the site since at least

1985, when it was discovered by Rick Bobbette. Since this is the only known site in Muskoka for this plant, the community contributes to the full range of biotic representation.

3. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than expected for Muskoka, as shown in Figure 1.

4. **Rare Species** - (B4) Jevins Lake provides habitat for the following rare species:

Vascular Plants
Bulbostylis capillaris Hair Rush [PR]
Peltandra virginica Arrow Arum [NR PR RR]
Sporobolus neglectus Overlooked Dropseed [RR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, one snake, one bird and six plant species were recorded as regionally uncommon.

Ownership and Disturbance

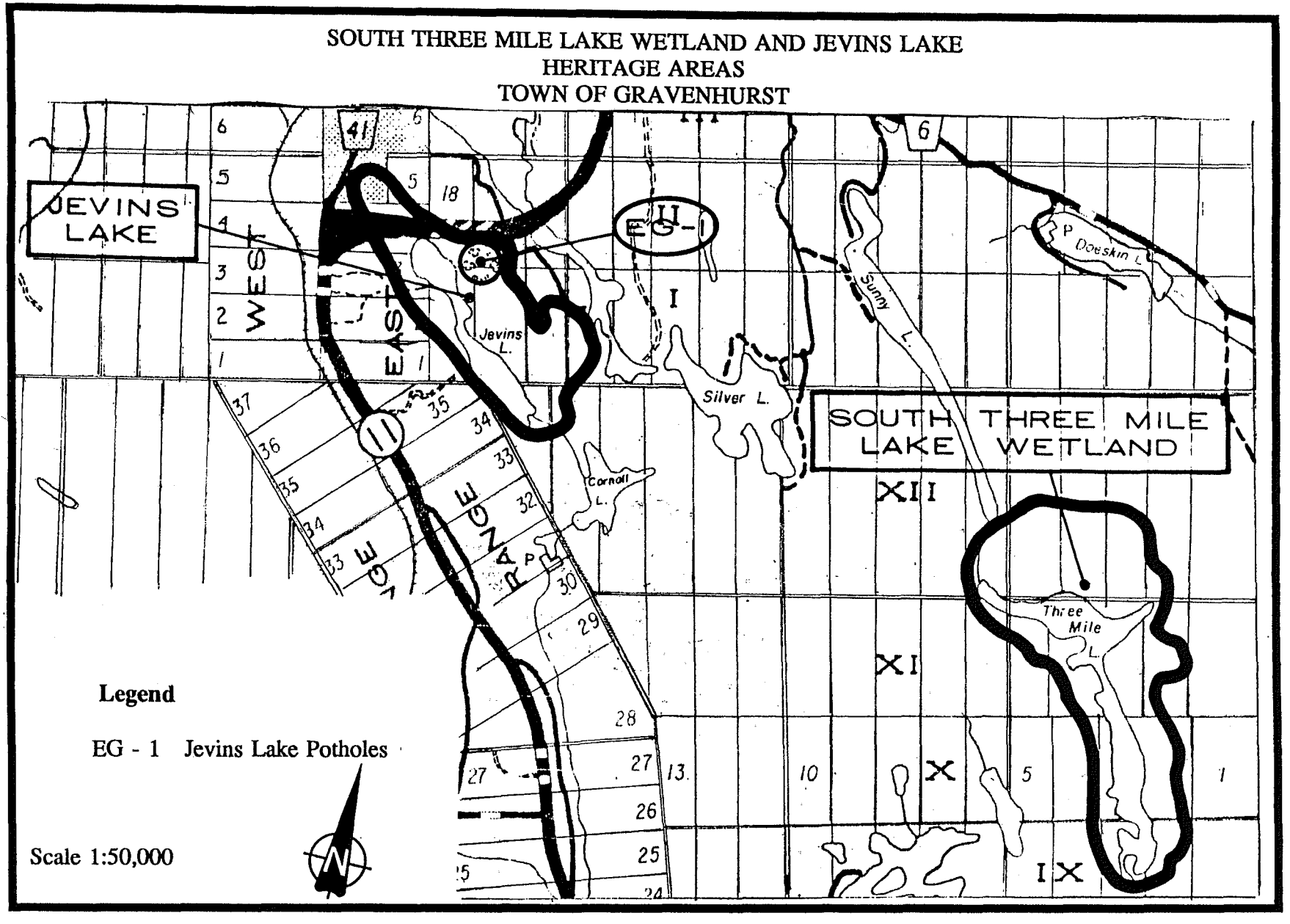
The majority of this site is privately owned, with approximately 28% Crown land. There are a few signs of disturbance associated with recreational use of the area for camping (firepits) fishing (disturbed shoreline vegetation) and hiking (footpaths). A hydro distribution line runs through the northern end of the area. Highway #11 crosses the marshlands at the northern end of Jevin's Lake. Areas further inland from the highway and cottage roads to Gull Lake are less disturbed.

Sensitivity

The sensitivity of this site is related to the function of the wetland (which was evaluated as provincially significant by (MNR in 1992), the presence of rare community and species types, and the preservation of the potholes. Due to the proximity of Highway #11 to the potholes and the Arrow Arum, any future realignment should identify mitigation measures to ensure that these features will be retained. Future development proposed north of Highway #11 should address stormwater and other impacts on the downstream lake ecosystem and wetland function as discussed in the Wetland Policy Implementation Guidelines.

Major Sources of Information

Bajc, 1992; OMNR Bracebridge Wetland Evaluation, 1992; Reid, et al., 1991.


SOUTH THREE MILE LAKE WETLAND AND JEVINS LAKE
HERITAGE AREAS
TOWN OF GRAVENHURST
JEVINS LAKE
EG-1
I
Jevins L.
Silver L.
Sunny L.
Doeskin L.
SOUTH THREE MILE LAKE WETLAND
XII
Cornell L.
Three Mile L.
XI
X
IX
WEST EAST GAP
Legend
EG - 1 Jevins Lake Potholes
Scale 1:50,000
N

KAHSHE LAKE BARRENS UTM Ref. 17TPV370640

Ryde Township, Gravenhurst Area: 4290 ha
Status: Recommend Heritage Area

Site Characteristics

Almost the entire Kahshe Lake Barrens area consists of weakly broken Precambrian bedrock plain, with overburden non-existent or very shallow. Bedrock ridges trending in a northeast direction cover approximately 70% of the site, supporting open forests of White Pine and Red Oak, or Red Oak-White Oak mixtures. Where deeper pockets of till occur, mostly in the extreme westerly sections of the area, younger stands of Red Maple-White Birch-Aspen occur.

Between the ridges, a series of narrow linear wetlands on organic soils support a wider variety of habitats. These wetlands drain primarily to the south into the Severn River, partly through Clearwater lake. The northern third of the site drains westward through the Kahshe River system. Drainage is frequently interrupted by beaver dams.

Wetland communities present include examples of floating and submerged aquatics, graminoid poor fens on organic mats, sedge-grass meadows on wet soils, Leatherleaf shrub bogs, Alder-Winterberry-Holly shrub thickets, and treed poor fens with Black Spruce and Tamarack.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	485 native; 68 introduced
	12 A.C.P.F. with a score of 63 (High)
Birds	52 observed during breeding season
Mammals	17 including 6 from small mammal trapping
Herpetofauna	17
Butterflies	13
Dragonflies	7
Mushrooms	36

Significant Natural Values and Selection Criteria Met

1. **Diversity** - (B2) Despite the uniformity of vegetation communities within this site, it displays a strong diversity of vascular plants (highest number of species recorded within Muskoka), mammals, and herptiles.

2. **Rare Species** - (B4) Kahshe Lake Barrens provides habitat for the following rare species:

Wildlife
Buteo lineatus Red-shouldered Hawk [NR PR]
Cistothorus platensis Sedge Wren [RR]

Coccyzus americanus Yellow-billed Cuckoo [RR]
Sialia sialis Eastern Bluebird [NR]
Clemmys quttata Spotted Turtle [NR PR RR] *
Vascular Plants
Anemone virginiana Thimbleweed [RR]
Bartonia virginica Bartonia [NR PR RR] **
Bidens discoidea Small Beggar-ticks [NR PR]
Bulbostylis capillaris Hair Rush [PR]
Carex folliculata Long Sedge [PR] **
Carex haydenii Hayden's Sedge [PR RR] **
Carpinus caroliniana Blue Beech/Hornbeam [RR]
Cyperus squarrosus Umbrella Sedge [RR]
Desmodium canadense Showy Tick Trefoil [RR]
Elatine minima Water Wort [PR]
Elymus virginicus Virginia Rye [RR]
Juglans cinerea Butternut [RR]
Laportea canadensis Wood Nettle [RR]
Panicum spretum Eaton's Grass [PR]
Platanthera blephariglottis White Fringed Orchis [PR] **
Polygonum arifolium Halberd-leaved Tearthumb [PR RR] **
Polygonum careyi Carey's Knotweed [PR]
Potamogeton strictifolius Straight-leaved Pond Weed [RR]
Rhexia virginica Virginia Meadow Beauty [NR PR]
Teucrium canadense Germander [RR]
Triadenum virginicum Marsh St. John's Wort [PR]
Viola adunca Hooked-spur Violet [RR]
Xyris difformis Slender Yellow-eyed Grass [PR]
* specimen collected by Bob Whittam
** specimens collected by Emerson Whiting

In addition, regionally uncommon species found within the site include 38 plant, two bird, one mammal, and two snake species.

3. **Fish and Wildlife Concentrations** - (B5) According to the Ministry of Natural Resources, this area includes several small deer yards, and spawning areas for Lake Trout in the bay of Clearwater Lake and Muskellunge at the end of Grant's Bay in Kahshe Lake.

4. **Size and Linkage** - (B6) The large size and unfragmented nature of the Kahshe Lake Barrens area provides habitat for species requiring extensive undisturbed areas. Evidence of such use included scats found within the area of a large cat, such as Lynx.

5. **Biogeographic Significance** - (B7) The Kahshe Lake Barrens area has a high ranking score for Atlantic Coastal Plain species, using a scoring system developed by Keddy and Sharp (1989). As well, the vegetation communities include strong representation of species near the northern limit of their range, such as White Oak (which is a co-dominant in some

communities), Butternut, and Blue Beech. The understory of some areas includes an unusual abundance of Downy Arrowwood and Bearberry.

Ownership and Disturbance

Approximately two-thirds of the Kahshe Lake Barrens is Crown land, with the private land found around its fringes, especially along the western side. Much of the area is protected from disturbance by the difficulty of access, with little more than snowmobile trails extending into the interior. Hydro transmission corridors are located along parts of the eastern and southern borders of the area. Cottage developments have taken place on much of the shoreline of Kahshe and Clearwater Lakes, and a new cottage access road has recently been constructed along one edge of the area.

Sensitivity

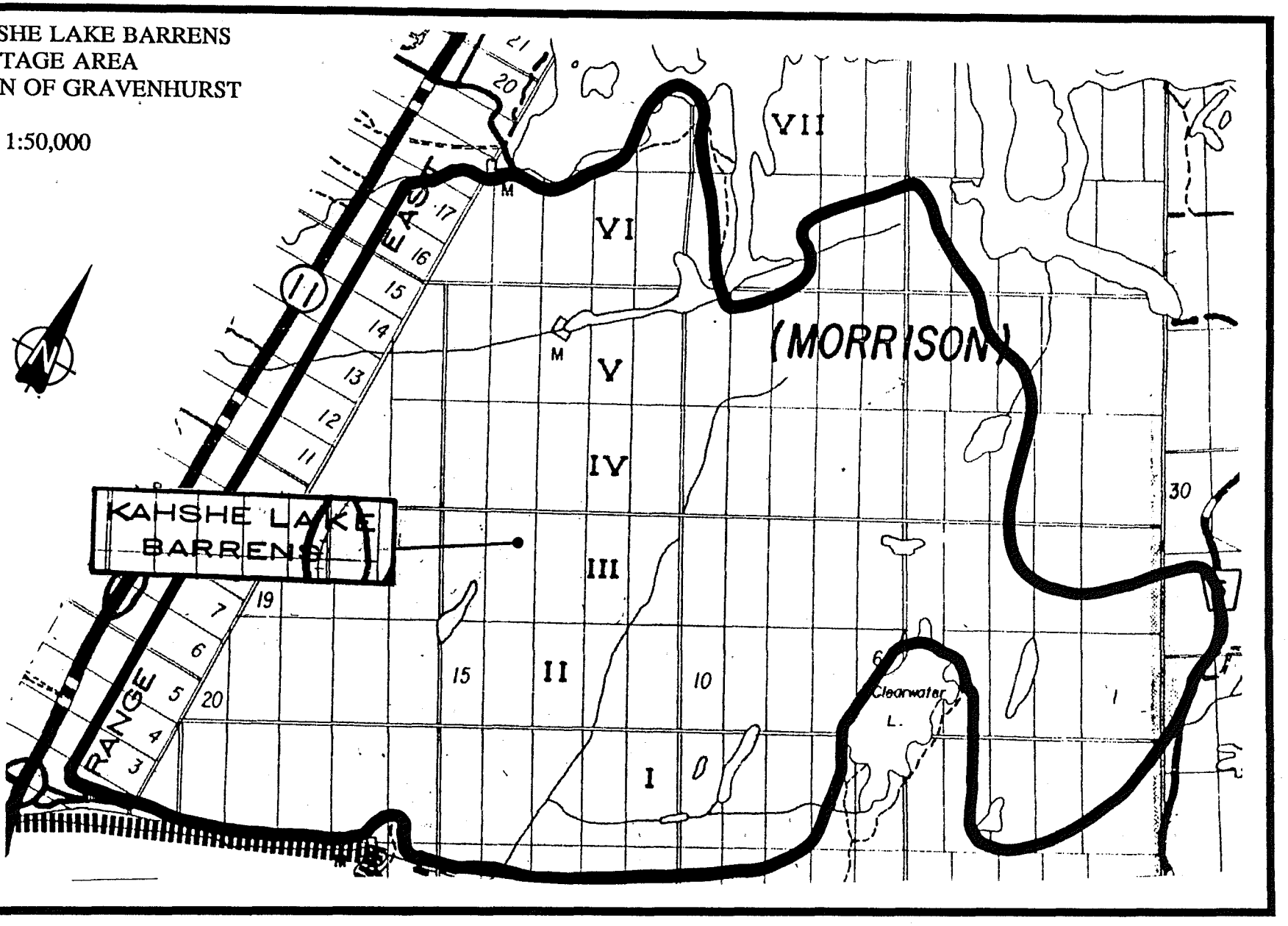
Since one of the prime values of the Kahshe Lake Barrens area is its size and intactness, its value would be diminished by the intrusion of roads, utility corridors, or other developments in the interior. Additional cottage or shoreline development could adversely affect the Atlantic Coastal Plain Flora, as could artificial stabilization of water levels. Many of the rare species are vulnerable to excessive disturbance, especially those associated with shorelines or with the harsh conditions on the open rock barrens.

Major Sources of Information

Reid et al, 1991; Brunton, 1991; Keddy and Sharp, 1989; Bajc and Paterson, 1992 a.

KAHSHE LAKE BARRENS
HERITAGE AREA
TOWN OF GRAVENHURST

Scale 1:50,000



LEWISHAM WETLAND UTM Ref. 17TPV480710

Ryde Township, Gravenhurst Area: 640 ha
Status: Recommend Heritage Area

Site Characteristics

Lewisham Wetland occupies a large basin of organic peat and muck which forms the headwaters of several tributary streams of the Black River. Beatty's Lake in the southwestern section of the area provides open water, as do scattered beaver ponds and marshy wetlands along the stream courses. Extensive wetland areas are separated by gneissic bedrock ridges with discontinuous shallow till, oriented in a northeast-southwest direction.

This wetland complex provides a diverse array of wetland types, including aquatic floating-leaved emergents, deep emergent marsh with sedge tussocks, open fen communities on floating organic mats, extensive low graminoid marshes, tall shrub-rich marshes, Leatherleaf shrub bog, Virginia Chain Fern poor fen, Alder thicket swamp, Tamarack and Black Spruce treed poor fens, and Red Maple-Yellow Birch swamp forest.

In areas of deep, moist soils, there are extensive mixed forests of Balsam Fir and Red Maple, mixed with Eastern White Cedar, White Pine, Eastern Hemlock, Poplar, and White Birch. Much of the dry thin-soiled upland supports a deciduous forest of Trembling Aspen and White Birch, with Bracken Fern in the understory. In some rock barren areas, White Pine is mixed with the Aspen-Birch community. A few pockets of richer deciduous forest occur as well, with Red and Sugar Maples dominating.

On the eastern side of Beatty's Lake, a mature Red Pine stand occupies a small knoll.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	203 native; 15 introduced
	2 A.C.P.F. with a score of 8 (Insignificant)
Birds	73 observed during breeding season
Mammals	7
Herpetofauna	14
Butterflies	12

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) Lewisham Wetland contributes to the regional hydrological system by acting as a headwaters and major water storage area for Riley Creek and two other tributaries of the Black River.

2. **Representation** - (B1) The mature Red Pine stand (warmer/sand/dry) found within this area is an association that has limited distribution elsewhere in Muskoka; this is the best such stand found during Heritage Areas field work.

3. **Quality and Disturbance** - (B3) Lewisham Wetland contains marsh and fen communities of high quality and showing little disturbance. There are many successional stages present, and representation of almost the full range of Muskoka wetland types. Only 6.9% of the vascular plant species recorded are non-native, a relatively low ratio.

4. **Rare Species** - (B4) The area provides habitat for the following rare species:

Vascular Plants
Rubus odoratus Purple Flowering Raspberry [RR]
Senecio pauperculus Balsam Ragwort [RR]
Solidago gigantea Late Goldenrod [RR]

In addition, regionally uncommon species within the area included six plants, five birds, and two butterflies.

5. **Size and Linkage** - (B6) This area is one of the largest contiguous wetlands identified within Muskoka, providing habitat for a variety of wildlife requiring undisturbed interior conditions.

Ownership and Disturbance

Approximately 85% of the area is Crown land. Much of the area is protected from disturbance by difficulty of access. A trail along the southern edge of the area serves as an access for hunters and snowmobilers, and several small boardwalks cross wet channels. Several seasonal dwellings are located near the road along the eastern edge of the area.

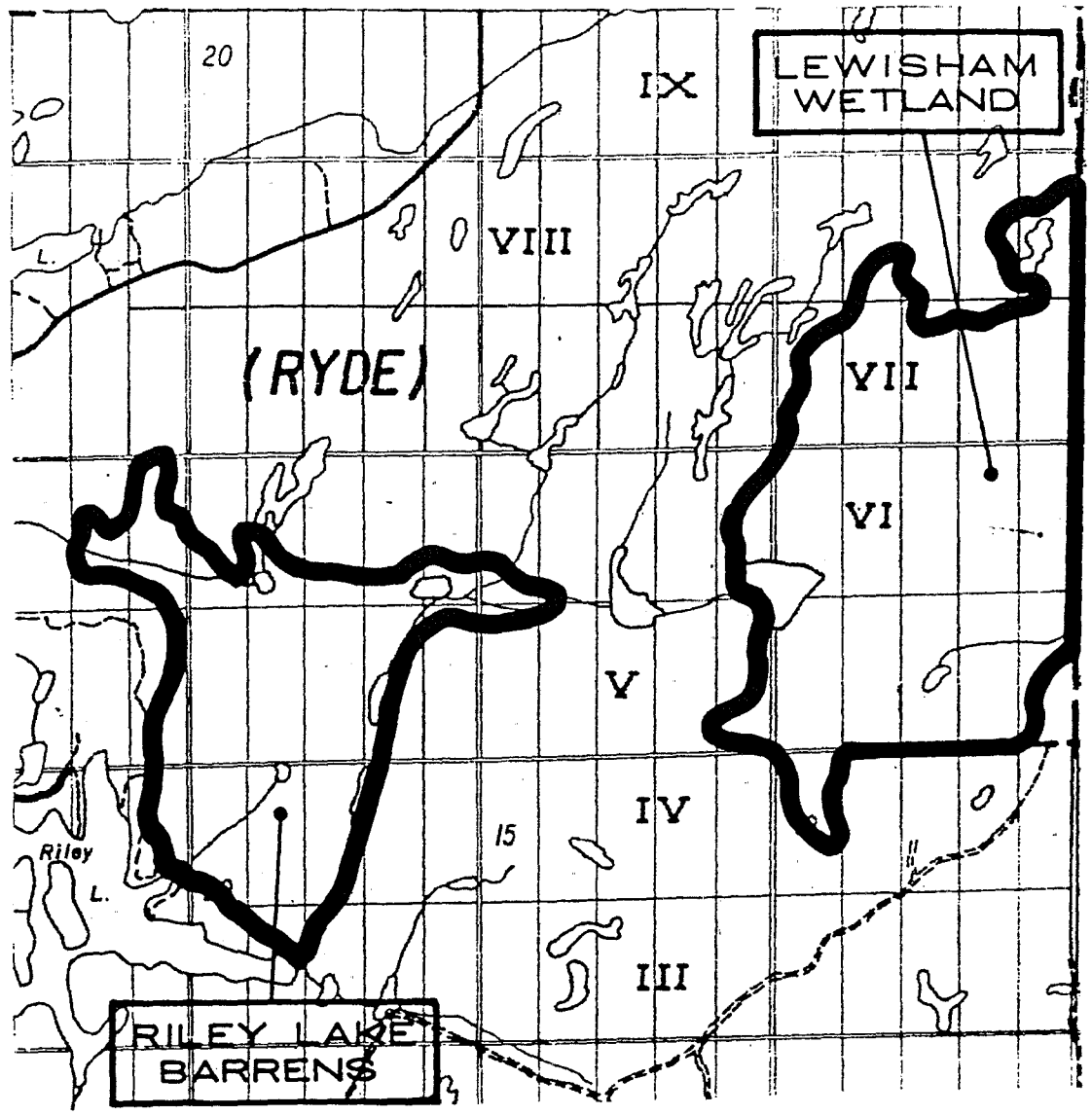
Sensitivity

The diverse wetland communities of this site could be adversely affected by water level changes or nutrient enrichment. Buffer areas should be maintained to minimize the effects of adjacent development. Road construction or utility corridors should not be permitted to fragment the interior of this area.

Major Sources of Information

Reid et al, 1992; Bergsma et al, 1993; Bajc and Paterson, 1992 a.

LEWISHAM WETLAND/RILEY LAKE BARRENS
HERITAGE AREAS
TOWN OF GRANVENHURST



Scale 1:50,000

RILEY LAKE BARRENS UTM Ref. 17TPV445445

Ryde Township, Gravenhurst Area: 384 ha
Status: Recommend Heritage Area

Site Characteristics

The Riley Lake Barrens area consists of a series of almost bare Precambrian gneissic ridges, alternating with closely-spaced, narrow water-filled depressions. The ridges are dominated by scattered White Pine and Red Oak on thin soils or bedrock, with an understory of Common juniper, Northern Bush Honeysuckle, Bracken Fern, Juneberries, and associated herbs.

The wetland areas drain through several small streams, often interrupted by beaver dams, southwards into Riley Lake. A wide range of swamp and organic deposits and floating sphagnum mats are present in low-lying areas. Wetland communities include shrub thicket swamps, Black Ash swamps, Leatherleaf shrub bogs, sedge-rich meadow marshes, open water ponds with floating-leaved aquatics, and treed poor fen areas with submature Tamarack.

A steep-sided bedrock valley along Green's Creek at the easterly edge of the site has deeper deposits of alluvial sands and silts, supporting a successional Aspen-White Birch forest in parts, and sedge-rich marshy area and forb meadow in other sections.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	247 native; 26 introduced
	1 A.C.P.F. with a score of 4 (Insignificant)
Birds	53 observed during breeding season
Mammals	10
Herpetofauna	15
Butterflies	10
Dragonflies	7

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) The site includes an Oak-Maple-Black Cherry open forest community (warmer/sand/dry-mesic), which has limited representation elsewhere in Muskoka.

2. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than average for Muskoka as shown in Figure 1.

3. **Quality and Disturbance** - (B3) Riley Lake Barrens provides an excellent example of gneissic bedrock ridges separated by narrow linear wetlands. While the site is easily accessible for educational purposes, its interior is little disturbed, providing habitat for such intolerant species as Lynx. Five-lined Skink are common on the hot dry ridges. Green's Marsh provides a quality example of wetland succession from open marsh to low shrub-rich marsh to tall shrub thicket swamp to Red Maple lowland forest.

4. **Rare Species** - (B4) Riley Lake Barrens area provides habitat for the following rare species:

Wildlife:
Sialia sialis Eastern Bluebird [NR]
Heterodon platirhinos Eastern Hognose Snake [PR] *
Erynnis lucilius Columbine Dusky Wing [PR]
Euchloe olympia Olympia Marblewing [PR RR] *
Vascular Plants:
Arabis laevigata Smooth Rock Cress [RR]
Panicum virgatum Switch Grass [RR]
* documented by R.L. Bowles, 1988-90

As well, regionally uncommon species on the site included nine plants, three birds, one mammal, and two herptiles.

Ownership and Disturbance

Approximately 85% of the Riley Lake Barrens site is Crown land. A cottage access road forms the southerly boundary and snowmobile routes traverse the area. Otherwise the site is largely undisturbed.

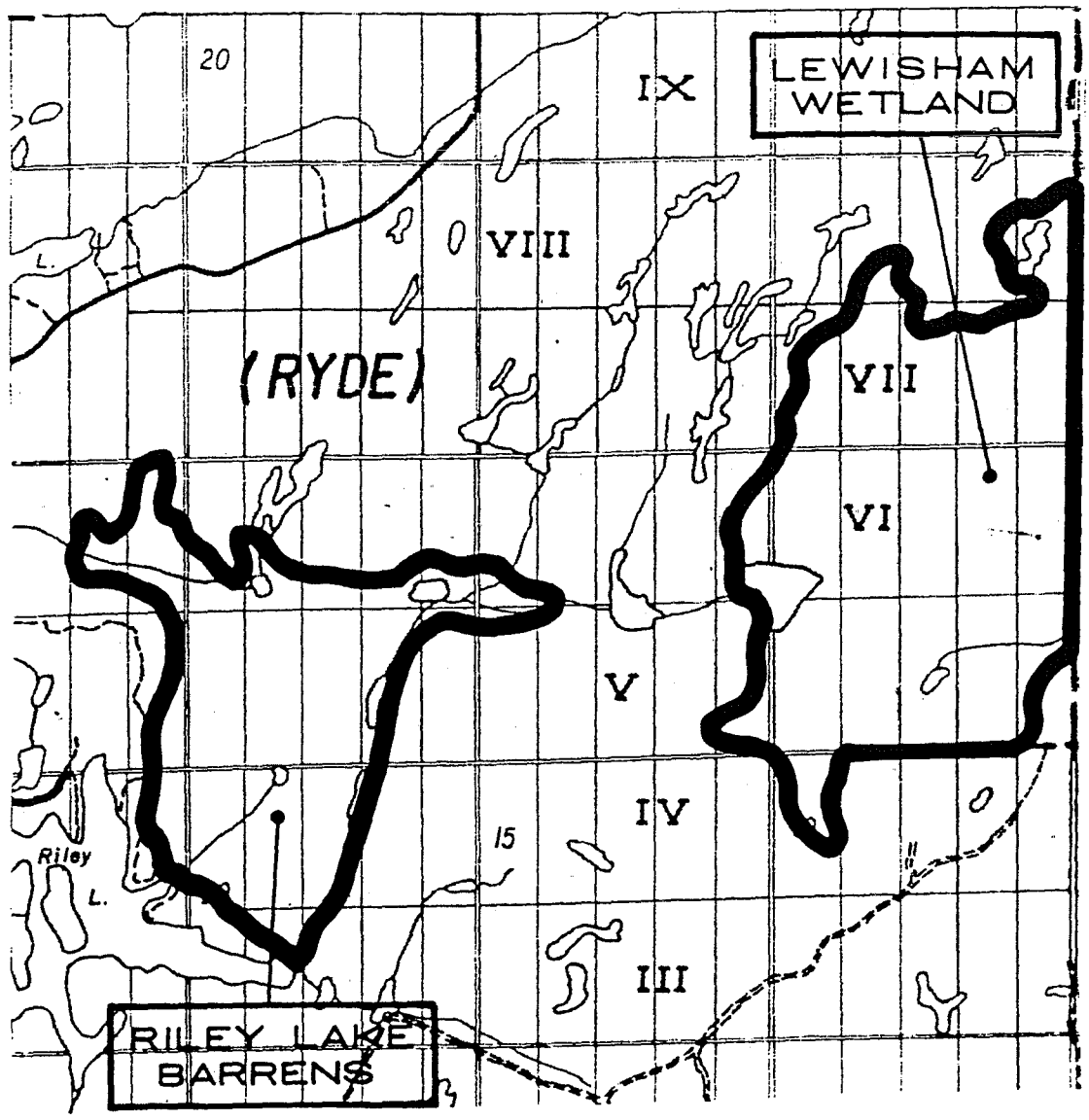
Sensitivity

Perhaps the greatest threat to this area is future fragmentation by new roads or utility corridors, which would disrupt its undisturbed nature. While the site has low forestry values, any future forest management activities should also respect the ecological values of this area.

Major Sources of Information

Bergsma et al, 1993.

LEWISHAM WETLAND/RILEY LAKE BARRENS
HERITAGE AREAS
TOWN OF GRANVENHURST



Scale 1:50,000

SOUTH THREE MILE LAKE WETLAND UTM Ref. 17TPV369718

Morrison Township, Gravenhurst Area: 338 ha
Status: Recommend Heritage Area

Site Characteristics

This site is located to the north of Kahshe Lake in an area of shallow overburden, supporting hardwood forests, open Pine and Oak mixed stands on shallower soils, and several areas of open White and Red Oak. One section of the eastern shore of the lake has a stand of Red Pine, Red Maple, with Black Huckleberry and Roundleaf Dogwood understory. Five-lined Skink were found in the open rock areas of these uplands.

Atlantic Coastal Plain species are abundant in at least ten locations along the shoreline of the lake and its islands. The diversity of coastal plain species is good with Virginia Meadow Beauty dominating at all sites. Atlantic Coastal Plain Flora were noted in 1981 by M. Sharp who reported extensive populations of Virginia Meadow Beauty. A later visit by MNR showed the population to be much smaller and less extensive due to higher water levels. This area was again visited in 1988 by Keddy and Sharp (1989) who documented only three A.C.P.F. species. In a visit by MHAP biologist in 1990, four species were recorded. A 1992 visit by MHAP biologists confirmed nine species and a more extensive shoreline distribution of A.C.P.F. than in 1990. Fluctuations in water levels control the distribution and abundance of coastal plain species. Shorelines with no coastal plain flora one year, may support extensive populations in subsequent seasons. It appears that the flora has gradually extended its shoreline distribution and species diversity on this lake since 1981.

Numerous small wetlands drain into the lake from all directions. These wetlands vary from open water with emergent and submergent aquatics, to wet meadow marshes and shoreline fens supporting orchid species such as Rose Pogonia.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	253 native; 16 introduced
	9 A.C.P.F. with a score of 43 (Moderate)
Birds	11 recorded during breeding season
Mammals	4
Herpetofauna	8
Butterflies	2
Dragonflies	2
Mushrooms	5

Significant Natural Values and Selection Criteria Met

1. **Representation** - (B1) The association of Black Huckleberry and Roundleaf Dogwood within a stand of Red Pine (warmer/rock/dry-mesic) is an unusual community type with limited representation in other Heritage Areas of Muskoka.

2. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than average for Muskoka as shown in Figure 1.

3. **Rare Species** - (B4) South Three Mile Lake provides habitat for the following rare species:

Wildlife
Sternotherus odoratus Stinkpot [RR]
Vascular Plants
Aster ericoides Heath Aster [RR]
Cyperus diandrus Two Stamen Umbrella Sedge [RR]
Elatine minima Water Wort [PR]
Galium boreale Northern Bedstraw [RR]
Rhexia virginica Virginia Meadow Beauty [NR PR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, one amphibian and one reptile plus thirteen species of vascular plants were recorded as regionally uncommon.

4. **Fish and Wildlife Concentrations** - (B5) Several areas in the north end of the lake are known to serve as spawning habitat for Muskellunge. Two small deer yards are present in the northeastern side of the lake. A heronry is present east of the lake.

Ownership and Disturbance

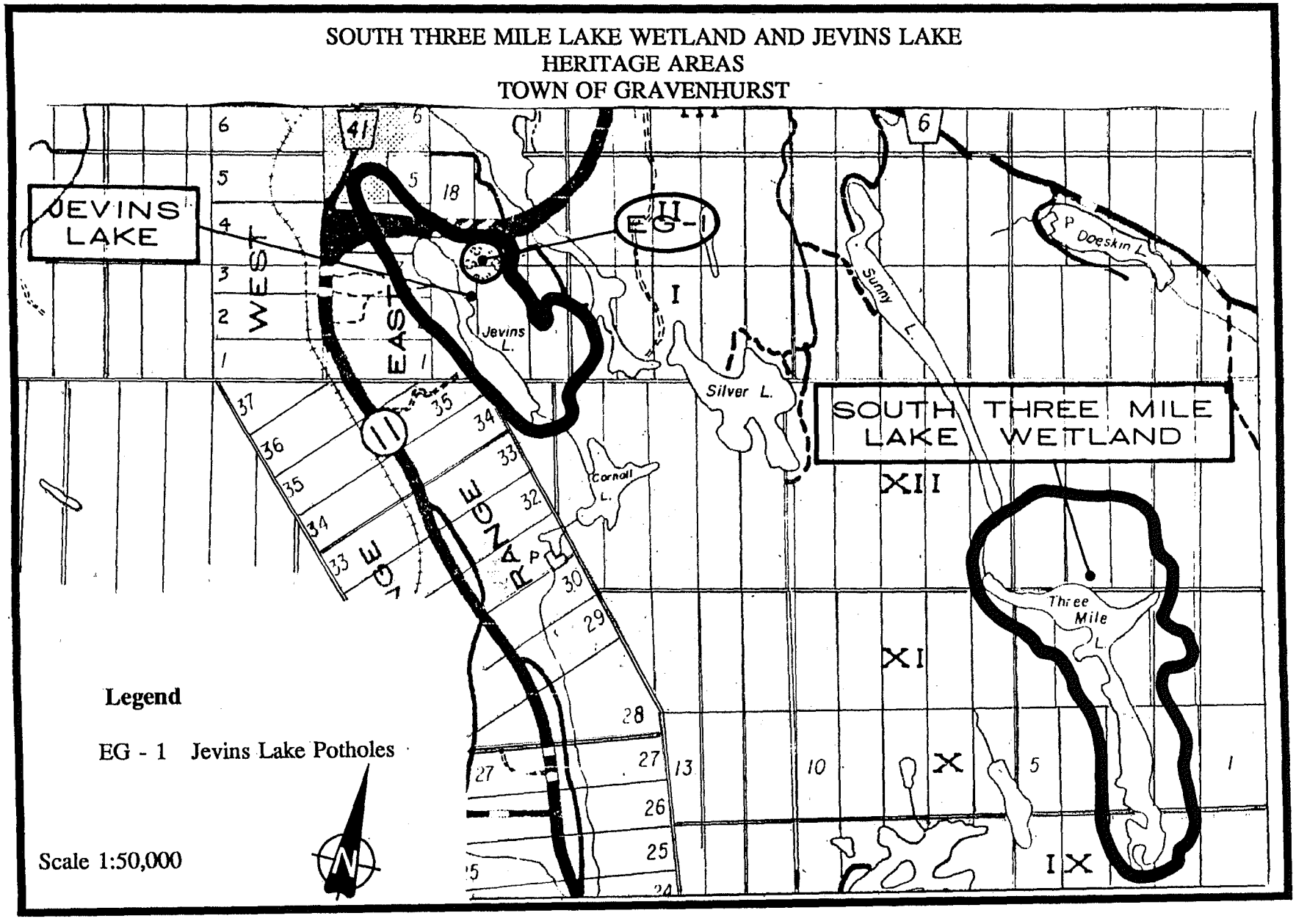
The majority of the shoreline of this lake, which is approximately 3 km long, is undeveloped Crown Lake. Shoreline at the southern end of the lake is privately owned. Several unregulated campsites and semi-permanent structures are present on the small islands in the southern end of the lake. These island habitats and portions of shoreline are suffering from abuse from trampling, burning, littering, tree-cutting and hunting. The area is a popular spot for parties, fishermen and campers with easy vehicle access.

Sensitivity

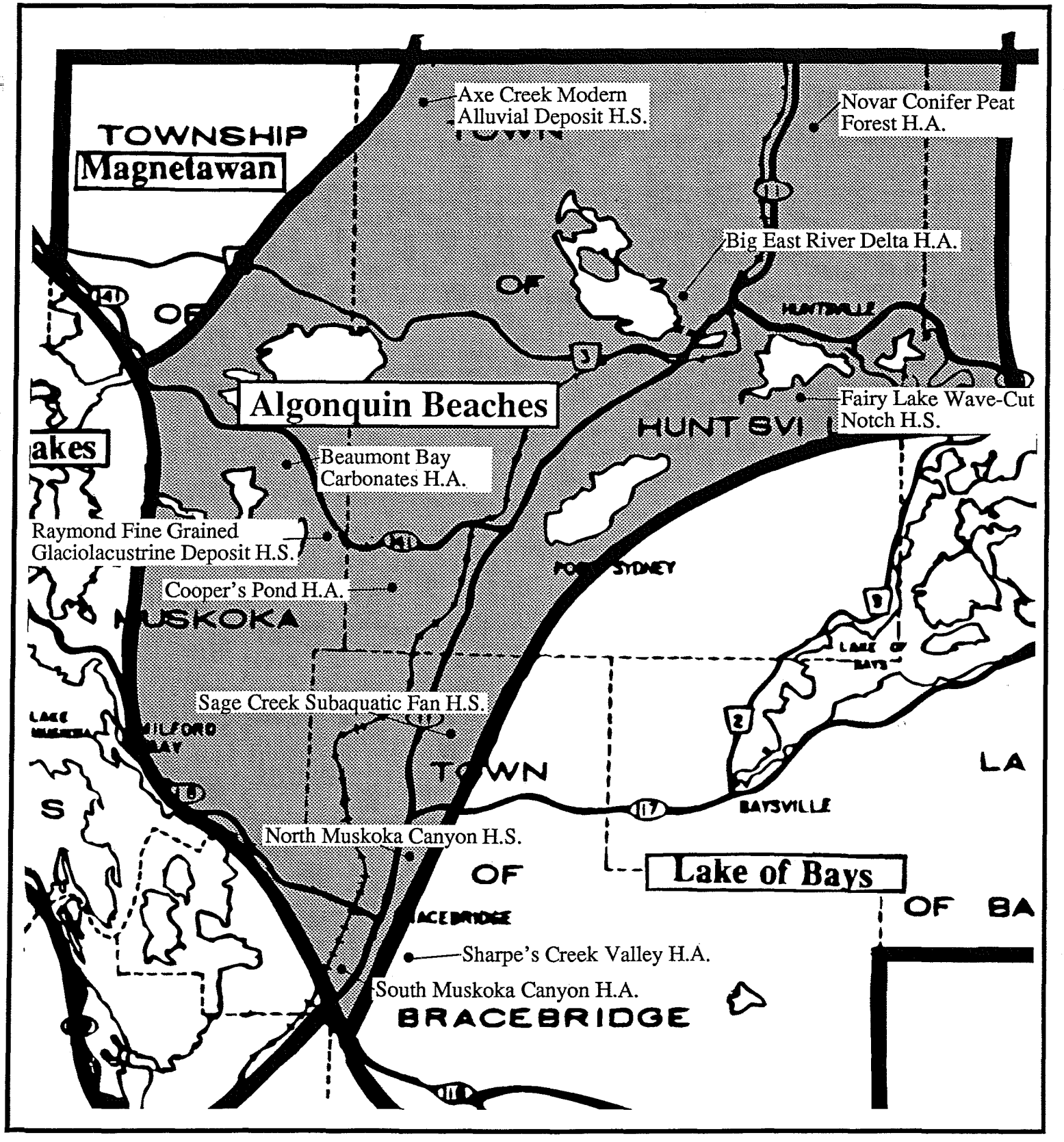
The sensitivity of this area is related to the shoreline habitat for Atlantic Coastal Plain Flora, wildlife habitat and the representative rock barren - shrub community. The MNR should give priority to protection of these significant ecological features by following management guidelines for A.C.P.F., deer yards, fish spawning areas and significant plant communities. Increased enforcement presence in this area is necessary to prevent further damage to the shoreline and island habitats.

Major Sources of Information

Bergsma, et al., 1993; District Municipality of Muskoka, Sensitive Areas Schedules 1985; Keddy & Sharp, 1989; Reid, et al., 1991; OMNR, rare species mapping; Muskoka Field Naturalists, 1991.


SOUTH THREE MILE LAKE WETLAND AND JEVINS LAKE
HERITAGE AREAS
TOWN OF GRAVENHURST
JEVINS LAKE
EG-1
SOUTH THREE MILE LAKE WETLAND
Jevins L.
Silver L.
Sunny L.
Doeskin L.
Cornell L.
Three Mile L.
Legend
EG - 1 Jevins Lake Potholes
Scale 1:50,000
N

3.6 ALGONQUIN BEACHES SUBDISTRICT



BEAUMONT BAY CARBONATES UTM Ref. 17TPA 215095

Watt Township, Muskoka Lakes Area: 220 ha
Status: Recommend Heritage Area

Site Characteristics

This site, situated south of Skeleton Lake, contains erratics of Ordovician limestone found by Waddington and Dence (1979) and later confirmed by Bajc (1990). The greatest concentration and exposure of carbonate fragments was located in a gravel pit adjacent to Nutt Lake. Most of the limestone fragments are small, but some range up to 30 cm across. The area south of Highway 141 is a kame moraine which is affected in part by the presence of two gravel pits. Rich, sub-mature Sugar Maple-Beech-Eastern Hemlock forests dominate the area. A small stream flowing toward Skeleton Lake through a low-lying depression supports an Eastern Hemlock-Yellow Birch-Cedar and Black Ash rich bottomland forest, tall thicket swamp and forb-rich wet meadow. The three areas north of Highway 141 consist of shallow till over bedrock, sections of steep topography with bedrock exposures, a large area underlain by swamp and organic deposits, and an inland bog pond.

The Beaumont Bay peninsula which extends out into Skeleton Lake is defined by steep cliffs supporting White Birch and Trembling Aspen, with White Pine and Eastern Hemlock on the bedrock exposed ridge tops and White Pine-Red Maple forest on the drier leeward slopes. The interior slopes contain very mature deciduous and mixed forests on deep, mesic soils with Sugar Maple and Yellow Birch dominants.

A large bog pond occupying a central depression supports Leatherleaf and Tamarack floating fen mat and graminoid mat with dead trees, surrounded by open water with emergent aquatic vegetation.

The forests to the west of Beaumont Bay are largely deciduous Sugar Maple-White Birch-Red Maple on deep rich soils. A central depression is occupied by a mixed conifer-broadleaf forest swamp. The large wetland area is confined by deciduous and mixed forested slopes. Adjacent to Hwy 141 where numerous stream sources converge, is a section of reedswamp (Cattail marsh) with dead standing conifers in deep standing water. The stream follows a primary channel through mixed and conifer swamp forests with large components of Eastern White Cedar plus Black Spruce, White Birch, Black Ash and Red Maple. Where two stream channels meet, the vegetation canopy opens to low shrub fen with Meadowsweet, Leatherleaf and sedge tussocks. As the channel deepens, in part due to a beaver dam, the community structure changes to shrub rich marsh with abundant aquatic vegetation.

Past the beaver dam, the channel narrows, and a shallow, cold water stream dominated by aquatic vegetation empties into Skeleton Lake. The first known station of Mare's-tail (*Hippuris vulgaris*) and regionally uncommon Marsh Marigold were located along this section of stream.

Flora and Fauna

Total number of species recorded were:

Vascular plants	304 native; 40 introduced
Birds	47 observed during breeding season
Mammals	7
Herpetofauna	10
Butterflies	6
Dragonflies	4
Mushrooms	10

Significant Natural Values and Selection Criteria Met

1. **Distinctive Landform** -(A1) The presence of strands of high carbonate glacial debris is an unusual landform feature that contributes to the richness of the site's vegetation communities. An earth science assessment of the Nutt Lake limestone erratics by the MNR concluded that the outlier covered by Skeleton Lake was regionally significant and the erratics and pebbles of Ordovician limestone in the outwash and till were at least locally significant (Spek, 1981a). Their contributions can be used to confirm the direction of past glacial ice movement. No other source of Ordovician limestone exists between Skeleton Lake and Lake Nipissing (Hewitt, 1967).

2. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than expected for Muskoka, as shown in Figure 1. The area also supports a diversity of landform features supporting a variety of upland, wetland and steep slope vegetation communities.

3. **Quality and Disturbance** - (B3) The presence of mature, late successional forests on rich soils supporting a diverse understory, many species of woodland amphibians, a diversity of warblers and thrushes and mammal species requiring large areas of mature forest (Fisher, Bear) attest to the quality of this site.

4. **Rare Species** - (B4) The Beaumont Bay area provides habitat for the following rare species:

Wildlife
Buteo lineatus Red-shouldered hawk [NR PR]
Vascular plants
Carex interior Inland sedge [RR]
Chenopodium simplex Maple-leaved Goosefoot [RR]
Gnaphalium sylvaticum Wood cudweed [RR]
Hippurus vulgaris Mare's-tail [RR]
Poa languida Blue grass [RR]
Sanguinaria canadensis Bloodroot [RR]

In addition, two salamanders, one bird, and 12 species of vascular plants were recorded as regionally uncommon.

5. **Fish and Wildlife Concentrations** - (B5) The coldwater stream has been identified as supporting Rainbow Smelt. The Peninsula east of Beaumont Bay supports a deer wintering area. Red-shouldered Hawk may nest in the area, although a nest site is yet to be confirmed.

6. **Biogeographic Significance** - (B7) Among the plant species found in the study area, two species, Blue Grass (*Poa languida*), and Glaucous Honeysuckle are considered calciphiles. Many other species reflect the presence of a rich woods, such as Basswood, Ironwood, Wild Leek, White Baneberry, Bloodroot, Downy Yellow Violet, Herb Robert, Rattlesnake Grape Fern, Smith's Melic Grass, Long Awned Wood Grass, Black Grass (*Oryzopsis racemosa*), White Grass (*O.asperifolia*), Tall Millet Grass (*Milium effusum*), Drooping Wood Sedge (*Carex arctata*) and Rough Sedge (*Carex scabrata*). Still others have a more southern distribution and thus would be approaching their northern limit, such as Silver Maple, Prickly Gooseberry, Maple-leaf Viburnum, Poison Ivy, Enchanter's Nightshade, White Baneberry.

Ownership and Disturbance

This area is all privately owned and has a high degree of disturbance associated with gravel pits, a cemetery, a large campground and golf course by Nutt Lake, a marina, and scattered rural homes within the study area. A highway cuts through the middle of the area and local access roads are present in many parts. Snowmobile trails and logging of the deciduous forests for firewood have disturbed other areas. Nevertheless, there are sections of very mature forest throughout the area. The wetland area is disturbed only to the extent that beaver dams are regularly dismantled and the channel kept open in order to reduce the incidence of flooding onto Highway 141. Areas of greatest disturbance were eliminated from the study area with the final boundaries including areas of relatively minor disturbance.

Sensitivity

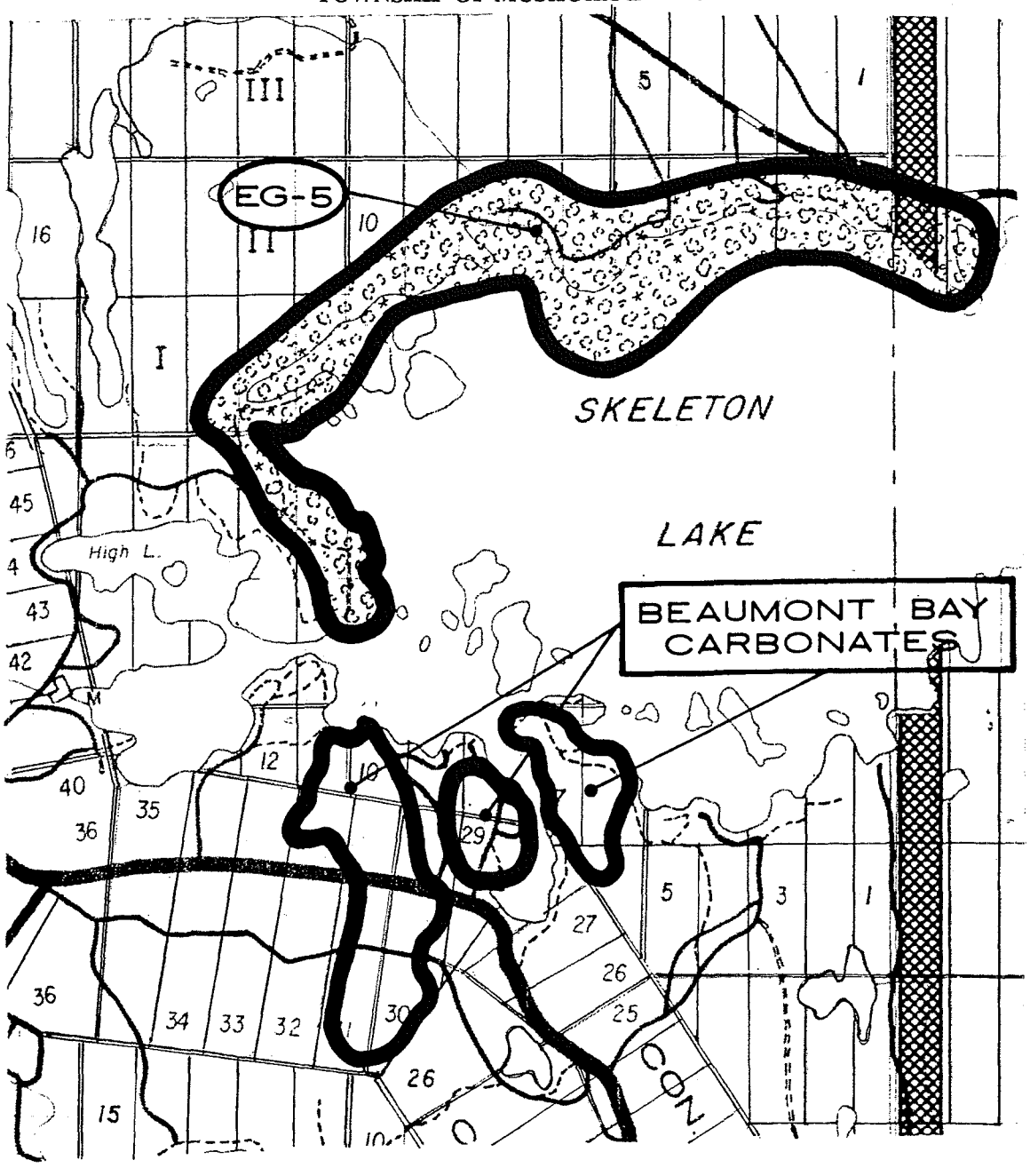
The sensitivity of this site is related to the combination of geological features which support rich mature forest stands of high quality, and a diversity of flora and woodland fauna, including many regionally rare and uncommon species representative of rich woods.

The woodlots are large enough to support larger mammals and birds requiring areas of relatively undisturbed mature forest. Management guidelines should be directed at protection and enhancement of forestry and wetland values by minimizing disturbances which would remove large areas of prime forest and cause further fragmentation of the area. Development on steep slopes must consider the impacts of erosion and increased sedimentation potential. Alterations to the stream on the large wetland should address impacts on water quality and quantity and reflect the Implementation Guidelines for the Wetlands Policy Statement.

Major Sources of Information

Bajc, 1990; Bergsma et al, 1993; District Municipality of Muskoka, Sensitive Areas Schedules, 1985 ; Hewitt, 1967; Reid et al, 1992; Spek, 1981; Waddington and Dence, 1979.

BEAUMONT BAY CARBONATES
HERITAGE AREAS
TOWNSHIP OF MUSKOKA LAKES



Legend

EG-5 Skeleton Lake Earth Science A.N.S.I.

Scale1:50,000

BIG EAST RIVER DELTA UTM Ref. 17TPA360220

Chaffey Township, Huntsville Area: 297 ha
Status: Recommend Heritage Area

Site Characteristics

This delta is located at the end of the Big East River hydrological system, which is the largest of the two rivers feeding into the North Muskoka River.

The active delta is set between ridges and knobs of the underlying gneissic bedrock, which support Sugar Maple-Red Maple successional deciduous stands. The heavy sediment load carried by the river is deposited as levees as it meets the deeper waters of Lake Vernon. These levees project as spits into the Lake supporting a late successional deciduous swamp forest of Red and Silver Maple and White Birch, with Green Ash and White Elm as secondary species. Soils are alluvial in origin and include glaciolacustrine fine-grained and coarse-grained deposits of fine sand, silt and clay.

Waterlogged organic and sandy peats have accumulated in the numerous oxbows and abandoned river channels in the delta. These areas support Speckled Alder thicket swamps, a grass marsh and a Leatherleaf shrub bog. Mesic to wet-mesic mixed woodland communities occur along the banks of the river and are dominated by White Spruce-Balsam Fir shrub-rich forests and Eastern White Cedar-Red Maple herb-rich swamp forests.

Nearshore waters at the mouth of the delta support an extensive deep emergent marsh dominated by Bayonet Rush. Shallow emergent marsh vegetation occurs along the shallow, sandy shorelines and emergent sandbars. Floating and submerged aquatic vegetation occupies the deeper waters of the river channel and in sheltered embayments along the river and lake.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	295 native ; 29 introduced
	3 A.C.P.F. with a score of 14 (Low)
Birds	72 observed during breeding season
Mammals	8 (6 from small mammal trapping)
Herpetofauna	10
Butterflies	1
Dragonflies	9
Mushrooms	1
Fish	1

Significant Natural Values and Selection Criteria Met

1. **Distinctive Landform** - (A1) The East River Delta is the best example of a highly active, modern delta formation within the District Municipality of Muskoka.

2. **Representation** - (B1) The deep emergent marsh vegetation consisting of an extensive (approx. 19 ha), virtually pure stand of Bayonet Rush (*Juncus militaris*) (normal/sand/very wet), is unique to Muskoka. This community type, may constitute the largest representation of its type in the province and adds to the full range of biotic representation in Muskoka.

The East River Delta has also been evaluated as a provincially significant wetland complex (OMNR, 1992) with a recommendation for ANSI status (Brunton, 1991 b).

3. **Diversity** - (B2) The total number of plant species related to the size of the area is higher than expected for Muskoka as shown on Figure 1. The area also supports a high diversity of birds.

4. **Rare Species** - (B4) The East River Delta provides habitat for the following rare species:

Wildlife

Agrion aequabile Black-banded Band Wing Dragonfly [RR]
Microsorex hoyi Pygmy Shrew [PR]
Empidonax traillii Willow Flycatcher [RR]
Buteo lineatus Red-shouldered Hawk [NR PR]
Dendroica tigrina Cape May Warbler [RR]

Vascular Plants

Elymus virginicus Virginia Rye [RR]
Potamogeton nodosus Pond Weed [RR]
Triadenum virginicum Marsh St. John's Wort [PR]
Trillium cernuum Nodding Trillium [RR]

In addition, one mammal, one bird and fourteen species of vascular plants were recorded as regionally uncommon.

5. **Fish and Wildlife Concentrations** - (B5) The aquatic plant communities along the river mouth and adjacent lakeshore provide spawning habitat for Rainbow Trout and excellent potential habitat for Northern Pike spawning and rearing.

6. **Size and Linkage** - (B6) The East River Delta is the southern terminus of the Big East River which forms a sheltered corridor for the movement of aquatic and terrestrial life across northern Muskoka.

7. **Biogeographic Significance** - (B7) A number of species typically associated with rich riparian woodlands of the southern Great Lakes-St. Lawrence Forest Region were found in the East River Delta area, including Silver Maple, Virginia Rye Grass and Bristly Greenbrier.

The large population of Nodding Trillium, a northern species of relatively rich floodplain habitats, is of regional significance. Its location in the understory of the deciduous swamp forest on the spit may represent the largest population of this species in Muskoka.

A minor Atlantic Coastal Plain Flora element is present in the flora of the East River Delta, represented largely by the population of Bayonet Rush.

Ownership and Disturbance

The area is privately owned. Most of the residential and cottage development is along the road on the southern boundary of the site and along the river upstream from the delta. Much of the delta feature is relatively undisturbed. However, a footpath which parallels the north bank of the river and an associated picnic site near the tip pose some threat to the population of Nodding Trillium. Soil compaction along the numerous subsidiary trails radiating from the picnic site was noted, along with some evidence of browsing by deer. Of the plant species recorded, 8.9% were introduced species.

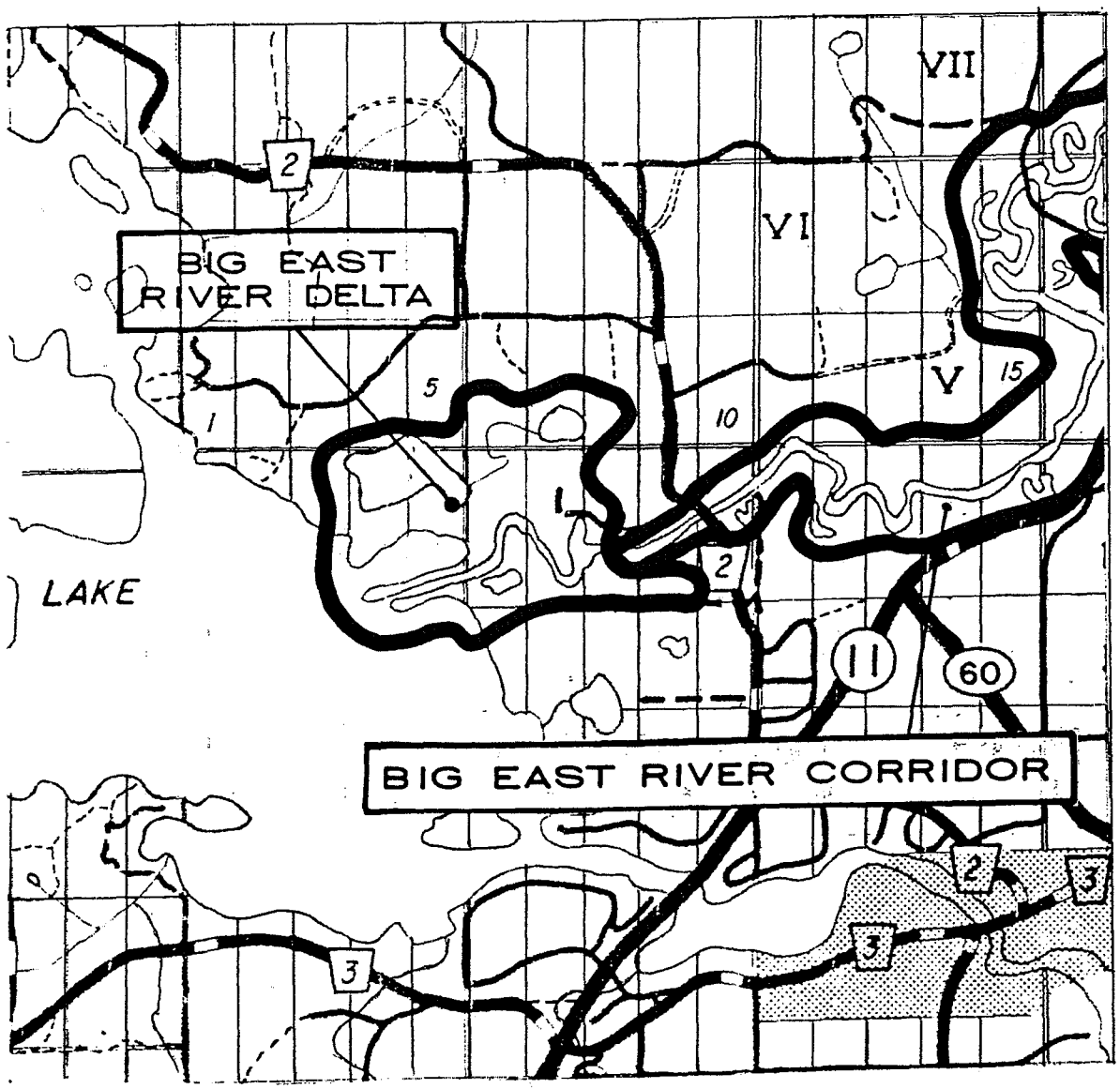
Sensitivity

The sensitivity of this site is related to the wetland ecology of the delta. Provincial policy guidelines related to the protection of wetlands should be followed.

Major Sources of Information

Bajc, & Henry, 1991; Brunton, 1991 b; District Municipality of Muskoka, 1985 Sensitive Areas Schedules; O.M.N.R. Wetland Evaluation, 1992; Reid, et al., 1991.

BIG EAST RIVER DELTA
HERITAGE AREA
TOWN OF HUNTSVILLE



Scale 1: 50,000

COOPER'S POND UTM Ref. 17TPA253027

Watt Township, Muskoka Lakes Area: 570 ha
Status: Recommend Heritage Area

Site Characteristics

Cooper's Pond is a small lake, bordered by wetlands, which drains into Three Mile Lake. Constant water levels in the lake, controlled by a concrete dam at its outlet, have allowed the invasion of floating-leaved aquatic plants and Leatherleaf-Sweet Gale shrubs on a floating sphagnum mat. Other beaver pond and wetland communities scattered throughout the site include areas with standing dead trees, White Cedar, Red Maple and Black Ash swamps, Alder thicket swamps, and a small area of Black Spruce swamp forest.

The upland areas around Cooper's Pond have a mantle of thin sandy tills, with some deeper pockets of fine silty till. Much of this upland is clad in a relatively mature Sugar Maple-Beech-Hemlock forest, with some areas of almost pure Eastern Hemlock. To the west of Cooper's Pond, the gentle slopes support a mature woodland of Sugar Maple, Black Cherry, and White Ash. This woodland has a rich herbaceous layer of fern species and herbs, including such species as Wild Leek and Ostrich Fern, which are indicative of relatively rich conditions.

In the 1960s and 1970s, Cooper's Pond was a productive waterfowl habitat, and records of annual banding activity show up to several hundred Wood Duck, Mallard, Black Duck, and other ducks (Gillespie and Lewis, 1985). However, its productivity has declined significantly in the absence of periodic water drawdowns to allow vegetative decay and nutrient release.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	252 native; 20 introduced
	1 A.C.P.F. with a score of 4 (Insignificant)
Birds	87 observed during breeding season
Mammals	15
Herpetofauna	11
Butterflies	19

Significant Natural Values and Selection Criteria

1. **Diversity** - (B2) The Cooper's Pond area shows an exceptional richness in diversity of bird species, with 87 species recorded during the breeding season. This richness is related in part to a good diversity of habitat types.

2. **Rare Species** - (B4) The Cooper's Pond area provides habitat for the following rare species:

Wildlife
Buteo lineatus Red-shouldered Hawk [NR PR]
Anas acuta Northern Pintail [RR]
Vireo philadelphicus Philadelphia Vireo [RR]
Vascular Plants
Botrychium dissectum Cut-leaved Grape Fern [RR]
Carex blanda Woodland Sedge [RR]
Carex interior Inland Sedge [RR]
Carex novae-angliae New England Sedge [PR]
Dryopteris Xboottii Bootts Wood Fern [RR]
Luzula multiflora Wood Rush [RR]
Shepherdia canadensis Canada Buffaloberry [RR]

In addition, regionally uncommon species documented from the site included 13 plants, five birds, one mammal, three amphibians and one butterfly. An unconfirmed summer sighting of Long-eared Owl, a provincially and regionally rare species, was also recorded during field work on the site.

2. **Fish and Wildlife Concentrations** - (B5) According to MNR records, a woodlot within the Cooper's Pond area supports a small heronry.

3. **Biogeographic Significance** - (B7) The flora of the Cooper's Pond area includes several species with eastern affinities, including New England Sedge, Slender Manna Grass (*Glyceria melicaria*), and the only Atlantic Coastal Plain species, Purple Bladderwort.

Ownership and Disturbance

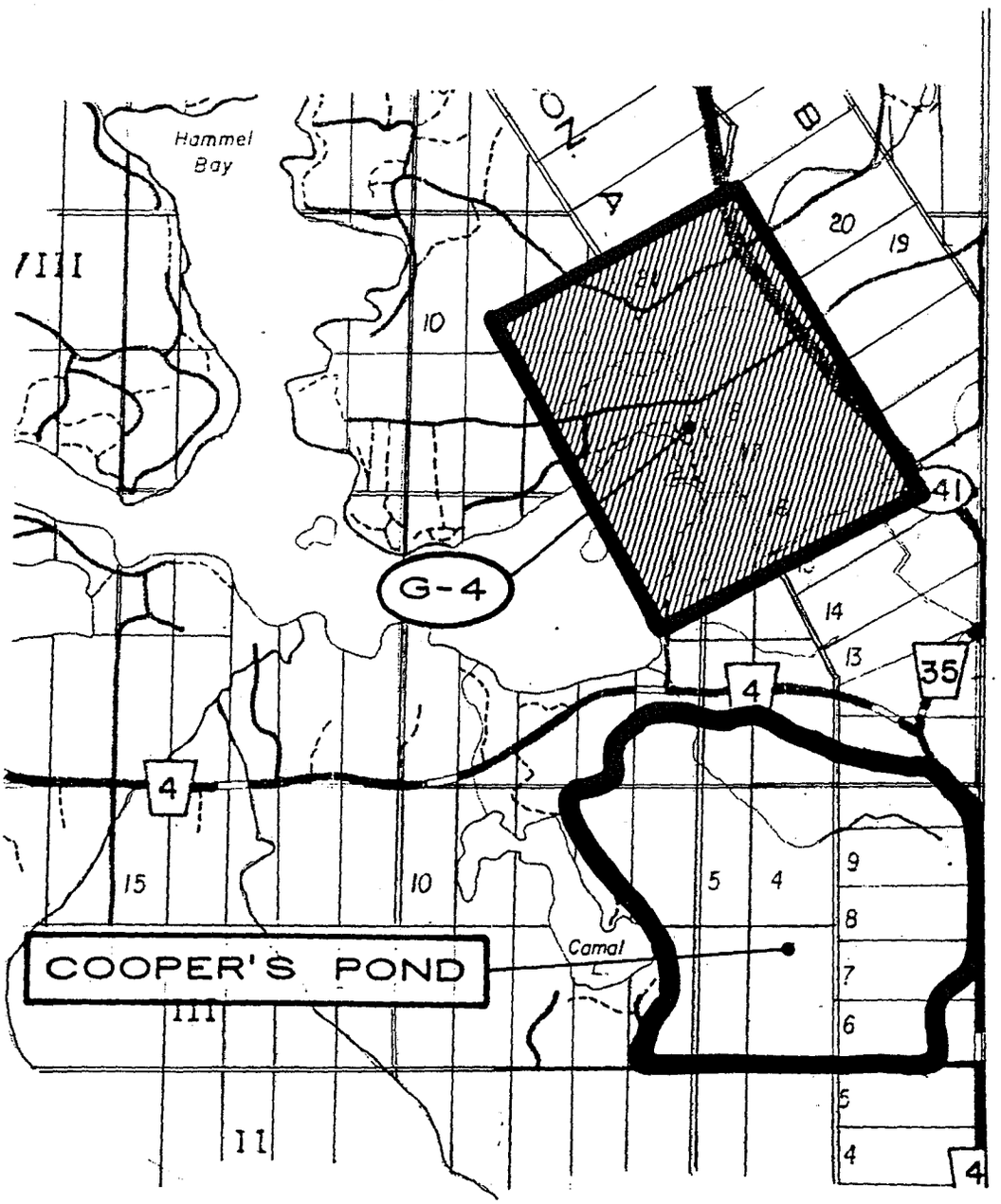
Over half of Cooper's Pond itself is Crown land; the remainder of the site is privately owned. A number of seasonal and permanent residences have been constructed around the edges of the area, and a hydro corridor cuts through the northwest corner. Parts of the forest, especially in the southern third of the site, have been selectively logged. Water levels in the Pond are controlled by a concrete dam.

Sensitivity

The natural values of the Cooper's Pond area could be impaired by further development or heavy logging, especially in the vicinity of rare species such as Red-shouldered Hawks. Artificial maintenance of the waters levels in the Pond has greatly reduced its productivity for waterfowl, a trend that will continue unless periodic water fluctuations are permitted to return.

Major Sources of Information - Reid et al, 1991; Gillespie and Lewis, 1985 Wetland Evaluation, OMNR; Bajc and Henry, 1991.

COOPER'S POND
HERITAGE AREA :
TOWNSHIP OF MUSKOKA LAKES



Legend

G-4 fine-grained glaciolacustrine deposits

Scale 1:50,000

NOVAR CONIFER PEAT FOREST UTM Ref. 17TPA374335

Chaffey Township, Huntsville Area: 347 ha
Status: Recommend Heritage Area

Site Characteristics

Novar Conifer Peat Forest is an extensive area of northern peatland, straddling Highway 11 along the Little East River. Deep organic soils support sections of conifer swamp forests of almost exclusively closed-canopy Black Spruce, partially open Black Spruce-Tamarack, and partially open Black Spruce, Tamarack, and Balsam Fir with Sphagnum dominating the understory. An open White Spruce-Tamarack-Eastern White Cedar swamp occupies the southeastern section of the wetland.

The river course is low-gradient and meandering, with frequent beaver dams. Water quality is sufficiently high to support Brook Trout, likely in large part due to the groundwater release of the wetland and the esker complex just to the north. The stream course supports a dense shrub swamp of Speckled Alder, Winterberry, and Mountain Holly. At the lower end of Fish Lake, an aquatic community of Waterlilies, Horsetails, Pickerelweed and Arrowhead occupies the shallow bay. On shallow peats overlying coarse-grained sand deposits just to the north, a sedge meadow provides further diversity of wetland types.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	286 native; 23 introduced
	8 A.C.P.F. with a score of 34 (Moderate)
Birds	77 observed during breeding season
Mammals	18
Herpetofauna	8
Butterflies	4
Dragonflies	7
Mushrooms	25

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) The extensive organic soils and the associated source areas along the edges of the esker complex contribute to maintaining the base flow and high water quality of the Little East River.

2. **Representation** - (B1) The area contributes to the full range of biotic representation in Muskoka by including a Black Ash-American Elm-Red Maple swamp (normal/sand/wet), a community type of limited distribution.

3. **Diversity** - (B2) Despite the homogeneity of its vegetation communities, Novar Conifer Peat Forest has a higher than expected diversity of native plants related to area, as shown in Figure 1. Diversity is also high for breeding birds and mammals. This diversity is especially notable in the northern communities represented in this wetland, since these typically have lower species richness than their southern counterparts.

4. **Rare Species** - (B4) Novar Conifer Peat Forest provides habitat for the following rare species:

Wildlife
Cistothorus platensis Sedge Wren [RR]
Dendragapus canadensis Spruce Grouse [RR]
Empidonax flaviventris Yellow-bellied Flycatcher [RR]
Parus hudsonicus Boreal Chickadee [RR]
Picoides arcticus Black-backed Woodpecker [RR]
Rana palustris Pickerel Frog [RR]
Polygonia faunus Green Comma [RR]
Vascular Plants
Carex novae-angliae New England Sedge [PR] *
Dryopteris Xboottii Bootts Wood Fern [RR]
Triadenum virginicum Marsh St. John's Wort [PR]
* species recorded by W. Crins
In addition, regionally uncommon species found within this site include 15 plants, seven birds, and one mammal.

5. **Fish and Wildlife Concentrations** - (B5) The wetland provides winter habitat for White-tailed Deer and Moose. The presence of Brook Trout in the stream and an exceptional number of northern bird species attests to the quality of habitat within this site.

6. **Biogeographical Significance** - (B7) Both the vegetation communities and the wildlife of Novar Conifer Peat Forest have a distinct northern flavour. Species which are approaching the southern limit of their range at this site include Southern Red-backed Vole, Spruce Grouse, Boreal Chickadee, Black-backed Woodpecker, Gray Jay, and Yellow-bellied Flycatcher.

Ownership and Disturbance

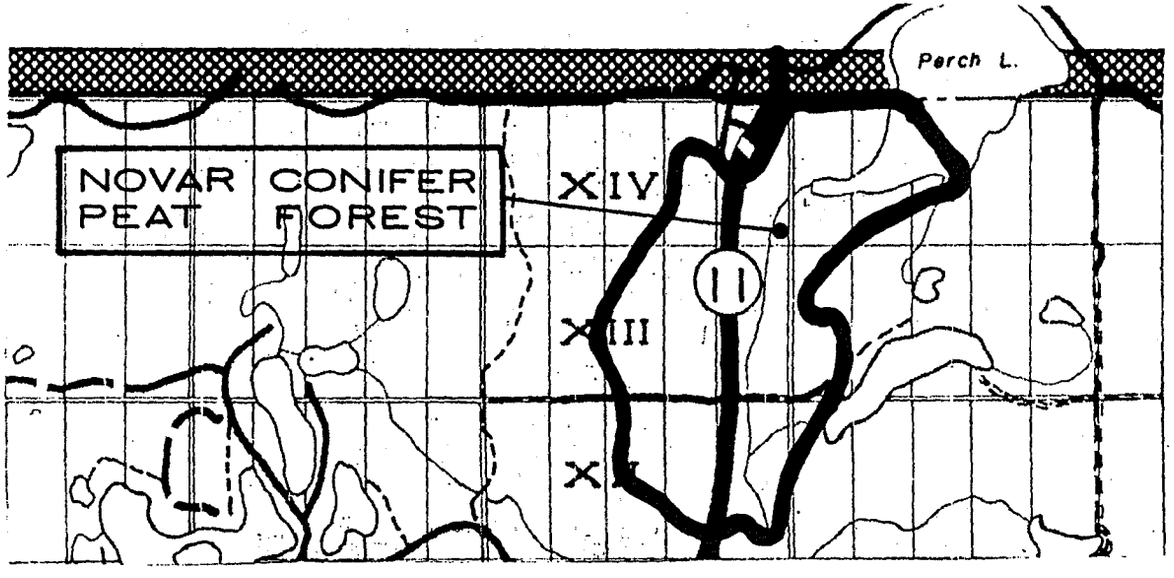
Approximately 98% of Novar Conifer Peat Forest is privately owned. Highway 11 and a rail corridor bisect the site, and several gravel roads have been recently constructed in the northeastern section of the wetland. Small areas of fill and old roadbeds are present in several isolated parts of the site. In spite of these disturbances, the remaining treed areas of this conifer wetland are remarkably undisturbed.

Sensitivity

Major development proposals affecting Novar Conifer Peat Forest, including twinning of the highway, housing expansion and Hydro lines, are likely to fragment its habitats and significantly reduce its current diversity and natural significance. While the limits of tolerance of most species is unknown, the survival of many of the significant northern wildlife species is likely to be in serious jeopardy. Future fragmentation and disturbance should be minimized within the wetland area, and the short and long-term effects should be monitored to evaluate and document impacts on species composition and functioning of the hydrological system.

Major Sources of Information - Reid et al, 1992; Brunton, 1991 b; OMNR 1985 deer surveys.

NOVAR CONIFER PEAT FOREST
HERITAGE AREA
TOWN OF HUNTSVILLE



Scale 1:50,000

SHARPE'S CREEK VALLEY

UTM Ref. 17TPV340870

Draper Township, Bracebridge
Status: Recommend Heritage Area

Area: 60 ha

Site Characteristics

This site is set within the steep-walled, clay-based ravine of Sharpe's Creek near its outflow into the South Muskoka River near Bracebridge. While limited in area, this clay deposit has been described as "at least 15 metres (in depth) of rhythmically laminated silts and clays" (Bajc, 1990). The layering, or varves, of this deposit probably originate with annual fluctuations in sediment depositions in a glacial lake.

The creek floodplain, which is bedrock controlled in parts, incorporate former stream channels in the form of oxbows, oxbow ponds and seasonally-flooded meander scars. These wetlands support rich riparian vegetation communities, from mature late successional Red Maple-Silver Maple-American Elm swamp forest and early successional Crack Willow-Balsam Poplar swamp, to Speckled Alder-Willow-Dogwood thicket swamps and grassy wet meadow marshes.

Small areas of mature, late successional Sugar Maple-Beech forest occur on rich alluvial deposits along the base of the southern slope of the creek, supporting a corresponding rich herbaceous flora including Maidenhair Fern, Silvery Spleenwort, Ostrich Fern, Wild Leek, Rose-like Sedge, Long-awned Woodgrass, White Grass, Tall Millet Grass, and the provincially rare New England Sedge.

Most of the steep ravine slopes are covered by an Eastern Hemlock-Sugar Maple-Beech-Yellow Birch mixed, mesic forest type. Disturbed, successional woodland and thickets occupy much of the northern slopes of the area, with Trembling Aspen, White Elm, White Pine, White Birch and Balsam Poplar. The disturbances are associated with a gravel and sand pit in an area of coarser water-lain outwash deposits west of Highway 11. The creek east of the highway runs through pasture land and old fields which are in early successional stages filling in with Meadowsweet and Pin Cherry. Several raised, dry-mesic sandy knolls on the floodplain of Sharpe's Creek are dominated by Poverty Grass.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	349 native ; 65 introduced
Birds	71 observed during breeding season
Mammals	12 (2 from small mammal trapping)
Herpetofauna	11
Butterflies	7
Dragonflies	2

Significant Natural Values and Selection Criteria Met

1. **Distinctive Landform** - (A1) The varved silts and clays exposed at several locations along Sharpe's Creek Valley contain a record of glacial lake sedimentation which spans well over 500 years of Lake Algonquin history (Jamieson, 1979), a record that is not matched elsewhere in Muskoka. Many of the rhythmites contain remnant trace fossils (burrows and tracks) attributed to burrowing and bottom-dwelling organisms which flourished 11,000 years ago in Lake Algonquin (Bajc, 1990).

2. **Representation** - (B1) Vegetation communities on clay-based soils are uncommon in Muskoka. The Crack Willow-Balsam Poplar broadleaf forest swamp (normal/organic(clay)/wet-mesic) is not represented in other Heritage Areas, thus it adds to the full range of biotic representation in Muskoka.

3. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than expected for Muskoka as shown in Figure 1. The area also supported a high diversity of birds.

4. **Rare Species** - (B4) The Sharpe's Creek Valley area provides habitat for the following rare species:

Wildlife
Agrion aequabile Black-banded Band Wing (dragonfly) [RR]
Empidonax traillii Willow Flycatcher [RR]
Vascular Plants
Carex aurea Golden Fruited Sedge [RR]
Carex blanda Woodland Sedge [RR]
Carex cephaloidea Thin-leaved Sedge [RR]
Carex novae-angliae New England Sedge [PR]
Carex pallescens Pale Sedge [RR]
Poa alsodes Blue Grass [RR]
Ribes triste Swamp Red Current [RR]
Solidago gigantea Late Goldenrod [RR]
Teucrium canadense Germander [RR]

In addition, two snake species, one bird and seventeen species of vascular plants were recorded as regionally uncommon.

5. **Biogeographic Significance** - (B7) The underlying clays and alluvial deposits of the ravine support a rich herbaceous flora, uncharacteristic of areas within the Precambrian Shield. Notable in this flora is the presence two southern woodland species; the sedge *Carex cephaloidea*, and the grass *Poa alsodes*, both of which were discovered in mesic mixed forest. The latter species constitutes a considerable northward range extension in Ontario (Dore & McNeill, 1980). Sharpe's Creek also harbours large populations of the provincially rare New England Sedge, a species primarily of eastern distribution.

The occurrence of Willow Flycatcher in hawthorn thickets northwest of Muskoka Road 37 is of regional significance. This species is rare on the Precambrian Shield and is approaching its northern distributional limit in Muskoka (Prescott, 1987 a).

6. **Scenic Landscapes** - (C7) The view of the Sharpe's Creek Valley in both directions from Muskoka Road 37 has been identified as having high scenic value.

Ownership and Disturbance

The area is privately owned and surrounded by a variety of urban, industrial, transportation and rural developments. These disturbances have broken the site into islands of habitats with limited linkages, thus preventing the movement of larger animals. Largest of these disturbances is the site of ongoing aggregate extraction. Disused pits and the associated network of roads supports vegetation dominated primarily by aggressive alien species. Over 15% non-native species were recorded from the area, one of the highest percentages in Muskoka. Other disturbances include a portion of the area northwest of Muskoka Road 37 which was apparently used as a landfill site for the Town of Bracebridge some time ago. This area now supports disturbed woodland and thicket communities Fenced agricultural land adjoining the banks of Sharpe's Creek, along the southeastern boundary of the area, is currently used for horse pasture.

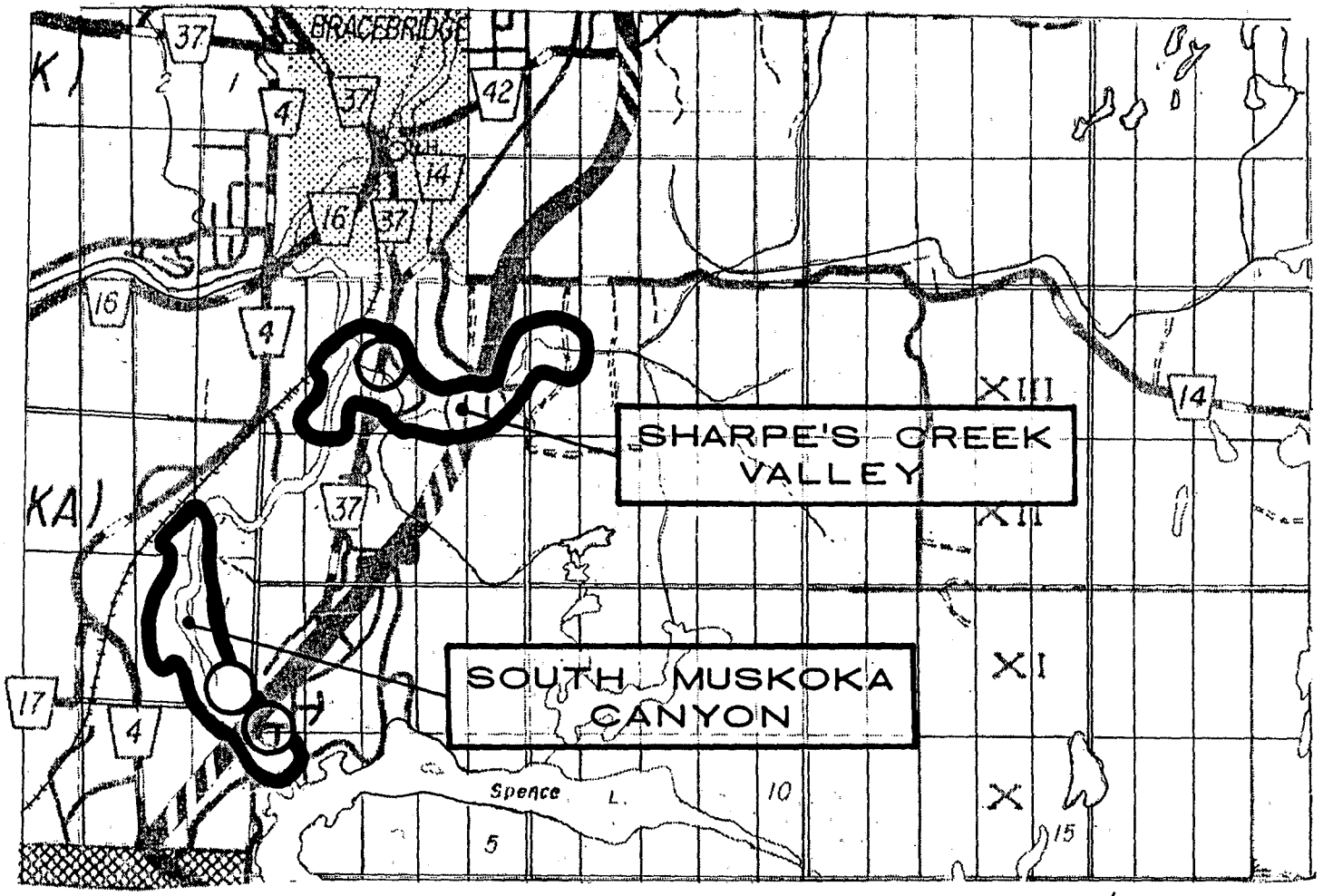
Sensitivity

The sensitivity of this site is related to the presence of the clay varves and clay-based vegetation which are of limited distribution and occurrence in Muskoka. Policies related to protection of the valley floor, sides and tributary ravines, including a buffer designed to prevent future erosion or slumping problems will be necessary. Rehabilitation of the abandoned landfill site and the worked-out parts of the gravel pit should provide long-term protection of the water quality in Sharpe's Creek and enhancement of the ecological connections for wildlife and plant life along the valley corridor.

Major Sources of Information

Bajc, 1990; Bajc & Henry, 1991; Berney, & Reid, 1993; Dore, & McNeill, 1980; Jamieson, 1979; Prescott, 1987 a; Reid, et al., 1991; Spek, 1979 a.

SHARPE'S CREEK/ SOUTH MUSKOKA CANYON
HERITAGE AREA
TOWN OF BRACEBRIDGE



Legend

O Scenic Spots

Scale 1:50,000

SOUTH MUSKOKA CANYON UTM Ref. 17TPV341842 to 330853

Draper and Muskoka Townships, Bracebridge Area: 49 ha
Status: Recommend Heritage Area

Site Characteristics

This site is situated along the South Muskoka River near Bracebridge. The river valley corridor includes the South Falls generating station headpond, the falls, and approximately 1.5 km of river downstream. Fluctuating water levels in the headpond above the falls provide suitable habitat for Atlantic Coastal Plain species. Adjacent to the generating station, the river drops steeply through a bedrock fault surrounded by White Pine forest. The massive rocks of the talus slope provide nesting habitat for Turkey Vultures. Below this point, the river runs through a steep-sided valley clad in fairly mature mixed forests of Eastern Hemlock, Red Maple, White and Yellow Birch, White Pine, and Red Oak on deep clay soils. Several small tributaries enter through deeply-incised side valleys.

The site is geologically interesting; the river follows ancestral meltwater discharge routes, verified by the presence of older alluvial sand and silt deposits along the river valley. The steep-sided eastern valley wall is composed of glaciolacustrine fine-grained deposits of clay and silt, while the western slopes are underlain by coarser-grained deposits of fine sand and silt (Bajc and Henry, 1991). These deposits account in part for the richness of the flora and wildlife habitat.

The sheltered canyon-like valley provides a green corridor into the urbanizing core of Bracebridge.

Flora and Fauna

Total number of species recorded were:

Vascular plants	298 native; 39 introduced
	11 A.C.P.F. with a score of 51 (High)
Birds	40 observed during breeding season
Mammals	7
Herpetofauna	5
Butterflies	5

Significant Natural Values and Selection Criteria Met

1. **Diversity** - (B2) The total number of native plant species related to the size of the area is higher than expected for Muskoka, as shown on Figure 1.

2. **Rare Species** - (B4) The South Falls Canyon area provides habitat for the following rare species:

Vascular Plants
Carex folliculata Long Sedge [PR]

Carex novae-angliae New England Sedge [PR]
Elatine minima Water Wort [PR]
Equisetum scirpoides Dwarf Scouring Rush [RR]
Rubus canadensis Thornless Blackberry [RR]
Triadenum virginicum Marsh St. John's Wort [PR]
Xyris difformis Slender Yellow-eyed Grass [PR]

In addition, 11 species of vascular plants were recorded as regionally uncommon.

3. **Fish and Wildlife Concentrations** - (B5) Pickerel are known to spawn below the falls (MNR fish spawning maps) and spawning bed enhancement was undertaken by the MNR in 1987. The 1990 confirmation of nesting Turkey Vulture was signficant since known nest locations for these birds are sparse.

4. **Biogeographic Significance** - (B7) The South Falls generating station headpond provides habitat for Atlantic Coastal Plain Flora, with 11 species recorded. In the assessment and ranking of areas for A.C.P.F., this site obtained a high score of 51 which ranked it 9 of 10 significant sites.

5. **Scenic Landscapes** - (C7) The falls beside the South Falls generating station and the view down the valley are identified as having high scenic value.

Ownership and Disturbance

The area is privately owned with uses varying from cottage and residential to Hydro generation. A large portion of the area is undisturbed, but it is evident that the river corridor is well-travelled with most associated disturbances located near the falls or close to the cottages along the shoreline. There were 11.3% introduced plant species recorded from the area.

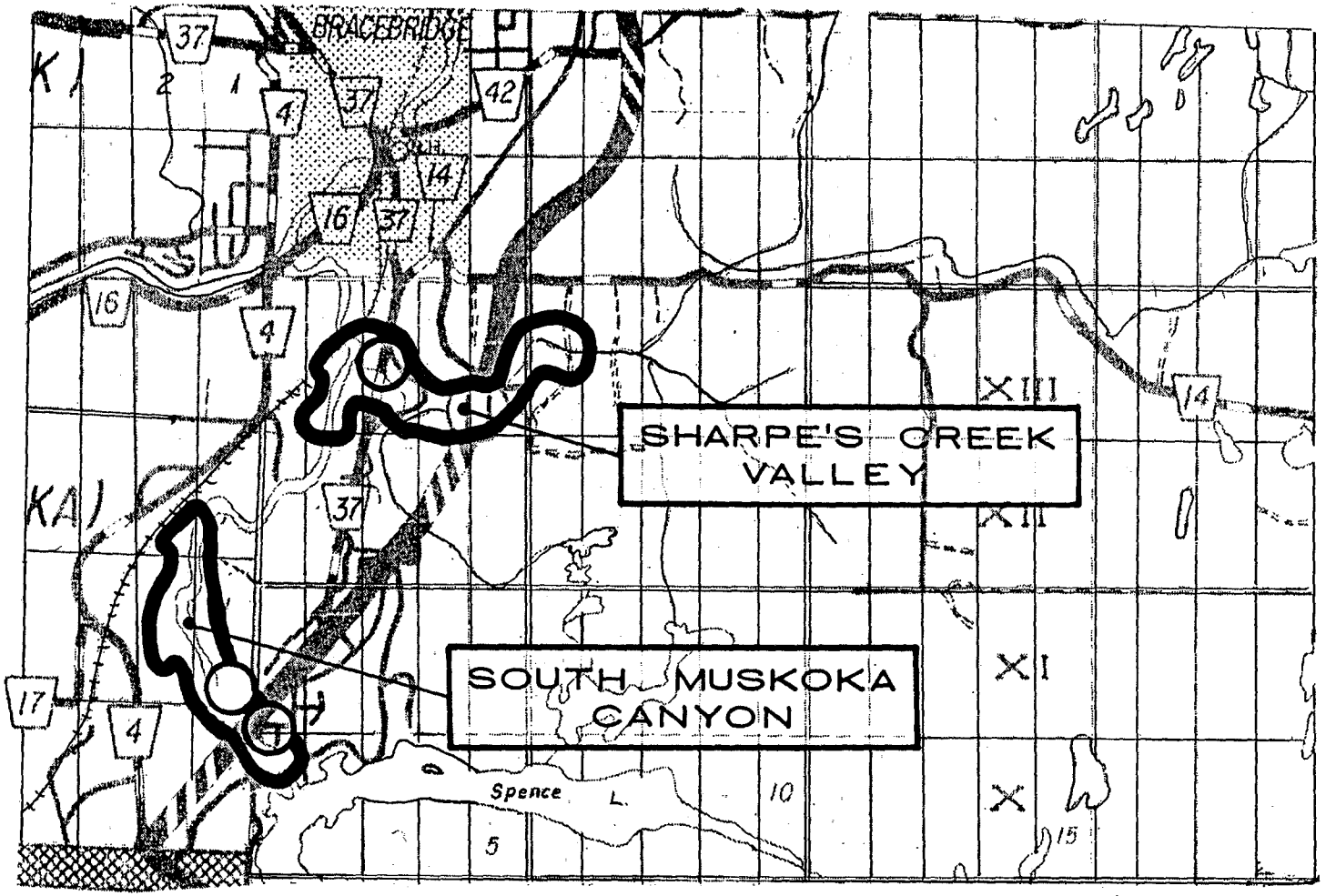
Sensitivity

The sensitivity of this site is related to the river corridor and shoreline features. Protection of the slopes using MNR Area of Concern guidelines and shoreline protection for A.C.P.F. should be considered in developing policies related to this area.

Major Sources of Information

Bajc & Henry, 1991; Bergsma, et al., 1993; Berney & Reid, 1993; Keddy & Sharp, 1989; Reid, et al., 1991.

SHARPE'S CREEK/ SOUTH MUSKOKA CANYON
HERITAGE AREA
TOWN OF BRACEBRIDGE



Legend

O Scenic Spots

Scale 1:50,000

AXE CREEK MODERN ALLUVIAL DEPOSIT

UTM Ref. 17TPA625260

Stisted Township, Huntsville
Status: Recommend Heritage Site

Area: 60 ha

Site Characteristics

Axe Creek carries a portion of the overflow from Axe Lake northward into Buck Lake. The lower section of the creek initially flows through a bedrock-dominated area before entering a broad floodplain of glaciolacustrine sands. The creek is about 5-10 metres wide, and meanders across a floodplain of about 100 metres in width. The densely vegetated floodplain is accumulating organic matter over most of its surface, supplemented by pulses of overbank silt and very fine sand deposited during peak flow seasons.

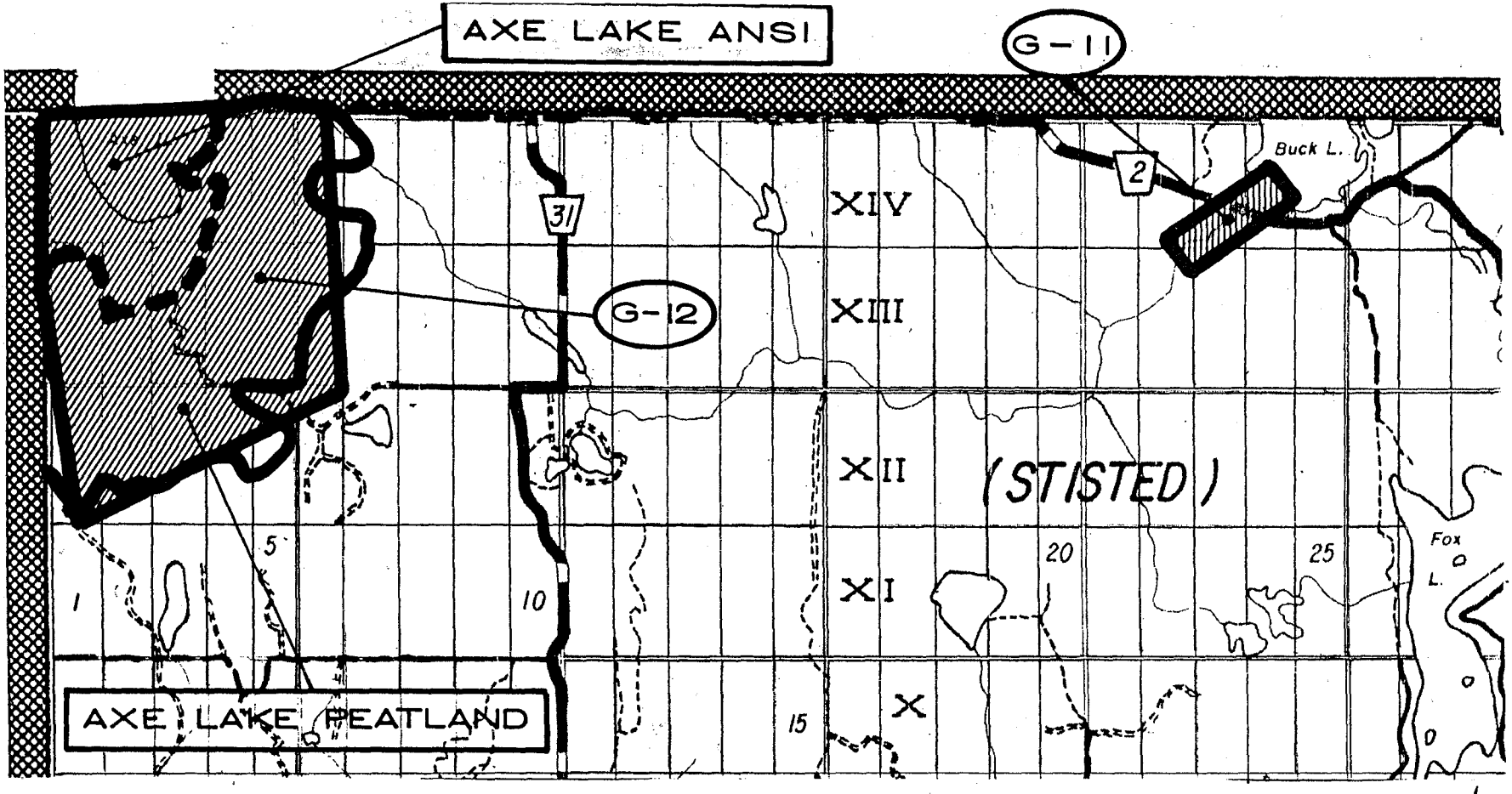
Significant Natural Values and Selection Criteria Met

1. **Landform Representation** - (A2) This site was selected by Bajc (1992) as an excellent representative of modern alluvial deposits in Muskoka.

Ownership, Disturbance and Sensitivity

Ownership of the site has not been determined but is likely private. To preserve the representative value of the site, the hydrology of the creek should remain unchanged, with no dams constructed, and development on the floodplain avoided.

AXE CREEK MODERN ALLUVIAL DEPOSIT
HERITAGE SITE
TOWN OF HUNTSVILLE



Legend

G-11 Modem alluvial deposit

G-12 Swamp and organic deposit

Scale 1:50,000

FAIRY LAKE WAVE-CUT NOTCH UTM Ref. 17TPA436199

Brunel Township, Huntsville Area: 5 ha
Status: Recommend Heritage Site

Site Characteristics

A wave-cut notch and foreshore platform of glacial Lake Algonquin is well developed on the south shore of Fairy Lake abut 0.5km east of Timber Bay. The notch is best seen in a cleared pasture on the east side of the cottage road leading to the lake. It is difficult to trace beyond the clearing. The notch, which occurs at an elevation of 335m ASL, has been eroded into dense, blocky, glacial fill flanking a bedrock outcrop can be found. The foreshore platform is about 100m in width and slopes very gently to the north. Up to 1m of fine nearshore sand overlies glacial till on the platform. The northern edge of the platform is bounded by a steep, bedrock-controlled descent of 50m to the shore of Fairy Lake.

Standing at the top of the bluff, viewing northward into the lowland now occupied by Fairy and Peninsula lakes and beyond to the highland north of the lakes, one can envisage standing on the shores of a narrow estuary of Glacial Lake Algonquin, a lake which occupied this valley some 11000 years ago. Deposits of varved silt and clay, now exposed along the north shore of Fairy Lake, were laid down on the lake bottom at depths easily comprehended from the site. For these reasons, the Fairy Lake wave-cut notch and foreshore platform has excellent potential as an interpretive geological site.

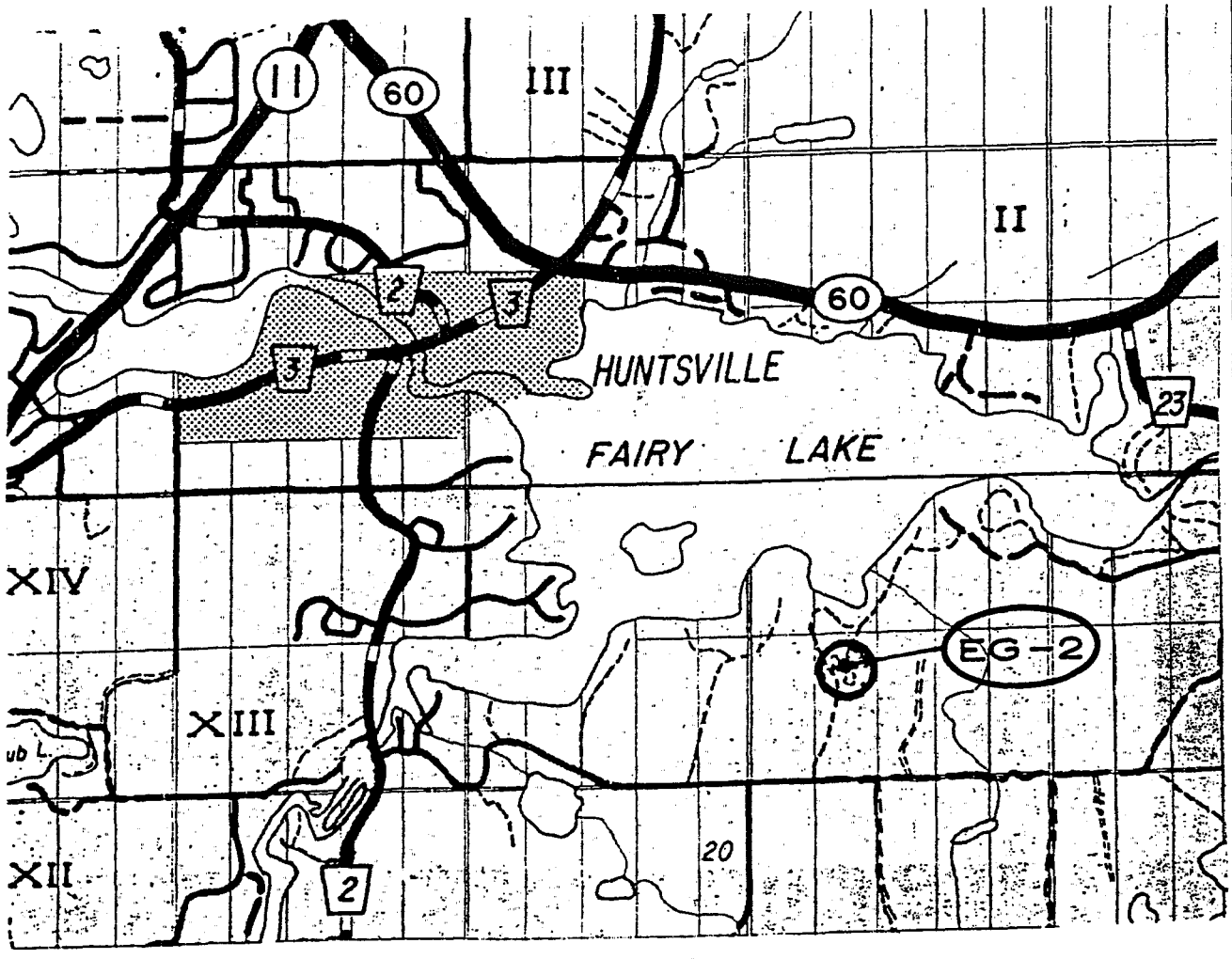
Significant Natural Values and Selection Criteria Met

1. **Distinctive Landform** - (A1) This shoreline fragment of glacial Lake Algonquin is unusual in Muskoka, since an extensive archipelago of islands fringing the shoreline probably damped the effects of nearshore processes, and since any shoreline features that did develop are difficult to trace in heavily forested terrain.

Ownership, Disturbance and Sensitivity

The site is privately owned, with a new house recently constructed just above the wave-cut notch. Further development on or adjacent to the bluff should be discouraged. The bluff should not be graded, nor should aggregate material or fill be removed from the site.

FAIRY LAKE WAVE-CUT NOTCH
HERITAGE SITE
TOWN OF HUNTSVILLE



Legend

EG-2 Fairy Lake wave-cut notch

Scale 1:50,000

NORTH MUSKOKA CANYON UTM Ref. 17TPV322930

Macaulay Township, Bracebridge Area: 123 ha
Status: Recommend Heritage Site

Site Characteristics

This prominent valley is situated along the North Branch of the Muskoka River between High Falls and Wilson Falls, north of Bracebridge. Just below High Falls the valley is flanked by two large outcroppings of Canadian Shield bedrock. Downstream, the valley is incised into an area of deep glaciolacustrine fine sands and older alluvial silts and sands. In places where the valley walls have been recently exposed, the layering effect (or varves) created by annual fluctuations in these sediments can be readily seen.

The valley walls and river floodplain provide a variety of sheltered habitats for wildlife and a locally significant corridor for the movement of wildlife and plant species. The mixed forests have a northern aspect with White Spruce, Balsam Fir and Eastern Hemlock, Red and Sugar Maple, White and Yellow Birch, Black Cherry and White Pine as common elements.

A total of 49 species of birds were seen in the Muskoka Canyon site during breeding season, together with 141 species of native vascular plants and 16 introduced plant species. Incidental sightings of other fauna were noted, including White-tailed Deer. Only one species of plant, Bloodroot (*Sanguinaria canadensis*), was considered regionally rare and one bird was uncommon.

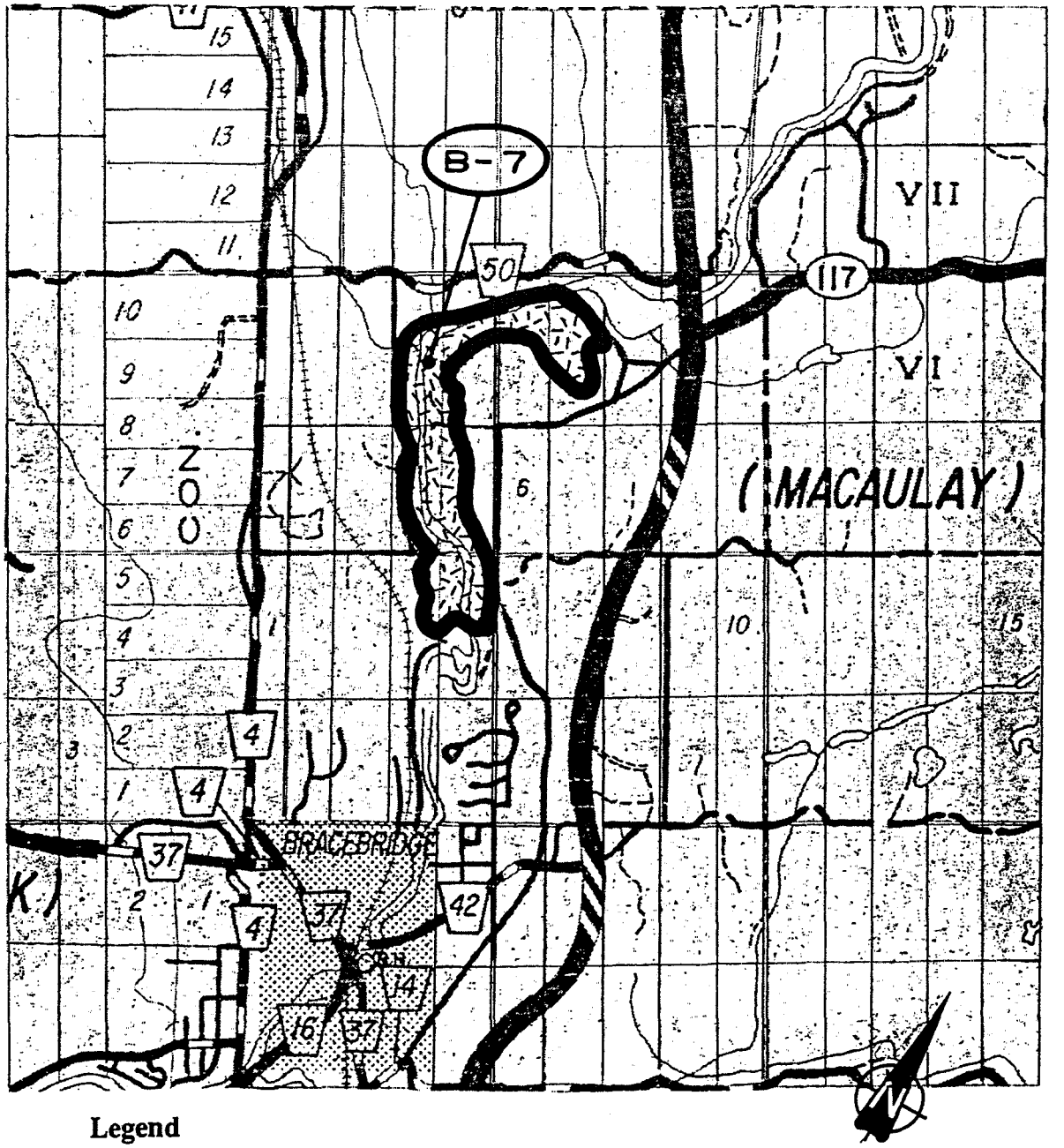
Significant Natural Values and Selection Criteria Met

1. **Fish and Wildlife Concentrations** - (B5) The North Muskoka Canyon is within a sizeable deer wintering area (District Municipality of Muskoka, 1985 Sensitive Areas Schedules; Jan McDonnell, personal communication, 1993) and provides a corridor of wildlife habitat within an urbanizing area of Muskoka.

Ownership, Disturbance and Sensitivity

All of the Muskoka Canyon site is privately owned, with most of the vegetation communities having undergone considerable disturbance over the years. Some forests are at an early successional stage of growth; others show evidence of continued disturbance from camping, recreational use of the land and cottage development. The sensitivity of the site is related to the maintenance of coniferous habitat for deer and the value of the natural corridor. Minimization of development on the valley floor and slopes and rehabilitation of shoreline areas would assist in protecting the natural river valley corridor.

NORTH MUSKOKA CANYON
HERITAGE SITE
TOWN OF BRACEBRIDGE



Legend

B-7 North Muskoka Canyon

Scale 1:50,000

RAYMOND FINE-GRAINED GLACIOLACUSTRINE DEPOSIT

UTM Ref. 17TPA624065

Watt Township, Muskoka Lakes
Status: Recommend Heritage Site

Area: 350 ha

Site Characteristics

This area contains a low relief lake plain of silt and clay, surrounding large, tree-covered rock knobs. Several small creeks, flowing into Three Mile Lake, have dissected the plain creating a dendritic erosional pattern. Steep, V-shaped gullies are common in the site.

The surface sediments consist of rhythmically laminated (varved) silts and clays. Each couplet of silt and clay represents one year of sedimentation; the silt layer being deposited during the peak melt seasons and the clay layers during the fall and winter seasons.

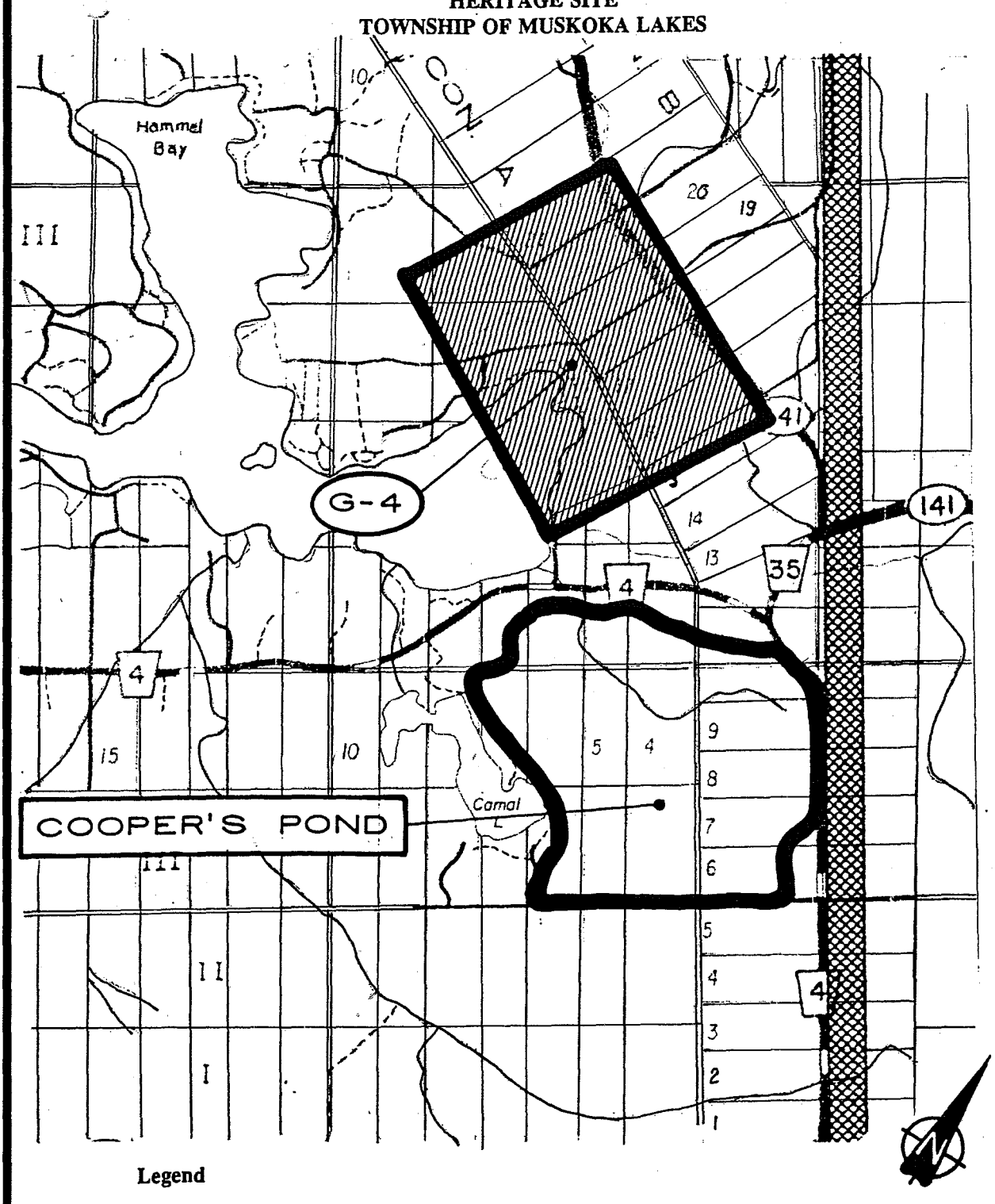
Significant Natural Values and Selection Criteria Met

1. **Landform Representation** - (A2) This site has been chosen by Bajc (1992) as one of the best examples of surface deposits of fine-grained glaciolacustrine sediments in Muskoka.

Ownership, Disturbance and Sensitivity

This site is privately owned, with the glaciolacustrine soils in active agriculture. The representational values of the site will be best expressed by continued farming, and by continued erosion along the creeks to expose the deposits through natural slumping.

RAYMOND FINE-GRAINED GLACIOLACUSTRINE DEPOSIT
HERITAGE SITE
TOWNSHIP OF MUSKOKA LAKES



Legend

G-4 fined-grained glaciolacustrine deposits

Scale 1: 50,000

SAGE CREEK SUBAQUATIC FAN UTM Ref. 17TPV345969

Macaulay Township, Bracebridge Area: 90 ha
Status: Recommend Heritage Site

Site Characteristics

The subaquatic fan feature is situated along the east bank of the North Branch Muskoka River. The river has incised itself more than 30m through the fan creating a steep western and southern flank. The upper surface of the feature is relatively flat and occurs at an elevation of approximately 305m ASL, about 10m below the former level of Lake Algonquin, thus confirming a subaquatic origin for the deposit. Bedrock is exposed at river level along the western edge of the fan and on its upper surface along the southern and eastern fringes. The entire deposit is confined to a south-trending bedrock channel along which the North Branch Muskoka River flows. The surface sediments of the fan consist of sand and gravel and are probably reworked by glaciolacustrine processes associated with falling Huron basin water levels. There are no natural exposures or gravel pits within the confines of the designated area; however, pits to the north expose thick sequences of well bedded very fine sand to gravel.

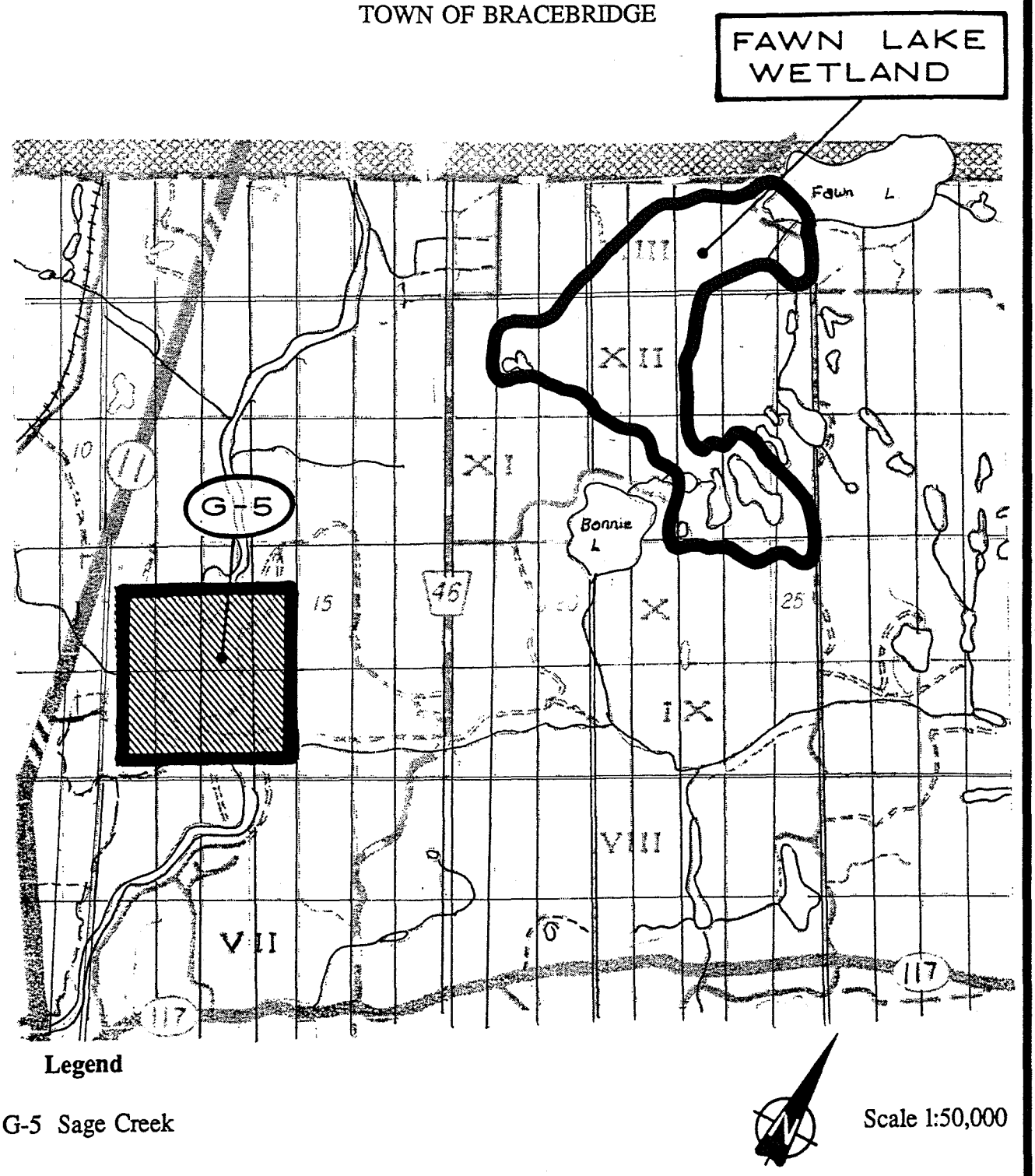
Significant Natural Values and Selection Criteria Met

1. **Landform Representation** - (A2) This site has been chosen by Bajc (1992) as an undisturbed representative of subaquatic fans. Since these fans are a primary source of aggregate within the District, most of the other deposits have been disturbed.

Ownership, Disturbance and Sensitivity

Ownership of this site is unknown. To preserve the values of this site, aggregate extraction should be prohibited from the feature. Forest cover should also be left as undisturbed as possible, especially along the steep terrace walls of the river, where severe erosional problems could occur.

SAGE CREEK SUBAQUATIC FAN
HERITAGE SITE
TOWN OF BRACEBRIDGE

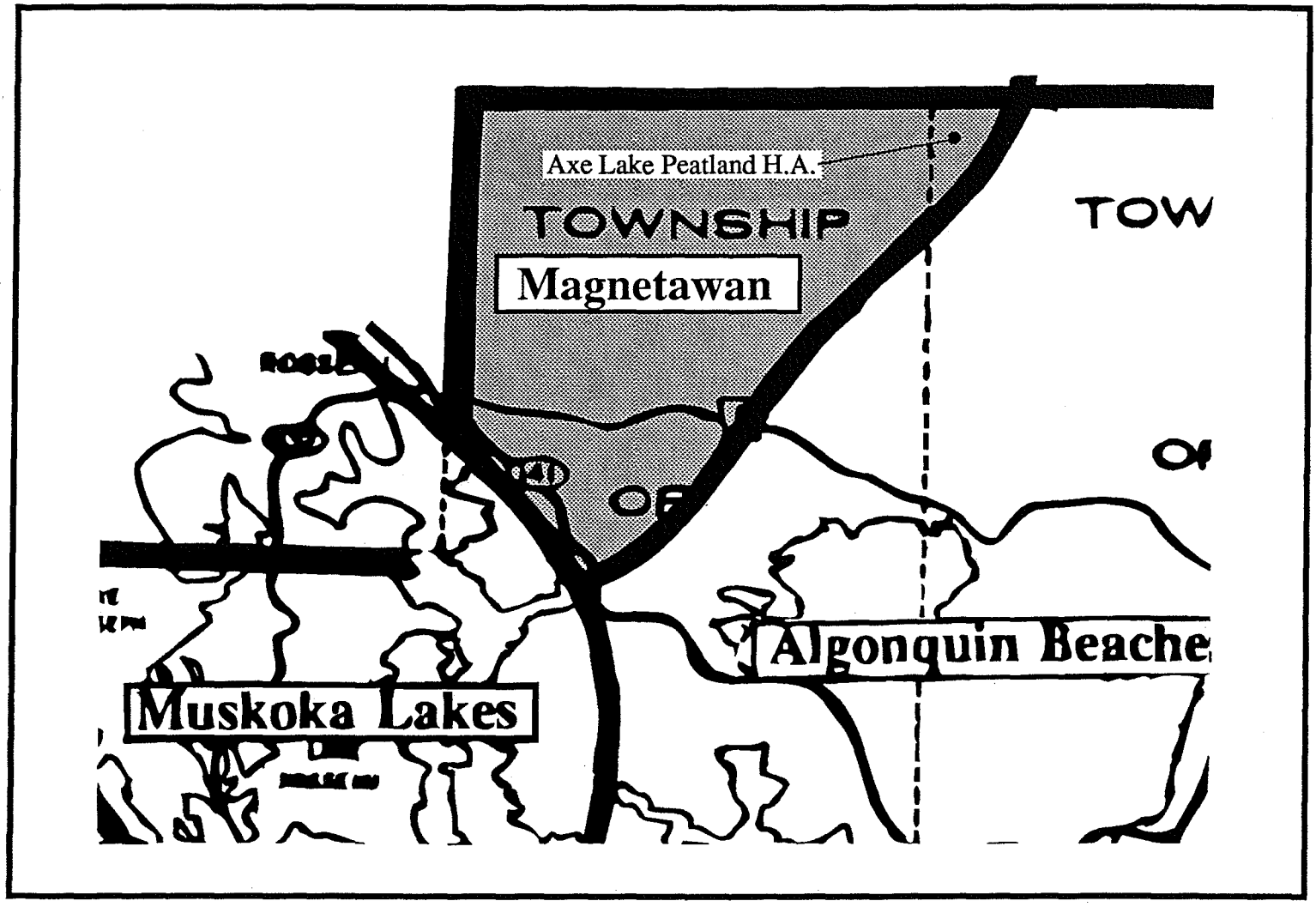


Legend

G-5 Sage Creek

Scale 1:50,000

3.7 MAGNETAWAN SUBDISTRICT



AXE LAKE PEATLAND UTM. Ref. 17TPA180260

Stisted Township, Huntsville
Cardwell Township, Muskoka Lakes Area: 607 ha
Status: Recommend Heritage Area

Site Characteristics

The lowland around Axe Lake is one of the more extensive peatlands within the District Municipalities of Muskoka and Parry Sound. Vegetation communities are dominated by Black Spruce-Tamarack-Eastern White Cedar swamp forests, treed poor fens and open bogs. The lake is situated on the remnant shoreline deposits of postglacial Lake Algonquin and is shallow, sand-bottomed and nutrient rich. It supports an extensive aquatic community of emergent and floating-leaved species, as well as an exceptionally rich assemblage of relict Atlantic Coastal Plain Flora. These coastal plain species are concentrated on the open, sandy-peaty shoreline at the north end of the lake (within the District of Parry Sound).

The south end of the lake shoreline is dominated by floating shrub mats with Pitcher Plants, Sundews, Calopogon, Bladderworts and Virginia Chain Fern.

On knolls within this wetland, and bordering its sides, there are intrusions of gneissic bedrock with a thin mantle of sandy till, supporting upland Sugar Maple-Balsam Fir-Eastern Hemlock mixed hardwood forests.

Axe Creek flows out of the lake eastward toward Buck Lake and south to Lake Vernon. The lake is thought to be an important oxidation - sedimentation basin (OMNR, 1977) and the surrounding wetlands are likely to moderate downstream flows. In addition there is a natural water level fluctuation up to one metre annually, which is essential for the maintenance of the Atlantic Coastal Plain Flora.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	174 native; 12 introduced
	16 A.C.P.F. with a score of 77 (High)
Birds	44 observed during breeding season
Mammals	10
Herpetofauna	7
Butterflies	7
Dragonflies	17
Mushrooms	48

Significant Natural Values and Selection Criteria Met

1. **Representative Landform** - (A2) The Axe Lake Peatland area was identified by Bajc, (1992) as the best representative example of swamp and organic deposits within the District Municipality of Muskoka.

2. **Hydrologic** - (A3) The extensive wetland area serves as a source for the Muskoka watershed system and functions as a storage and discharge system to moderate downstream flows.

3. **Representation** - (B1) The Axe Lake Peatland contains an area of open Treed Black Spruce Bog (cooler/organic/very wet). This community type is of limited distribution in Muskoka. It shares representation with Shack Creek Wetland.

4. **Quality and Disturbance** - (B3) The Axe Lake Peatland contains wetland community types in various successional stages and high quality habitat for Atlantic Coastal Plain Flora. The diversity of dragonflies indicates a high quality wetland environment. The lake and shoreline has been designated a provincially significant aquatic and shoreline complex ANSI since 1987.

5. **Rare Species** - (B4) The Axe Lake Peatland provides habitat for the following rare species:

Wildlife
Coccyzus americanus Yellow-billed Cuckoo [RR]
Dendragapus canadensis Spruce Grouse [RR]
Picoides arcticus Black-backed Woodpecker [RR]
Vascular Plants
Bartonia paniculata Screwstem [NR PR RR]
Carex flava Yellow sedge [RR]
**Potamogeton bicupulatus* Two-cupped Pond Weed [NR PR]
**Potamogeton confervoides* Pond Weed [PR RR]
**Rhexia virginica* Virginia Meadow Beauty [NR PR]
**Xyris difformis* Slender Yellow-eyed Grass [PR]

*located on the Parry Sound side of Axe Lake

In addition, one snake, three birds and nine vascular plant species were recorded as regionally uncommon.

6. **Size and Linkage** - (B6) Axe Lake peatland is one of the most extensive peatlands in the District of Muskoka and is one of the six largest Heritage Areas. The large size supports good populations of large mammals such as Black Bear and Moose.

7. **Biogeographic Significance** - (B7) In the Keddy and Sharp (1989) assessment of Atlantic Coastal Plain lakes, Axe Lake is rated as the second most significant in Ontario. Within Muskoka, Axe Lake ranks third for significant representation (second only to Morrison Lake for whole lake assessments). There are 16 coastal plain species present with a score of 77.

Axe Lake also supports fauna with a northern influence, such as Spruce Grouse, Black-backed Woodpecker, Gray Jay, Golden-crowned Kinglet and Southern Red-backed Vole.

Ownership and Disturbance

The majority of the site (approximately 80%) is situated within Crown land. The area within the ANSI boundaries is virtually undisturbed. The east shore of the lake is used as an unserviced campsite and is the only part of the lake shore suitable for recreation. Much of the ANSI is bordered by logging roads which were used to cut timber in the upland forests. These forests show evidence of recent logging and are in a regenerating early successional stage. Snowmobile trails are common in the area and hunting activities occur adjacent to a hunt camp located in the southeast corner. The density of aquatic vegetation in the shallow lake limits the use of motorized boats and other recreational activities.

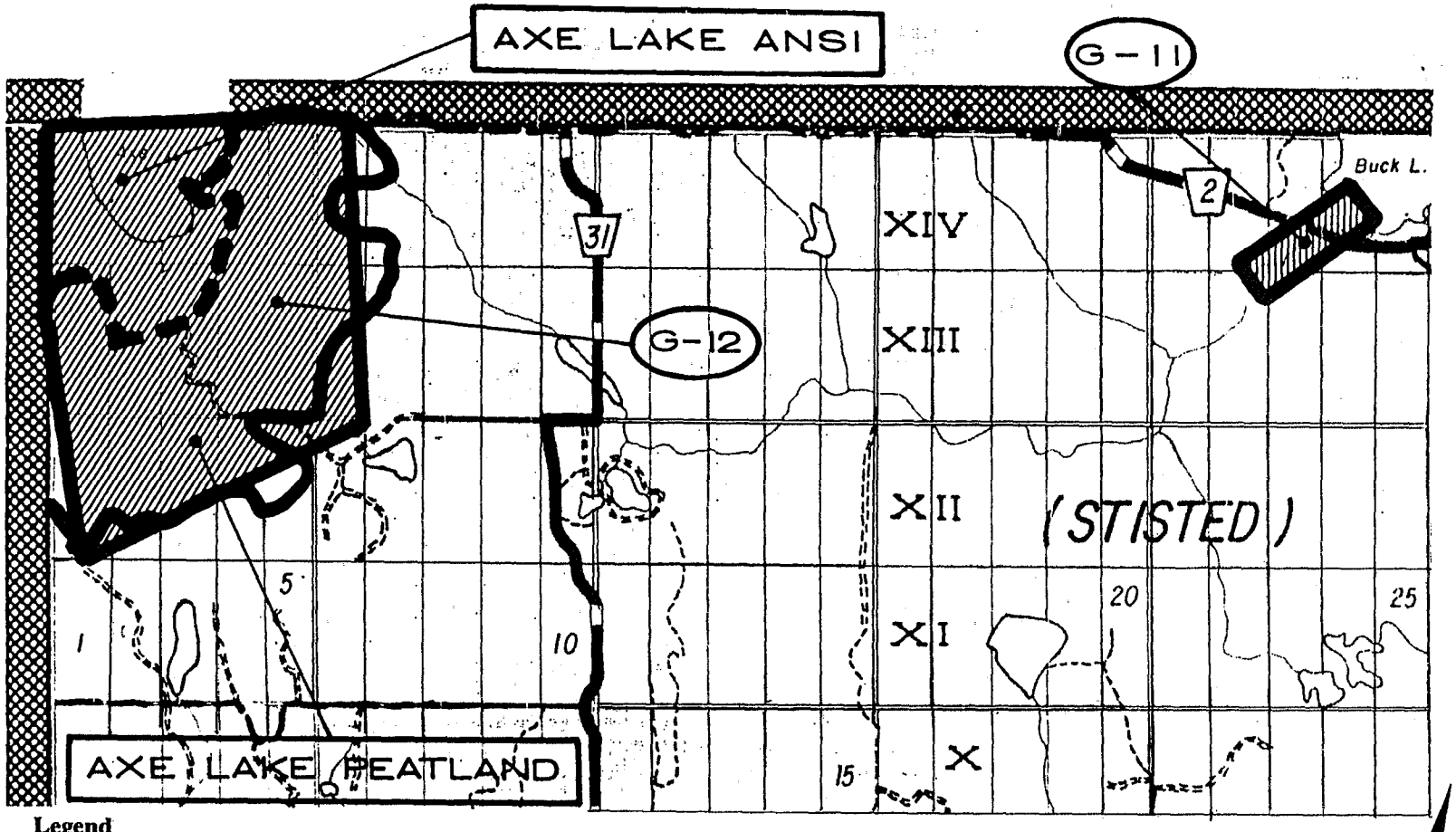
Sensitivity

The sensitivity of this site is related to the shoreline features and wetland function. The natural, fluctuating water levels are critical to the maintenance of the shoreline A.C.P.F. communities. The floating shrub mats and sandy-peaty shores are sensitive to erosional disturbances brought about by heavy equipment or large numbers of people. Disturbances to one part of the wetland could have adverse effects upon other portions. Policies related to protection and management of A.C.P.F. sites and the provincial wetland policy should be followed.

Major Sources of Information

Bajc, 1992; Brunton, 1991b; Keddy, and Sharp, 1989; Keddy, 1981, 1982, 1983; OMNR, 1977; Reid, et al., 1991.

AXE LAKE PEATLAND
HERITAGE AREA
TOWN OF HUNTSVILLE



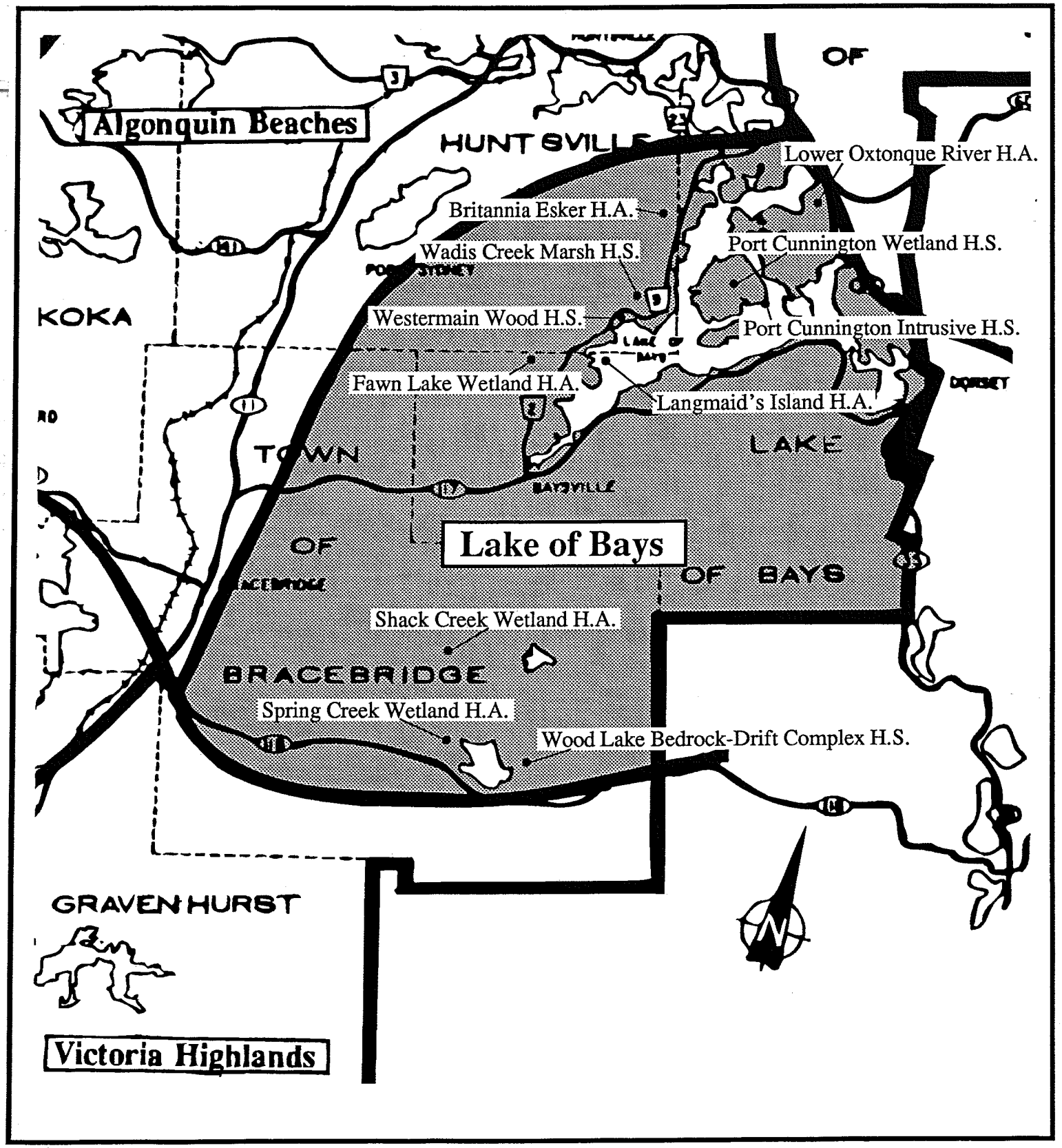
Legend

G-11 Modern alluvial deposit

G-12 Swamp and organic deposit

Scale 1:50,000

3.8 LAKE OF BAYS DISTRICT



BRITANNIA ESKER UTM Ref. 17TPA484174

Brunel Township, Huntsville Area: 130 ha
Status: Recommend Heritage Area

Site Characteristics

This esker feature consists of a series of north-trending, criss-crossing ridges composed primarily of sand and gravel. These ridges, which vary from 3 to 10 metres in height, support a sub-mature closed canopy forest of Sugar Maple, Eastern Hemlock and Balsam Fir. The ridges are bounded by small ice block depressions or kettles (ponds) 100 to 200 metres in diameter. The esker terminates in a flat-topped, fan shaped deposit of sand and gravel approximately 300m long and 200m wide, fringed by a wetland which has developed on deep organic soils under restricted drainage conditions. The wetland is largely a graminoid mat with a shrub component of Leatherleaf and Sweet Gale. At either end of this association, on slightly drier ground, is a mixed swamp forest dominated by Eastern White Cedar, Red Maple, Balsam Fir and Black Ash. The wetland is flanked on the outer edges by rich deciduous Sugar Maple - Beech - Black Cherry - Yellow Birch woodland on deep sandy soils.

The hydrology of the site is linked to its glacial origin. Disappearing streams and dry pond beds within the site are evidence of the permeable nature of the soils, and suggest a highly active groundwater system. Several beaver dams are present in the site in association with the two stream systems draining to the southeast.

Flora and Fauna

Total numbers of species recorded were:

Vascular plants	129 native; 4 introduced
Birds	33 observed during breeding season
Mammals	5
Herpetofauna	6
Butterflies	3
Mushrooms	14

Significant Natural Values and Selection Criteria Met

1. **Distinctive Landform** - (A1) The geomorphic expression of esker complexes are infrequently seen within Muskoka District (Bajc & Henry, 1991). Britannia Esker is situated well above the limits of glacial Lake Algonquin (380 m ASL) and is therefore unmodified and easily recognizable. This site also provides a good example of an esker terminating in a subaquatic fan, marking the position of the glacial face.

2. **Representative Landform** - (A2) The Britannia Esker Complex was identified by Bajc (1992) as the best representation in the District of Muskoka of glaciofluvial ice-contact stratified drift deposits in the form of an esker.

3. **Quality and Disturbance** - (B3) The quality of the esker within the Heritage Area is for the most part pristine, and it supports undisturbed representative successional forests and wetlands. The quality of this site is related in part to the diversity of environments from both a geological and a biological perspective. While the flora and fauna was largely typical of this part of Muskoka, one regionally rare and one regionally uncommon plant was found.

Ownership and Disturbance

The area is all in private ownership and current landowners are aware of the significance of the esker on their properties. The entire esker ridge is not included in the recommended area due to disturbances on the northern section, including a few small gravel pits and clear-cutting of timber. The recommended southern portion of the esker feature displays the best representation and diversity of geological and biological features in a pristine surrounding.

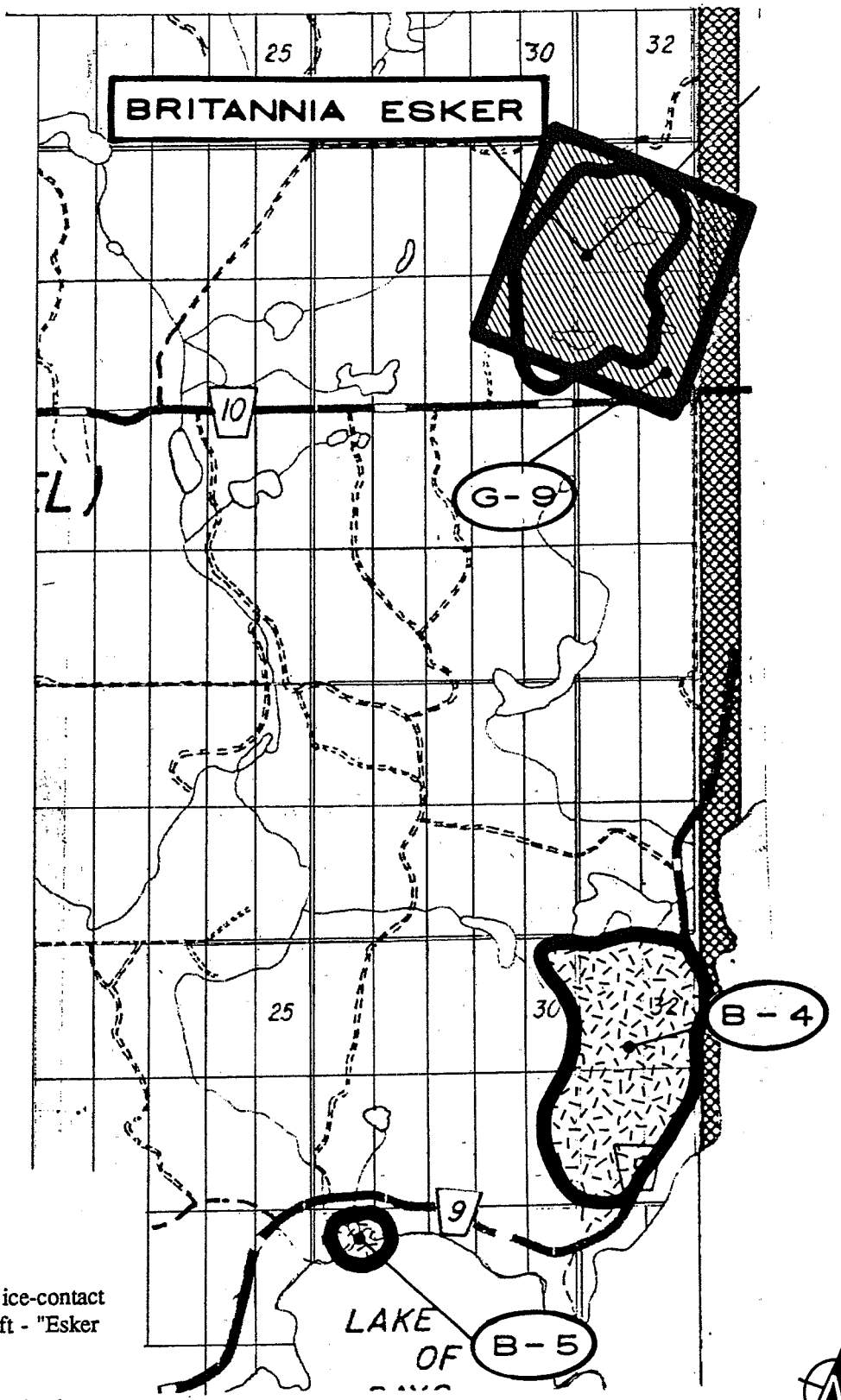
Sensitivity

The sensitivity of this site is related to the geological feature of interest and biological values which it supports. Policies for protection should include restriction of development (logging, roads) in the areas adjacent to the esker and no development (especially mineral aggregate extraction) allowed on the esker, the outwash fan and the wetland fringe.

Major Sources of Information

Bajc & Henry, 1991; Bajc, 1992; Reid, et al., 1992.

BRITANNIA ESKER
HERITAGE AREA
TOWN OF HUNTSVILLE



Legend

G-9 Glaciofluvial ice-contact stratified drift - "Esker Complex"

B-4 Westermain Wood

B-5 Wadis Creek Marsh

Scale 1:50,000

FAWN LAKE WETLAND UTM Ref. 17TPA365012

Macaulay Township, Bracebridge Area: 400 ha
Status: Recommend Heritage Area

Site Characteristics

This palustrine wetland occupies an extensive low-lying area of peat and muck soils between Bonnie Lake and Fawn Lake. It is dominated by fairly mature Black Spruce, Eastern White Cedar and Tamarack rich conifer swamp forest on sphagnum and Speckled Alder thickets along the intermittent stream channel. The drainage is northwards with one source from Bonnie Lake, a second from a small creek and beaver pond in the southwestern corner, and the major source from a complex of open beaver-controlled ponds supporting marsh and fen vegetation. These ponds, situated 25 metres above the larger wetland basin, are connected through a narrow steep rocky gorge into the southeastern end of the wetland.

The wetland is enclosed by Red Maple - Trembling Aspen - White Birch successional forest and Sugar Maple - Red Maple - Eastern Hemlock mixed forest on gentle slopes. White Pine - White Spruce conifer forest dominates the steeper slopes. The forests are on fairly deep till over bedrock. Pockets of exceptionally mature, rich forest with a cool microclimate support boreal species such as Yellow Clintonia, Hobblebush and Balsam Fir. The canopy is occupied by trees requiring cooler, moist sites, particulary Black Cherry, Yellow Birch and White Spruce.

The swamp forests within the wetland are generally herb-rich with boreal species like Bunchberry, Yellow Clintonia, Wintergreen, Three-leaved False Solomon's Seal, Goldthread, Twin Flower, Dewberry, Two-seeded and Three-seeded sedges; as well as containing a prominent low shrub layer of Labrador Tea, American Mountain Ash and Velvetleaf Blueberry. All are on a sphagnum base on hummock and hollow topography. Where the canopy is more open toward Fawn Lake, the community structure has intermediate to rich fens and thicket swamps.

Flora and Fauna

Total numbers of species recorded were:

Vascular plants	161 native; 2 introduced
Birds	50
Mammals	5
Herpetofauna	9
Butterflies	5
Dragonflies	10

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) The Fawn Lake wetland complex contributes to regional hydrological systems through water quality enhancement and water storage. The area was evaluated as a provincially significant wetland by MNR (1992).

2. **Representation** - (B1) The area is one of the largest and most mature conifer swamp forests in the District. It was evaluated as a provincially significant wetland with recommended candidate ANSI status for site District 5E-8 (Brunton, 1991b). The wetland area also supports an intermediate-rich fen (normal/organic/wet-mesic) which is of limited representation in other Heritage Areas.

3. **Quality and Disturbance** - (B3) The area has very little disturbance to disrupt the natural functioning of the wetland. The quality of the conifer swamp forest is high in terms of maturity and size. A maximum diameter breast height of 26.2 cm was recorded for Eastern White Cedar. The quality of the upland forests is also good, with examples of undisturbed successional and mature, rich woods. Maximum dbh of Black Cherry is 21.8 cm and Yellow Birch 29.4 cm. The number of amphibians and dragonflies observed reflects the high quality of the area, as does the low ratio of 1.2% introduced plant species.

Ownership and Disturbance

The area is 100% private and virtually undisturbed. The forested edges show some signs of human activity relating to logging, recreational trails from the nearby campground, hunting camps and snowmobile trails. A cut between the 12th and 13th Concession line is the only disturbance to the central wetland area.

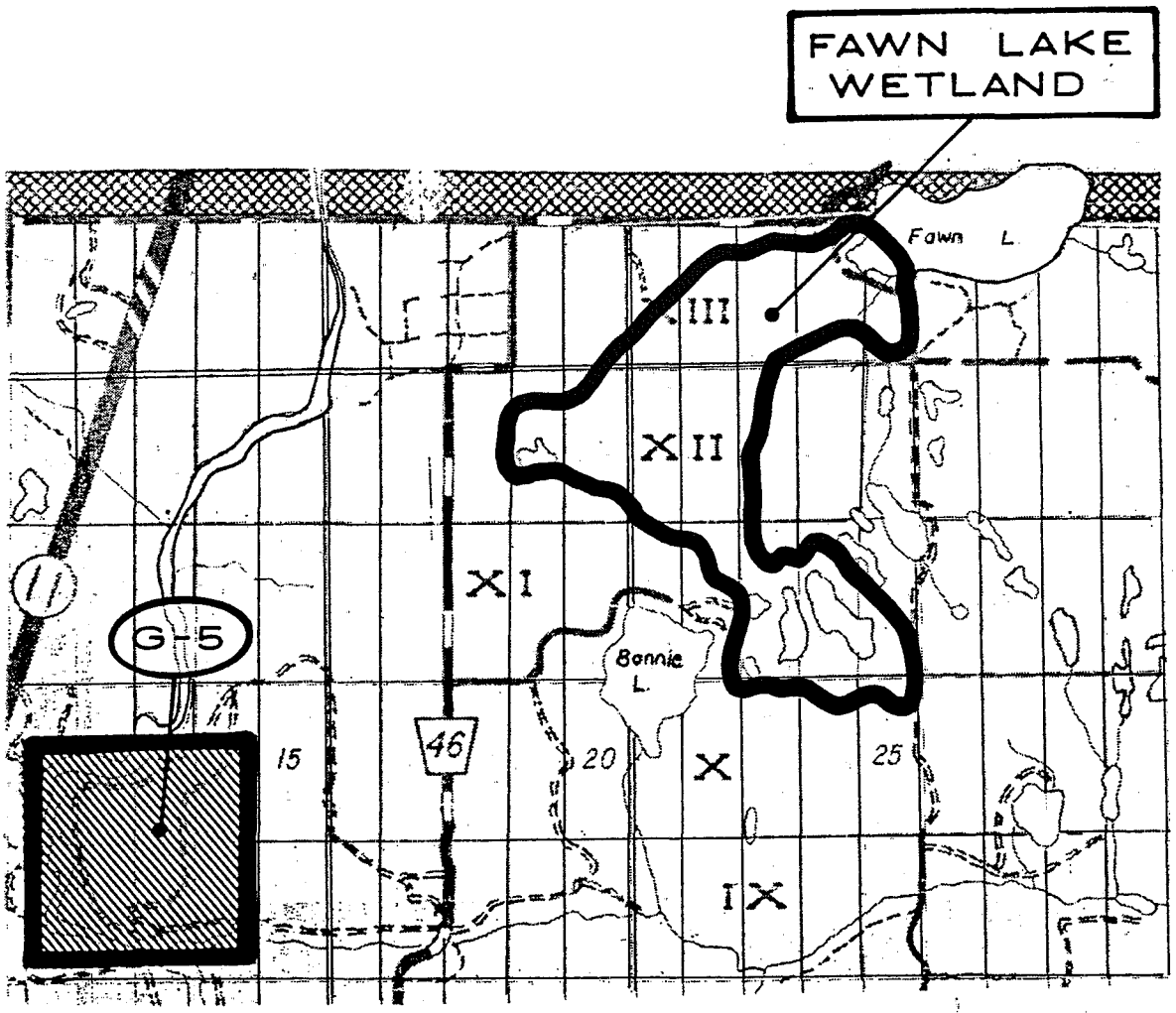
Sensitivity

The sensitivity of this site is related to the hydrological functioning of the wetland ecology. Management of the wetland should follow the OMNR Manual of Implementation Guidelines for the Wetland Policy Statement. A buffer area should be established following MNR Area of Concern Guidelines to avoid erosion and encroachment, taking into account slope and other features of interest.

Major Sources of Information

Bajc, & Henry, 1991; Bajc, 1992; Bergsma et al, 1993; Brunton, 1991b; OMNR Wetland Evaluation, 1992.

FAWN LAKE WETLAND
HERITAGE AREA
TOWN OF BRACEBRIDGE



Legend

G-5 Glaciofluvial ice-contact stratified drift - "subaquatic fan"

N

Scale 1:50,000

LANGMAID'S ISLAND UTM Ref. 17TPA498082

McLean Township, Lake of Bays Area: 55 ha
Status: Recommend Heritage Area

Site Characteristics

This island is situated just off the mainland north of Baysville in Lake of Bays. The narrow island is formed by three large hills which rise up to 50 metres above the elevation of the water (315m ASL). The geology is mainly bedrock-drift complex, with deeper soils on the slopes and lowlands supporting early successional White Birch-Trembling Aspen deciduous forests and late successional Sugar Maple-Yellow Birch-Eastern Hemlock mixed forests. The two highest peaks are of exposed bedrock outcrops with very thin soils supporting semi-open Red Oak-White Pine-White Ash treed woodland barrens. Exposed cliffs on the south side of the island are sparsely vegetated with an open graninoid and low shrub assemblage consisting of some uncommon plant species.

The undeveloped rocky shoreline is mainly coniferous fringe forest dominated by Eastern Hemlock and Eastern White Cedar with some areas of White Spruce, and White Pine on the more exposed slopes. Two long sandy beaches are present in isolated bays along the southern shoreline, while one small marshland occupies a tiny, protected bay along the northern shore at the narrowest point of the island.

Between Langmaid's Island and Joli Point of the mainland is a small rocky island, Seagull Island, which was included as part of this site because of the presence of nesting Canada Geese (considered regionally uncommon) and its function as a Herring Gull loafing area.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	134 native; 3 introduced
Birds	28 observed during the breeding season
Mammals	3
Herpetofauna	4
Butterflies	1
Dragonflies	4
Mushrooms	14

Significant Natural Values and Selection Criteria Met

1. **Diversity** - (B2) For an island of its size, Langmaid's Island supports a diversity of habitats, including coniferous fringe forest, early successional deciduous forests, late successional mixed forests, rocky shorelines, sandy beach, marshland, steep rocky ridge exposed cliff faces and semi-open treed barrens.

2. **Quality and Disturbance** - (B3) The island contains biotic communities showing little recent disturbance. In particular, it supports long stretches of undeveloped shoreline and natural beaches on a lake otherwise heavily developed for recreational property.

The successional sequence following a natural disturbance (70-80 years ago) by fire on the eastern section of the island is of interest to compare with the late successional (120-140 year old) forests on the western section of the island.

The use of this island by Fisher (reported by Towle, 1989) would attest to its quality of forested communities and lack of disturbance. The island was evaluated by Brunton (1991 b) as a regionally significant forest and recommended as a candidate ANSI.

3. **Fish and Wildlife Concentrations** - (B5) Langmaid's Island supports a deer wintering area as well as potential Lake Trout spawning school. The proximity of the island to the mainland allows for a wildlife migration opportunity for many species.

4. **Scenic Landscapes** - (C7) Seagull Island was identified as having high scenic value. In addition, the view from the summit of the hills on Longmaid's Island provide a commanding and highly scenic vista of the Lake of Bays.

Ownership and Disturbance

The island is privately owned by one individual who wishes to maintain the island in a natural state. Development of the island is restricted to a cluster of buildings on the small peninsula separating the western and eastern island sections and a limited network of paths. The sandy beaches are frequented by boaters who stop to picnic and swim. While some disturbance to the adjoining forests is occurring, the beaches remain relatively clean.

Natural disturbances to the island show evidence of a fire on the eastern section in the past. There were old burned stumps in the understory of the early successional forest dominated by White Birch with Trembling Aspen and Eastern White Cedar.

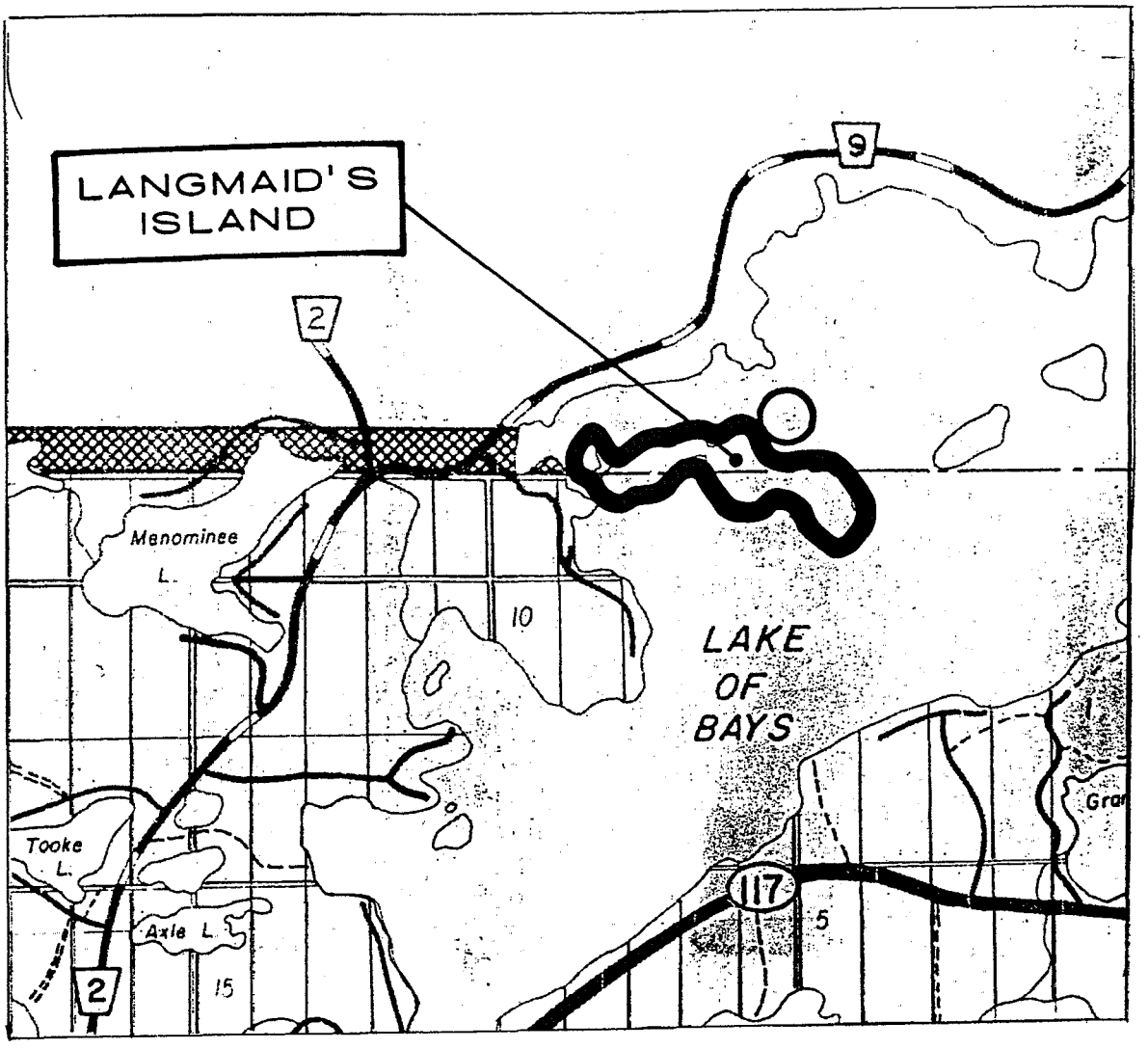
Sensitivity

The sensitivity of this site is related to natural quality of this forested island as wildlife habitat and undisturbed shoreline. Private land stewardship with the landowner should go far to ensure its continued protection. Posting of the island as private conservation area may help to limit unregulated uses.

Major Sources of Information

Bergsma, et al., 1993; Brunton, 1991b; District Municipality of Muskoka, 1985 Sensitive Areas Schedules; OMNR, 1989 Deer Mapping; Reid, & Berney, 1993; Towle, 1989.

LANGMAID'S ISLAND
HERITAGE AREA
TOWNSHIP OF LAKE OF BAYS



Legend

○ Scenic Spot

Scale 1:50,000

LOWER OXTONGUE RIVER UTM Ref. 17TPA570196

Franklin Township, Lake of Bays Area: 172 ha
Status: Recommend Heritage Area

Site Characteristics

This site includes the lower course of the Oxtongue River, below Marsh's Falls, and a sandy, low-energy delta where the river enters Lake of Bays. The quiet edges of the meandering river and several meander scars and oxbow lakes support a variety of aquatic and emergent vegetation communities. An isolated kettle near the mouth of the delta has matured into a small bog pond with a Leatherleaf floating shrub mat and Buckbean along its edges.

Most of the delta is undulating terrain with light brown fine sands near the surface and a basal layer of silty fine sand and clay. A fan-shaped deposit occurs at the river mouth, and a small spit has built up at the southern tip of the delta. These sands are covered in deciduous and mixed successional forests, likely of fire origin. Trembling Aspen and White Pine early successional forests occupy much of the site, together with stands dominated by White Spruce, White Birch, and Red and Sugar Maple.

In an earlier study of this site, Simpson (1978) reported the occurrence of an American Elm-Yellow Birch association on poorly drained deltaic sands near the mouth of the river. While the continued presence of this community could not be confirmed because of refused access onto private land, it would be an uncommon association, not known elsewhere in Muskoka.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	181 native; 8 introduced
	3 A.C.P.F. with a score of 14 (Low)
Birds	68 observed during breeding season
Mammals	5
Herpetofauna	8

Significant Natural Values and Selection Criteria Met

1. **Distinctive Landform** - (A1) The Lower Oxtongue River exhibits several features associated with a modern low energy depositional environment, including a meandering river and alluvial floodplain features; ongoing deposition along the delta mouth, including development of a recurved spit; and build-up of organic deposits in wet floodplain depressions. Mature delta deposits of this size are unusual in Muskoka.

2. **Quality and Disturbance** - (B3) The area provides an extensive undisturbed length of riverfront and lakefront on a large Muskoka lake, backed by forests and wetlands in a natural state. 4.2% of the plant species are introduced, a relatively low ratio.

3. **Rare Species** - (B4) The area provides habitat for the following rare species:

Wildlife
Dendroica tigrina Cape May Warbler [RR]
Vascular Plants
Agrimonia striata Woodland Agrimony [RR]
Triadenum virginicum Marsh St. John's Wort [PR]

As well, three regionally uncommon plants and one regionally uncommon bird species were found within this area.

4. **Fish and Wildlife Concentrations** - (B5) The Lower Oxtongue River and adjacent waters are known spawning areas for Trout and Yellow Perch.

5. **Scenic Landscapes** - (C7) Marsh's Falls and the Lower Oxtongue River have been identified as areas of high scenic value, with heavy use for wildlife viewing and sightseeing from cottagers on Lake of Bays.

Ownership and Disturbance

This area is entirely privately owned. While there are few recent signs of disturbance in the wooded delta, the area around Marsh's Falls is regularly used for picnics, swimming, and hiking. A few seasonal cottages exist within the area, and proposals are being considered for additional development below the falls. Heavy use of the river by motorboats is a significant disturbance factor, causing erosion from boat wake in some sections.

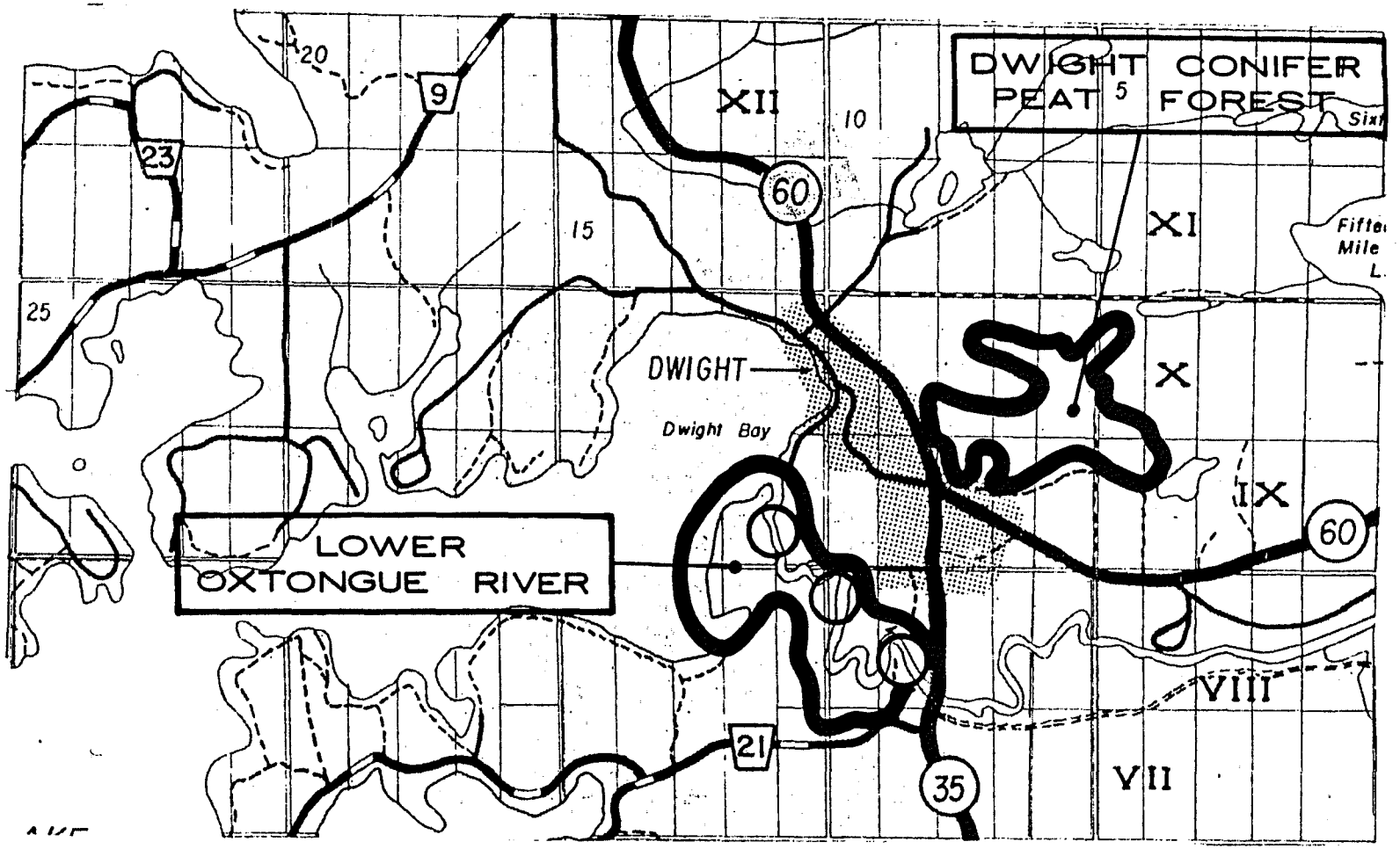
Sensitivity

This site provides a substantial length of natural, undisturbed river and lake shoreline on one of the large lakes of Muskoka. Its aesthetic and ecological values could be seriously impaired by cottage or campground development along those shorelines. Measures to limit boat traffic on the river corridor and to minimize boat wake would help to alleviate the disturbance associated with this ongoing use.

Major Sources of Information

Bergsma et al, 1993; Reid et al, 1991; Bajc and Henry, 1991; Simpson, 1978; Spek, 1978; Towle, 1989.

LOWER OXTONGUE RIVER
HERITAGE AREA
TOWNSHIP OF LAKE OF BAYS



Legend

O Scenic Spots

Scale 1:50,000

SHACK CREEK WETLAND UTM Ref. 17TPV482942

McLean and Oakley Townships, Bracebridge Area: 500 ha.
Status: Recommend Heritage Area

Site Characteristics

This wetland is situated in the Kawpakwakog Creek valley in a broad, shallow depression of organic peat and muck soils. It supports a diversity of wetland types, including swamp forests, fens, bogs, thicket swamps and marshes. Islands of glaciofluvial sand and till are present in the centre of the depression as kame hummocks and terraces (Bajc & Henry, 1991). These islands support boreal mixed forests with White Birch and a more northern Trembling Aspen conifer forest association.

The area surrounding the wetland is a relatively flat glaciofluvial outwash feature at an elevation above 300 metres. Rich Maple-Birch deciduous forests and White Pine northern mixed hardwood forests are present on sand and is largely drift-covered bedrock outcrops supporting mature mixed and coniferous forests with rich shrub and herbaceous layers. Two large ponds in this northern upland feed the intermittent stream which runs through the wetland. The stream is partially beaver controlled with several small flooded areas present.

Shack Creek is classified as a palustrine wetland. Where the stream empties into the Kawpakwakog River, the wetland becomes riverine.

A large portion of the wetland is covered by either early successional herb-rich mixed swamp forest or 70-90 year-old conifer swamp forest dominated by Black Spruce, Eastern White Cedar, Tamarack and Speckled Alder. An extensive area of heath and graminoid poor fen and a smaller area of breast-height Black Spruce treed bog occur in the north of the site.

Along the intermittent stream are flooded areas of forb, sedge and shrub-rich wet meadow and shallow emergent marshes. To the east is an isolated area of Black Spruce-Tamarack-Labrador Tea intermediate to rich fen. South toward the Kawpakwakog Creek the vegetation changes from a rich Tamarack and tall shrub swamp to Speckled Alder-Willow-Dogwood thicket swamp to low shrub-rich marsh and Cattail-Sedge deep emergent marsh.

Flora and Fauna

Total number of species recorded were:

Vascular Plants	170 native; 0 introduced
Birds	48 observed during the breeding season
Mammals	4
Herpetofauna	7
Butterflies	4
Dragonflies	7

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) The Shack Creek Wetland contributes to regional hydrological systems through ground and surface water storage and recharge.

2. **Representation** - (B1) Based on the representational site type matrix, there are five vegetation associations here which are unique or of limited distribution in Muskoka. These are: the Trembling Aspen-Northern Conifer forest (cooler/sand/mesic), the Eastern White Cedar Swamp forest (normal/sand/wet-mesic), Graminoid Pool Fen (normal/organic/very wet), Black Spruce Treed Bog (cooler/organic/wet-mesic) and Black Spruce-Sphagnum-Labrador Tea Intermediate Fen (normal/organic/wet-mesic). The area was evaluated as a regionally significant wetland with recommendation for ANSI status by Brunton (1991b).

3. **Diversity** - (B2) The area exhibits a high diversity of vegetation community types, particularly wetlands.

4. **Quality** - (B3) The area is a high quality, pristine wetland with minimal disturbance, as evidenced by the absence of introduced plant species. The surrounding late successional forests contain some mature tree species with maximum diameter breast heights of: White Pine 39.2 cm, Red Oak 32.6 cm, White Spruce 30.0 cm, Tamarack 19.8 cm, Sugar Maple 35.2 cm. The latter three trees were the largest found during the 1992 field season.

5. **Rare Species** - (B4) Shack Creek Wetland provides habitat for the following rare species:

Wildlife
Picoides arcticus Black-backed Woodpecker [RR]
Vascular Plants
Carex folliculata Long Sedge [PR]
Castilleja coccinea Indian Paintbrush [RR]
Equisetum palustre Marsh Horsetail [RR]

In addition, two bird species and seven species of vascular plants were recorded as regionally uncommon.

6. **Biogeographic Significance** - (B7) The Shack Creek Wetland contains many species of flora and fauna plus vegetation community types with boreal affinities. Notable among these are the Black-backed Woodpecker. The forest understory vegetation is dominated by species found commonly in boreal regions such as Mountain Maple, Velvetleaf Blueberry, American Mountain Ash, Dalibarda, Snowberry and Wintergreen. Pure Black Spruce bogs are uncommon in Muskoka.

Ownership and Disturbance

The area is approximately 65% Crown land and 35% private, with little associated disturbances. Evidence of hunting activities, minor logging for private use and an artificially constructed dam on the upper pond were the only signs of disturbance.

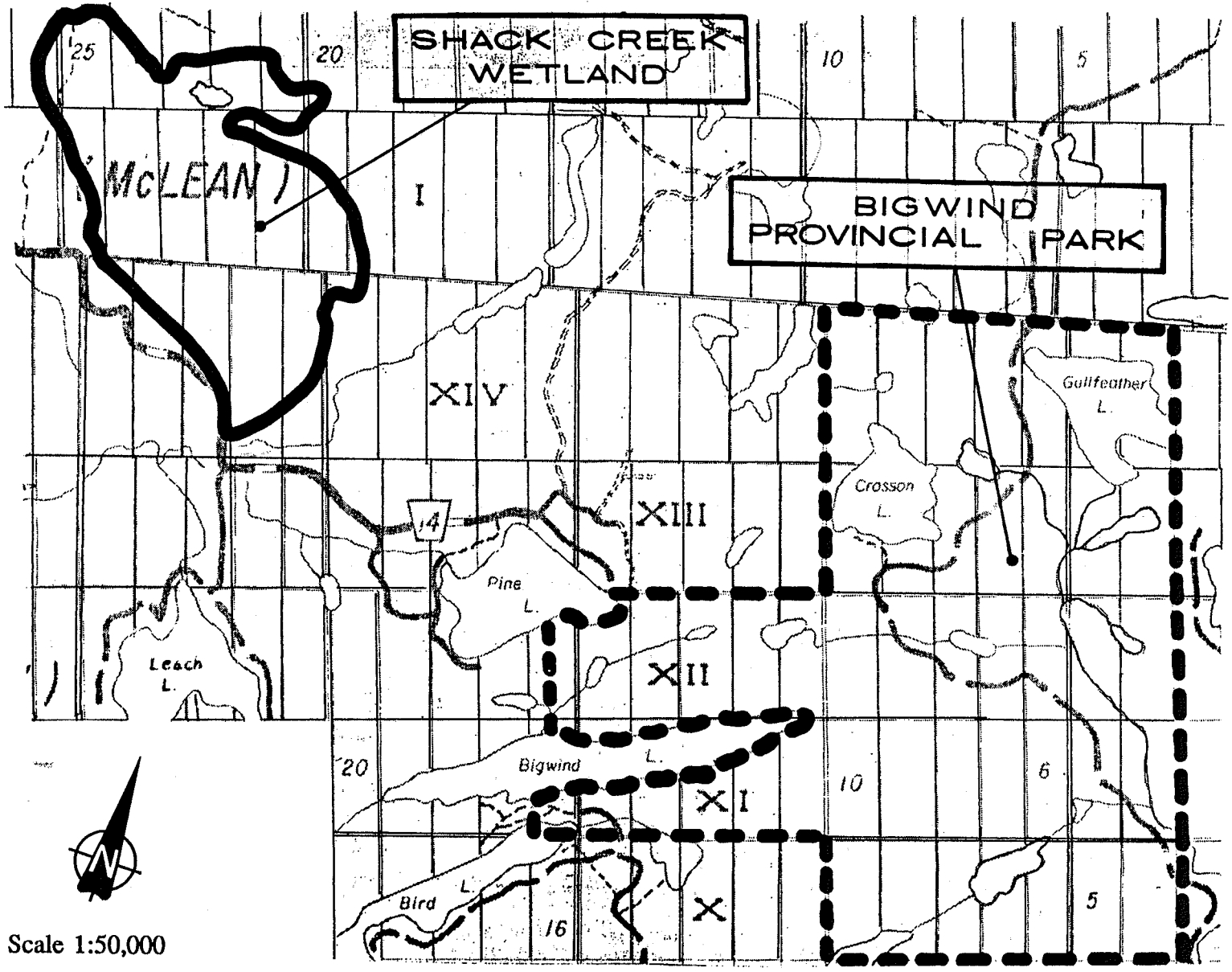
Sensitivity

The sensitivity of this site is related to the hydrological functioning of the wetland and the representation of unique community types in Muskoka. If Provincial Wetland Policies are followed, including identification of an appropriate upland buffer within the adjacent land, protection of the representational community types, significant species, quality and diversity will also be achieved.

Major Sources of Information

Bajc, 1992; Bajc and Henry, 1991; Bergsma, et al., 1993; Brunton, 1991b.

SHACK CREEK WETLAND
HERITAGE AREA
TOWN OF BRACEBRIDGE



Scale 1:50,000

SPRING CREEK WETLAND UTM Ref. 17TPV488873

Oakley and Draper Townships, Bracebridge Area: 402 ha
Status: Recommend Heritage Area

Site Characteristics

Spring Creek is a classic palustrine wetland positioned above a riverine wetland. The source of the wetland begins at Wood Lake, with an intermittent inflow of water draining through a MNR maintained floodgate dam into a large, circular, rather flat floodplain underlain by swamp and organic deposits. A deep (> 2 metre), permanent, clear water stream with abundant aquatic vegetation meanders through a thicket swamp, a shrub-rich wet meadow marsh and open graminoid wet meadow marsh to a large beaver dam at the west end. Two small treed outcrops are present as breaks in the otherwise flat wetland. North of the stream is an extensive low shrub rich fen grading into Eastern White Cedar and White Pine-mixed hardwood swamp forests and Eastern White Cedar-Red Maple mixed herb-rich swamp forest. The slightly elevated upland in the northern section of the area supports a mature to sub-mature Balsam Fir-Sugar Maple northern hardwood forest with a rich herbaceous understory.

From the beaver dam, the water (which is now tea-coloured), falls about five metres through a narrow, bedrock exposed valley, treed with White Pine and Eastern Hemlock. The stream flows for two kilometres between White Pine northern mixed hardwood forest, Red Maple-Yellow Birch-Black Cherry rich bottomland forest, White Spruce-Red Maple forest and Silver Maple-American Elm deciduous swamp forest. The stream widens as it descends, past several beaver dams and associated low shrub and sedge meadow marsh communities. It then opens into a broad, fan-shaped delta where it meets the South Muskoka River. At this confluence, the wetland is riverine and supports floating and submerged aquatics and tussocks of sedges, plus an extensive shrub-rich marsh. To the north on slightly elevated ground is a large area of Black Spruce-Tamarack-Alder-Sphagnum transitional herb-rich swamp forest.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	222 native ; 2 introduced
	1 A.C.P.F. with a score of 6 (Insignificant)
Birds	37 observed during breeding season
Mammals	5
Herpetofauna	12
Butterflies	2
Fish	3 minnows

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) The area is a significant hydrological system, with the large floodplain basin contributing a water storage function, plus enhancement of water quality downstream from Wood Lake.

2. **Representation** - (B1) Good examples of mature Eastern White Cedar conifer swamp forests (normal/sand/ wet-mesic) are not well-represented in other Heritage Areas. The

presence of this community type contributes to the full range of biotic representation in Muskoka.

3. **Diversity** - (B2) The area exhibits a high diversity of community types and successional stages with representation of aquatic, marsh, swamp, fen and riverine wetland communities, plus mature to sub-mature coniferous, mixed and deciduous lowland and upland forests, many which display a rich herbaceous understory.

4. **Quality** - (B3) The area is in pristine condition, containing biotic communities of unusually high quality showing little recent disturbance. The Balsam Fir-Sugar Maple northern hardwood forest contains mature specimens of Sugar Maple (maximum dbh 34.9 cm) and Black Cherry (max. dbh 14.8 cm). The Eastern White Cedar swamp forest is also mature with the largest specimen measured at 20.0 cm dbh.

5. **Rare Species** - (B4) The Spring Creek Wetland provides habitat for the following rare species:

Vascular Plants

Potamogeton filiformis	Filiform Pond Weed [RR]
Triadenum virginicum	Marsh St. John's Wort [PR]

In addition, one bird and ten species of vascular plants were recorded as regionally uncommon.

6. **Fish and Wildlife Concentrations** - (B5) The Spring Creek wetland is on the edge of a large deer wintering area. Yellow Pickerel spawn at the outlet of Wood Lake. The deep, clear waters of the creek support an abundance of minnows and small fish.

7. **Large Size and Linkage** - (B6) The area is large enough to provide habitat for River Otters with an undisturbed linkage between Wood Lake and South Muskoka River. A den with two adult otters present was confirmed during field visits in 1992.

Ownership and Disturbance

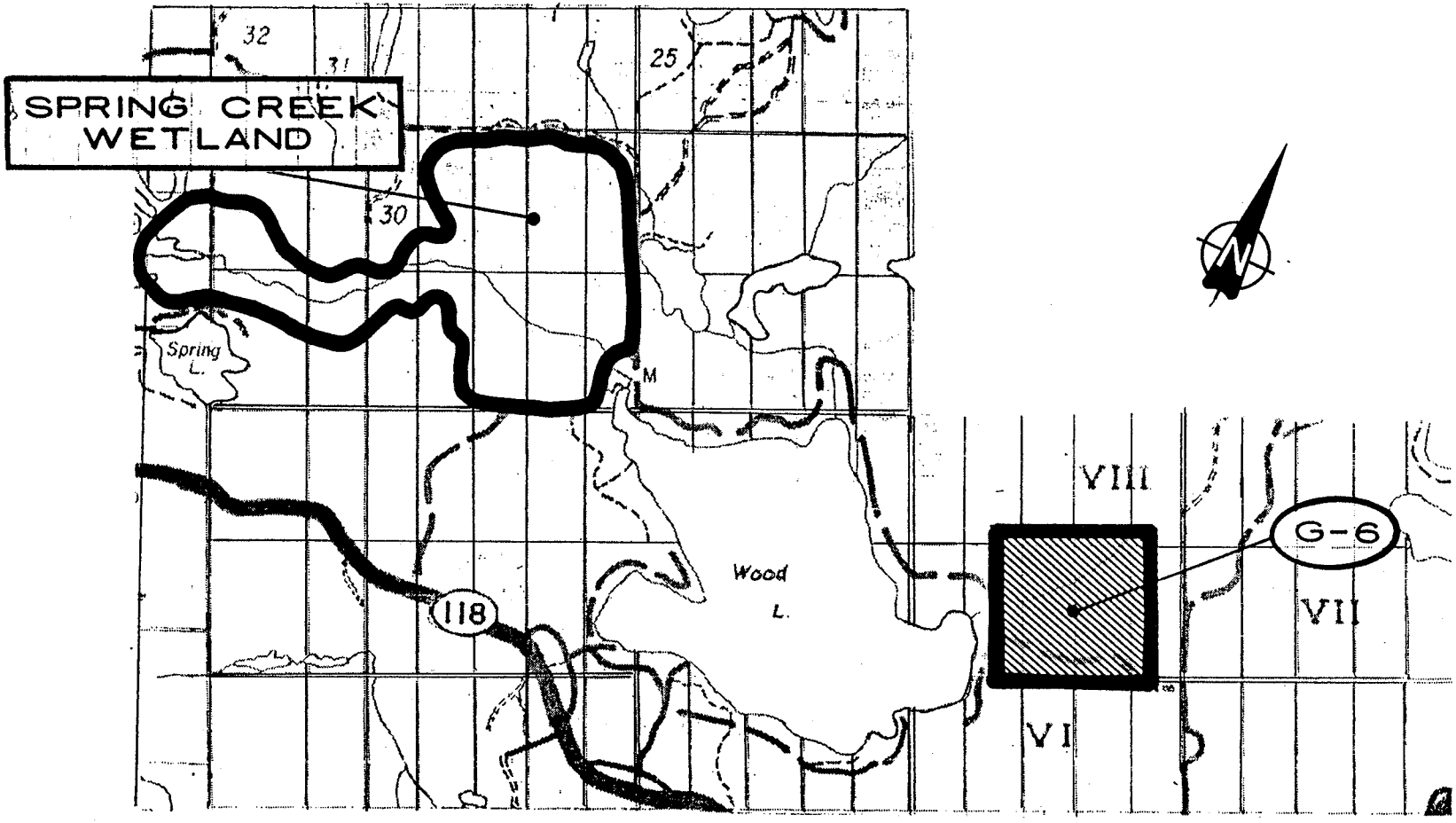
The area is privately owned and used mainly for recreation in the form of hunting for Deer, Moose and Bear and harvesting of bait minnows from the stream for fishing. A snowmobile trail crosses the creek in one place and goes across the northern and eastern edges of the site. Minor logging is carried out in the surrounding forests. The area is otherwise undisturbed.

Sensitivity

The sensitivity of this site is related to the hydrological functioning of the wetland system. The Provincial Wetland Policy related to protection of wetlands should be followed including sufficient surrounding forests as buffer. Fragmentation of the wetland corridor would disrupt the natural functioning of wetland species.

Major Sources of Information - Bajc, 1992; Bajc, & Henry, 1991; Bergsma, et al., 1993; District Municipality of Muskoka, 1985 Sensitive Areas Schedules.

SPRING CREEK WETLAND
HERITAGE AREA
TOWN OF BRACEBRIDGE



Legend

G-6 Bedrock - Drift Complex

Scale 1:50,000

PORT CUNNINGTON INTRUSIVE UTM Ref. 17TPA558138

Franklin Township, Lake of Bays Area: 5 ha
Status: Recommend Heritage Site

Site Characteristics

The Port Cunnington Intrusive is a small, late Precambrian intrusion of ultramafic rock, exposed in a small borrow pit along Elder Drive. Three rocks have been intensely weathered, resulting in their fragmented texture. This weathering probably took place during the Cretaceous period (65 million years ago) when the climate in this region was tropical. Drilling undertaken several decades ago suggest that the weathering may extend several hundred feet into the subsurface. Large, unweathered blocks of ultramafic rock float within the weathered matrix at several exposures within the pit. Similar incomplete weathering along joints and fractures have been described from sites in Minnesota.

The weathered rock, called saprolite, is overlain by up to 4 metres of subglacial meltout and flow till, a deposit common to Muskoka. However, the sharp and undulating contact between the rock and till is significant in that it attests to the passive mode in which the till was deposited. Since there are few opportunities in Muskoka to observe the contact between soft, incompetent bedrock and overlying till, this site helps in understanding the style of deglaciation in this region (Bajc, 1992).

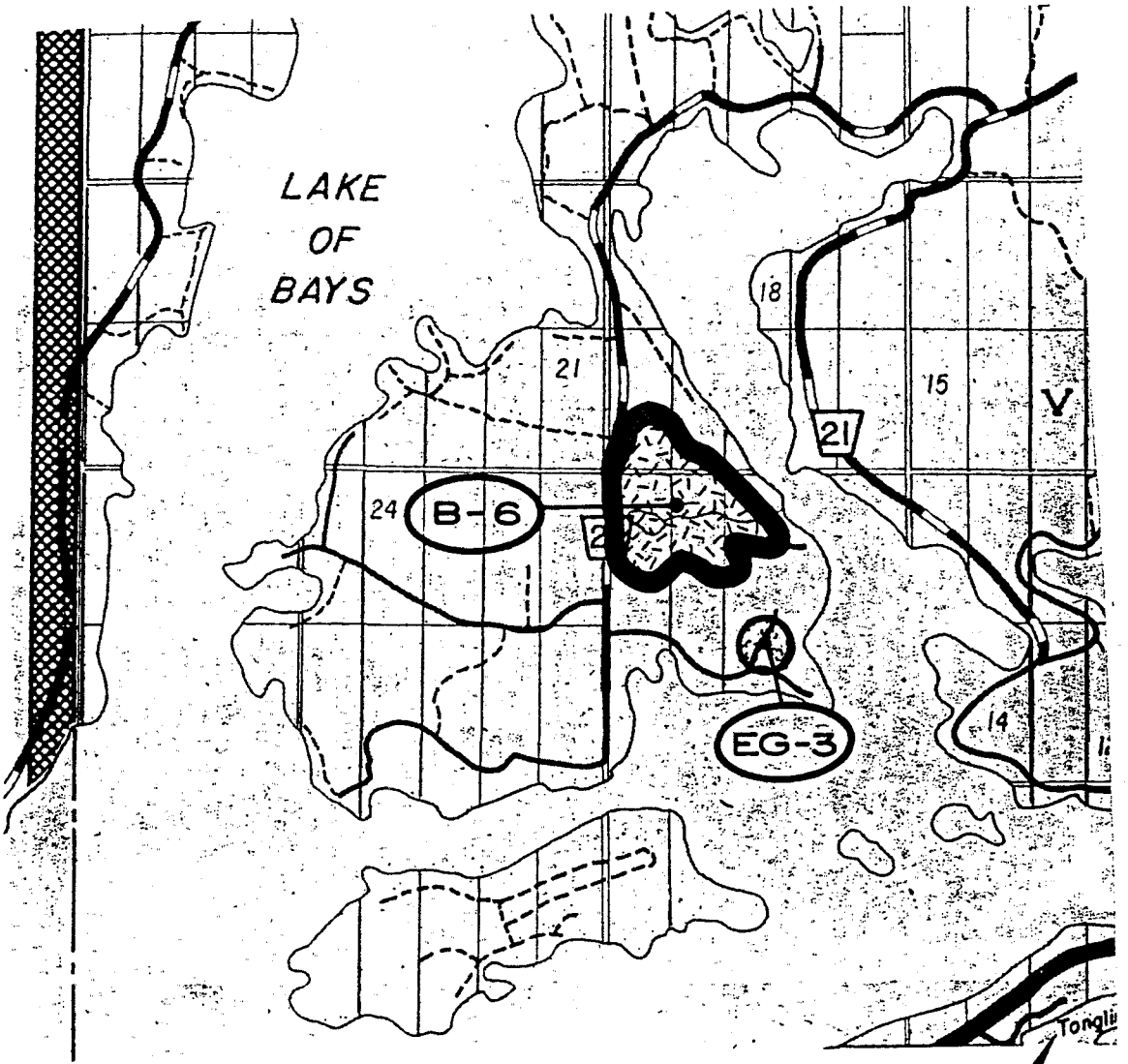
Significant Natural Values and Selection Criteria Met

1. **Distinctive Landform** - (A1) This site is one of only two known examples of late Precambrian intrusions of ultramafic rocks in Muskoka (Hewitt, 1967).

Ownership, Disturbance and Sensitivity

This site is privately owned. Protection of the values of this site does not preclude further moderate removal of aggregates, but an exposure at the northwest corner of the pit should be preserved to show both weathered bedrock and a substantial thickness of the overlying till.

PORT CUNNINGTON
HERITAGE SITES
TOWNSHIP OF LAKE OF BAYS



Legend

B-6 Port Cunnington Wetland

EG-3 Port Cunnington Intrusive

Scale 1:50,000

PORT CUNNINGTON WETLAND UTM Ref. 17TPA550145

Franklin Township, Lake of Bays Area: 50 ha.
Status: Recommend Heritage Site

Site Characteristics

This site occupies a lowland basin inland from Haystack Bay on the Lake of Bays and some of the surrounding upland forests. A small pond with watershield and duckweed is surrounded by an emergent marsh of Cattail, Iris and Burreeds. Drainage from the pond is slowed by beaver activities, resulting in a area of grass wet meadow marsh through which a small stream flows into Lake of Bays. A small area of Virginia Chain Fern poor fen with Leatherleaf and Sweet Gale increases the diversity of wetland types at this site. The northern edge of the wetland is lined with a narrow band of mixed conifer-broadleaf swamp forest with an herb-rich understory on sphagnum. Adjacent to this community on slightly raised ground is an area of Red Maple - Yellow Birch - Black Cherry bottomland forest. A rich late successional Sugar Maple - Beech - Eastern Hemlock forest on deep soils surrounds the wetland.

There were 146 species of native vascular plants and 13 introduced species, plus 11 birds observed during breeding season, four mammals, six herpetofauna and 13 mushroom species recorded from the site. All were common except for the Pickerel Frog which is regionally rare and Tall Manna Grass (*Glyceria grandis*) which is uncommon in Muskoka.

Significant Natural Values and Selection Criteria Met

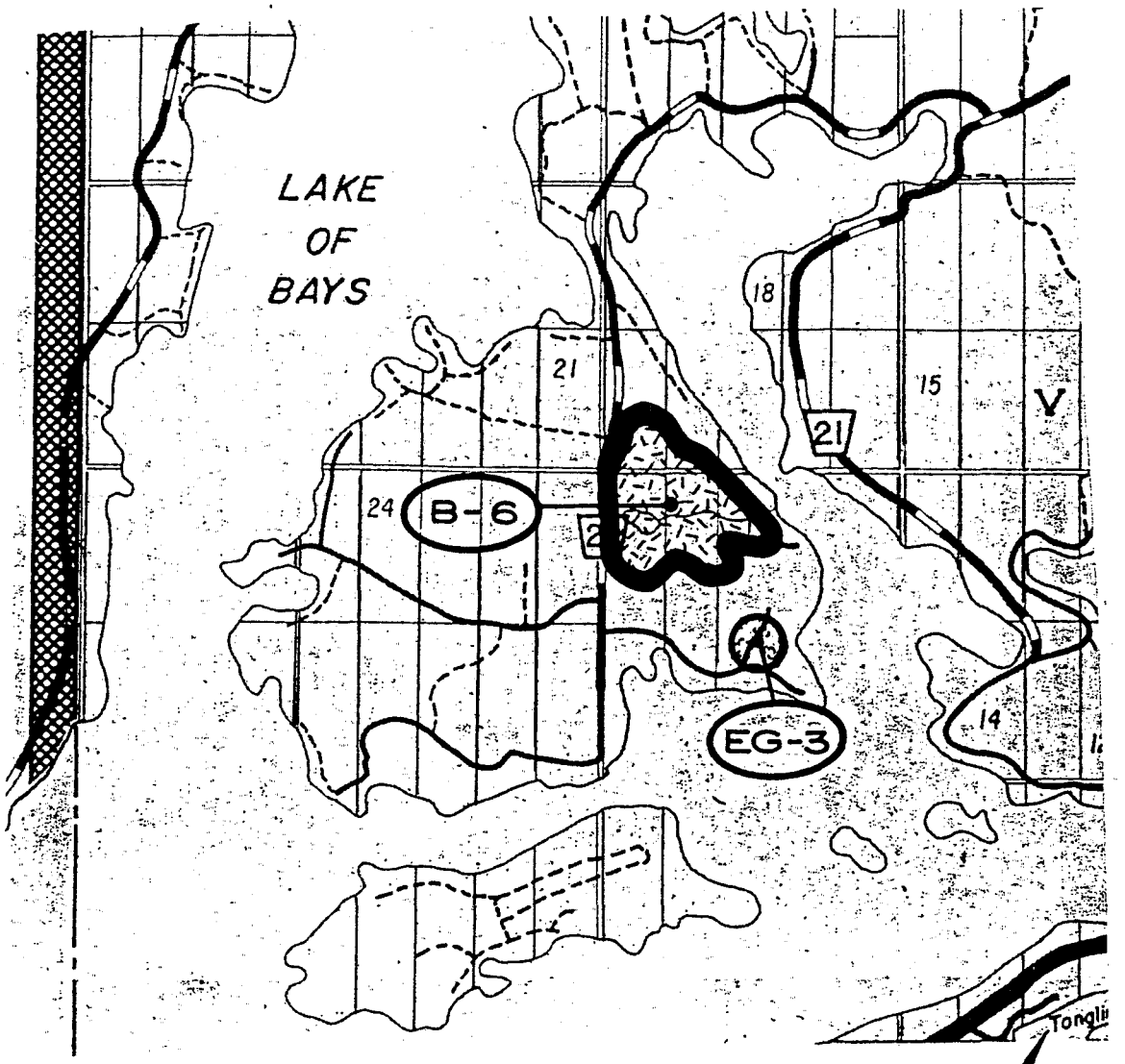
1. **Diversity** - (B2) This small site supports a good diversity of vegetation community types including mature upland forest, rich bottomland forest, swamp forest, emergent marsh, meadow marsh, floating shrub mat, and open water with floating aquatics macrophytes. Towle (1989) rated the diversity of habitats important for wildlife, while Brunton (1991 b) assessed the area as a regionally significant wetland for candidate ANSI status.

Ownership, Disturbance and Sensitivity

The area is privately owned but is recognized on an "area of natural constraint" in schedule E of the Muskoka District Official Plan and is therefore unlikely to be developed. There is visible human-related disturbance in the form of a dump site located adjacent to the main road. Building materials and scrap metal have been dumped here and it is strewn down the hillside and into the top end of the pond and marsh.

The sensitivity of this site is related to the wetland function. The mature upland forests form a suitable buffer for the protection of the wetland. The greatest threat to the wetland is from the improper use of the area adjacent to the road as a dump. There exists the potential for contamination of the wetland and/or impairment of function in addition to the poor aesthetics of the dump itself.

PORT CUNNINGTON
HERITAGE SITES
TOWNSHIP OF LAKE OF BAYS



Legend

B-6 Port Cunnington Wetland

EG-3 Port Cunnington Intrusive

Scale 1:50,000

WADIS CREEK MARSH UTM Ref. 17TPA496101

Brunel Township, Lake of Bays Area: 10 ha
Status: Recommend Heritage Site

Site Characteristics

This site is situated at the mouth of a slow moving, meadering creek which empties into Whitehouse Bay on the western shore of Lake of Bays. Silt is deposited from the creek onto sand and gravel substrates in Lake of Bays, forming a shallow littoral zone which supports an emergent marsh community. This community is sustained by creek-transported sediments as well as lakeshore currents (Brunton 1991 b). It supports a diversity of species including Three-way Sedge (*Dulichium arundinaceum*) Swamp Horsetail (*Equisetum fluviatile*) Robbin's Sedge (*Eleocharis robbinsii*) Floating Burreed (*Sparganium fluctuans*), Northern Manna Grass (*Glyceria borealis*), plus Floating Hearts, Bullhead Lily, Pipewort, Wild Calla, Fragrant Water Lily, Pondweeds and Bladderworts.

The shoreline is mainly dominated by a speckled Alder - Winterberry - Elderberry Thicket Swamp while northern forests of White birch, White Spruce, Eastern White Cedar and Balsam Fir occupy the adjacent upland areas.

There were 57 species of vascular plants recorded with incidental sightings of other fauna including Beaver, Midland Painted Turtle and several unidentified minnows. There were at least 16 bird species recorded outside of breeding season, although many were likely breeders.

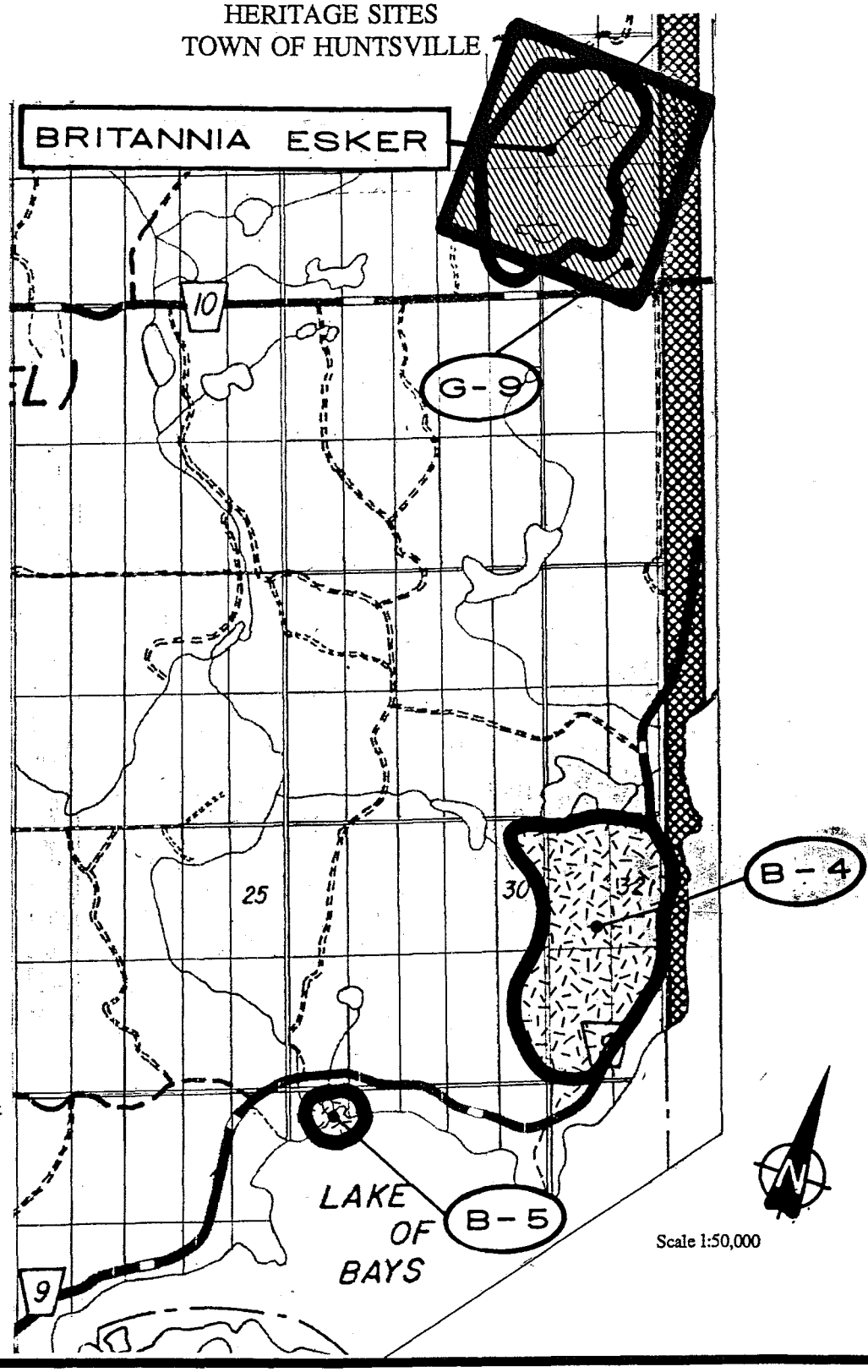
Significant Natural Values and Selection Criteria Met

1. **Quality** - (B3) The area contains a good example of pure marsh vegetation at an area where riverine and lacustrine habitat meet. The existence of cover for waterfowl nesting and aquatic vegetation for protection by young fish supplies important wildlife habitat (Towles 1988). Brunton (1991 b) evaluated the area as a regionally significant marsh for candidate ANSI status.

Ownership, Disturbance and Sensitivity

The area is privately owned with the marsh designated as "hazard area" by the Ministry of Natural Resources. This designation merely limits development. Disturbances to the area are several. Immediately downstream of the bridge crossing of Muskoka Road #9 are cleared areas with permanently occupied dwellings. Lawns extend to the creek bed and Canada Geese are fed at one dwelling. Cottage encroachment is evident on either side of the creek mouth. Boats and canoes occasionally travel a short distance of 100-200m upstream. Shallow water prevents many boats from entering the marsh, thus maintaining the quality. The sensitivity of the site is related to the area of the marsh and the function that it has in relation to its location on a lake with year-round riverine input. Natural expansion of the marsh habitat should be allowed to occur. A suitable buffer should be established with development prohibited within that area and limited development on lands adjacent to the buffer.

WESTERMAIN WOOD AND WADIS CREEK MARSH
HERITAGE SITES
TOWN OF HUNTSVILLE



Legend

G-9 Glaciofluvial ice-contact stratified drift - "Esker Complex"

B-4 Westermain Wood

B-5 Wadis Creek Marsh

WESTERMAIN WOOD UTM Ref. 17TPA487094

Brunel Township, Lake of Bays Area: 179 ha
Status: Recommend Heritage Site

Site Characteristics

This forested site is situated close to the shore of Lake of Bays just south of Dreamhaven Lake on till and bedrock outcrops. The landscape rises from District Road 9 by 60 to 70 metres onto a gently undulating upland dominated by nature rich mixed woods composed of Eastern Hemlock - Sugar Maple - Beech - Yellow Birch with minor components of Black Cherry, Basswood, Large-tooth Aspen and White Pine.

Numerous small seepage streams run through the site and downslope toward Lake of Bays, supporting deciduous Sugar Maple - Beech - White Ash with Wild Leek, Christmas, Ostrich and Lady Ferns, Rattlesnake Plantain and Spotted Jewelweed along the streams.

Depressions in the upland tend to be seasonally flooded and are occupied by Black Ash Swamp forest or cool rich bottomland Eastern Hemlock - Beech - Large tooth Aspen forest with boreal understory of Hobblebush, Yellow Clintonia, Redberry Wintergreen, Goldthread, Dwarf Raspberry, Wood Sorrel and Wood Ferns.

There were a total of 121 vascular plant species recorded from the site with two considered regionally uncommon. Seven common mammals, including Moose, White-tail Deer and Black Bear, and five amphibians were also recorded. Since the inventory did not begin until August, 1992, these numbers are likely less than expected. Birds were not recorded outside of the breeding season.

Significant Natural Values and Selection Criteria Met

1. **Quality** - (B3) The areas contains at least two types of very mature upland forest in good condition and of a significant size. The maximum diameter breast height measurements for tree specimens on this site yielded the largest measurements for White Pine, Basswood and Large-tooth Aspen recorded from 1992 sites. These was a tie with Tasso Creek for the largest specimen of Eastern Hemlock, and measurements taken from Yellow Birch and Sugar Maple, while not the largest, were nonetheless significant.

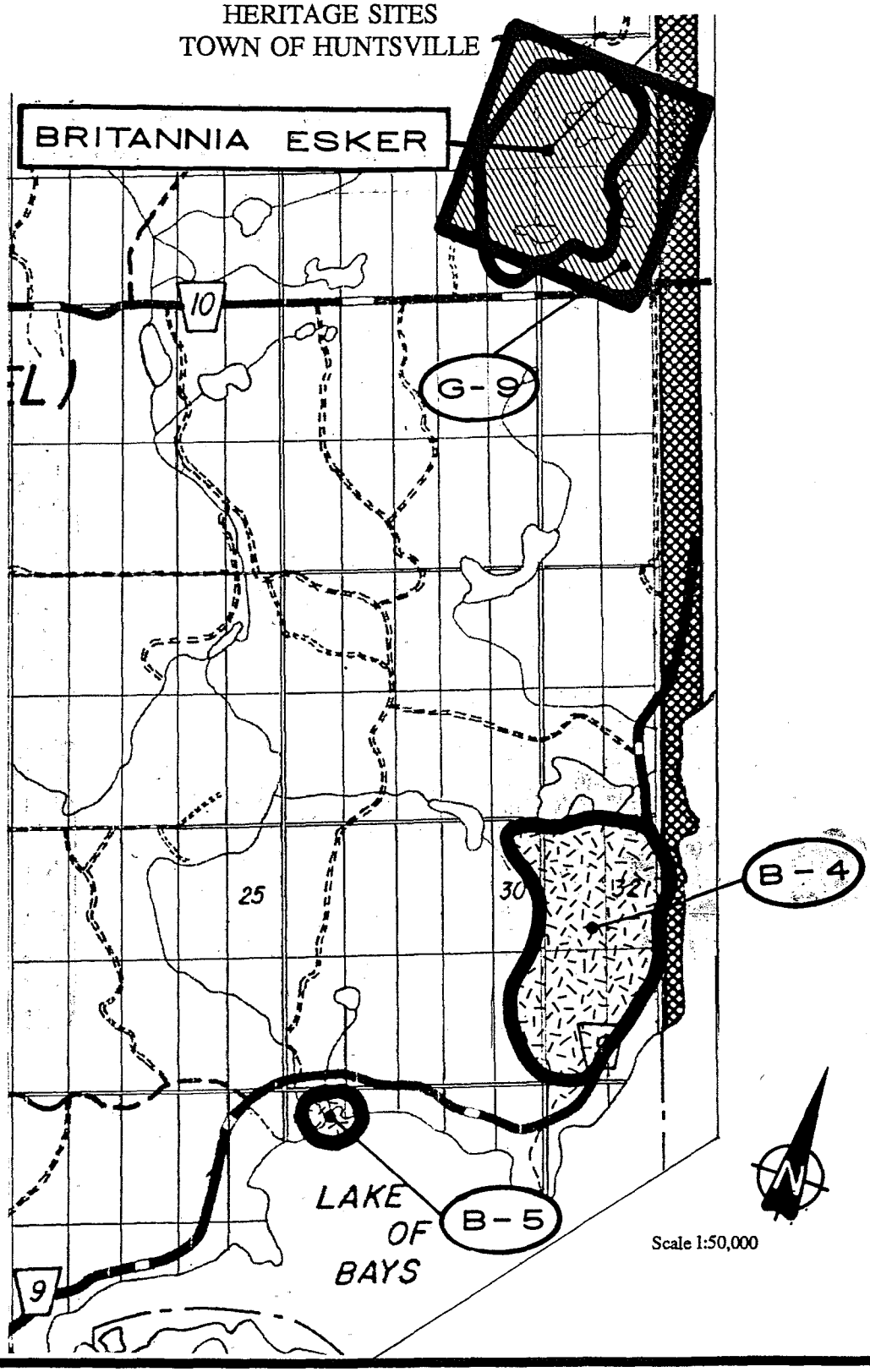
Ownership, Disturbance and Sensitivity

These woods have been legally protected by an association of private landowners, since the early 1980's, from any form of development or large-scale alteration of the natural features. For a long time before this, it had been maintained in a natural state by a single landowner.

Logging is occurring within areas west of the site. A cross-country ski trail winds through the site with little visible impact. The rest of the site is in good to excellent condition with very mature sections of forest unaltered.

The sensitivity of this site is related to the mature upland forest communities which are of limited occurrence within Muskoka. Stewardship activities with the Westermain Wood Association to support the ongoing ecologically based forest management in association with MNR should be continued.

WESTERMAIN WOOD AND WADIS CREEK MARSH
HERITAGE SITES
TOWN OF HUNTSVILLE



Legend

G-9 Glaciofluvial ice-contact stratified drift - "Esker Complex"

B-4 Westermain Wood

B-5 Wadis Creek Marsh

WOOD LAKE BEDROCK-DRIFT COMPLEX

UTM Ref. 17TPV654860

Oakley Township, Bracebridge
Status: Recommend Heritage Site

Area: 60 ha

Site Characteristics

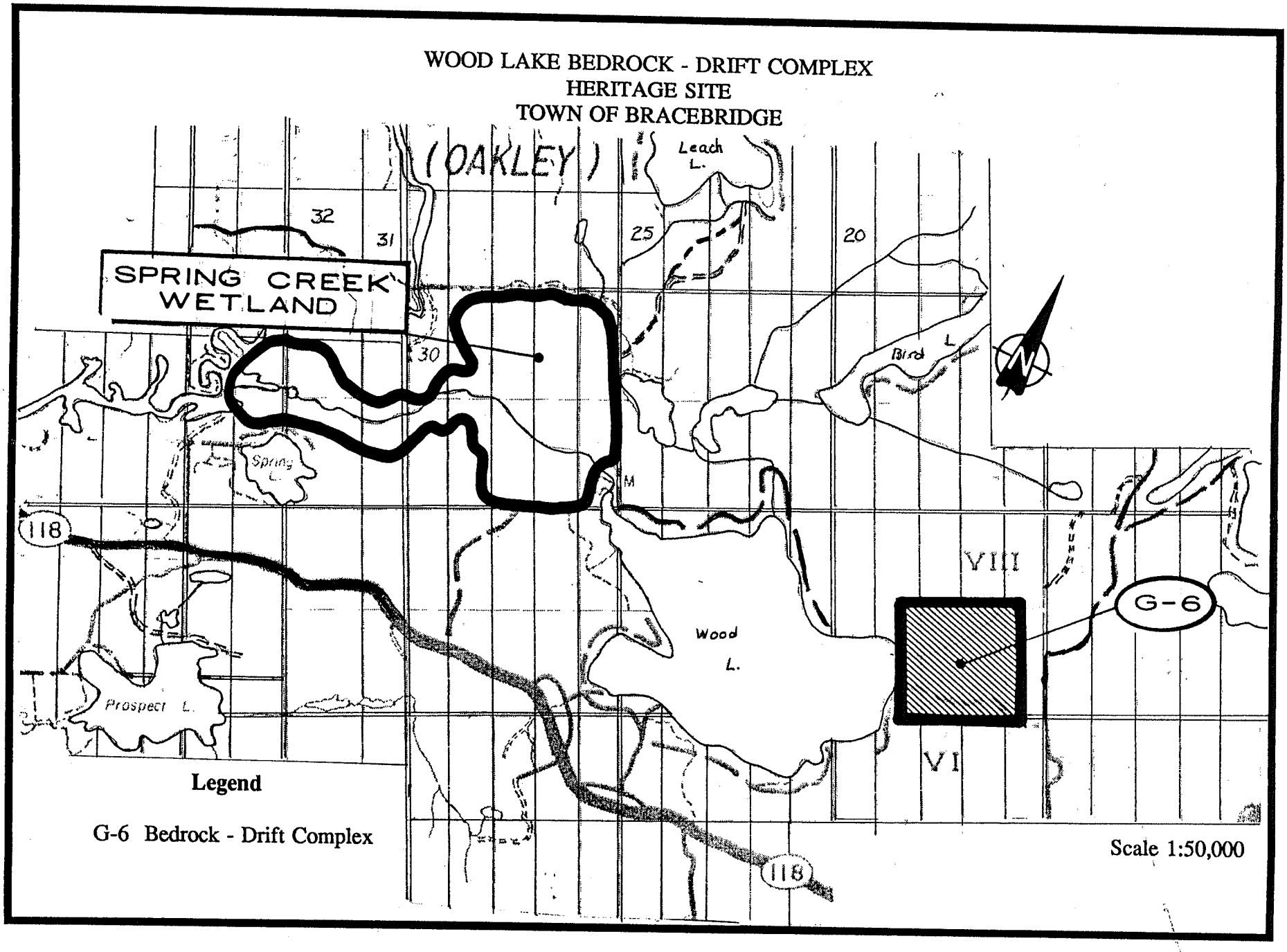
This site to the east of Wood Lake has a low relief undulating landscape, with extensive till cover up to several metres thick. However, bedrock outcrops occur at regular intervals, and bedrock joints and faults are recognizable as linear, poorly-drained depressions. The area is heavily vegetated with hardwood forest.

Significant Natural Values and Selection Criteria Met

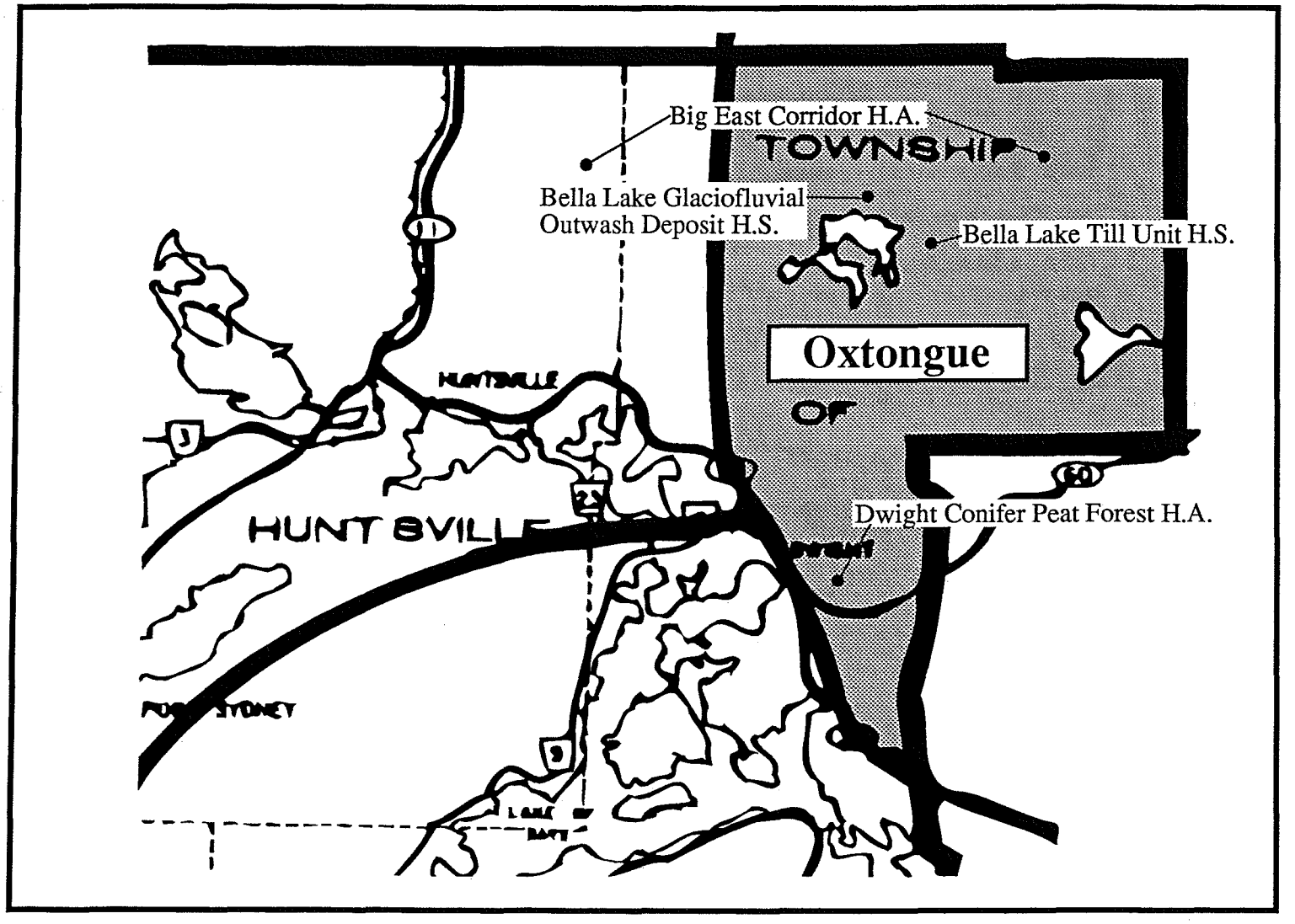
1. **Landform Representation** - (A2) This site has been selected by Bajc (1992) as representative of the bedrock-drift complex that occurs widely in the northern half of Muskoka.

Ownership, Disturbance and Sensitivity

Ownership of the site is unknown. The site is relatively undisturbed, except for an existing cottage road. Its representation values can be protected by preventing the extraction of rock or overburden, and by encouraging the selective harvest of trees rather than clearcuts.


WOOD LAKE BEDROCK - DRIFT COMPLEX
HERITAGE SITE
TOWN OF BRACEBRIDGE
(OAKLEY)
Leach L.
32
31
25
20
SPRING CREEK WETLAND
30
Bird L
Spring L.
M
118
VIII
G-6
Wood L.
Prospect L.
VI
118
Legend
G-6 Bedrock - Drift Complex
Scale 1:50,000

3.9 OXTONGUE SUBDISTRICT



BIG EAST RIVER CORRIDOR UTM Ref. 17TPA370227 to 613424

Chaffey Township, Huntsville
Sinclair and Finlayson Townships, Lake of Bays Area: 2590 ha
Status: Recommend Heritage Area

Site Characteristics

The Big East River is the largest of two rivers which form the North Muskoka watershed system. It flows approximately 50 km across northern Muskoka from Algonquin Park to Lake Vernon. The river is characterized by a shallow channel, broad floodplain containing a complex of meander channels and oxbow lakes, and steep, rocky headwater regions. The total descent of the Big East River is 88 metres with most of the drop in the upper section. The width of the river valley varies from 1 to 2 km over most of its length. Flooding is a regular seasonal occurrence.

The headwaters are fed into a number of coldwater tributary streams (McCraney, Mink, Beanpod, Cripple and Tasso) that run through narrow valleys into the deep waters of Finlayson Pond. The surrounding hills are largely bedrock controlled upland with areas of extensive drift cover on steep valley slopes and rocky terrain. The high elevation and cooler climate support forests with a northern or boreal ecology. Dominant species along the upper valley slopes include White Spruce, Eastern White Cedar, White and Yellow Birch and Balsam Fir.

From Finlayson Pond to McBrien Pond, the river descends through a thickly forested valley with numerous waterfalls, rapids, and tributary streams entering regularly in a trellis pattern. McBrien Pond is generally shallow and underlain by swamp and organic deposits, with an abundance of floating, submerged and emergent aquatic macrophytes. A treed talus slope forms an impressive backdrop along the northern shore of McBrien Pond.

Distress Pond is the next deep basin located between the exposed rock sills (waterfalls and rapids) and outcrops in the bedrock. Below Distress Pond are a series of rocky waterfalls, long stony rapids and quiet pools which twist through 600 metres of hardwood and coniferous forest.

The last 26 km of river are characterized by a gentler descent, a slowing in the rate of flow resulting in a more sinuous, meandering system. This section of the river is underlain by glaciolacustrine coarse-grained deposits on the river edges, glaciolacustrine outwash deposits, and elements of bedrock drift complex. Extensive stands of White Spruce and other conifers are common along the valley slopes. Below Williamsport Road, the river cuts through a sand plain, consisting entirely of thick deposits (up to 23 metres) of older alluvium of sand and silt with minor gravel (Bajc & Henry, 1991). The river is still rapidly evolving and changing its course creating numerous oxbow lakes and incised channels in the process. In this predominately alluvial landscape, the vegetation consists of thicket and forest swamps, marshes and shoreline forests dominated by Red and Sugar Maples, Eastern Hemlock, Yellow Birch and White Spruce.

Flora and Fauna

Total numbers of species recorded were:

Vascular Plants	416 native ; 39 introduced
	2 A.C.P.F. with a score of 8 (Insignificant)
Birds	94 observed during breeding season
Mammals	18 (4 from small mammal trapping)
Herpetofauna	16
Butterflies	5
Dragonflies	9
Mushrooms	36
Fish	2

Significant Natural Values and Selection Criteria Met

1. **Distinctive Landform** - (A1) The Big East River glacial spillway valley is a distinctive feature at the regional level. Meltwaters from the retreating glaciers of the Algonquin Highland poured through this spillway into Lake Algonquin 10,000 years ago. Large quantities of glacial outwash were carried down and deposited in the bedrock valleys and the delta of the old shoreline, which was at that time in the vicinity of Arrowhead Provincial Park. When the Lake Algonquin shoreline receded these deposits were exposed and, over time, the new river channel has incised itself 25 to 30 m below the upper surface of the deltaic plain, exposing a thick sequence of sandy glaciolacustrine sediments. These large sand bluffs not only represent the geological history of the area, but they are also thought to be the only naturally occurring, well-exposed delta of this type in the province (Warner, 1978; Spek,1979 b; Bajc, 1992).

2. **Representative Landform** - (A2) The Big East River, in the vicinity of Big Bend Lookout in Arrowhead Provincial Park, was identified by Bajc (1992) to contain representative examples of both Coarse-Grained Glaciolacustrine Deposits and Older Alluvial Deposits. The cut bank exposure of the steep deltaic sand bluffs contains well-bedded, pebbly fine to very fine sand to silty very fine sand. The floodplain area adjacent to Big Bend Lookout contains several abandoned meanders (oxbow lakes) which are separated by sandy, older alluvial deposits. In addition, an oval-shaped rocky upland immediately adjacent to the River, west of Huntsville, was selected by Bajc to represent Algonquin Highland Precambrian Bedrock.

3. **Hydrological Significance** - (A3) The Big East River contributes high quantity and quality water to the Muskoka River System. The sandy valley floor, with its many pockets of wetland, acts to sustain the quality of the river water, and likely provides some degree of seasonal storage of floodwaters.

4. **Representation** - (B1) The area contributes to the full range of biotic representation in Muskoka by including two community types of limited occurrence in the District. A Boreal Birch-Aspen Successional forest (cooler/sand/dry-mesic) was found frequently along the valleys of the river corridor. A treed acidic talus slope (cooler/rock/dry) is present in the

McBrien Pond area, providing habitat for the Fragrant Cliff Fern, an arctic-alpine disjunct species.

5. **Diversity** - (B2) The Big East River Corridor supports over 400 species of vascular plants. It also contains a high diversity of birds, mammals and herpetofauna compared with other areas.
6. **Quality and Disturbance** - (B3) The Big East River Corridor provides examples of a number of biotic communities of unusual quality.

The valley walls support mature stands of White Spruce dominant and mixed hardwood forests. Their quality is reflected in the abundance of Northern Parula and some fourteen other warbler species.

A 140-170 year old mature Yellow Birch-Eastern Hemlock-Sugar Maple forest and mature Eastern White Cedar-Eastern Hemlock-White Birch boreal forest in the Finlayson Pond - Tasso Creek area are significant since mature upland forests are not well-represented in the District. Of all trees measured from forested sites in the 1992 season, the largest specimens of Yellow Birch (maximum dbh = 54.1 cm), Eastern Hemlock (Max. dbh = 39.2 cm) and Eastern White Cedar (max. dbh = 30.1 cm) were recorded from these stands.

The abundance of dragonflies and damselflies along the river, plus the presence of Brook Trout, are indicative of excellent water quality and habitat conditions.

The McBrien Pond area, with aquatic wetland community, forested slopes and talus cliff is a high quality ecosystem supporting a diversity of flora and fauna, many with rare or uncommon status within the District of Muskoka.

The active meander morphology of the river channel and ongoing formation of oxbow lakes on the lower floodplain provide excellent examples of succession as the quiet waters gradually are invaded by aquatic and then terrestrial vegetation.

7. **Rare Species** - The Big East River Corridor provides habitat for the following rare species:

Wildlife
- *Agrion aequabile* Black-banded Band Wing Dragonfly [RR]
- *Polygonia faunus* Green Comma Butterfly [RR]
- *Rana palustris* Pickerel Frog [RR]
- *Empidonax flaviventris* Yellow-bellied Flycatcher [RR]
- *Bucephala clangula* Common Goldeneye [RR]
- *Mergus serrator* Red-breasted Merganser [RR]
- *Picoides arcticus* Black-backed Woodpecker [RR]

Vascular Plants
- *Calystegia spithamaea* Upright Bindweed [RR]
- *Carex flava* Yellow Sedge [RR]
- *Carex lanuginosa* Wooly Sedge [RR]

Carex michauxiana Sedge [RR]*
Chenopodium simplex Maple-leaved Goosefoot [RR]
Cicuta maculata Water Hemlock [RR]
Dryopteris fragrans Fragrant Cliff Fern [RR]*
Gentiana linearis Narrow-leaved Gentian [RR]
Isoetes lacustris Lake Quillwort [RR]*
Panicum ovale American Panic Grass [RR]
Potamogeton filiformis Filiform Pond Weed [RR]
Ribes lacustre Swamp Black Currant [RR]
Ribes triste Swamp Red Currant [RR]
Scirpus clintonii Clinton's Bulrush [PR RR]
Solidago gigantea Late Goldenrod [RR]
Viola xsublanceolata Primrose-leaved Violet [RR]
* Located by Jim Goltz, 1991

In addition, two snake species, one salamander, eight bird species and twenty-one species of vascular plants were recorded as regionally uncommon.

8. **Fish and Wildlife Concentrations** - (B5) The large, deep cold water reservoir of Finlayson Pond contains numerous fish spawning areas. The gravelly shorelines of this pond and the rocky rapids along the upper reaches of the Big East River are excellent habitat for the regionally rare Pickerel Frog. Several Moose cows and calves were seen in the upper reaches of the Big East River during the February 1992 aerial survey. At least two active Osprey nests are located in Distress Pond. Deer are frequent throughout the area with small deer yards in the vicinity of Arrowhead Provincial Park. Rainbow Trout spawn in the river from the delta to just east of Williamsport Road. The many coldwater streams are potential Brook Trout spawning habitats.

9. **Size and Linkage** - (B6) The Big East River acts as a biogeographic corridor allowing species movement from the Algonquin Highlands down the river valley as evidenced by the occurrence of northern species such as Black-backed Woodpecker, Goldeneye, Swamp Black Currant and Narrow-leaved Gentian. The river corridor stretches across the north of Muskoka for 50 km, occupying a large area of over 2,500 hectares.

10. **Biogeographic Significance** - (B7) The flora is composed of species with representation of both southern and northern elements. Southern affinity species such as Dutchman's Breeches, Wild Leek and Silver Maple are concentrated on the floodplain and oxbows. Northern or boreal species such as Wintergreen, American Mountain Ash, Velvetleaf Blueberry and Swamp Black Currant are common in the upper sections of the river. The Fragrant Cliff Fern is an arctic-alpine disjunct species. A single historical record existed for this particular species but it had not been recorded in Muskoka for over 40 years.

The fauna includes species approaching a southern limit of their breeding distribution including Southern Redback Vole, Northern Parula Warbler, Black-backed Woodpecker and Goldeneye.

11. **Scenic Landscapes** - (C7) The view from the Finlayson Dam has been identified as having high scenic value. As well, the Distress Chutes are noted as one of the most scenic waterfalls in Muskoka (Long, 1989).

Ownership and Disturbance

The area is approximately 60% Crown land and 40% private, with the proportion of Crown land increasing toward the upper reaches of the river. Vegetation has been influenced in part by extensive logging along the entire length of the river from 1920-1930. More recently, selection harvesting has been carried out from 1972-74 and in the early 1980's. However, the shoreline setbacks, plus the presence of steep valley walls making timber extraction virtually impossible, have maintained a largely mature conifer vegetated corridor along the river with scattered stands of mature hardwoods.

In some parts of the lower valley, housing, agriculture, industry, gravel extraction, recreational campgrounds and cottages present ongoing disturbances. Most of the forests are early to mid-successional. The lack of extensive development along the river is due to the dynamic of spring flooding, low summer water levels and the presence of numerous rapids and waterfalls.

In 1953, government control dams replaced old timber dams on Distress and Finlayson Ponds. These dams were originally constructed by lumbermen in the 1880's to facilitate the annual log drives down the river. A dam at McBrien Pond was not replaced, and the pond has since returned to its natural level.

Sensitivity

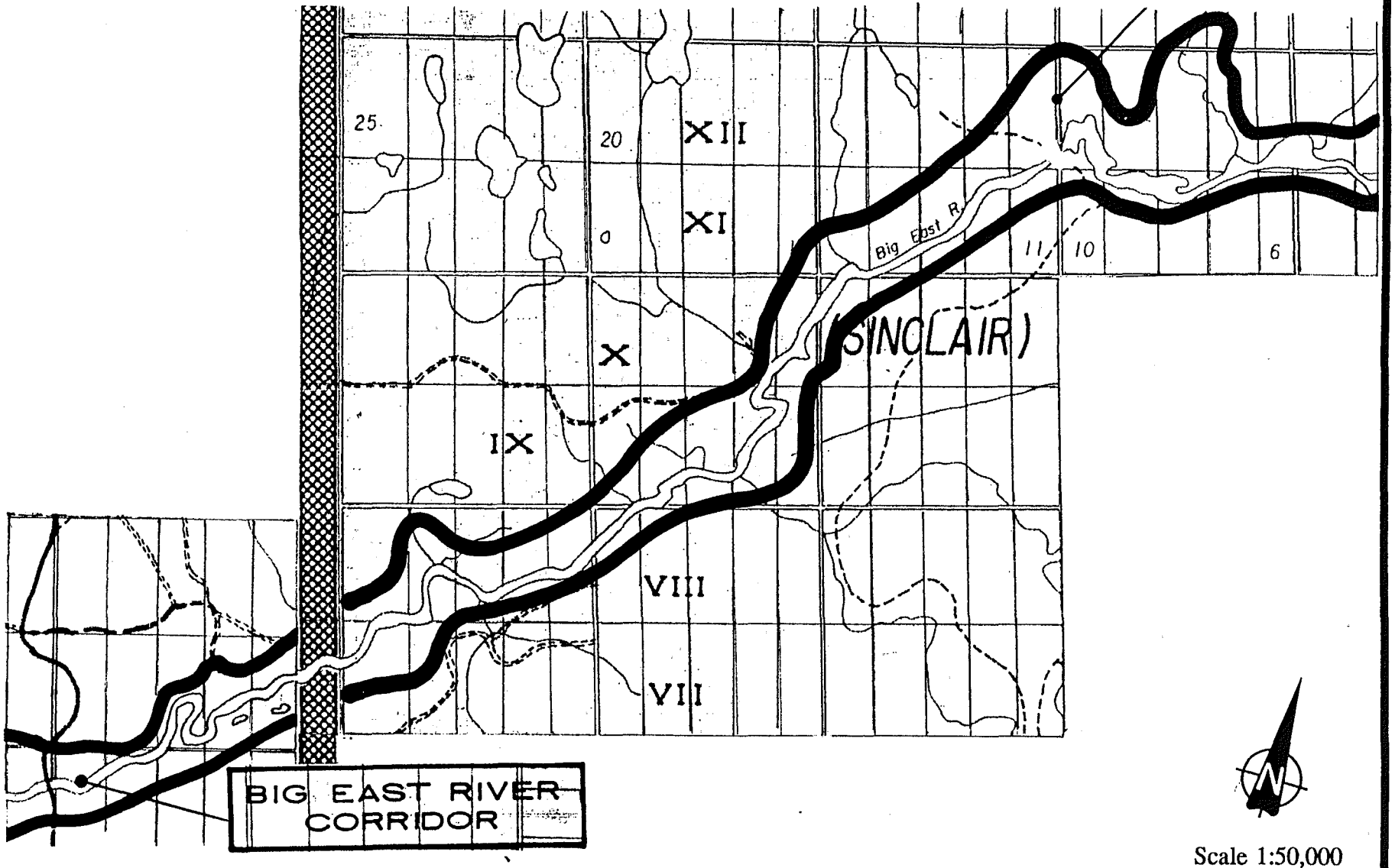
The sensitivity of this site is related to the geological and hydrological values of the river valley and deltaic sandplain, the biogeographic significance of the corridor, the representational values and significant species, and the importance of the area to wildlife due to the size, length and unfragmented nature of the corridor.

Policies should ensure the protection of the corridor in an unfragmented manner. As well, there should be no alteration of the natural flow of water (by damming) and normal erosive processes should be allowed to continue along the meander cut banks. The valley slopes should remain forested following Area of Concern guidelines related to slope and aspect, with a high conifer content encouraged. Any development or resource extraction proposed should address the impact of the proposal on erosion, sedimentation and presence of significant species or vegetation community types.

Major Sources of Information

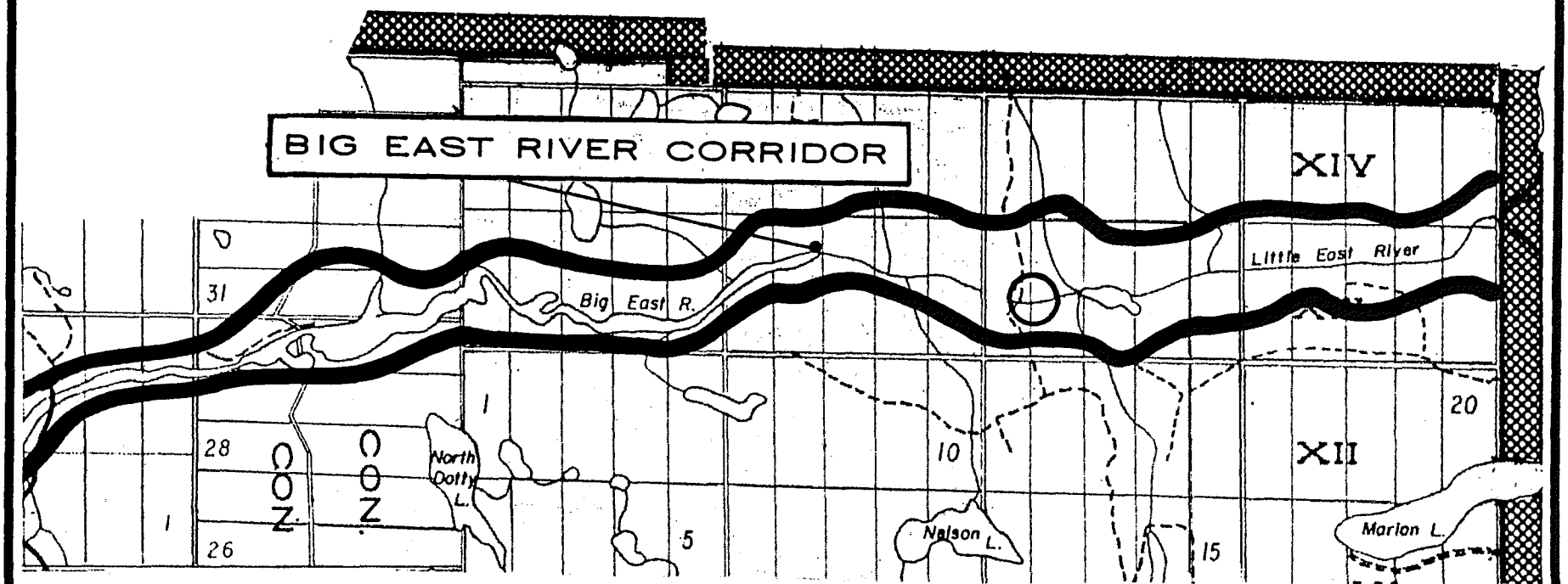
Bajc, 1992; Bajc & Henry, 1991; Bergsma, et al., 1993; Brownell, 1978; District Municipality of Muskoka, Sensitive Areas Maps, 1985; Long, 1989; Noble, 1983 a; OMNR, moose aerial surveys, 1992; Reid, et al., 1992; Spek, 1979 b; Warner, 1978.

BIG EAST RIVER CORRIDOR
HERITAGE AREA
TOWN OF HUNTSVILLE/TOWNSHIP OF LAKE OF BAYS



Scale 1:50,000

BIG EAST RIVER CORRIDOR
HERITAGE AREA
TOWN OF HUNTSVILLE/TOWNSHIP OF LAKE OF BAYS

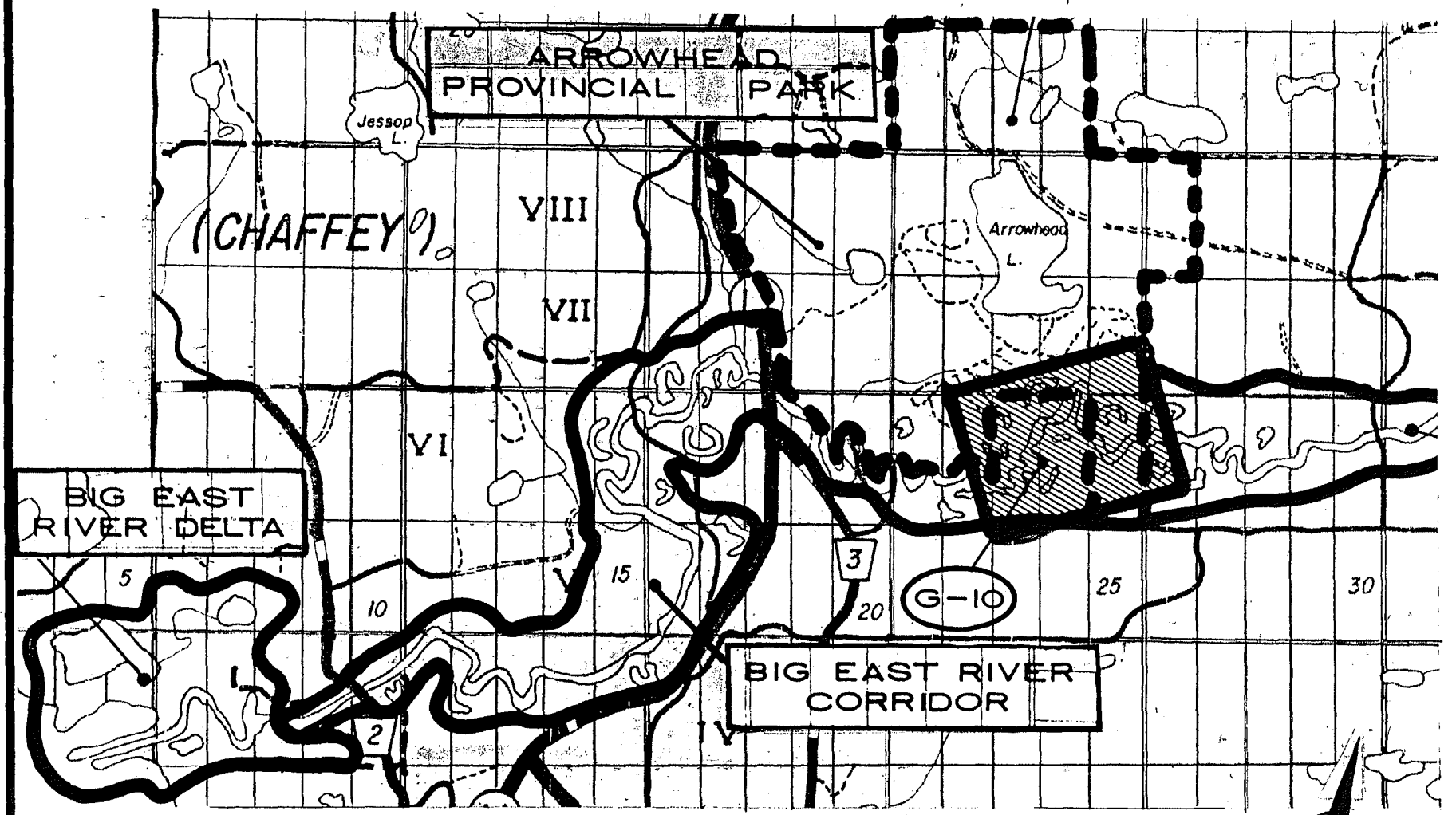


Legend

○ Scenic Spot

Scale 1:50,000

BIG EAST RIVER CORRIDOR
HERITAGE AREA
TOWN OF HUNTSVILLE/TOWNSHIP OF LAKE OF BAYS



Legend

G-10 Coarse grained glaciolacustrine deposits and older alluvial deposits

Scale 1:50,000

DWIGHT CONIFER PEAT FOREST UTM Ref. 17TPA577216

Franklin Township, Lake of Bays Area: 115 ha
Status: Recommend Heritage Area

Site Characteristics

This site, formerly referred to as Dwight Bog, is contained in a depression underlain by swamp and organic deposits. The peat in this area is up to 100 cm deep (Bajc & Henry, 1991).

The vegetation of the site is typical of northern peatland communities. The terrain is a gently sloping surface with a hummock-hollow topography within a continuous cover of Sphagnum mosses, a ground cover of ericaceous shrubs and herbs and open canopy of Black Spruce and some Tamarack. Associations vary from transitional poor conifer swamp (peat forest) and intermediate conifer swamp (peat forest) to herb-rich mixed conifer-broadleaf swamp and broadleaf swamp forest.

Two intermittent streams supporting Winterberry - Mountain Holly - Northern Wild Raisin thicket swamps run through the middle of the site. One stream drains westward from Wilson Lake, located to the east. The other stream drains from a series of small beaver controlled ponds which begin in the Trembling Aspen successional forested hills to the north. The elevation is 100 metres higher than the peat forest. The southern area is a sandy plain supporting deciduous and Balsam Fir conifer forests.

Flora and Fauna

Total numbers of species recorded were:

Vascular plants	93 native; 0 introduced
Birds	17 observed during breeding season
Mammals	6
Herpetofauna	6
Butterflies	3
Dragonflies	1
Mushrooms	27

Significant Natural Values and Selection Criteria Met

1. **Hydrology** - (A3) The area is classified as a provincially significant wetland (MNR, 1992) and as such it serves as a storage and recharge area as well as contributing to the enhancement of water quality.

2. **Representation** - (B1) The area contributes to the full range of biotic representation in Muskoka by including community types of limited distribution in other Heritage Areas. Two such community types are represented. The largest is the homogenous Black Spruce peat forest (cooler/organic/mesic) with few sedges, ferns and sparse herb understory. The peat is

relatively dry compared to most swamp forests. A second community of limited representation is the Balsam Fir conifer forest (cooler/sand/wet-mesic).

3. **Quality and Disturbance** - (B3) The area contains peat and swamp forest vegetation communities of high quality showing little recent disturbance. The survey of vascular flora in the area showed no introduced species.

4. **Rare Species** - (B4) The Dwight Peat Forest provides habitat for the following rare species:

Wildlife
Hesperia leonardus Leonardus Skipper [PR]
Dendragapus canadersis Spruce Grouse [RR]
Vascular plants
Corallorhiza trifida Early coralroot [RR]

In addition, one bird and three plants were recorded as regionally uncommon.

5. **Biogeographic Significance** - (B7) The area supports species and vegetation community types with boreal affinities. Mature, closed canopy Black Spruce peat forests are uncommon this far south. Species with boreal distributions include Wintergreen, Labrador Tea, American Mountain Ash, Velvetleaf Blueberry and Round-leaved Orchis. The presence of Spruce Grouse is significant since it is approaching its southern limit for distribution.

Ownership and Disturbance

The area is privately owned. A campground is situated in the adjacent lands to the south. The entire area is largely undisturbed except for a survey cut running through the forest. Some campers and hunters may venture into the area, but its dense growth and wet surface discourage heavy use.

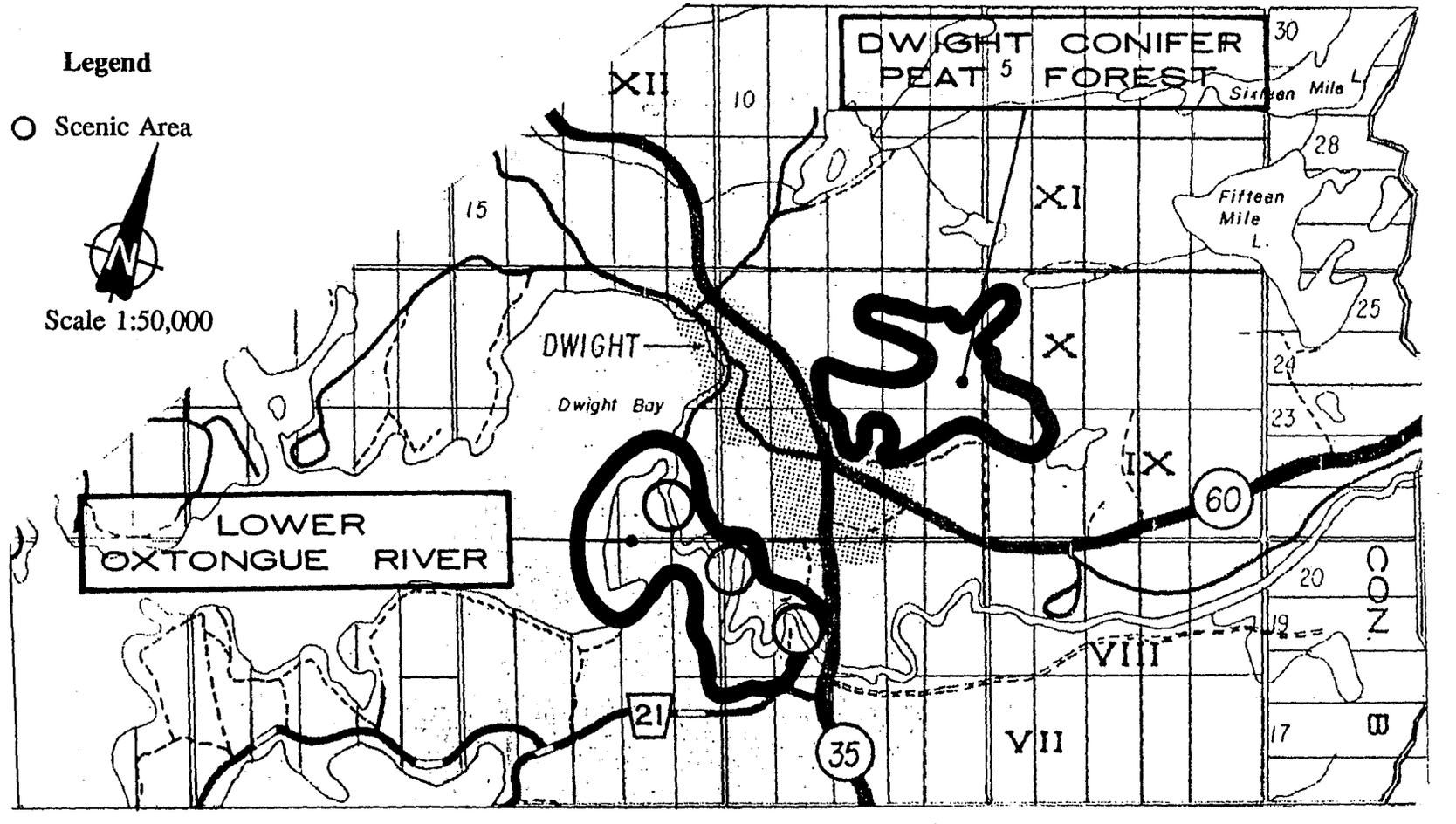
Sensitivity

The sensitivity of this site is related to the wetland function and the significant features associated with this ecosystem. The Provincial Wetland Policy should also protect other significant values of this area.

Major Sources of Information

Bajc & Henry, 1991; Bergsma, et al., 1993; Reid, et al., 1992.

DWIGHT CONIFER PEAT FOREST
HERITAGE AREA
TOWNSHIP OF LAKE OF BAYS



BELLA LAKE GLACIOFLUVIAL OUTWASH DEPOSIT UTM Ref. 17PA654354

Sinclair Township, Lake of Bays Area: 125 ha
Status: Recommend Heritage Site

Site Characteristics

This outwash deposit, at the north end of Bella Lake, is fed by a small esker that trends from the north at the Big East River and passes southwards through Heck Lake. The outwash plain is relatively flat, at an elevation of 365 to 380m ASL, well above the former level of Lake Algonquin. The surface sediments consist of cobble gravel to fine sand. Several peat-filled, ice block depressions, up to 300-400 metres in diameter, have been identified. These kettles were formed when large ice blocks broke off the retreating ice mass, were buried by the aggrading pile of glaciofluvial sediments, and subsequently melted.

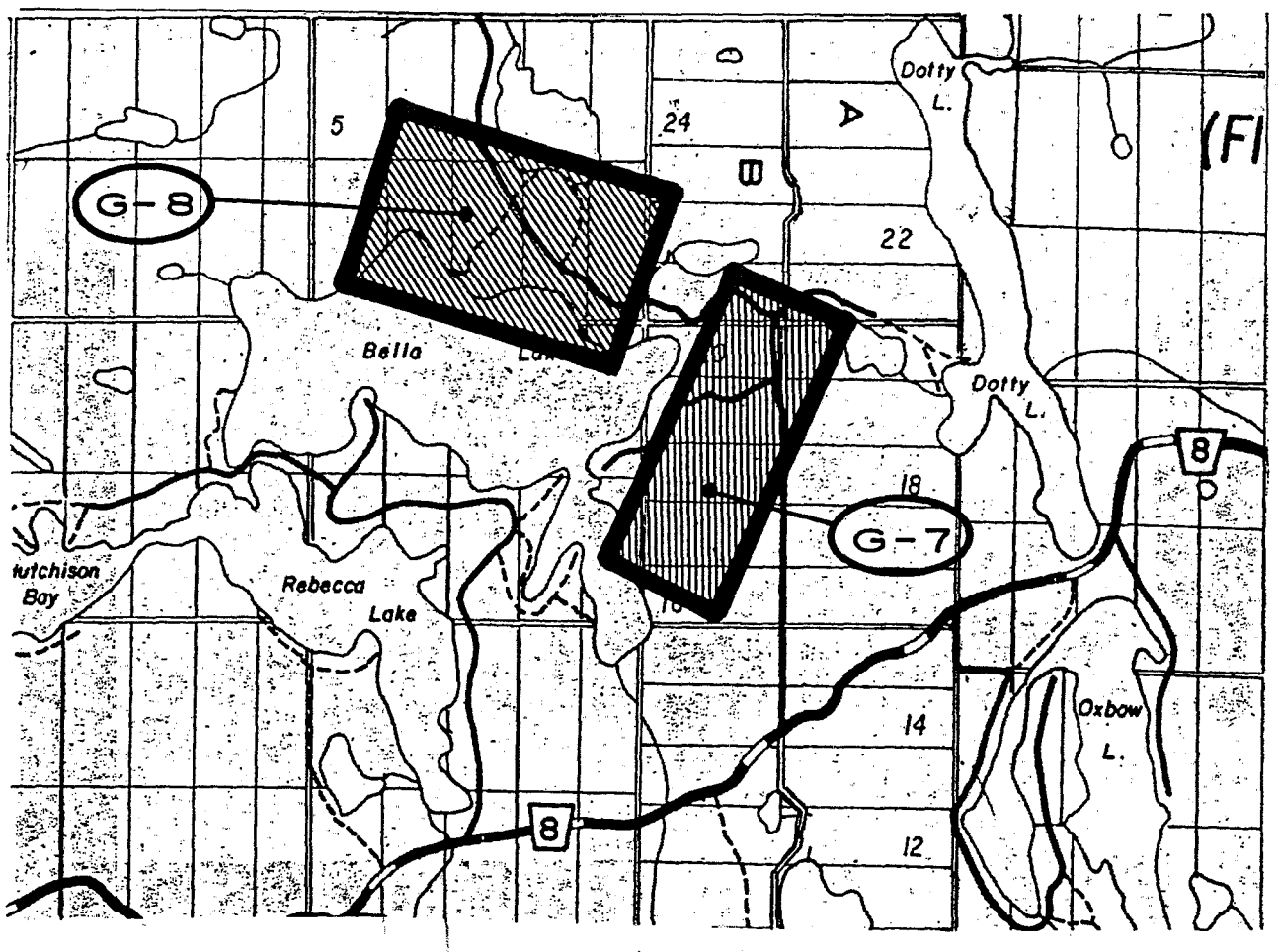
Significant Natural Values and Selection Criteria Met

1. **Landform Representation** - (A2) This site has been selected by Bajc (1992) as representative of glaciofluvial outwash deposits.

Ownership, Disturbance and Sensitivity

Ownership of the site is unknown. There is relatively little disturbance, except for a cottage road serving cottages on Bella Lake. Further development within the deposit should be kept to a minimum, with forestry practices limited to selective cutting and extraction of aggregate prohibited.

BELLA LAKE GEOLOGICAL HERITAGE SITES TOWNSHIP OF LAKE OF BAYS



Legend

G-8 Bella Lake Glaciofluvial Outwash Deposit

G-7 Bella Lake Till Unit

Scale 1:50,000

BELLA LAKE TILL UNIT UTM Ref. 17TPA656349

Sinclair Township, Lake of Bays Area: 150 ha
Status: Recommend Heritage Site

Site Characteristics

This site, along a cottage road immediately east of Bella Lake, contains fluted to gently undulating ground moraine with till deposits thick enough to mask to the underlying irregular bedrock surface. the ground surface slopes gently to the west, with local relief generally less than 10 to 20 metres. The site is littered with cobbles and boulders, but no bedrock outcrops are visible. Hardwood forest covers the site.

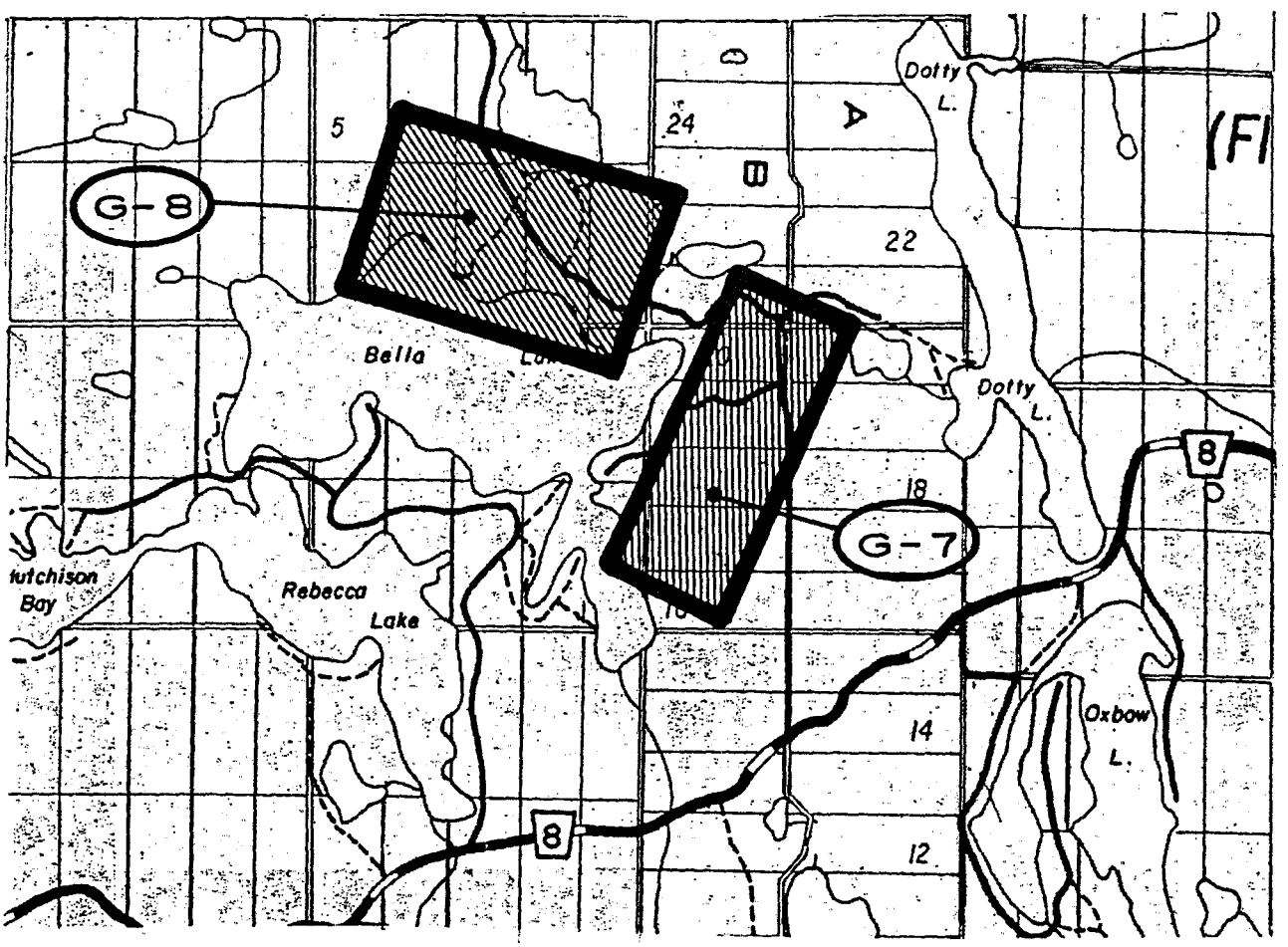
Significant Natural Values and Selection Criteria Met

1. **Landform Representation** - (A2) This site has been selected by Bajc (1992) as representative of the expansive areas of till which are confined primarily to the Algonquin Highland section of Muskoka.

Ownership, Disturbance and Sensitivity

Ownership of the site is unknown. Aside from selective cutting of the hardwood forest, the site is relatively undisturbed. Clear cutting and opening of borrow pits within the site should be prohibited to preserve its representative values.

BELLA LAKE GEOLOGICAL HERITAGE SITES TOWNSHIP OF LAKE OF BAYS



Legend

G-8 Bella Lake Glaciofluvial Outwash Deposit

G-7 Bella Lake Till Unit

Scale 1:50,000

3.10 OTHER CANDIDATES CONSIDERED

ALPORT BAY — Monck Township, Bracebridge

This wetland site is situated in a large discrete bay, 1 km below the outlet of the Muskoka River into Lake Muskoka.

Five broad wetland vegetation communities are present including: floating/submerged aquatics dominated by pondweeds, waterlilies, Floating Hearts; Wild Rice stands; open low shrub poor fen on a Sphagnum mat dominated by Leatherleaf and sedges with scattered tall shrubs; dense tall shrub swamp dominated by Winterberry-Holly-Alder; wet Red Maple-Speckled Alder swamp. None of the community types were considered to be significant to Muskoka. Most are of widespread occurrence in the District. One species, Marsh St. John's Wort, is provincially rare, but is common along shorelines and wetlands in Muskoka.

This site is of local significance within the context of Lake Muskoka, as a remnant wetland along a shoreline where few wetlands now remain.

BAYSVILLE BOG — McLean Township, Lake of Bays

A small wetland immediately northwest of Baysville was examined at the suggestion of a local resident. The wetland contains a small acidic pond, surrounded by floating Sphagnum mat with scattered conifer trees. The flora, which includes several orchid species, appears typical of Muskoka poor fen habitats. Based on its small size and lack of unusual features, this wetland should be considered locally significant. However, it does have excellent interpretive potential due to its proximity to the village and easy access. Further intrusions into the wetland by filling or dredging should be avoided.

BRANDY CREEK WETLAND — Watt Township, Muskoka Lakes

This site is located along Brandy Creek between Doherty Road and Brackenrig Road, south of Cowan Lake and north of Falkenburg Road. The Brandy Creek Wetland was recommended by Brunton (1991 b) for Regional ANSI status due to the presence of a large area of mixed and coniferous swamp forest dominated by Eastern White Cedar, Balsam Fir, Black Spruce, Black Ash and Speckled Alder and underlain by substantial peat deposits in excess of 12 metres. The site shares representation with Axe Lake and Fawn Lake Heritage Areas.

A high quality riparian wetland exists along the Brandy Creek, supporting abundant aquatic macrophytes and minnows, numerous beaver dams, and excellent breeding habitat for Wood Duck, Mallard, Blue-winged Teal, American Bittern, numerous species of flycatchers, sparrows and warblers, as well as common wetland and forest interior bird species.

Surrounding swamp forests are dominated by Red Maple - Black Ash and Tamarack - Red Maple - White Pine. Cool northern forests of Eastern Hemlock-Red Maple-Balsam Fir and moist Red Maple-Yellow Birch-Hemlock are also present. Sections of low shrub fen, to thicket swamp, Cottongrass poor fen, wet beaver meadows, and Alder-Elderberry - Willow

swales line the creek. Adjacent lands include White Pine - Red Maple - White Birch upland forests, active sand and gravel pits and agricultural land (for grazing of cattle).

This large wetland is hydrologically significant, contributing to water quality enhancement and water storage in the large peatland. The wetland is near the source area of the Brandy Creek system which exits into Brandy Lake and then to Lake Muskoka.

The area supports a major deer yard, as well as suitable habitat for Moose, Black Bear, Beaver, Muskrat, Otter and at least five other common mammals.

According to the criteria for Heritage Area selection this site should meet three criteria (quality, wildlife concentration, hydrological significance) making it a suitable candidate. However, during the landowner contact stage, a number of landowners denied the Heritage Area staff access onto their properties. This prevented work in more than half of the study area, so the site was dropped from the field program.

Brandy Creek Wetland is sensitive to disturbances which would impact on wetland function and area, as well as habitat fragmentation which would impact on the large wildlife populations in the area. This site is recommended for wetland evaluation.

KENNEDY POINT Medora Township, Muskoka Lakes

This site is located on the western side of Lake Muskoka. It is an undeveloped piece of land that is almost entirely surrounded by water. The site was inventoried in 1990 by Sinclair, Tafts and Purdon, and in 1992 by a private consultant. It contains a Red and Silver Maple wooded swamp, a mesic Sugar Maple-Beech-White Ash forest, a northern mixed hardwoods community, a barren gneissic rockland with Red and White Oak, a precipitous slope to the lake and a small poor fen area. The Point provides habitat for wildlife such as White-tailed Deer, Black Bear and large birds such as hawks and owls.

The area is presently under development pressure. The Muskoka Heritage Areas field staff were denied permission to inventory most of the site, however, an inventory of the mainland area adjacent to Kennedy Point was made. While there are signs of disturbance due to cottage development, the forests here contain some very mature specimens of Sugar Maple (max. dbh 28.3 cm), Beech (max. dbh 27.1 cm) and White Ash (max. dbh 40.3 cm). The White Ash was the largest specimen from the 1992 season. The cool, rich mainland woods supports several rare and uncommon species. These features satisfy the criteria for quality and rare species.

According to the reports noted above, Kennedy Point itself contains four regionally rare species and a minimum of seventeen regionally uncommon species. Many of these significant species are located on the dry rocky ridge at the southern tip and are at a northern limit for their distribution. This satisfies the criterion for biogeographic significance. The area also contains a higher than expected diversity of native plant species in relation to the size of the site.

The scenic quality of the steep slopes and cliffs was also noted in the Muskoka Scenic Evaluation. The Kennedy Point area would likely meet the requirements for Natural Heritage Area status since it satisfies five criteria, but lack of access prevented confirmation of most of these features. Hopefully the areas to be developed will be done without compromising the natural environment.

LIMBERLOST — Sinclair Township, Lake of Bays

An extensive forest area, owned by a single family, surrounds the east and west sides of Solitaire Lake. At the request of the owners, this site was visited in 1990. Despite the occurrence of several rare species, including Two-lined Salamander and Red-shouldered Hawk, the extent of disturbance to the forest by past and current logging practices has significantly reduced its biological values. It is considered to be of local significance only.

LOWER GALLA LAKE — Freeman Township, Georgian Bay

This site was initially recommended for study due to reports of a Red Spruce population within the area. It was not located, however populations of the regionally rare Grass-leaved Arrowhead were located in the wetlands of Galla Lake. This species was present in other Heritage Areas, so this site was not considered significant enough to warrant designation as a Heritage Area or Site.

MCCRAE LAKE NORTH — Gibson Township, Georgian Bay

Limited time and resources and the difficulty of access prevented a biological assessment of this area. The Geomatics report had recommeded extending the McCrae Lake boundary to the Gibson River candidate in order to incorporate a larger area of representative Georgian Bay landscape. This would also provide a large contiguous area of corridor link which would support species requiring extensive undisturbed habitats.

MCKAY CREEK WETLAND — Draper Township, Bracebridge

The McKay Creek wetland, located near Purbrook was looked at briefly in September of 1991 and in late May of 1992. The access to this area was impeded by a thick Speckled Alder swamp along a shallow and narrow, twisting stream. No significant species or unusual vegetation associations were identified during the field visit so the area was dropped. The Spring Creek wetland, located on the other side of Purbrook, replaced this site.

PORTAGE BAY — Watt Township, Muskoka Lakes

This site is situated in a small bay of Lake Rosseau, beside Brackenrig Road. The shallow bay is dominated by emergent marsh and floating aquatic vegetation. The adjacent woods are rich Sugar Maple-Beech-Eastern Hemlock forest with Red/Green Ash, White and Yellow Birch, Black Cherry and White Pine subdominants. The understory supports a diverse groundflora including Maidenhair Fern, Wood Ferns, Trilliums, Violets, Hepatica, Blue Cohosh, Wild Garlic, Toothwort, Dwarf Ginseng, Carolina Spring Beauty, Trout Lily, Indian Cucumber Root and Canada Yew.

While considered a rich wood for Muskoka, better representation was found in other areas. There were no other significant natural values which met the selection criteria, so this area was not considered a candidate site.

QUARRY ISLAND Baxter Township, Georgian Bay

This island is located 8 km northwest of Port Severn and 4 km south of Honey Harbour. The island, with an area of 72 hectares, has been described in previous studies including: A Botanist's Discovery of Quarry Island by R.G. Whiting (1978), Wetland Evaluation Record for the Quarry Island Marsh, (completed in 1986 for Huronia District OMNR) which designated it Class 3, and site visits by Jim Goltz (undated - reported 1992).

The site is representative of unique geological features and biological associations in Muskoka. It is a large limestone plateau which has a variety of mesic to dry habitats including Red/Green Ash-Sugar Maple-Basswood hardwood forest, Eastern White Cedar limestone escarpment and Snowberry-Downy Arrowwood-Eastern White Cedar limestone pavement (alvar), plus a boulder beach with Bearberry and Ninebark - Willow - Alder thicket and Cattail - sedge shoreline marsh.

The Whiting and Goltz inventories reported one provincially rare species, Blue-eyed Mary (*Collinsia parviflora*), thirteen regionally rare species, and eight regionally uncommon. These include Georgian Bay shoreline species such as Red Cedar (RU), Kalm's Chess Brome (RR), Ninebark (RR), Buffaloberry (RR), and Balsam Ragwort (RR).

A number of significant birds were observed in the wetlands surrounding Quarry Island, including Caspian Tern (NR, PR, RU), Common Tern (RU), Osprey, and Black Duck. The marshes provide local significance for waterfowl production and staging of Mergansers and Mallards.

According to the criteria for Heritage Area selection, this site would meet the criteria for biological representation (limestone alvar), rare species and distinctive or unusual geological feature (limestone bedrock), making it a suitable candidate. However, since access to the area was denied, it was dropped from the field program.

This area is currently under development pressure. The limestone habitats are especially sensitive to disturbance. The recommendations made in Whiting's report, to restrict shoreline cottage development and maintain the interior in its natural conditions remain valid. Private stewardship efforts with the landowners are also recommended.

RILEY LAKE SOUTH Ryde Township, Gravenhurst

The landscape of this site to the south and east of Riley Lake is typical of southern Muskoka rock barrens, which consists of bare rock ridges separated by narrow, linear wetlands. This site is dominated by low-lying, saturated areas and beaver ponds. Vegetation communities range from open to semi-open rock barrens with White and Red Pine and Red and White Oak, to lower-lying moist forests of Red Maple, White Birch, Trembling Aspen and Black

Cherry, and wet marshy depressions, sometimes with open water containing floating shrub mats and aquatic vegetation and/or dead standing trees.

A total of 178 vascular plants were identified at Riley Lake South, Eight of these were significant, with the provincially rare, Long Sedge, Carey's Knotweed and Halberal-leaved Tearthumb, two regionally rare species - Smooth Rock Cress and Northern Bedstraw and four regionally uncommon plants.

Forty-three bird species were recorded during nesting season including two regionally uncommon species, the Northern Goshawk and Rufous-sided Towhee. An active Turkey Vulture nest was also identified.

Eight common mammals, and twelve species of reptiles and amphibians including Five-lined Skink and the regionally uncommon Eastern Newt were found in the wetlands and dry ridges of the site.

Eleven Butterfly species were identified including the provincially rare Leonardus Skipper. This species has been documented from numerous areas in Muskoka.

While this site meets the criteria for rare species, all are well represented in other nearby rock barren Heritage Areas. No other criteria appear to be met. It was therefore recommended that this site be dropped from the list of candidate Heritage Areas or Sites, and considered locally significant.

STONELEIGH — Draper Township, Bracebridge

A large property located between Stoneleigh Road and North Healey Lake was looked at in September 1991 and late May 1992. A small area of mature Sugar Maple, Eastern Hemlock and Yellow Birch was identified in the area, however it was too small to be considered representational. Much of the surrounding forests are early successional Red Maple mixed. The Regionally Uncommon Eastern Newt was identified on the property.

THREE MILE LAKE SWAMP — Watt Township, Muskoka Lakes

This site is located along the creek which flows from Longs Lake into the eastern end of Three Mile Lake. It has been recommended as a candidate regional ANSI by Brunton (1991 b) based upon the occurrence of clay-based vegetation in a natural condition on lacustrine deposits. Bajc (1992) recommended the area on the north side of Three Mile Lake as the best representative example of silty and clayey glaciolacustrine plains in the District of Muskoka.

The creek runs through Sugar Maple deciduous upland forests, agricultural lands and residential lots to a small waterfalls, where it drops 30m to a seasonally flooded lowland of forest swamps and thicket swamps. The dominant vegetation along the creek is Speckled Alder with Elderberry and High-bush Cranberry. Mature Black Cherry, Red and Silver Maple occupy the adjacent wetland area.

The creek provides spawning habitat for Yellow Pickerel and is classified as Fish Sanctuary by the OMNR.

The criteria for inclusion as an ANSI were not sufficient to recommend this site as a Heritage Area. Better examples of clay-based vegetation occur in other nearby Heritage Areas, such as Clark's Pond, Sharpe's Creek and Scarcliffe Bay.

3.11 EXISTING PROTECTED AREAS

GEORGIAN BAY ISLANDS NATIONAL PARK — Baxter Township, Georgian Bay

National Park holdings on Beausoleil Island and scattered smaller holdings on nearby islands protect a significant range of habitats and species typical of the southern Georgian Bay coast. The northern section of Beausoleil and the interior of Bone Island are characteristic coastal rocklands, with particularly significant shoreline vegetation communities. The southern section of Beausoleil is representative of the Simcoe uplands physiographic region of Huronia District, with up to 30 metres of extensive till deposits. Interior upland hardwood forests are well developed, as are coastal shoreline and backshore boulder pavement meadows with many significant plants. The National Park protects large populations of provincially and regionally rare plants, together with an outstanding diversity of herpetofauna.
(MacDonald, 1986)

O'DONNELL POINT PROVINCIAL NATURE RESERVE — Freeman Township, Georgian Bay

Much of this Reserve is organic lowlands, set between ridge-top bedrock representative barrens with scattered White Pine and Red Oak. Plant species and communities of significance generally consist of Great Lakes shoreline species, southern species at or near their range limits, and Atlantic Coastal Plain Flora. White-fringed Orchid, a provincially rare species, occurs here in abundance, with up to 5000 individuals found in a single wetland. The Reserve is also an exceptionally rich area for reptiles and amphibians, including Eastern Massasauga, Eastern Hognose Snake, Spotted Turtle, and Four-toed Salamander. (OMNR, 1983, Simpson, 1980).

SIX MILE LAKE PROVINCIAL PARK — Baxter Township, Georgian Bay

This recreation-class park contains a limited representation of vegetation communities, mostly somewhat disturbed. The gneissic bedrock ridges are topped in some areas with sandy till deposits; the intervening wetland swales are frequently affected by beaver activity. Several significant species of vascular plants, herptiles, and birds are known to occur, mostly associated with aquatic and shoreline habitats. (MacDonald, 1986, Sharp, 1983)

GIBSON RIVER PROVINCIAL NATURE RESERVE — Baxter Township, Georgian Bay

This nature reserve was recently expanded to include Red Marsh, an extensive graminoid wetland area to the south of the original park. This area contains good examples of mature

Sugar Maple forest on till-mantled rocklands. An exceptional diversity of herptiles and good diversity of bird species is found within the Reserve, including such rarities as Eastern Massasauga and Cooper's Hawk. A number or rare plants, mostly shoreline species, are also known from the area. (Kamstra, 1992, Harris, 1976).

HARDY LAKE PROVINCIAL PARK — Wood Township, Muskoka Lakes

This 800 hectare park consists mostly of mixed dryland forest on extensive rock barrens, together with fen and wooded swamps in frequent depressions. In western sections with deeper soils, shade-tolerant hardwood and Eastern Hemlock forests predominate. Over 350 species of vascular plants are found within the park, including such rare species as White-fringed Orchis, Ebony Spleenwort, Squawroot, Farwell's Milfoil, and Two-cupped Pondweed. There is also a strong representation of Atlantic Coastal Plain Flora, and a number of southern species near the limit of their range. (Brunton, 1980, Bennett, 1976).

ARROWHEAD PROVINCIAL PARK — Chaffey Township, Huntsville

Most of the park area consists of till drift-covered uplands covered in Sugar Maple deciduous forest with a diverse understory. The southerly section of the park includes a deep sand delta associated with the Big East River corridor, with a pioneer forest of Trembling Aspen and White Birch occurring on the delta. The river has cut into the delta, and its wide floodplain includes an array of features associated with fluvial erosion and deposition. The flora of the park includes several provincially rare species, and a relatively large number of southern species at the northern edge of their known range. The regionally-rare Pickerel Frog is also known to occur within the park. (Noble, 1983 b, Brownell, 1977).

BIGWIND PROVINCIAL PARK — Oakley Township, Bracebridge

The rugged landscape of this park has a thin covering of sandy loam over gneissic bedrock, with disturbed late-successional mixed forests of Sugar Maple, Yellow Birch, American Beech, Eastern Hemlock, and Eastern White Cedar. Wetland sites are often disrupted by beaver activity, and display a variety of wooded and shrub bog and thicket swamp associations. Lakes are deep, cool, and oligotrophic with narrow emergent shore zones. Previous life science work recorded many rare species, but these records are unconfirmed and many are suspect. (Brunton, 1991b, Singh, 1973).

BAUER PROVINCIAL NATURE RESERVE — Sinclair Township, Lake of Bays

Most of this property is wooded with young regenerating upland forest on old disturbed sites, with characteristic forests of Sugar Maple, White Birch, and Eastern Hemlock. Several pockets of White Ash occur on bedrock sites with warmer than normal microclimates. Wetlands are not extensive, occurring along drainage swales and in several small pockets along Solitaire Lake. A cliff along the west side of the lake was a former Peregrine Falcon nest site. (Noble, 1984)

OXTONGUE RIVER-RAGGED FALLS PROVINCIAL PARK — Finlayson Township, Lake of Bays

The course of the Oxtongue River out of Algonquin Park follows a glacial spillway through this rugged landscape. Tolerant coniferous forests of Eastern Hemlock and Eastern White Cedar occupy ravine slopes and wet depressions; deciduous and mixed forests of Sugar Maple, Eastern Hemlock and Yellow Birch occupy rich sandy loam soils on upland sites. Lowland forests on the river flats are dominated by Balsam Fir at the edges, grading into pure Black Spruce wetland forest over deep peat deposits to the south. A number of plant species at the maximum limits of their range on the west side of the Algonquin Dome are found here. (Brunton, 1991c)

LESLIE M. FROST NATURAL RESOURCES CENTRE — Ridout Township, Lake of Bays

A part of the land base associated with the Frost Centre, which carries out resource management and educational activities, extends into Muskoka District. The forest is dominated by Sugar Maple associations, and is typical of southern Shield conditions on rocky upland terrain. A few unusual species have been found, including the provincially and regionally rare *Potamogeton confervoides*, and Water Awlwort. The only record of Least Weasel within Muskoka comes from Frost Centre lands. (Simpson, 1974)

GULLS ELEANOR ISLAND — Muskoka Township, Gravenhurst

Eleanor Island is a National Wildlife Area set in Lake Muskoka, which hosts a colony of nesting Herring Gulls and a small heronry.

BIG CHUTE ROCKLANDS ANSI — Baxter Township, Georgian Bay

A portion of this provincially significant ANSI extends into Muskoka District. The area is identified as providing representation of interior gneissic rocklands with an outstanding concentration of significant flora. 589 species of vascular plants have been identified, including nine provincially rare species and 75 species rare in Simcoe County and/or Muskoka. One bird species and two reptiles are provincially rare. (Varga, 1988)

AXE LAKE ANSI

A small portion of this provincially significant ANSI, which is largely in Parry Sound District, extends into Muskoka. The life science values associated with this ANSI relate primarily to the abundance and diversity of Atlantic Coastal Plain Flora, which is present in the shallow waters and along the shoreline of the lake. A Natural Heritage Area has been recommended which would extend into the peatlands to the south of Axe Lake, recognizing natural values in addition to the A.C.P.F. (Keddy and Sharpe, 1989).

EARTH SCIENCE ANSIs

Three regionally significant Earth Science ANSIs are found within Muskoka. One is incorporated within the Sharpe's Creek Heritage Area. A second, the Opal Island-Skeleton Lake ANSI, incorporates an excellent exposure of monomict autochthonous breccias along the north side of Skeleton Lake, believed to be the result of the impact of a meteorite. The third is a rock cut along Highway 35 in the Birkendale area, which shows excellent displays of the folding and faulting of the gneissic bedrock in this area. Neither of the latter two sites appear to have any biotic significance.

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APPENDICES

APPENDIX 1: Numerical Summary of Heritage Areas and Sites.

SUB-DISTRICT	NAME OF SITE	CODE	YEAR	# RECORDS PN	PI	BI	MA	HE	LE	DR	MU	F	% INTROD SPECIES	AREA (ha)
	MUSKOKA WATERSHED													
	A) GEORGIAN BAY AREA													
S.C.	Quarry Island	G1	Access denied											72
Gib.	Bala Bog	G2	90	318	47	47	8	11	24	6	34		12.9	425
C.B.	Gibson River Corridor	G3	91GI	129	3	20	6	7	2				2.3	495
C.B.	Bone Island	G4	91GI	219	12	35	3	21					5.2	573
C.B.	Cognashene Lk.-Long. Bay	G5	91GI	218	5	26	5	7					2.2	421
C.B.	Pine Islands	G6	91GI	10		4	2						0	50
C.B.	Moreaus Bay	G7	91GI	169	2	22	5	3	2				1.2	445
Gib.	Coldwater Lk.- Swan Lk.	G8	91GI	78		6	2						0	104
Gib.	Lower Moon River	G9	91GI	136	5	10	1	4					3.5	570
Gib.	Concession Lake	G10	90	204	21	29	9	14	7				9.3	485
C.B.	Lower Galla Lake	G11	91GI	65	1	5	2						1.5	44
Gib.	Gaunt Bay ACPF/Upper Moon	G12	90	159	16		3	4					9.1	2
Gib.	Gray Rapids	G13	92	149	2	21	4	6	1				1.3	300
Gib.	Musquash River ACPF	G14	90	50										50
	B) CENTRAL MUSKOKA													
M.L.	Kennedy Point	M1	denied	227	16	46	3	2					6.6	30
M.L.	Nell's Creek/Walker Pt.	M2	92	191	9	31	5	10					4.5	150
A.B.	Big East River Delta	M3	90	295	29	72	8	10	1	9	1	1	8.9	297
M.L.	Clark's Pond	M4	90	335	49	73	11	15	14				12.7	259
M.L.	Bruce Lake Marshes	M5	90	392	57	46	8	12	14				12.7	174
L.B.	Spring Creek Wetland	M6	92	222	2	37	5	12	2			3	0.9	402
A.B.	Sharpe's Creek Valley	M7	90	349	65	71	12	11	7	2			15.7	60
Gib.	Deer Lake Complex	M8	90	470	58	94	19	10	28	8	34		11.0	4540
L.B.	Shack Creek Wetland	M9	92	170		48	4	7	4	7			0	500
A.B.	Cooper's Pond	M10	90	252	20	87	15	11	19				7.3	570
M.L.	Scarcliffe Bay	M11	92	135	11	36	6	4				5	7.5	11
M.L.	Bilean Govan Island	M12	90	254	28	33	7	5	6		1		10.1	107
A.B.	South Muskoka Canyon	M13	90	298	39	40	7	5	5				11.3	49
A.B.	Beaumont Bay Carbonates	M14	91	304	40	47	7	10	6	4	10		11.6	220
A.B.	North Muskoka Canyon	M15	91	141	16	49	3	3	4	2	1		10.2	123
L.B.	Fawn Lake Wetland	M16	92	161	2	50	5	9	5	10			1.2	400
	C) ALGONQUIN HIGHLANDS													
Oxt.	Big East River Corridor	A1	90-92	416	39	94	18	16	5	9	36	2	8.6	2590
A.B.	Novar Conifer Peat Forest	A2	90,91	286	23	77	18	8	4	7	25	3	7.5	347
Mag.	Axe Lake Peatland	A3	91	174	12	44	10	7	7	17	48		5.9	607
L.B.	Brittania Esker	A4	91	129	4	33	5	6	3		14		3.0	130
Oxt.	Dwight Conifer Peat Forest	A5	91	93		17	6	6	3	1	27		0	115
L.B.	Port Cunnington Wetland	A6	91	146	13	11	4	6			13		8.2	50
L.B.	Wadis Creek Marsh	A7	91	57	2		1	1	1	1			3.4	10
L.B.	Langmaid's Island	A8	91	134	3	28	3	4	1	4	14		2.2	55
L.B.	Lower Oxtongue River	A9	91	181	8	68	5	8					4.2	172
L.B.	Westermain Wood	A10	92	121	4		7	5					3.2	179

APPENDIX 1

		CODE	YEAR	PN	PI	BI	MA	HE	LE	DR	MU	F	% INTRO SPECIES	AREA (ha)
	BLACK RIVER WATERSHED													
V.H.	Levishan Wetlands	B1	91	203	15	73	7	4	12				6.9	640
V.H.	Riley Lake Barrens	B2	91-92	247	26	53	10	15	10	7	1		9.5	384
	SEVERN RIVER WATERSHED													
Gib.	Gibson River V./Red Marsh	S1	91GL	378	26	60	10	17	22				6.4	90 +380
S.C.	Lost Channel	S2	91GL	462	40	58	5	18	9				8.0	906
S.C.	Meipage Lake Complex	S3	91GL	339	22	71	7	13	19				6.1	525
S.C.	Ellison Bay Wetland	S4	91GL	167	20								10.7	75
S.C.	Lower Swift Slope	S5	91GL	261	36								12.1	7
S.C.	Lion's Head	S6	91GL	159	11								6.5	4
S.C.	Moose Lake	S7	91GL	225	15	47	4	10	13				6.2	105
S.C.	McLean Bay Wetland	S8	91GL	143	8								5.3	65
S.C.	Sparrow Lake(general)	S9	91GL	236	25	27		9	9				9.6	NA
S.C.	Clipsham's Wood	S10	92	176	20	22	2	4					10.2	7.5
Gib.	Morrison Lake Weland	S11	90	455	58	65	19	18	24	7	25		11.3	425
S.C.	Potato Island	S12	91GI	171	19	36	4	9	7				10.3	241
S.C.	Port Severn Outlier	S13	91	46	20				5		1		30.3	11
V.H.	South Three Mile Lake Wetl	S14	90	253	16	11	4	8	2	2	5		5.9	338
V.H.	Jevins Lake	S15	90-91	267	38	45	3	10	5				12.4	188
Gib.	Muldrew Creek	S16	92	186	11	38	4	9	3				5.1	140
V.H.	Kahshe Lake Barrens	S17	90	485	68	52	17	17	13	7	36		12.3	4290
Gib.	Loon Lake Wetland	S18	90	303	38	60	14	14	20				11.1	550
C.B.	McCrae Lake	S19	91GI	190	7	25	6	9	6			2	3.6	1170
Gib.	Poison Sumac Swamp	S20	91											1.5
Gib.	Bass Island ACPP	S21	91											0.4
	OTHER SITES													
V.H.	Riley Lake South		91	178	11	43	8	12	11	5	15		5.8	
A.B.	Brandy Creek Wetland	access denied		119	2	46	10	8	2			1	1.6	
A.B.	Fairy Lake Foreshore		90	geological site										
L.B.	Port Cunnington Intrusives		90	geological site										
M.L.	Alport Bay		90	dropped										
M.L.	Portage Bay		90	dropped										
L.B.	Stoneleigh		92	dropped										
L.B.	McKay Creek		92	dropped										
A.B.	Limberlost		92	dropped										
A.B.	Baysville Bog		90	dropped										
M.L.	Three Mile Lake Swamp		92	dropped										

YEAR - GI - Geomatics International
GL - Gartner Lee

RECORDS - PN - Plants, Native species
PI - Plants, Introduced species
BI - Birds
MA - Mammals
HE - Herpetofauna
LE - Lepidoptera (Butterflies)
DR - Dragonflies
MU - Mushrooms
F - Fish

APPENDIX 2: Vegetation Community Site Type Matrix for Muskoka District.

VEGETATION COMMUNITY TYPE	MATRIX POSITION	REPRESENTATION
TERRESTRIAL SYSTEMS		
DECIDUOUS FOREST TYPES		
Boreal Birch-Aspen Successional forest	cooler/sand/dry-mesic	A1
Red Maple-Red Oak lowland forest	cooler/sand/wet-mesic	G13,S2,S6,S16,A5
Sugar Maple-Red Maple Northern Successional forest	cooler/loam/dry-mesic	G10,M3,M16,A1
Trembling Aspen Successional forest	normal/sand/mesic	S17,B1,M16,A4,A5,A9
Sugar Maple-Yellow Birch forest	normal/sand/mesic	M6,M14,M15,A4,A8,A10
Rich Maple-Birch Deciduous forest	normal/sand/mesic	S1,S11,S15,A10
Red Maple-Red Oak-White Ash-Basswood	normal/sand/mesic	G13,B2,M2,A10
Sugar Maple-Beech forest	normal/loam/dry-mesic	M1,M2,M7,M14,A4,A2,A6,A10
Rich Sugar Maple-Mixed Hardwood forest [IVa]	normal/loam/mesic	S10,S19,G3,G4,G5,G9,M1,M10,M15,A10
Basswood Mixed Deciduous forest	normal/clay/wet-mesic	S3,S10,M2,M14
White Oak-Red Oak-Red Maple forest	warmer/sand/dry	S2,S4,S11
Oak-Maple-Black Cherry open forest	warmer/sand/dry-mesic	S3,B2
Large-tooth Aspen Successional forest [IVb]	warmer/sand/dry-mesic	G2,G4,G7,G8,G9,S2,S12,S19,M8,A10
MIXED FOREST TYPES		
White Birch-Northern Conifer forest	cooler/sand/dry-mesic	A1,A7,A9
Balsam Fir-Sugar Maple Northern Hardwood forest	cooler/sand/mesic	A3,A4,M6,M15,M16
Trembling Aspen-Northern Conifer forest	cooler/sand/mesic	M9
Eastern White Cedar-Eastern Hemlock-Mixed Hardwood forest	cooler/sand/wet-mesic	A1,A8,M1
White Pine Northern Mixed Hardwood forest	cooler/loam/mesic	M6,M8,M9,M13,A9
Red Maple-Yellow Birch-Black Cherry Bottomland forest	cooler-loam-wet	M6,M11,M16,A6
Red Pine-Mixed Hardwood forest [II]	normal/sand/dry-mesic	G3,G4,G5,G7,G9,S12,S14,S15,S16,S19, M8,A9,B2
Early Successional Mixed Aspen-Birch-Pine forest	normal/sand/dry-mesic	S18,B1,B2
Eastern Hemlock-Maple-Oak forest	normal/sand/dry-mesic	G13,M2,M5,M15
Eastern White Cedar-White Birch forest	normal/sand/mesic	A3,A7,A8
Eastern Hemlock-Yellow Birch forest	normal/sand/wet-mesic	G12,S11,M1,M2,M5,M11,M13,M14,A1
White Pine-Black Ash-Oak-Red Maple Bottomland forest	normal/sand/wet-mesic	M11
Eastern Hemlock-White Pine Mixed Hardwood forest	normal/sand,loam,clay/dry-mesic	M13,M15,M16,A10
Eastern Hemlock-Mixed Hardwood forest	normal/sand,loam or clay/mesic	S2,M2,M4,M10,M11,M12,M14,M15,M16,A4, A10
Eastern Hemlock-Sugar Maple-Beech-Yellow Birch forest	normal/clay/mesic	S10,M7,M8,G10
White Pine-Oak-Red Maple forest	warmer/sand/dry	G13,S2,S3,S4,S15,S16,M9,M10,M13,A8
White Pine-Sugar Maple-Red Oak-Ironwood	warmer/sand/dry-mesic	M4,M9,A8
White Pine-Large Tooth Aspen-Red Maple forest	warmer/sand/mesic	S3,S16,M8
White Pine-Birch-Silver Maple Bottomland forest	warmer/sand/wet-mesic	G13
CONIFEROUS FOREST TYPES		
White Spruce-Mixed forest	cooler/sand/mesic	A1,A2,A9,M6,M9,M15,M16,
White Spruce-Balsam Fir-Shrub-rich forest	cooler/sand/mesic	M3,M9,M15,A1,A7
Balsam Fir forest	cooler/sand/wet-mesic	S2,A5
Jack Pine stand	normal/sand/dry	M12
White Pine forest	normal/sand/dry-mesic	S3,A8,A9,B2
White Pine-Red Pine forest [IIIa]	normal/sand/dry-mesic	G2,G3,G4,G5,G6,G8,G9,G11,G13,S2,S12, S19,B1
Eastern Hemlock forest	normal/sand/dry-mesic	S2,S10,M2,M4,M5,M10,M14,A8
Eastern Hemlock-White Pine forest [IIIb]	normal/sand/mesic	G3,G4,G11,S4,S19,M4,M6,M10,M15
Red Pine forest	warmer/sand/dry	B1

APPENDIX 2

SHRUB THICKETS		
Mixed Tall shrub thicket	normal/sand/dry	M10,M15,S13,B1,A8,A9
Black Huckleberry/Roundleaf Dogwood shrub thicket	warmer/rock/dry	S14
Fragrant Sumac-Downy Arrowwood shrub thicket	warmer/rock/dry-mesic	S11,M1
Chokecherry-Poison Ivy shrub thicket	warmer/sand/very dry	S13,M11
ROCK BARRENS AND SAVANNAS		
White Pine open acidic rock barrens	warmer/rock/very dry	G13,S15,S16,B1,B2,A8
Red Cedar-Juniper open rock barrens	warmer/rock/very dry	S4,S13
Jack Pine rock barrens	warmer/rock/dry	S7
Red Oak-White Pine-White Ash treed barrens	warmer/rock/dry	S17,M5,M8,G2,A8
White Oak-White Pine open rock barrens	warmer/rock/dry-mesic	S18,M4
South-facing Rock Shoreline (prairie species)	warmer/rock/wet	S5,S6
Offshore Island open rock barrens	warmer/sand/arid	G6
Graminoid-heath barrens	warmer/sand/very dry	S2,S3,S5,A8
White Pine-Mixed Oak Treed open woodland [I]	warmer/sand/dry	G3,G4,G5,G7,G8,G9,G10,S7,S13,S14, S19,B2,M1
White Oak-Red Oak open woodland	warmer/sand/dry-mesic	S5,S6,S17,M5
LIMESTONE ALVARS		
Open Alvar	warmer/rock/arid	G1
TALLGRASS PRAIRIES		
Spartina Dry-sand Prairie	warmer/sand/arid	S6
OPEN TALUS SLOPES		
Treed Acidic talus slope (arctic-alpine disjuncts)	cooler/rock/dry	A1

APPENDIX 2

WETLANDS SYSTEM - THICKET SWAMPS AND FOREST SWAMPS

THICKET SWAMP (CARR)		
Winterberry-Mountain Holly-Northern Wild Raisin [VI]	cooler/organic/very wet	G2,G3,G4,G5,S2,S3,S17,S19,M2,M8,M16, A2,A3,A5,A6,A7,B1
Alder thicket swamp	normal/organic/very wet	S1,S16,G10,M3,M4,M5,M6,M7,M8,M9,M10, M15,M16,B1,B2,A9
Willow-Dogwood thicket swamp	normal/organic/very wet	M7,M6,M9,M15,A1,A8,B2
Buttonbush-Silky Dogwood thicket swamp	warmer/clay/very wet	S8,S16,M11
Poison Sumac thicket swamp	warmer/organic/very wet	S20
BROADLEAF FOREST SWAMP		
Black Ash-Red Maple Swamp	cooler/organic/wet	S2,S3,S11,M5,A1,A5,A10
Black Ash-American Elm-Red Maple swamp	normal/sand/wet	A2
American Elm-Mixed Hardwood swamp	normal/sand/wet	A1,A9,M2,M6,M11
Red Maple-Silver Maple-American Elm swamp	normal/clay/wet	S8,M1,M3,M4,M7,M8
Crack Willow-Balsam Poplar swamp	normal/organic/wet-mesic	M7
Bur Oak-Silver Maple-Snowberry swamp	warmer/clay/wet-mesic	S10,S16,M2
Silver Maple-Basswood swamp	warmer/sand/wet	G13
MIXED CONIFER-BROADLEAF FOREST SWAMP		
*Eastern White Cedar-Red Maple-Mixed Herb-rich swamp (Hemlock, Black Ash, Balsam Fir, Canada Mayflower, Clintonia, Carex pedunculata) TYPE 3	cooler/sand/mesic	S16,M3,M4,M6,M10,M14,M16,A3,A4
*Black Spruce-Tamarack-Sphagnum swamp (White Pine-Red Maple-White Birch-Mountain Holly and ericaceous shrubs, Carex stricta, C. trisperma, Three-leaved Solomon's Seal) TYPE 5	cooler/organic/mesic	S18,M6,M8,M9,M14,B1,A3
*Eastern White Cedar-Mixed Hardwood Herb-rich swamp (Tamarack, Balsam Fir, White Birch, White Pine, Alder, Eupatorium sp., Mitrewort, Bedstraw, Glyceria striata, Carex leptalea) TYPE 2	normal/sand/wet	S2,M10,A5
White Pine-Mixed Hardwood swamp	normal/organic/wet	M4,M6,M16
CONIFER FOREST SWAMP		
Black Spruce-Pleurozium-Labrador Tea Peat Forest (transitional poor swamp) with Sheep Laurel and Velvetleaf Blueberry	cooler/organic/mesic	A3,A5
Black Spruce-Sphagnum-Pluerozium Peat Forest (intermediate swamp) with Carex trisperma, Snowberry Wintergreen, Bunchberry,Wood Horsetail,Labrador Tea	cooler/organic/mesic	A2,A3,A5,B1,M16
*Tamarack-Black Spruce-Leatherleaf-sphagnum swamp TYPE 6	cooler/organic/wet	G10,S2,S15,S17,S18,M5,M10,A3
*Black Spruce-Tamarack-Alder-Sphagnum transitional herb-rich swamp with Dwarf Blackberry,Canada Mayflower, One-sided Pyrola, Red-Osier Dogwood, Dwarf Blackberry, Solidago uliginosa, S. rugosa, Lycopus uniflorus, Buckbean, Aster puniceus, Carex leptalea) TYPE 1 [VII]	cooler/organic/wet	S11,S19,G2,M6,M9,A2,A3,A6
*Black Spruce-Balsam Fir-Eastern White Cedar rich swamp with Tamarack,Red-Osier Dogwood,Bebb Willow, Wild Raisin, Skunk and Swamp Red Currants,Mountain Ash, Bedstraw, Starflower, Mitrewort, Goldthread, Bunchberry, Violets, Carex disperma, C. trisperma, Clintonia, Sarsaparilla, Cinnamon Fern, Oak Fern, Sphagnum TYPE 4	normal/organic/dry-mesic	S3,A2,A3,M6,M16
Eastern White Cedar Swamp	normal/sand/wet-mesic	M6, M9

APPENDIX 2

* Dominant Conifer Wetlands of Huronia-Muskoka (Sims & Bobbette, 1987) 6 types
Wooded Peatland vegetation types and plant indicators based on Jeglum, J.K., (1991).

WOODED PEATLANDS - POOR FENS AND OMBROTROPHIC BOGS		
Treed poor fen (Black Spruce/Tamarack-Alder)	normal/organic/wet-mesic	G2,B1,B2,M9,M16,A3
Low Shrub poor fen (Leatherleaf, Labrador Tea, Cranberry) [VIII]	normal/organic/wet	G4,G5,G7,G8,G10,S2,S19,M5,M6,M9, B1,B2
Graminoid poor fen (Carex magellancia,C. limosa)	normal/organic/very wet	S2,M9
Herb-Rich poor fen (Three-leaved Solomon's Seal)	normal/organic/very wet	B1,M9,M16
Treed Bog (Black Spruce)	cooler/organic/wet-mesic	A3,M9
Open Low-Shrub Bog (Leatherleaf-Bog Laurel)	cooler/organic/wet	S1,S3,S7,S17,S18,M3,M9,A3
Open Graminoid Bog (Carex oligosperma, C. pauciflora, Eriophorum spissum)	cooler/organic/very wet	S3,S17,S18,M8,A3
Open Herb-Rich Bog (Virginia Chain Fern,Pitcher Plant)	cooler/organic/very wet	S1,S2,S3,S15,S16,S17,S18,G2,G10, M8,A3,A6,B1,B2
Floating Bog Mats (Leatherleaf, Sweet Gale)	cooler/organic/saturated	S1,S11,S15,S18,M3,G2,M8,M10,M16, A3,A9,B1,B2
RICH FENS		
Black Spruce-Shagnum-Labrador Tea intermediate fen (Tamarack, Goldthread,Swamp Horsetail,Leatherleaf)	normal/organic/wet-mesic	M9,M16
Tamarack-Black Spruce-Pleurozium rich fen (Sundew, Bog Rosemary,Bog Goldenrod, Carex limosa, C. stricta, C. chordorrhiza, C. leptalea, Muhlenbergia glomerata)	normal/organic/wet	M6,M8,M9,B1

APPENDIX 2

WETLANDS - MARSH COMMUNITIES

WET MEADOW MARSH		
Forb-Rich (Aster umbellatus, Solidago rugosa, Euthamia graminifolia, Eupatorium spp.)	cooler/organic/wet	G13,A1,M6,M9
Shrub-rich (Salix, Cornus, Spiraea, Calamagrostis) [VI]	cooler/organic/wet	G2,G3,G4,G5,S19,M5,M6,M9,M15,M16, A1,B1,B2
Grass (Phalaris, Calamagrostis, Glyceria, Sensitive Fern, Impatiens capensis, Triadenum sp., Dulichium)	normal/organic/wet	G13,S2,S3,S8,M2,M6,M7,M11,M16, A5,A6
Sedge wet (Carex spp.)	normal/organic/wet	G2,S15,S18,M6,M10,B2
Beaver wet meadow (Bluejoint Grass, Woolgrass)	normal/organic/wet	S16,S17,M2,M5,M9,M16,B1
SHALLOW EMERGENT MARSH		
Grass (Calamagrostis, Carex aquatilis, Cladium) [Va]	normal/sand/very wet	G3,G4,G5,G7,G8,G9,S4,S8,S19,M3,M4, M16,A1
Shrub-rich Sweet gale (Ascelpias, Osmunda, Bohemerica) [Va]	normal/sand/very wet	G2,G3,G4,G5,G7,G8,G9,S16,S19,M5,M6, M9,A8
Coastal Plain marsh (Atlantic Coastal Plain Flora) [ACPF]	normal/sand/very wet	G2,G3,G4,G5,G7,G8,G9,G10,G12,G13, G14,S1,S2,S3,S7,S11,S14,S15,S16,S17, S18,S19,M3,M4,M8,M12,M13,A2,A3,A7,A9
Spikerush (Eleocharis spp.)	normal/sand/very wet	S11,M6,M16
Bayonet Rush (Juncus militaris)	normal/sand/very wet	M3
Sedge (C. lacustris, C. lasiocarpa, Dulichium) [Vb]	normal/organic/very wet	G2,G3,G4,G5,G7,G8,S8,S19,M6,M9,M16, A1,B1
Herb-rich (Pickerelweed, Calla, Marsh Cinquefoil, Swamp Candles, Arrowhead, Water Hemlock)	normal/organic/very wet	G11,G13,S1,S8,S11,M2,M5,M6,M10,M11, M14,A2,A7,A9,B2
Herb-rich (Peltandra virginica)	normal/organic/very wet	S15
Rush (Juncus effusus, Scirpus cyperinus, Hypericum spp.)	normal/organic/very wet	G13,B2,M2,M6,M9
Bur-reed (Sparganium spp.)	normal/organic/very wet	M2,M4,M9,A9,B2
Beaver Meadow Ponds (Polygonum spp., Bidens spp., Marsh Fern, Lycopus spp.)	normal/organic/very wet	G2,S2,S7,S15,M5,M6,M9
Pipewort (Eriocaulon, Floating Heart, Water Lobelia)	warmer/sand/very wet	A3,A7,A9,M2
Shrub-rich Decodon veticillatus (Rosa palustris)	warmer/clay/very wet	M11
Shrub-rich Decodon, Buttonbush, Rosa palustris, Sweetgale	warmer/organic/very wet	G13,S1,S8,S11,S16,B1,M2
DEEP EMERGENT MARSH		
Wild Rice (Zizania palustris)	normal/sand/saturated	G5,S4,S12
Bulrush (Scirpus spp.)	normal/sand/saturated	S4,S12,B1,A9
Cattail (Thypha spp.)	normal/organic/saturated	S8,S12,M5,M9,M14,B1,B2,A6
Horsetail (Equisetum spp.,Glyceria borealis)	normal/organic/saturated	A7,M6,M10,M16

APPENDIX 2

LACUSTRINE SYSTEM - SHALLOW OPEN WATER

SUBMERGED AQUATIC COMMUNITIES		
Acidic Brown Water Lake or Stream	cooler/organic/open water	S7,S16,M7,G10,M6,M9,M14,M16,A2,A3, A9,B2
Acidic Oligotrophic Clear Shallow Water [Va]	normal/sand/open water	G3,G5,G7,G8,G9,S19,M4,A7
Neutral Mesotrophic Shallow open water (rich diversity of aquatic flora)	warmer/sand/open water	S4,S8
FLOATING-LEAVED AQUATIC COMMUNITY		
Water Shield Brownwater Pond	cooler/organic/open water	S1,S3,S18,G2,M5,M16,A6
Pond-Lily pond (Bullhead Lily/Fragrant Water Lily)	normal/organic/open water	G10,G13,S2,S11,S14,S15,S17,M6,M8, M10,M11,A4,B1,B2
Floating Pond Weed-Bur-Reed pond	normal/organic/open water	B1,B2,M2,M6,M7
Floating Heart Softwater Pond/Bay	warmer/organic/open water	G13,M2,A9
NON-NATIVE COMMUNITIES		
Purple Loosestrife		M4
Buckthorn swamp		G10

APPENDIX 2: Vegetation Community Site Type Matrix for Muskoka District (adapted from Maycock, 1980). Dots refer to common vegetation community representation within candidate sites. Codes refer to specific sites which contain vegetation community types of limited occurrence (two or less examples found) within the District of Muskoka.

Substrate & temp. \ Moisture regime		Arid	Very Dry	Dry	Dry Mesic	Mesic	Wet Mesic	Wet	Very Wet	Saturated	Open Water
Colder	Rock			A1							
	Sand				A1 ●	M9 ●	S2, A5 ●				
	Loam				●	●		●			
	Clay										
	Organic					A3, A5 ●	A3, M9	●	●	●	●
Normal	Rock										
	Sand			M12 ●	●	●	M11, M6 M9 ●	A2 ●	M3 ●	●	●
	Loam				●	●					
	Clay				●	●	●	●			
	Organic				●		M7, M9 M16 ●	●	S2, M9 B1, M16 S15 ●	●	●
Warmer	Rock	G1	S4, S13 ●	S14, S7 ●	S11, M1, M4 S18,			S5, S6			
	Sand	G6, S6	S13, M11 ●	B1 ●	S3, B2 ●	●	G13	G13	●		S4, S8
	Loam										
	Clay						●		M11 ●		
	Organic								S20 ●		●

APPENDIX 3: Atlantic Coastal Plain Flora Occurrence and Ranking

Assessment and ranking of areas using only coastal plain and other associated rare species.
(*score = col.4x4 + col.5x3 + col.6x2 + col.7x1 + col.8x1)

			SPECIES			
			Coastal Plain		Others	
RANK	AREA	SCORE*	TOTAL (X4)	RARE IN CANADA (x3)	RARE IN ONTARIO (x2)	RARE IN CANADA (x1)	RARE IN ONTARIO (x1)
HIGH REPRESENTATION							
1	Morrison Lake	89	18	2	5	1	0
2	Gaunt Bay	78	15	3	4	0	1
3	Axe Lake	77	16	3	2	0	0
4	Kahshe Lake	63	12	1	5	1	1
5	Deer Lake	60	12	2	3	0	0
6	Coq Lk-Long Bay	59	12	1	4	0	0
7	Muldrew Creek	57	12	1	3	0	0
8	S. Muskoka Cany.	51	11	0	3	0	1
8	Eilean Gowan I.	51	10	1	4	0	0
MODERATE REPRESENTATION							
9	Moose Lake	49	10	1	3	0	0
10	Bass Island	45	9	1	3	0	0
10	Concession Lk.	45	9	1	3	0	0
11	McCrae Lake	44	9	1	2	0	1
12	S. 3-Mile Lk.	43	9	1	2	0	0
13	Moreaus Bay	42	9	0	3	0	0
14	Novar C.P.F.	34	8	0	1	0	0
14	Lower Moon R.	34	6	2	2	0	0
15	Lost Channel	33	7	0	2	1	0
16	Neipage Lake	29	6	0	2	1	0
17	Gray Rapids	25	5	1	1	0	0
LOW REPRESENTATION							
18	Loon Lake	23	5	1	0	0	0
18	Bala Boq	23	5	1	0	0	0
19	Jevins Lake	22	5	0	1	0	0
20	Gibson River C.	21	4	1	1	0	0
21	Red Marsh	20	4	0	1	1	1
22	Musquash River	20	3	2	1	0	0
23	Coldwater-Swan	18	4	0	1	0	0
23	Bone Island	18	4	0	1	0	0
24	Clark's Pond	16	3	0	2	0	0
25	B.East R. Delta	14	3	0	1	0	0
25	Lower Oxtongue	14	3	0	1	0	0

APPENDIX 3

INSIGNIFICANT REPRESENTATION

26	Big East River	8	2	0	0	0	0
26	Lewisham	8	2	0	0	0	0
26	Wadis Creek	8	2	0	0	0	0
26	Well's Creek	8	2	0	0	0	0
27	Sparrow Lk.	7	1	0	1	1	0
28	Pine Islands	6	1	0	1	0	0
28	Bruce Lk Marsh	6	1	0	1	0	0
28	Spring Creek	6	1	0	1	0	0
29	Ellison Bay	5	1	0	0	1	0
29	Riley Lk. South	5	1	0	1	0	0
30	Potato Island	4	1	0	0	0	0
30	McLean Bay	4	1	0	0	0	0
30	Cooper's Pond	4	1	0	0	0	0
30	Port Cunn Wetlan	4	1	0	0	0	0
30	Riley Lk. Barren	4	1	0	0	0	0

SIGNIFICANCE
A score of > 49 is high representation of coastal plain flora
A score of 25 to 49 is moderate representation
A score of 10 to 24 is low representation
A score of < 10 is insignificant for representation

ATLANTIC COASTAL PLAIN SPECIES	RARITY CANADA(NR)	ONTARIO(PR)
1. Bartonia paniculata	NR	PR
2. Cladium mariscoides		
3. Drosera intermedia		
4. Elatine minima		PR
5. Eleocharis olivacea		
6. Eleocharis robbinsii		
7. Gratiola aurea		
8. Juncus militaris		
9. Linum striatum	NR	PR
10. Nymphoides cordata		
11. Panicum spretum		PR
12. Panicum rigidulum	NR	PR
13. Polygonum careyi		PR
14. Potamogeton bicupulatus	NR	PR
15. Potamogeton confervoides		PR
16. Rhexia virginica	NR	PR
17. Rhyncospora capitellata		
18. Rhyncospora fusca		
19. Triadenum virginicum		PR
20. Utricularia cornuta		
21. Utricularia purpurea		
22. Woodwardia virginica		
23. Xyris difformis		PR
Other Associated Species		
A. Bidens discoidea	NR	PR
B. Carex folliculata		PR
C. Isoetes tuckermanii		PR

APPENDIX 3: ATLANTIC COASTAL PLAIN FLORA OCCURRENCE AND RANKING

ATLANTIC COASTAL PLAIN SPECIES

NAME OF SITE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	OTHER ASSORT. SPEC. A	B	C
Bone Island		X	X							X													X			
Cog L-Long Bay			X	X	X					X			X	X			X		X	X	X	X	X			
Gibson R. Cor.				X			X			X		X														
McCrae Lk		X	X				X					X					X		X	X		X	X		X	
L. Moon R.			X	X						X		X				X							X			
Moreaus B.		X	X	X		X				X			X							X		X	X			
Pine Islands													X													
Potato Island		X																								
Coldwater Swan L.		X	X																			X	X			
Ellison Bay						X																		X		
Lost Channel		X	X			X													X		X	X	X	X		
McLean Bay		X																								
Moose Lake					X	X		X		X	X			X					X		X	X	X			
Neipage Lake		X	X										X							X		X	X	X		
Red Marsh			X		X								X									X		X	X	
Sparrow Lake															X									X		
Bala Bog	X	X	X			X																X				
Bruce L. Marsh													X													
Clark's Pond				X															X			X				
Concession Lk.		X	X								X					X			X	X	X	X	X			
Cooper's Pond																					X					
Deer Lake		X	X							X	X			X		X	X		X	X	X	X	X			
B. East R. Delta						X		X											X							
Eileen Gowan Isl.		X	X	X			X		X		X						X		X	X			X			
Gaunt Bay		X	X	X	X		X		X	X	X	X				X	X	X	X	X			X		X	
Kahshe Lake		X	X	X						X	X		X			X		X	X		X	X	X	X	X	
Loon Lake	X	X	X																	X		X				
Morrison Lake	X	X	X	X	X	X		X		X	X		X			X	X	X	X	X	X	X	X	X		
S. Muskoka Can.		X	X	X	X	X	X	X		X									X	X			X		X	
S. 3-Mile Lk.		X	X	X	X					X						X	X	X					X			
Axe Lake	X	X	X		X	X		X		X				X	X	X	X	X		X	X	X	X			
Big East River			X			X																				
Jevins Lake		X	X															X				X	X			
Lewisham																				X		X				
Novar C.P.F.		X	X			X		X		X								X	X	X						
Lower Oxtongue			X							X									X							
Port Cunn. Wetl.																						X				
Riley Lk. Barren																						X				
Riley Lake S.													X													
Wadis Creek						X				X																
Gray Rapids				X	X		X			X		X														
S. Muldrew L.		X	X	X						X	X					X	X	X		X	X	X	X			
Spring Creek																			X							
Well's Creek										X											X					
Musquash River												X				X							X			
Bass Island		X	X	X							X					X	X	X		X			X			

Nationally Rare

Provincially Rare