

4. Michipicoten Island

HEALTHY WATERS REPORT CARD

OFFSHORE	NA	ISLANDS	A
NEARSHORE	A	COASTAL WETLANDS	A
EMBAYMENTS & INSHORE	A	COASTAL TERRESTRIAL	A+
TRIBUTARIES & WATERSHEDS	A	OVERALL A	

Report card denotes general condition/health of each biodiversity target in the region based on condition/stress indices. See introduction to the regional summaries.



A Very Good	<i>Ecologically desirable status; requires little intervention for maintenance</i>
B Good	<i>Within acceptable range of variation; may require some intervention for maintenance.</i>
C Fair	<i>Outside of the range of acceptable variation and requires management. If unchecked, the biodiversity target may be vulnerable to serious degradation.</i>
D Poor	<i>Allowing the biodiversity target to remain in this condition for an extended period will make restoration or preventing extirpation practically impossible.</i>
Unknown	<i>Insufficient information.</i>



Photo of Caribou Island Lighthouse in the distance taken from Caribou Island. Photo credit Bruce Tomlinson, Ontario Ministry of Natural Resources (OMNR). Photo supplied by Sue Greenwood, OMNR

Summary/ Description

The Michipicoten Island regional unit contains Michipicoten Island and Caribou Island, as well as other smaller islands and island complexes. This regional unit measures 783.66 km² in size, including the associated nearshore waters. Michipicoten Island is located in the northeastern portion of Lake Superior. It is the third largest island in the lake, and is approximately 26 by 10 km wide (from north to south) (OMNR 2004a). The topography of the island is variable, with close to 300 m in topographic relief from the Lake Superior shoreline (181 m above sea level) to the island's highest elevation (479 m above sea level) (OMNR 2004a). First nations of the Lake Superior area gave the island the name Missipacouatong, which means "land of the big bluffs" (Annells 1974 as cited in OMNR 2004a). The closest mainland to Michipicoten Island is approximately 16 kilometres to the north, and the community of Wawa is approximately 65 kilometres to the northeast (OMNR 2004a). No Moose, deer, bear or wolves occur on Michipicoten Island, but Beaver and Woodland Caribou are abundant (COSEWIC 2011b, OMNR 2013b, 2004a). Approximately 40 kilometres south of Michipicoten Island is the 6.09 km² Caribou Island. Caribou Island is the most isolated island in the Great Lakes, and it is also the most isolated freshwater island in the world (Henson et al. 2010). Michipicoten Island regional unit does not contain any tertiary or quaternary watershed units, but is comprised of islands and island complexes. While Michipicoten Island is characterized by high cliffs and cobble beaches, Caribou Island is generally flat and has large sand beaches. Much of Michipicoten Island is provincial park, except for some small private and federal parcels. Caribou Island is privately owned by a U.S. foundation.

TABLE 4.1: Michipicoten Island BY THE NUMBERS

Land and Water Cover	Region (km²)	Region %	Lake Superior Total (km²)	Notes
Agriculture	0.09	0.01	1,441.07	
Developed	0.08	0.01	389.55	
Forest	184.38	21.04	107,747.13	
Associated Nearshore Waters	681.44	77.75	17,868.03	
Other	1.47	0.17	8,227.57	
Water (inland)	8.94	1.02	9,473.05	
Total Area	876.39	100	145,146.40	
Coastal Features	Region	Region %	% of Lake Superior Total for Coastal Feature	
Coastline (km)	130.53	NA	2.24	Based on SOLEC shoreline
Sand Beaches (km)	11.56	8.86	1.80*	*% of Lake Superior Total Sand Beaches
Coastal Wetlands (km ²)	0.89	0.67*	0.08**	*% of Regional Coastal Area ** % of Lake Superior Total Coastal Wetlands
Natural Cover in Coastal Zone	124.35	93.95*	2.01**	*% of Regional Coastal Area ** % of Lake Superior Total Natural Cover in Coastal Area
Number of Islands	83	NA	3.1	
Condition	Region	Region %	% of Lake Superior Total	
Population Density (persons/km ²)	0.00	NA		
Road Density (km/km ²)	0	NA		
Number of Dams and Barriers	0	NA	0	
Artificial Shoreline (km)	0.19	0.15	0.08	
Land Ownership & Protection	Region (km²)	Region %	Regional Area (km²)	
Private	6.86	3.52	194.96	Regional area based on landmass
Public/Crown	-	0.00	194.96	
Tribes/ First Nations	-	0.00	194.96	
Parks & Protected Areas (total)	188.10	96.48	194.96	
Parks & Protected Areas (coast)	125.49	94.82*	132.35**	*% of Regional Coastal Area **Regional Coastal Area (km ²)

Important Biodiversity Features

Nearshore and Inshore Waters

- Spawning beds for Lake Trout are known to be present in the Lake Superior portion of Michipicoten Island Provincial Park (OMNR 2004a).
- The fish community in the waters of Michipicoten Island Provincial Park includes Lake Trout, Coho Salmon, Chinook Salmon, Cisco and Lake Whitefish. These species support a sport fishing fishery, especially in areas along the southern and southwestern shore of Michipicoten Island (OMNR 2004a).

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- The provincially rare Pygmy Whitefish is found in the eastern waters of Lake Superior, around Michipicoten Island (Petzold 2003 as cited in OMNR 2004a).

Coastal Zone and Islands

- The Michipicoten Island regional unit contains sites of Important Habitat for Lake Trout and Lake Whitefish (Figure 4.1). Lake Trout spawning sites are noted around the Breeder Islands just south west of Michipicoten Island and in Quebec Harbour (Goodier 1982) located on the south shore. Lake Whitefish are also noted as spawning in Quebec Harbour. Lake Trout spawning is noted on Caribou Island and commercial fishers report Lake Whitefish spawning along the southwest shore of Caribou Island prior to 1955 (Lake Superior Binational Program Habitat Committee 2006, Goodier 1982).
- Michipicoten Island is considered to be an Important Habitat Area (Lake Superior Binational Program Habitat Committee 2006) (Table 4.3, Figure 4.3).
- Much of Michipicoten Island's shoreline is bare bedrock knolls, exposed to wave action. The shoreline is also composed of beach deposits of sand, pebble and cobble (OMNR 2004a).
- Michipicoten Island's present shoreline was established approximately 2,000 years ago (OMNR 2004a).
- East Sand Bay and West Sand Bay are provincially rare sand beach communities, and are classified as provincially significant vegetation communities (White 2000 as cited in OMNR 2004).
- The Rocky Shoreline habitats of Michipicoten Island support provincially and regionally significant plants, and are classified as provincially significant vegetation communities (White 2000 as cited in OMNR 2004).
- The Quebec Harbour Wetland Complex is regionally significant, and is the most extensive and diverse wetland on Michipicoten Island, containing a variety of wetland communities (White 2000 as cited in OMNR 2004a).
- The Caribou Island shoreline has large sections of sandy beaches and dunes (Henson et al. 2010). Wetlands occur between the ridges of the dunes, and open bogs, treed muskegs and forested dunes are also present (Liebermann 1998 as cited in Henson et al. 2010).
- The topographic relief found on Michipicoten Island contributes to habitat diversity, and allows southern and northern plant species to be found in relatively close proximity to one another (OMNR 2004a). Many of these species are arctic-alpine disjuncts, or at the extent of their geographic range. Ten provincially significant and 53 regionally significant plant species have been identified (OMNR 2004a).

Tributaries and Watersheds

- The Interior Lake Shorelines of Michipicoten Island are classified as provincially significant vegetation communities (White 2000 as cited in OMNR 2004). They are described as "lakes of little disturbance on an isolated island exposed to the climatic influence of Lake Superior" (OMNR 2004a:12). There are over 20 inland lakes on Michipicoten Island (OMNR 2004a).
- The presence of an abundant Beaver population has altered the natural hydrology of Michipicoten Island, with many areas flooded (OMNR 2004a).
- Approximately 87% of Michipicoten Island is forested (Noble 1984 as cited in OMNR 2004a); remaining areas are water, non-forested wetlands, beaches, talus slopes and rock outcrops (OMNR 2004a).

Figure 4.1: Michipicoten Island - Coastal and Watershed Features

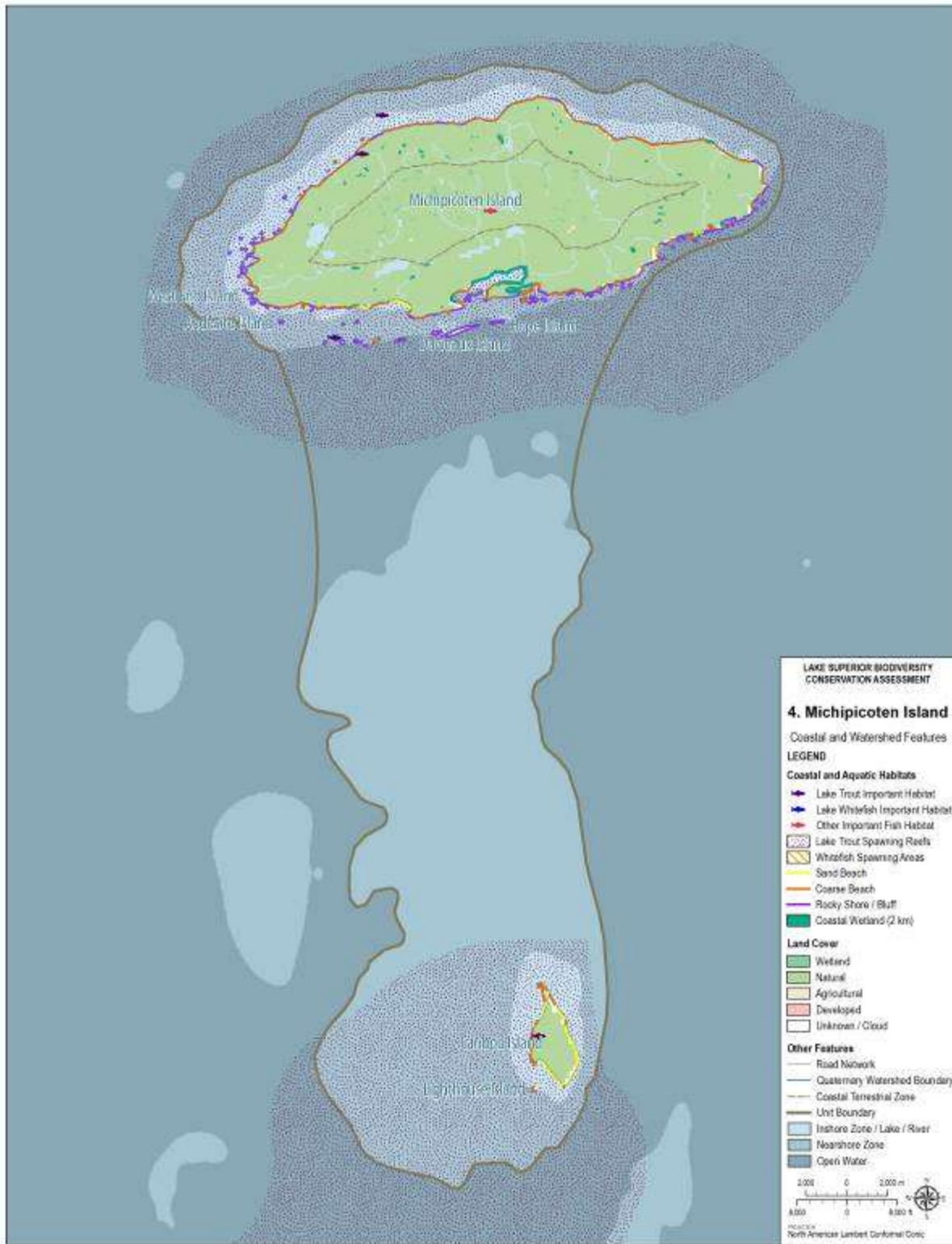


TABLE 4.2: Michipicoten Island CONDITION AND TRENDS

Target (Data Source)	Condition	Trends
Offshore ¹	NA	NA
Nearshore ¹	A (0.90)	Unknown
Embayments and Inshore ^{1,2}	A (0.90)	Unknown
Coastal Wetlands ^{2,3}	A (0.933)	Unknown
Islands ⁴	A	Unknown
Coastal Terrestrial ³	A+ (0.998)	Unknown
Tributaries and Watersheds ²	A (0.90)	Unknown

A: Very Good	<i>Ecologically desirable status; requires little intervention for maintenance</i>
B: Good	<i>Within acceptable range of variation; may require some intervention for maintenance.</i>
C: Fair	<i>Outside of the range of acceptable variation and requires management. If unchecked, the biodiversity target may be vulnerable to serious degradation.</i>
D: Poor	<i>Allowing the biodiversity target to remain in this condition for an extended period will make restoration or preventing extirpation practically impossible.</i>
Unknown	<i>Insufficient information.</i>

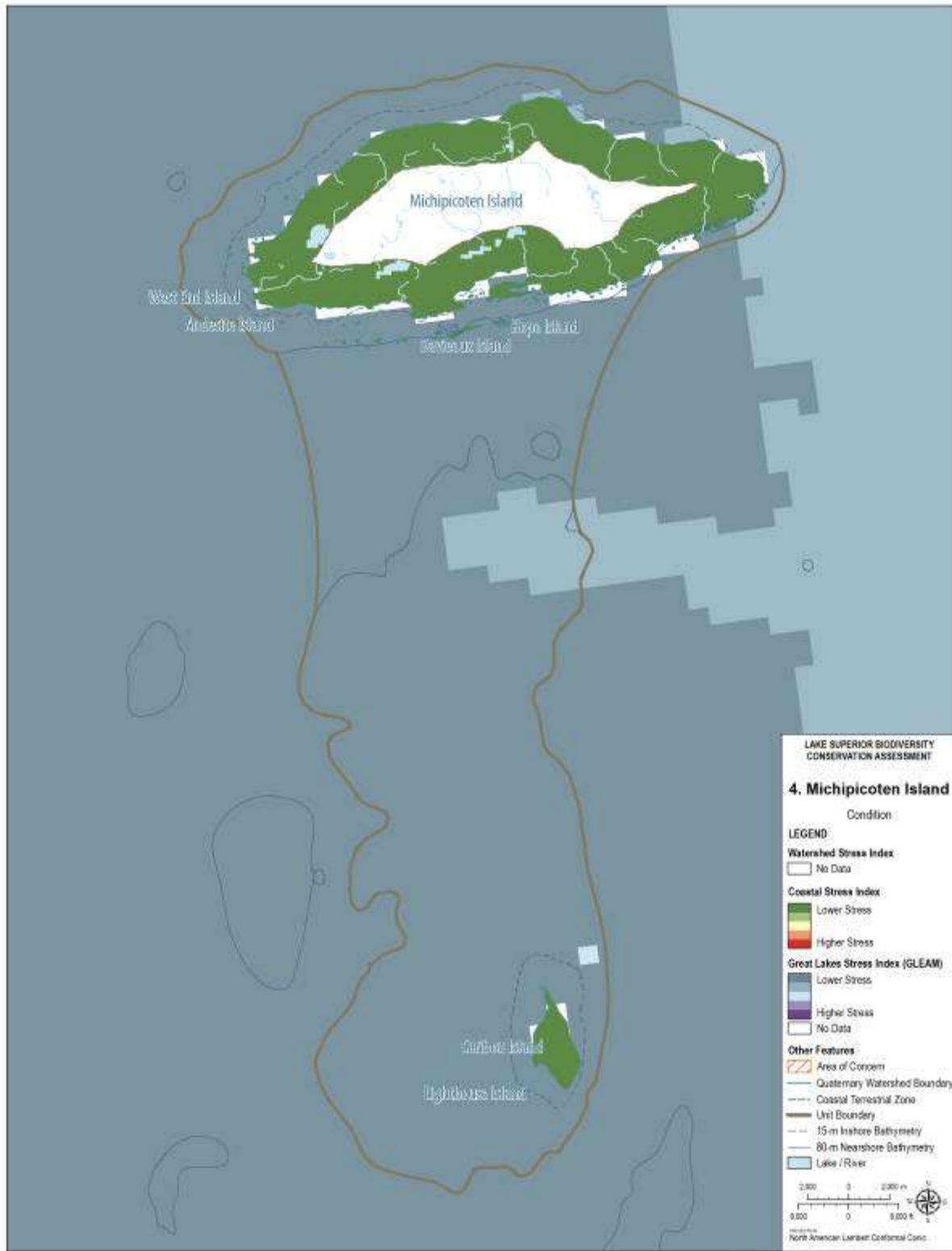
1: Great Lakes Cumulative Stress (GLEAM 2012, Allan et al. 2013)

2: Watershed Stress Index (GLEI 2013)

3: Coastal Condition Index (developed for this report)

4 : Island Condition Score (Henson et al. 2010)

Figure 4.2: Michipicoten Island - Condition



Important Issues & Threats

- Michipicoten Island Provincial Park’s sand beaches are sought out by visitors to the island for recreational use, and they are especially sought out given the rarity of the beaches on the island (OMNR 2004a). These sand beach communities contain significant and sensitive species, and are also considered the most sensitive feature to recreation use (OMNR 2004a).
- The shorelines of Michipicoten Island Provincial Park are the focus of recreational activities. Many of these shorelines contain significant species; recreation and interpretation must be weighed against constraints to manage the areas (OMNR 2004a).
- 170 acres in the southeast portion of Michipicoten Island are listed for sale. The property includes over 9,300 feet of Lake Superior coastline, including pebble and boulder beaches, and two small islands (Apex Realty Services Ltd. 2013).

Conservation In Action

Parks & Protected Areas

- Michipicoten Island Provincial Park: The boundaries of Michipicoten Island Provincial Park extend 2.5 kilometres offshore of Michipicoten Island, and the park designation applies to the islands and shoals within that area (OMNR 2004a). Some private and federal lands within the park boundaries are excluded from the provincial park and related policies (OMNR 2004a).

Existing Programs & Projects

- Michipicoten Island is the source of one of two Lake Trout brood stock gametes (Michipicoten strain) used by the provincial fish culture system for Lake Trout rehabilitation stocking in Lake Superior and Lake Huron (S. Greenwood, pers. comm., March 11 2013).
- The caribou population found on Michipicoten Island today is the result of a successful 1982 translocation of eight animals from Slate Islands Provincial Park (Ontario Woodland Caribou Recovery Team 2008), in addition to the one adult male already present on the island (believed to be from the Pukaskwa herd) (Gogan and Cochrane 1994). The caribou population that was historically present on the island was extirpated in the late 1800s, when there were active copper mining operations on the island. The current population is estimated to be between 400 and 500 individuals (S. Lebel and G. Eason, pers. comm., June 18 2013).
- Peregrine Falcons have been reintroduced to Ontario, including in the Lake Superior basin, following their extirpation as a breeding species in Ontario in the early 1960s (Ontario Peregrine Falcon Recovery Team 2010).
- Caribou Island has been on the market in the past and may be available for purchase in the future.

TABLE 4.3: Michipicoten Island IMPORTANT HABITAT SITES AND AREAS

<i>Code</i>	<i>Site/ Area</i>	<i>Important Habitat Site/Area Name</i>	<i>Key Features</i>
ON-162	Area	Michipicoten Island	Provincial Park; fish spawning

Figure 4.3: Michipicoten Island - Important Habitat Sites and Areas



TABLE 4.4: Michipicoten Island LIST OF SPECIES AND COMMUNITIES OF CONSERVATION CONCERN

At least 10 species and communities of conservation concern have been documented in the regional unit. 3 of these have viability rankings which indicate the species or community is currently present, or was at the date of last sampling. The viability rankings of these species varies from A to E (A – Excellent predicted viability, B – Good predicted viability, C – Fair predicted viability, D – Probably not viable, E – Verified extant). 7 species and communities were once known to occur here, but have current conservation ranks of H (Historical).⁵

<i>Present Records (Viability Rankings of A to E)</i>	
Scientific Name	Common Name
American Dune Grass - Beach Pea - Sand Cherry Dune Grassland Type	American Dune Grass - Beach Pea - Sand Cherry Dune Grassland Type
<i>Potamogeton confervoides</i>	Alga Pondweed
<i>Rangifer tarandus caribou</i>	Woodland Caribou (Forest-dwelling boreal population)
<i>Historical Records</i>	
Scientific Name	Common Name
<i>Coregonus zenithicus</i>	Shortjaw Cisco
<i>Elymus glaucus</i>	Blue Wild Rye
<i>Galium kamtschaticum</i>	Boreal Bedstraw
<i>Myoxocephalus thompsoni</i>	Deepwater Sculpin
<i>Polystichum braunii</i>	Braun's Holly Fern
<i>Vaccinium ovalifolium</i>	Oval-leaved Bilberry
<i>Woodsia alpina</i>	Alpine Woodsia

⁵ Data included here were provided by the Ontario Ministry of Natural Resources and Forestry. Copyright Queen's Printer for Ontario (2012).