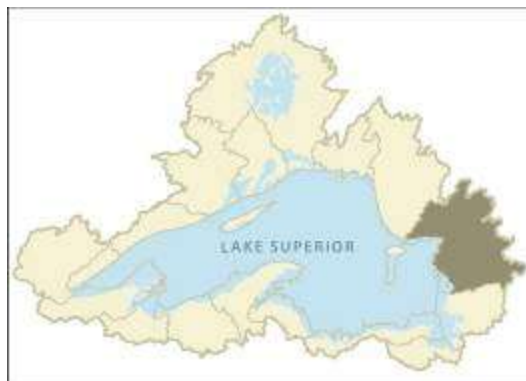


2. Michipicoten-Magpie and Agawa

HEALTHY WATERS REPORT CARD

OFFSHORE	NA	ISLANDS	A
NEARSHORE	B	COASTAL WETLANDS	A-
EMBAYMENTS & INSHORE	B	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	Ecologically desirable status; requires little intervention for maintenance
B Good	Within acceptable range of variation; may require some intervention for maintenance.
C Fair	Outside of the range of acceptable variation and requires management. If unchecked, the biodiversity target may be vulnerable to serious degradation.
D Poor	Allowing the biodiversity target to remain in this condition for an extended period will make restoration or preventing extirpation practically impossible.
Unknown	Insufficient information.



Sunset over Lake Superior shoreline in Lake Superior Provincial Park. Photo credit: Ethan Meleg

Summary/ Description

The Michipicoten-Magpie and Agawa unit is located in Ontario on the eastern shore of Lake Superior, and contains the easternmost portion of the Lake Superior basin. Including the associated nearshore waters, this regional unit is 14,413.9 km² in size. This regional unit has its southern boundary near the Montreal River, while its northern boundary is near Pilot Harbour. Lake Superior Provincial Park, a 155,647 ha natural environment class park, is located in this regional unit, along the Lake Superior shore (OMNR 2006d). A portion of the Chapleau Crown Game Reserve is also located in this regional unit. Communities in this regional unit include Dubreuilville, Hawk Junction, Montreal River, Missanabie Cree First Nation, Michipicoten First Nation, Michipicoten River and Wawa. The Michipicoten-Magpie and Agawa unit combines two tertiary watersheds, the Michipicoten-Magpie and the Agawa, and contains 22 quaternary watersheds. The watersheds are dominated by forests - developed and agricultural lands are very limited. The coast is characterized by rocky shores and cliffs. Coastal wetlands and sand beaches are very rare in this region. Lake Superior Provincial Park and several other parks protect almost two-thirds of the coast in this region.

TABLE 2.1: Michipicoten-Magpie and Agawa BY THE NUMBERS

Land and Water Cover	Region (km²)	Region %	Lake Superior Total (km²)	Notes
Agriculture	7.15	0.04	1,441.07	
Developed	2.18	0.01	389.55	
Forest	13,465.84	83.65	107,747.13	
Associated Nearshore Waters	938.81	5.83	17,868.03	
Other	1,044.89	6.49	8,227.57	
Water (inland)	638.71	3.97	9,473.05	
Total Area	16,097.59	100	145,146.40	
Coastal Features	Region	Region %	% of Lake Superior Total for Coastal Feature	
Coastline (km)	355.60	NA	6.10	Based on SOLEC shoreline
Sand Beaches (km)	36.25	10.19	5.63*	*% of Lake Superior Total Sand Beaches
Coastal Wetlands (km ²)	3.32	0.82*	0.30**	*% of Regional Coastal Area ** % of Lake Superior Total Coastal Wetlands
Natural Cover in Coastal Zone	396.37	97.24*	6.42**	*% of Regional Coastal Area ** % of Lake Superior Total Natural Cover in Coastal Area
Number of Islands	291	NA	11.0	
Condition	Region	Region %	% of Lake Superior Total	
Population Density (persons/km ²)	0.02	NA		
Road Density (km/km ²)	0.18	NA		
Number of Dams and Barriers	1,270	NA	5.4	
Artificial Shoreline (km)	0.75	0.21	0.33	
Land Ownership & Protection	Region (km²)	Region %	Regional Area (km²)	
Private	2,941.36	19.41	15,155.66	Regional area based on landmass
Public/Crown	8,683.57	57.30	15,155.66	
Tribes/ First Nations	35.96	0.24	15,155.66	
Parks & Protected Areas (total)	3,494.78	23.06	15,155.66	
Parks & Protected Areas (coast)	253.01	62.07*	407.61**	*% of Regional Coastal Area **Regional Coastal Area (km ²)

Important Biodiversity Features

Nearshore and Inshore Waters

- The Michipicoten-Magpie and Agawa regional unit contains sites of Important Habitat for both Lake Trout and Lake Whitefish. Important Habitat sites for Lake Trout are found off the coast of the Michipicoten-Magpie and Agawa region, in the inshore and nearshore zones (Lake Superior Binational Program Habitat Committee 2006) (Figure 2.1).
- Michipicoten Bay is noted as a Lake Superior embayment important for Lake Sturgeon (Auer 2003). In the Michipicoten-Magpie and Agawa regional unit this embayment and the nearshore zone, which provides corridors for movement, are identified as critical management areas for Lake Sturgeon in the Lake Superior basin (Auer 2003).

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- An offshore cobble bar complex is located at Montreal River Provincial Nature Reserve. This cobble bar formed 6,000 years ago, when glacial lakes were present. Under present day conditions the cobble bar is 60 metres above Lake Superior water levels (OMNR 2006e).

Coastal Zone and Islands

- Leach Island, South Lizard Island and Rowe Island (islands which are part of Lake Superior Provincial Park) are noted as an Important Habitat site for Lake Trout (Lake Superior Binational Program Habitat Committee 2006) (Figure 2.1).
- The Michipicoten-Magpie and Agawa regional unit contains Important Habitat Areas, including one area which extends along the coast and into the White and Pic regional unit. Several Important Habitat Sites are also found in this region, including along the shore, inland, and on Leach Island and Montreal Island (part of Lake Superior Provincial Park) (Lake Superior Binational Program Habitat Committee 2006) (Table 2.3, Figure 2.3).
- The McGregor Cove natural heritage area contains arctic coastal disjunct species (OMNR 2006c) and the Lake Superior shoreline at Montreal River Provincial Nature Reserve also contains two kilometres of habitat suitable for arctic alpine plant species (OMNR 2006e).
- The shoreline of Lake Superior at Montreal River Provincial Nature Reserve is noted to be a high energy cobble beach (OMNR 2006e).
- Driftwood Beach at Michipicoten Provincial Park is considered a significant landscape feature (OMNR 2006g).
- 170 taxa have been recorded in Michipicoten Post Provincial Park (Thompson 1994 as cited in OMNR 2004a). Two of the plant species were provincially significant, and six of the species were regionally significant (Thompson 1994 as cited in OMNR 2004a).
- 34 migratory bird species and 4 year round resident bird species have been recorded in Michipicoten Post Provincial Park (OMNR 2004a).

Tributaries and Watersheds

- The fish community on the lower Michipicoten River is largely comprised of introduced species, including Rainbow Trout, Chinook Salmon, Coho Salmon and pink salmon. Less abundant are native fish species, including Walleye, Lake Trout, Lake Sturgeon and Brook Trout (Eason 2003 as cited in OMNR 2004a).
- Historically 21 tributaries in Lake Superior had Lake Sturgeon spawning runs. One of these historical spawning tributaries, the Michipicoten River, is in the Michipicoten-Magpie and Agawa regional unit. The population status and population trajectory are both considered unknown (Golder Associates Ltd. 2011); however there is no recent evidence of Lake Sturgeon spawning in the Michipicoten River (Lake Superior Lake Sturgeon Work Group 2012, unpublished data).
- A Lake Sturgeon Rehabilitation Plan for Lake Superior (Auer 2003) identifies the Michipicoten River as one of the seventeen tributaries to Lake Superior in which there should be a focus on Lake Sturgeon rehabilitation. Habitat restoration is a priority in the Michipicoten River, due to barriers to migration and spawning (Auer 2003).
- The Michipicoten River mouth is a site for bald eagles during fall salmon spawning (OMNR 2004a).
- The rivers flowing through Lake Superior Provincial Park are noted to drop rapidly as they flow from the interior highlands to Lake Superior. This is noted to create rapids and waterfalls (OMNR 2006d).
- The Lake Superior Highlands Recommended Conservation Reserve is a 54,007 hectare area along the northeastern Lake Superior coast, in the White and Pic and Michipicoten-Magpie and Agawa regional units. The boundary of this unit was extended to include a waterway which would connect the Lake Superior shoreline. This area also provides critical habitat for caribou (OMNR 2006h).

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- The Nimoosh Provincial Park combines a number of rivers, parks, and life and earth science areas. The Nimoosh River links Obitanga Provincial Park with the Lake Superior shore (OMNR 2006i). Areas of important spawning habitat for Lake Trout are located in the Dog River (OMNR 2006i).

Figure 2.1: Michipicoten-Magpie and Agawa - Coastal and Watershed Features

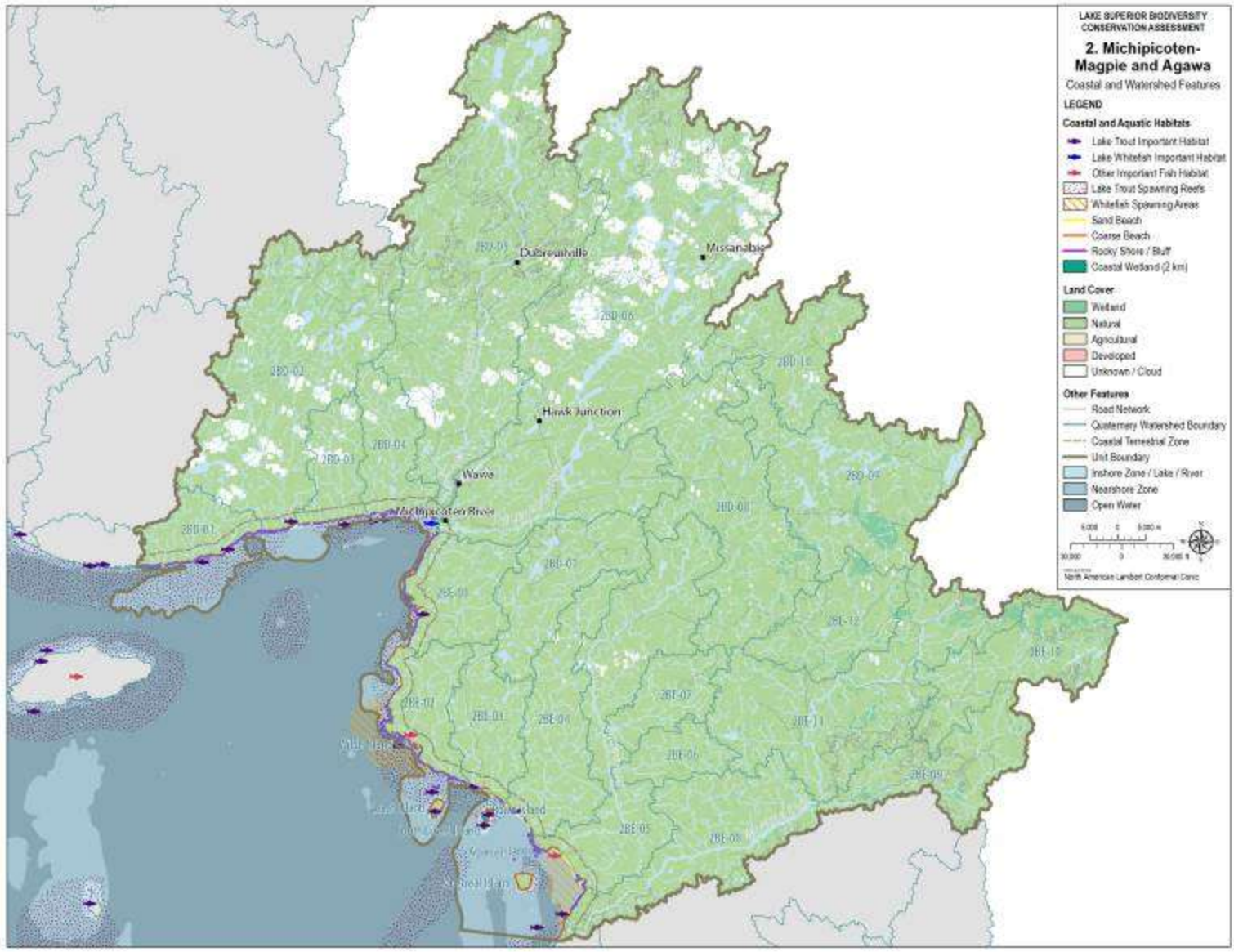


TABLE 2.2: Michipicoten-Magpie and Agawa CONDITION AND TRENDS

Target (Data Source)	Condition	Trends
Offshore ¹	NA	NA
Nearshore ¹	B (0.62)	Unknown
Embayments and Inshore ^{1,2}	B (0.74)	Unknown
Coastal Wetlands ^{2,3}	A- (0.825)	Unknown
Islands ⁴	A	Unknown
Coastal Terrestrial ³	A+ (0.995)	Unknown
Tributaries and Watersheds ²	A (0.86)	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>

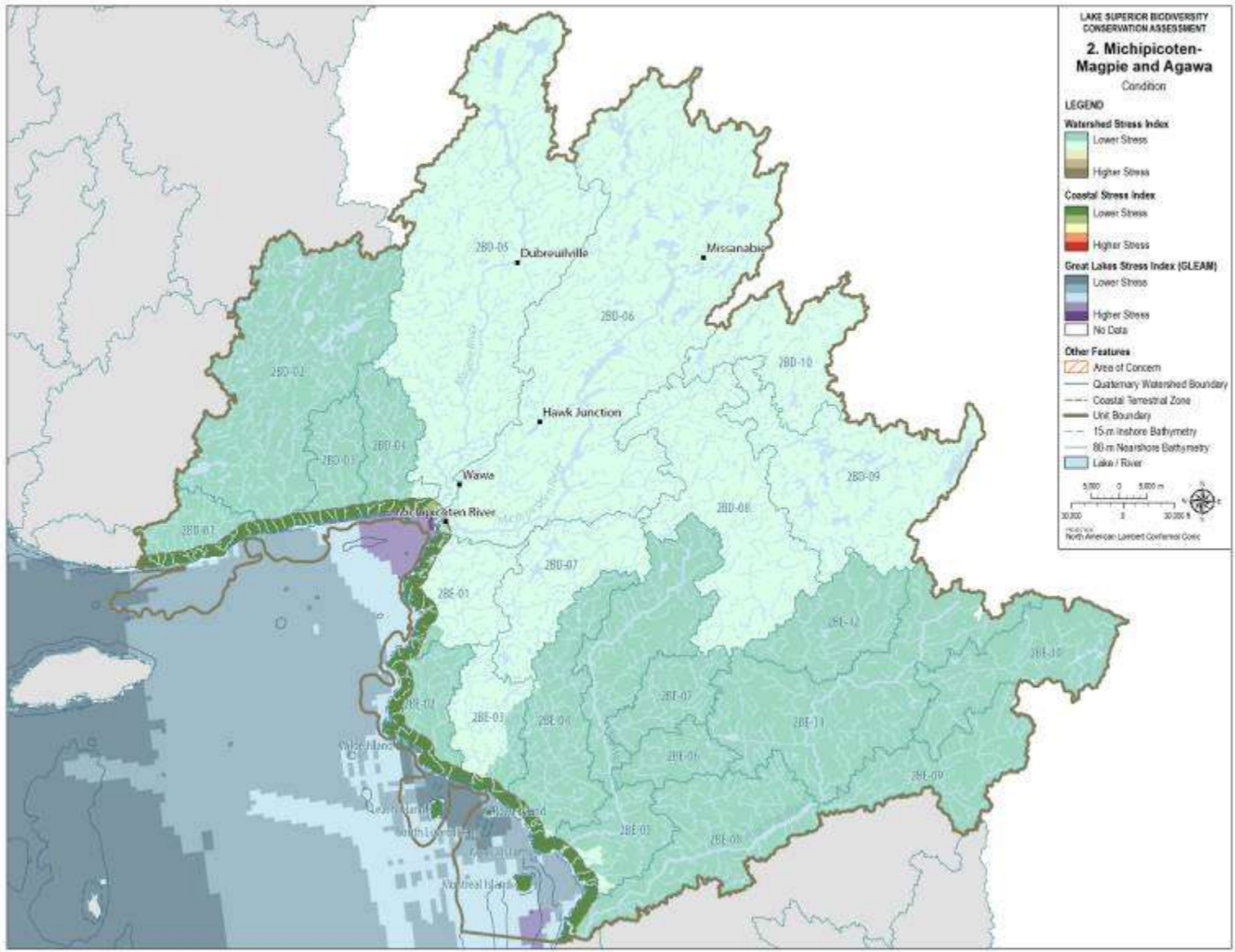
1: Great Lakes Cumulative Stress (GLEAM 2012, Allan et al. 2013)

2: Watershed Stress Index (GLEI 2013)

3: Coastal Condition Index (developed for this report)

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

Figure 2.2: Michipicoten-Maggie and Agawa - Condition



Important Issues & Threats

- The rehabilitation of lean Lake Trout and Lake Whitefish in the nearshore waters of the east end of the lake has not progressed to the same extent as the remainder of the lake. Ensuring that the unregulated fish harvests in the region are at levels that maintain sustainable populations will provide for the opportunity to resume cooperative rehabilitative fish stocking efforts.
- Twenty-one of the species identified in Michipicoten Post Provincial Park were non-native species (Thompson 1994 as cited in OMNR 2004a).
- The Michipicoten River and Magpie River were both reported to have a number of dams. Four power dams and four storage dams were reported on the Michipicoten River system. Three power dams and one storage dam were reported to be in operation on the Magpie River (OMNR 2004a).
- Recreational use of Michipicoten Post Provincial Park is generally compatible, however some activities are incompatible, and some areas are more sensitive to activities. The majority of park use occurs in and around Driftwood Beach, in the nearby coastal forest and in the waters of Lake Superior. Driftwood Beach is a sandy beach community that is both well-used and sensitive to recreational use. All-terrain and off-road vehicle use on the beach and in the forest is significant. Camping, relic hunting, and other human activities have led to some degradation of areas of Michipicoten Post Provincial Park (OMNR 2004a).
- Portions of the South Michipicoten River – Superior Shoreline Conservation Reserve are subject to mining claims and leases. There is low to high mineral potential in these sites; if the mining claims are surrendered the claim and lease areas will be added to the conservation reserve lands (OMNR 2006f).

Conservation In Action

Parks & Protected Areas

- Lake Superior Provincial Park
- Wenebagon River Provincial Park
- The Shoals Provincial Park
- Potholes Provincial Nature Reserve
- Michipicoten Post Provincial Park
- Nimoosh Provincial Park
- Obatanga Provincial Park
- Montreal River Provincial Nature Reserve
- South Michipicoten River – Superior Shoreline Conservation Reserve
- South Michipicoten River Forest Reserve
- Lake Superior Highlands Recommended Conservation Reserve (Recommended)
- Chapleau Crown Game Preserve

Existing Programs & Projects

- The Magpie and Michipicoten Rivers were the focus of several research projects examining the ecological effects of hydropower peaking (OMNR No date a). Hydropower peaking can be described as the variable flows in rivers resulting from storing waters in reservoirs during non-peak periods and the release of water from reservoirs to produce power during peak hours. The alterations to river flow did not necessarily result in a decrease in productive fish habitat, but some fishes and invertebrates are constrained by the altered flow regime (OMNR No date a). Implications for river management include treating the high and low flows in hydropower peaking rivers as two rivers, and acknowledging the longitudinal and latitudinal gradients in hydropower peaking rivers (OMNR No date a).

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- The Michipicoten River system is the focus of a water management plan. In the lower reach of the river, the plan will focus on increasing the minimum flow from the lowest hydro dam (OMNR 2004a).
- Fall aerial helicopter flight counts for spawning Chinook Salmon were conducted on the Michipicoten River from 1987 to 2000 (Greenwood 2000). Volunteers have continued to count spawning Chinook Salmon, but the data for these counts are not known (S. Greenwood, pers. comm., April 22 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). The Ontario Ministry of Natural Resources (OMNR), Canadian Wildlife Service and many naturalist organizations and corporations have been involved in the re-establishment of Peregrine Falcons across Ontario (Ontario Peregrine Falcon Recovery Team 2010). Project Peregrine is a project of the Thunder Bay Field Naturalists, supported by the OMNR. Established in 1989, Project Peregrine now conducts an intensive monitoring program with volunteers and OMNR staff in a number of areas throughout the Ontario portion of the Lake Superior Basin (Thunder Bay Field Naturalists No Date, Ontario Peregrine Falcon Recovery Team 2010). In the 2010 Ontario Peregrine Falcon survey, 72 of the 119 identified territories in Ontario were located in the Lake Superior basin. In Ontario the Lake Superior basin is the location of the highest quality of cliff nesting sites and supports the highest increase in the number of territories, and the highest density of cliff nesting birds (Chikoski and Nyman 2011). Peregrine Falcons born and banded in Ontario have also been observed nesting in Minnesota, Wisconsin and Michigan (Redig et al. 2010 as cited in Chikoski and Nyman 2011). Peregrine Falcons are listed as Special Concern by the Committee on the Status of Species at Risk in Ontario (COSSARO) and the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) (OMNR 2013a, COSEWIC 2011a).
- Over twenty percent (150,336 hectares) of the 731,621 hectare Chapleau Crown Game Preserve is within the Lake Superior Biodiversity Conservation Assessment study area. The Crown Game Preserve is considered an exceptional area for wildlife viewing.

TABLE 2.3: Michipicoten-Magpie and Agawa IMPORTANT HABITAT SITES AND AREAS

<i>Code</i>	<i>Site/ Area</i>	<i>Important Habitat Site/Area Name</i>	<i>Key Features</i>
ON-001	Site	Michipicoten Corridor	Habitat for rare plants (arctic disjuncts) and animals; rocky outcrops and shallow soils with acid sensitivity
ON-001	Area	Michipicoten Corridor	Habitat for rare plants (arctic disjuncts) and animals; rocky outcrops and shallow soils with acid sensitivity
ON-025	Site	Dog River System	Fish spawning area (Dog R. strain of Lake Trout is one of few river-spawning populations); fish habitat; waterfowl breeding/staging, rare plant habitat
ON-029	Site	Dove Bay	Fish spawning area
ON-031	Site	Eagle River	Fish habitat
ON-035	Site	Wawa Fume Kill	High biodiversity values
ON-042	Site	Gravel Beach	Fish spawning area
ON-052	Site	Leach Island	Rare animal habitat (unoccupied)
ON-060	Site	Megason Lake	Old growth pockets, roadless area; provincially significant wetlands; fish spawning area, headwaters for several rivers
ON-062	Site	Michipicoten Harbor	Fish spawning area
ON-065	Site	Michipicoten River	Fish spawning area/habitat; coastal wetland/estuary
ON-066	Site	Lower Michipicoten River	Fish spawning habitat
ON-068	Site	Montreal Island	Former populations of Woodland Caribou
ON-069	Site	Montreal River Nature Reserve	Excellent Moose habitat
ON-069	Area	Montreal River Nature Reserve	Excellent Moose habitat
ON-075	Site	Montreal River Mouth	Fish spawning habitat
ON-105	Site	Sandy Beach	Shorebird habitat, dune habitat
ON-108	Site	Montreal Shoreline North	Rare arctic plant habitat
ON-124	Site	The Flats	Rare animal habitat
ON-135	Site	Wolf-Achigan Lakes	Old growth forest, high biodiversity value (landscape level), fish habitat, roadless area
ON-136	Area	Gros Cap Corridor	Migratory fish habitat; commercial fishery; colonial water bird habitat; Gros Cap reef
ON-168	Area	Potholes Nature Reserve	

Figure 2.3: Michipicoten-Magpie and Agawa - Important Habitat Sites and Areas

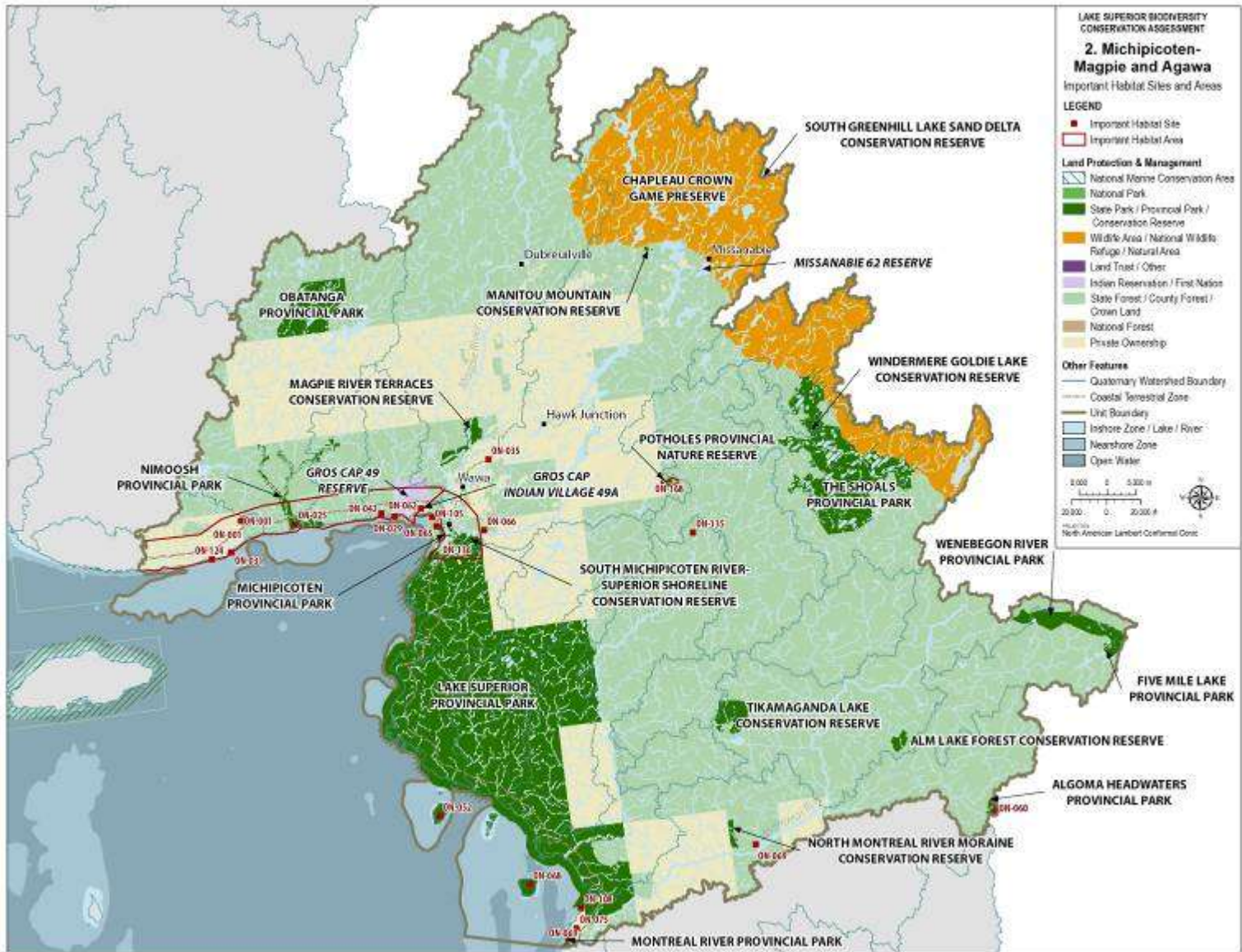


TABLE 2.4: Michipicoten-Magpie and Agawa LIST OF SPECIES AND COMMUNITIES OF CONSERVATION CONCERN

At least 44 species and communities of conservation concern have been documented in the regional unit. 16 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). 28 species and communities were once known to occur here, but have current conservation ranks of H (Historical).³

<i>Present Records (Viability Rankings of A to E)</i>	
Scientific Name	Common Name
Acidic Open Bedrock Shoreline Type	Acidic Open Bedrock Shoreline Type
American Dune Grass - Beach Pea - Sand Cherry Dune Grassland Type	American Dune Grass - Beach Pea - Sand Cherry Dune Grassland Type
Bat Colony	Bat Hibernaculum/Nursery
<i>Botrychium pallidum</i>	Pale Moonwort
<i>Diplophyllum taxifolium</i>	A Liverwort
Dry Red Pine - White Pine Coniferous Forest Type	Dry Red Pine - White Pine Coniferous Forest Type
<i>Eleocharis nitida</i>	Quill Spike-rush
<i>Falco peregrinus</i>	Peregrine Falcon
Great Lakes Arctic-Alpine Basic Open Bedrock Shoreline Type	Great Lakes Arctic-Alpine Basic Open Bedrock Shoreline Type
<i>Haliaeetus leucocephalus</i>	Bald Eagle
<i>Hudsonia tomentosa</i>	Woolly Beach-heath
<i>Hygrohypnum eugyrium</i>	A Moss
<i>Listera auriculata</i>	Auricled Twayblade
Moist - Fresh Sugar Maple - Yellow Birch Deciduous Forest Type	Moist - Fresh Sugar Maple - Yellow Birch Deciduous Forest Type
<i>Pogonatum dentatum</i>	Haircap
<i>Viola novae-angliae</i>	New England Violet
<i>Historical Records</i>	
Scientific Name	Common Name
<i>Anaptychia setifera</i>	A Lichen
<i>Andreaea crassinervia</i>	A Moss
<i>Botrychium acuminatum</i>	Pointed Moonwort
<i>Botrychium hesperium</i>	Western Moonwort
<i>Botrychium pseudopinnatum</i>	False Northwestern Moonwort
<i>Coregonus zenithicus</i>	Shortjaw Cisco
<i>Galium kamtschaticum</i>	Boreal Bedstraw
<i>Grimmia teretinervis</i>	A Moss
<i>Gymnocarpium robertianum</i>	Limestone Oak Fern
<i>Leptogium rivulare</i>	Flooded Jellyskin
<i>Marsupella sparsifolia</i>	A Liverwort
<i>Moehringia macrophylla</i>	Large-leaved Sandwort
<i>Mylia taylorii</i>	A Liverwort
<i>Myotis leibii</i>	Eastern Small-footed Myotis
<i>Myotis septentrionalis</i>	Northern Myotis

³ Data included here were provided by the Ontario Ministry of Natural Resources and Forestry. Copyright Queen's Printer for Ontario (2012).

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Nardia insecta	A Liverwort
Odontoschisma macounii	A Liverwort
Packera obovata	Round-leaved Groundsel
Pannaria conoplea	A Lichen
Polystichum braunii	Braun's Holly Fern
Porpidia diversa	A Lichen
Potamogeton confervoides	Alga Pondweed
Pseudoleskeella tectorum	A Moss
Pterospora andromedea	Woodland Pinedrops
Stereocaulon subcoralloides	A Lichen
Tetraplodon mnioides	A Moss
Vaccinium ovalifolium	Oval-leaved Bilberry
Woodsia alpina	Alpine Woodsia