

6. Nipigon and Jackpine

HEALTHY WATERS REPORT CARD

OFFSHORE	NA	ISLANDS	A
NEARSHORE	C	COASTAL WETLANDS	B
EMBAYMENTS & INSHORE	B	COASTAL TERRESTRIAL	A+
TRIBUTARIES & WATERSHEDS	B	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>



Cypress Bay, in the Nipigon and Jackpine regional unit.
Photo credit: Ontario Ministry of Natural Resources

Summary/ Description

The Nipigon and Jackpine regional unit is located along the northern shore of Lake Superior, and extends the furthest north of any of the regional units. The regional unit is 25,558 km² in size, including the associated nearshore waters, and is the largest of any of the regional units in this study. The regional unit extends inland considerably, and includes Lake Nipigon and the surrounding area, as well as Nipigon Bay. The relatively short shoreline of this regional unit starts just west of St. Ignace Island, and extends to east of Wilson Island, near the community of Schreiber. Communities in this regional unit include Nipigon, MacDiarmid, Beardmore, Armstrong, Whitesand First Nation, Kiashke Zaaging Anishinaabek (Gull Bay) First Nation, Biinjitiwaabik Zaaging Anishinaabek (Rocky Bay) First Nation, Bingwi Neyaashi Anishinaabek (Sand Point) First Nation, Animiigoo Zaagiigan Anishinaabek (Lake Nipigon Ojibway) First Nation, Namaygoosisagagun First Nation, and Red Rock Indian Band (Lake Helen First Nation). A number of provincial parks and nature reserves are located in this region, along with an enhanced management area. Several large islands, including St. Ignace Island, Simpson Island and Wilson Island are located in this area. This regional unit contains the largest remnant population of Brook Trout in Lake Superior (M. Chase, pers. comm., June 3 2013). The Nipigon and Jackpine regional unit combines two tertiary watershed units, Nipigon and Jackpine, and contains 32 quaternary watersheds. The watersheds are almost completely dominated by forests. The coasts are characterized by rocky shores and cliffs, with scattered sand beaches and coastal wetlands.

TABLE 6.1: Nipigon and Jackpine BY THE NUMBERS

Land and Water Cover	Region (km²)	Region %	Lake Superior Total (km²)	Notes
Agriculture	6.54	0.02	1,441.07	
Developed	1.42	0.01	389.55	
Forest	19,366.98	68.48	107,747.13	
Associated Nearshore Waters	794.43	2.81	17,868.03	
Other	1,959.85	6.93	8,227.57	
Water (inland)	6,151.96	21.75	9,473.05	
Total Area	28,281.17	100	145,146.40	
Coastal Features	Region	Region %	% of Lake Superior Total for Coastal Feature	
Coastline (km)	533.98	NA	9.16	Based on SOLEC shoreline
Sand Beaches (km)	27.80	5.21	4.32*	*% of Lake Superior Total Sand Beaches
Coastal Wetlands (km ²)	4.71	0.97*	0.43 **	*% of Regional Coastal Area ** % of Lake Superior Total Coastal Wetlands
Natural Cover in Coastal Zone	437.96	89.98*	7.09**	*% of Regional Coastal Area ** % of Lake Superior Total Natural Cover in Coastal Area
Number of Islands	212	NA	8.0	
Condition	Region	Region %	% of Lake Superior Total	
Population Density (persons/km ²)	0.06	NA		
Road Density (km/km ²)	0.16	NA		
Number of Dams and Barriers	1188	NA	5.0	
Artificial Shoreline (km)	6.95	1.30	3.05	
Land Ownership & Protection	Region (km²)	Region %	Regional Area (km²)	
Private	574.94	2.09	27,486.60	Regional area based on landmass
Public/Crown	22,791.03	82.92	27,486.60	
Tribes/ First Nations	67.96	0.25	27,486.60	
Parks & Protected Areas (total)	4,052.67	14.74	27,486.60	
Parks & Protected Areas (coast)	65.52	13.46*	486.75**	*% of Regional Coastal Area **Regional Coastal Area (km ²)

Important Biodiversity Features

Nearshore and Inshore Waters

- Nipigon Bay is noted as a Lake Superior embayment important for Lake Sturgeon (Auer 2003). In the Nipigon and Jackpine 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).
- Nipigon Bay and the nearshore waters are critical management areas for Brook Trout in the Lake Superior basin (M. Chase, pers. comm., June 3 2013).

Coastal Zone and Islands

- The Nipigon and Jackpine regional unit provides several sites of Important Habitat for Lake Trout, including many sites around St. Ignace Island, Simpson Island, Vein Island, Wilson Island, La Grange Island and Vert Island. Additional Important Habitat Sites for Lake Trout are found in areas along the Lake Superior coast (Lake Superior Binational Program Habitat Committee 2006) (Figure 6.1).
- One area identified as an Important Habitat Area is found around St. Ignace Island and Simpson Island, while other Important Habitat Areas are found throughout the regional unit (Lake Superior Binational Program Habitat Committee 2006) (Table 6.3, Figure 6.3).
- A number of Important Habitat Sites are clustered around the shore and some of the eastern islands (Lake Superior Binational Program Habitat Committee 2006) (Table 6.3, Figure 6.3).

Tributaries and Watersheds

- Few wild populations of Brook Trout in the Lake Superior basin are both sufficiently large to serve as a source population for brood stock and exhibit the migratory or lake-dwelling life history. The populations which fit these criteria include populations from Nipigon Bay and Lake Nipigon. In 2002 there were three strains of Brook Trout brood stock available for stocking, including the Lake Nipigon strain from Lake Nipigon, Ontario (Newman et al. 2003). The trigger that causes the development of the coaster Brook Trout life-history variant is unknown, and the right conditions must be present for this trait to develop. Decisions concerning the rehabilitation of Brook Trout must consider a number of factors (M. Chase, pers. comm., June 3 2013).
- Coaster Brook Trout in the Nipigon River have shown some ability to co-exist with other salmonid species, although competition may still be a factor in certain habitats and at certain densities (Newman et al. 2003).
- Historically 21 tributaries in Lake Superior had Lake Sturgeon spawning runs. Two of these historical spawning tributaries, the Gravel River and the Nipigon River are in the Nipigon and Jackpine regional unit. The Gravel River population status and population trajectory are both unknown (Golder Associates Ltd. 2011); however there is not recent evidence of natural reproduction in the Gravel River (Lake Superior Lake Sturgeon Work Group 2012, unpublished data). The Nipigon River population status is extant, while the population trajectory is unknown (Golder Associates Ltd. 2011).
- A sub-population of Lake Sturgeon which is physically isolated from other populations is found within Lake Nipigon. The Lake Nipigon population status is extant, while the population trajectory is stable (Golder Associates Ltd. 2011).
- A Lake Sturgeon Rehabilitation Plan for Lake Superior (Auer 2003) identifies the Gravel River and Nipigon River as two of the seventeen tributaries to Lake Superior in which there should be a focus on Lake Sturgeon rehabilitation.
- Several areas around Lake Nipigon are identified as Important Habitat Areas, including Kabitotikwia River Provincial Nature Reserve, West Bay Provincial Nature Reserve, Kopka River Provincial Park Addition, Livingstone Point Provincial Park and Lake Nipigon Provincial Park. A large Important Habitat area which lies mostly north of the Nipigon and Jackpine regional unit partially extends into the northern portion of the unit (Lake Superior Binational Program Habitat Committee 2006) (Table 6.3, Figure 6.3).

Figure 6.1: Nipigon and Jackpine - Coastal and Watershed Features

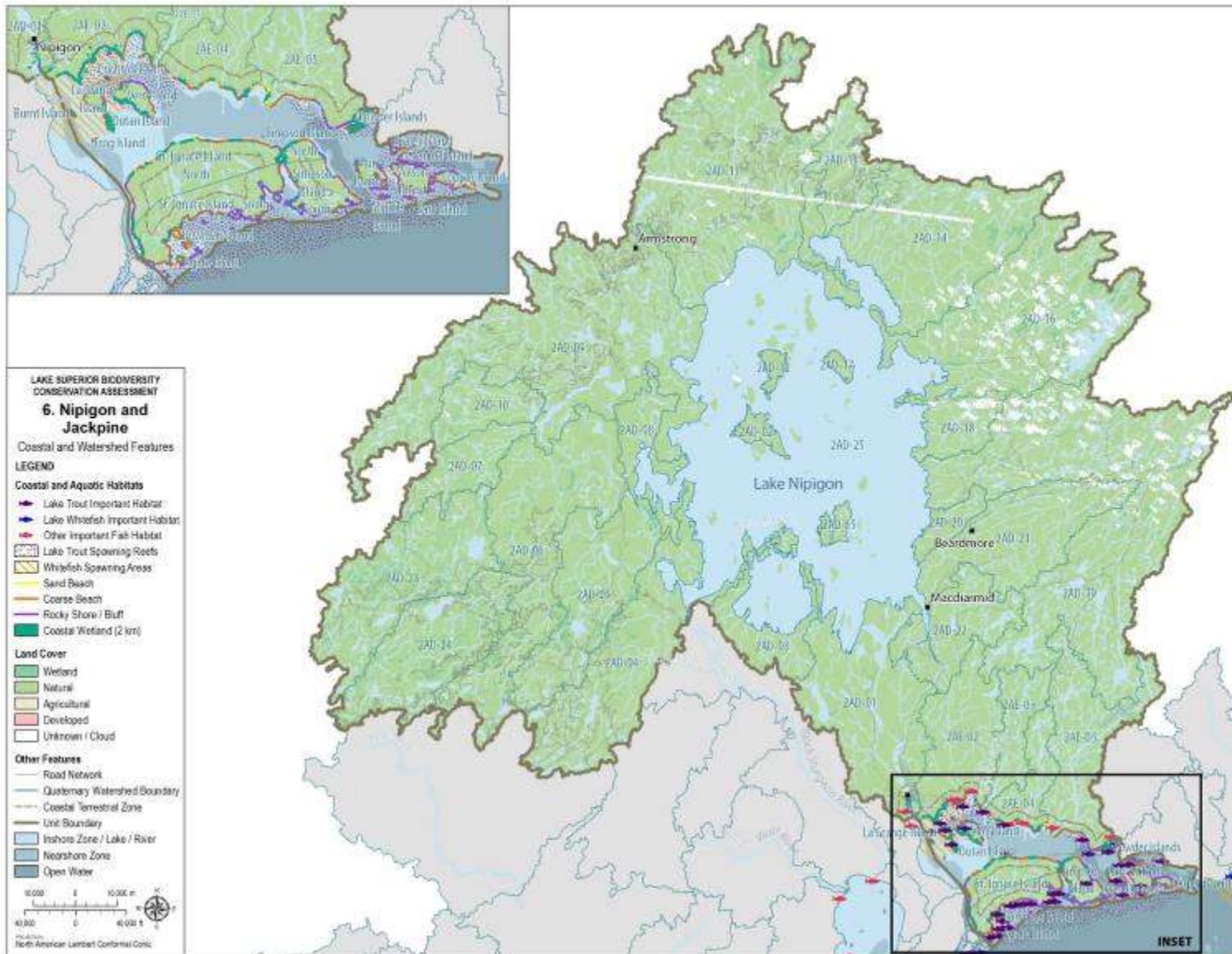


TABLE 6.2: Nipigon and Jackpine CONDITION AND TRENDS

Target (Data Source)	Condition	Trends
Offshore ¹	NA	NA
Nearshore ¹	C (0.59)	Unknown
Embayments and Inshore ^{1,2}	B (0.68)	Unknown
Coastal Wetlands ^{2,3}	B (0.782)	Unknown
Islands ⁴	A	Unknown
Coastal Terrestrial ³	A+ (0.996)	Unknown
Tributaries and Watersheds ²	B (0.76)	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>

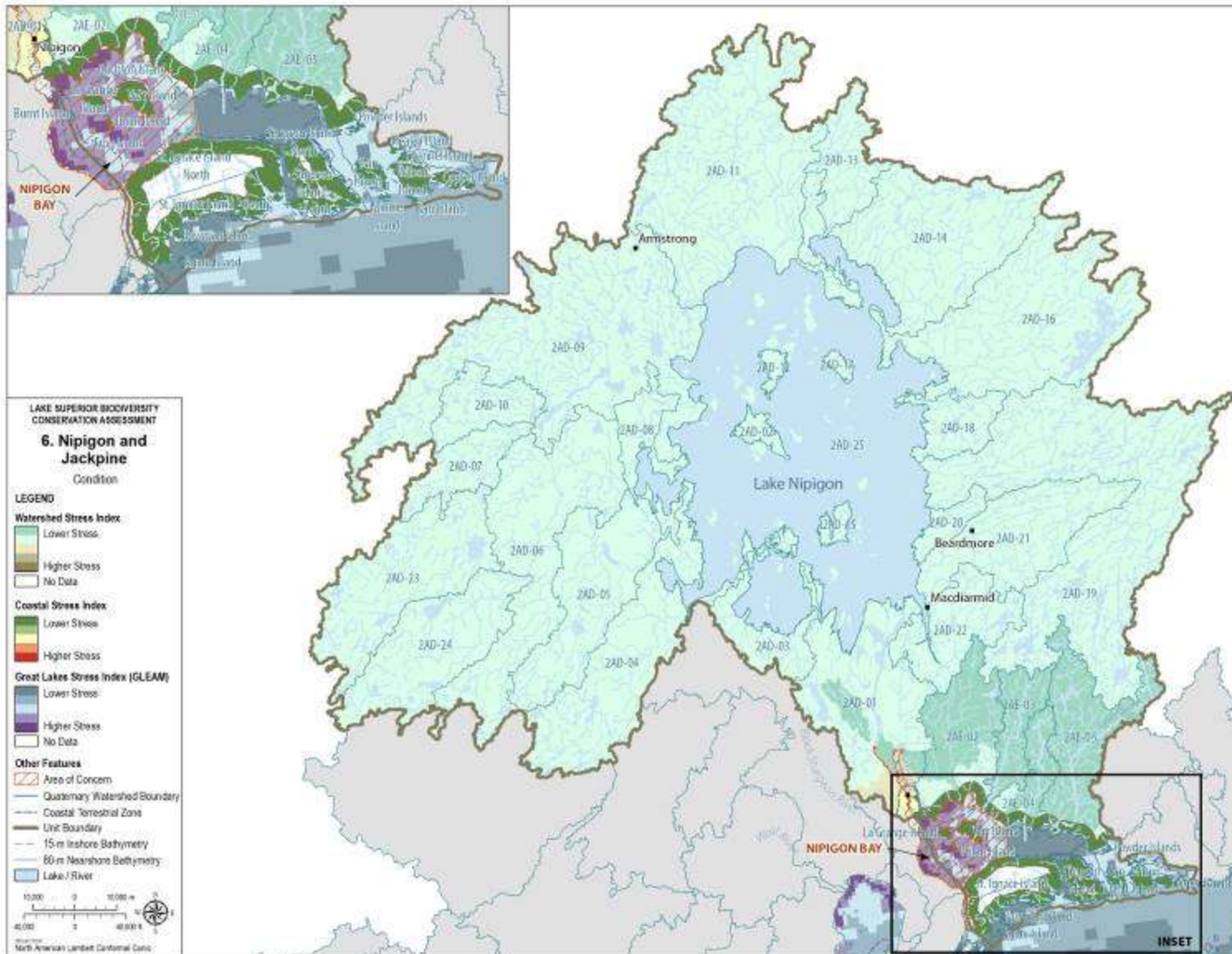
1: Great Lakes Cumulative Stress (GLEAM 2012, Allan et al. 2013)

2: Watershed Stress Index (GLEI 2013)

3: Coastal Condition Index (developed for this report)

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

Figure 6.2: Nipigon and Jackpine - Condition



Important Issues & Threats

- The Nipigon Bay Area of Concern (AOC) is located in the Nipigon and Jackpine regional unit (Figure 6.2). Eight Beneficial Use Impairments (BUIs) were identified as impaired or requiring further assessment in the 1991 Stage 1 Status (Nipigon Bay Remedial Action Plan Team 2011). Discharges of industrial and municipal effluent from mills and sewage treatment plants, hydro-electric development and related changes to water levels and flows in Lake Nipigon and the Nipigon River, and negative impacts from previous timber harvest practices (such as log driving) all contributed to the impairments to water quality and environmental health. Many improvements have occurred, including upgrades to mills and water treatments plants due to regulatory requirements, restoration and rehabilitation of important creeks, and several other actions, resulting in improvements to water quality and environmental health. Upgrades to the water pollution control plant in the Township of Red Rock are the final action required to restore water quality and ecosystem health in this AOC. Monitoring will assess the restoration of beneficial uses, and the anticipated delisting for the Nipigon Bay AOC is 2019 (Environment Canada 2014c).

Conservation In Action

Parks & Protected Areas

- The Lake Superior National Marine Conservation Area (LSNMCA) of Canada includes a significant portion of the nearshore and inshore waters associated with the Nipigon and Jackpine regional unit, as well as some coastal lands (Parks Canada 2009). National Marine Conservation Areas protect and conserve representative marine areas for the benefit, education and enjoyment of the people of Canada and the world. By law, each national marine conservation area must contain at least one zone that fosters and encourages the ecologically sustainable use of aquatic resources and at least one zone that fully protects special features or sensitive elements of ecosystems. Currently, the Lake Superior NMCA has proposed two zones that offer some protection for the Gunilda shipwreck (Nipigon and Jackpine regional unit), and Gapen's Pool Brook Trout Spawning Area (Nipigon and Jackpine regional unit) (C. Vis, pers. comm., December 18 2014).
- The LSMCA extends beyond the nearshore water boundary associated with the Nipigon and Jackpine region, to the international boundary with the United States.
- Gravel River Provincial Nature Reserve
- Ruby Lake Provincial Park
- Lake Nipigon Provincial Park
- Livingstone Point Provincial Park
- Wabakimi Provincial Park (portion)
- Whitesand Provincial Park
- Windigo Bay Provincial Park
- Kopka River Provincial Park
- Kopka River Provincial Park Addition
- Wilson Island
- West Bay Provincial Nature Reserve
- Pantagrue Creek Provincial Nature Reserve
- Gull River Provincial Park
- Kabitotkwia River Provincial Nature Reserve
- Kaiashk Provincial Nature Reserve
- Black Sturgeon River Provincial Park (portion)

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- Lake Superior Shoreline Enhanced Management Area (also in Pic and White and Little Pic regional units)
- Bowman Island Nature Reserve (Thunder Bay Field Naturalists)
- Nipigon River Nature Reserve (Thunder Bay Field Naturalists)
- Paradise Island Nature Reserve (Thunder Bay Field Naturalists)

Existing Programs & Projects

- Three Provincially Significant Wetlands (PSWs) are located in the Nipigon and Jackpine regional unit. Kabitotikwia River PSW (1515.02 hectares) and Poshkokagan River PSW (168.84 hectares) are located on Lake Nipigon, and Nipigon River PSW (78.60 hectares) is located along the Nipigon River. The three PSWs provide a combined total of 1,762.47 hectares.
- Existing populations of native Brook Trout in the Nipigon area seem to be responding well to measures taken for their conservation, including restrictions on harvests and the protection of spawning habitat (Newman et al. 2003). Seasonal refuge areas have been established on the Nipigon River by the Ontario Ministry of Natural Resources, in order to protect spawning adults and habitat from destruction by fishermen wading through the area (Newman et al. 2003).
- Both the Ontario Ministry of Natural Resources Dorion Fish Culture Station and the Red Cliff Tribal Fish Hatchery rear captive brood stock and production fish of the Lake Nipigon strain of Brook Trout (Newman et al. 2003). The OMNR Dorion Fish Culture Station is located in the Black-Sturgeon region, while the Red Cliff Tribal Fish Hatchery is located in the Nemadji to Fish Creek region. The offspring from the Dorion Fish Culture Station are not stocked into Lake Superior (M. Chase, pers. comm., June 3 2013).
- The Ontario MNR Upper Great Lakes Management Unit (UGLMU) has established the Fish Community Index Netting (FCIN) program on Lake Superior. Started in 2009, the FCIN program represents an ecosystem-based fish community approach, which provides trend-through-time information on the fish community. Emphasis is on the commercially important species of Lake Trout and Lake Whitefish, but the shift is away from a single species approach, to monitoring of fish population dynamics (Thunder Bay RAP 2013). The FCIN program is underway in the Thunder Bay, Peninsula Harbour and Jackfish Bay AOCs, as well as in Nipigon Bay (no commercial fisheries) (M. Chase, pers. comm., June 3 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 Thunder Bay Field Naturalists have three nature reserves in the Nipigon and Jackpine regional unit. Bowman Island Nature Reserve is 80 acres in total (40 acres of land and 40 acres of water), and is an Area of Natural and Scientific Interest (ANSI), part of the Great Lakes Heritage Coast, and is within the Lake Superior National Marine Conservation Area. Nipigon River Nature Reserve is 545 acres in total area and is adjacent to other conservation lands, is a Great Lakes Heritage Coast signature site, and contains provincially significant wetlands. Paradise Island Nature Reserve is 112 acres in total (58 acres of land and 54 acres of water). It is adjacent to conservation lands, a Great Lakes Heritage Coast signature site, an ANSI and within the Lake Superior National Marine Conservation Area (B. Yurkoski, pers. comm., February 16 2015).
- Schreiber Point Nature Reserve (TBFN) is located in the Little Pic regional unit. It is 46 acres in area and is a Great Lakes Conservation Blueprint priority site.
- The Nature Conservancy of Canada has conserved the 399 acre Powder Islands, which are made up of two large islands dominated by Lake Superior coastal forests.

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- Wilson Island is owned by the Nature Conservancy of Canada, and managed through an agreement with the Pays Plat First Nation.

TABLE 6.3: Nipigon and Jackpine IMPORTANT HABITAT SITES AND AREAS

<i>Code</i>	<i>Site/ Area</i>	<i>Important Habitat Site/Area Name</i>	<i>Key Features</i>
ON-017	Site	Cat Islands	Nesting site for colonial water birds
ON-022	Site	Cobinosh Island	Historic rare animal habitat
ON-023	Site	Cypress River	Fish spawning area
ON-030	Site	Dublin Creek	Suspected fish spawning area
ON-046	Site	Inside Islands of Nipigon Bay	Fish habitat; raptor habitat
ON-048	Site	Kama Bay West	Fish spawning area
ON-051	Site	Lake Helen	Former fish spawning area
ON-058	Site	McInnes Lake and Creek	Fish spawning area
ON-074	Area	Gravel River Nature Reserve	Important staging area for migration
ON-077	Site	Kabitotikuia River Mouth	Coastal wetland, rare animal habitat; Provincial Nature Reserve
ON-078	Site	Nipigon River and Bay	Significant coastal wetland; waterfowl nesting/staging area; high biodiversity value
ON-078	Area	Nipigon River and Bay	Significant coastal wetland; waterfowl nesting/staging area; high biodiversity value
ON-085	Site	Northeast Wilson Island	Rare plant habitat
ON-088	Site	Onaman River Mouth	Large wetland; high biodiversity value
ON-091	Site	Outan Island	Rare animal habitat
ON-093	Site	Parmachene Bridge at Polly Lake	
ON-119	Site	Speckle Islands	Colonial water bird habitat
ON-121	Area	St. Ignace and Simpson Islands	Rare animal habitat (Woodland Caribou unoccupied)
ON-123	Site	Steamboat Bay	Former fish spawning area
ON-133	Site	Windikokan Lake	Fish spawning area
ON-149	Area	Kabitotikuia River Nature Reserve	
ON-152	Area	Kama Hill Nature Reserve	Kama Cliffs; representative landform and vegetation types (sparse forests and conifer on broken bedrock)
ON-156	Area	Lake Nipigon	Woodland Caribou calving islands, long undeveloped lakeshore
ON-157	Area	Windigo Bay Nature Reserve	Woodland Caribou habitat and migration route, sand dune communities
ON-161	Area	Livingstone Point Nature Reserve	
ON-182	Area	Wabakimi Wilderness Area	Woodland Caribou habitat, large pristine protected area
ON-183	Area	West Bay Nature Reserve	Fish spawning habitat

TABLE 6.4: Nipigon and Jackpine LIST OF SPECIES AND COMMUNITIES OF CONSERVATION CONCERN

At least 61 species and communities of conservation concern have been documented in the regional unit. 20 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). 41 species and communities were once known to occur here, but have current conservation ranks of F (Failed to find) or H (Historical).⁷

<i>Present Records (Viability Rankings of A to E)</i>	
Scientific Name	Common Name
<i>Arnica lonchophylla</i>	Long-leaved Arnica
<i>Botrychium pallidum</i>	Pale Moonwort
<i>Botrychium pseudopinnatum</i>	False Northwestern Moonwort
<i>Caprimulgus vociferus</i>	Whip-poor-will
<i>Carex rossii</i>	Ross' Sedge
<i>Coturnicops noveboracensis</i>	Yellow Rail
<i>Cystopteris laurentiana</i>	Laurentian Bladder Fern
<i>Dryas drummondii</i>	Yellow Mountain Avens
<i>Erebia mancinus</i>	Taiga Alpine
Great Lakes Arctic-Alpine Basic Open Bedrock Shoreline Type	Great Lakes Arctic-Alpine Basic Open Bedrock Shoreline Type
<i>Gulo gulo</i>	Wolverine
<i>Huperzia appressa</i>	Mountain Firmoss
<i>Ichthyomyzon fossor</i>	Northern Brook Lamprey
<i>Juncus longistylis</i>	Long-styled Rush
<i>Juncus vaseyi</i>	Vasey's Rush
<i>Oeneis macounii</i>	Macoun's Arctic
<i>Pelecanus erythrorhynchos</i>	American White Pelican
<i>Phacelia franklinii</i>	Franklin's Scorpionweed
<i>Rangifer tarandus caribou</i>	Woodland Caribou (Forest-dwelling boreal population)
<i>Woodsia scopulina</i>	Mountain Woodsia
<i>Historical or Failed to Find Records</i>	
Scientific Name	Common Name
<i>Acipenser fulvescens</i> pop. 3	Lake Sturgeon (Great Lakes - Upper St. Lawrence River population)
<i>Aeshna juncea</i>	Sedge Darner
<i>Aeshna subarctica</i>	Subarctic Darner
<i>Amphidium mougeotii</i>	A Moss
<i>Anastrophyllum saxicola</i>	A Liverwort
<i>Aulacomnium turgidum</i>	A Moss
<i>Botrychium acuminatum</i>	Pointed Moonwort
<i>Botrychium hesperium</i>	Western Moonwort
<i>Bryum blindii</i>	A Moss
<i>Coregonus zenithicus</i>	Shortjaw Cisco
<i>Dicranella crispa</i>	A Moss
<i>Elymus glaucus</i>	Blue Wild Rye
<i>Erebia discoidalis</i>	Red-disked Alpine

⁷ 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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<i>Euchloe ausonides</i>	Large Marble
<i>Falco peregrinus</i>	Peregrine Falcon
<i>Fontinalis sphagnifolia</i>	A Moss
<i>Grimmia teretinervis</i>	A Moss
<i>Grimmia torquata</i>	A Moss
<i>Gymnocarpium robertianum</i>	Limestone Oak Fern
<i>Haliaeetus leucocephalus</i>	Bald Eagle
<i>Hypnum plicatulum</i>	A Moss
<i>Ixobrychus exilis</i>	Least Bittern
<i>Listera auriculata</i>	Auricled Twayblade
<i>Moehringia macrophylla</i>	Large-leaved Sandwort
<i>Myotis septentrionalis</i>	Northern Myotis
<i>Myoxocephalus thompsoni</i>	Deepwater Sculpin
<i>Ophiogomphus anomalus</i>	Extra-striped Snaketail
<i>Pannaria conoplea</i>	A Lichen
<i>Porpidia diversa</i>	A Lichen
<i>Potentilla bimundorum</i>	Staghorn Cinquefoil
<i>Pseudoleskeella tectorum</i>	A Moss
<i>Rhizomnium gracile</i>	A Moss
<i>Somatochlora elongata</i>	Ski-tailed Emerald
<i>Stereocaulon glaucescens</i>	A Foam Lichen
<i>Stylurus notatus</i>	Elusive Clubtail
<i>Tayloria serrata</i>	A Moss
<i>Valvata sincera ontariensis</i>	Loosely Coiled Valve-snail
<i>Vertigo paradoxa</i>	Classification Uncertain
<i>Viola epipsila</i>	Northern Marsh Violet
<i>Woodsia alpina</i>	Alpine Woodsia
<i>Zizia aptera</i>	Heart-leaved Alexanders