

Isle Royale Regional Plan

This is one of twenty Regional Plans prepared to further guide and support implementation of the Lake Superior Biodiversity Conservation Strategy (Strategy). The Strategy, prepared and overseen by the Lake Superior Partnership, contains information and 62 sub-strategies to provide guidance to restoring and protecting biodiversity (www.natureconservancy.ca/superiorbca).

Regional Plans are intended to be adaptive documents which support and respond to local conservation efforts that are contributing to lakewide biodiversity goals. To contribute an update to this Regional Plan, please contact superiorplans@glmpo.net.

10. Isle Royale

Isle Royale is located in the northwestern part of Lake Superior; the closest mainland is approximately 14 miles away.

The island of Isle Royale is a national park, along with the more than 450 smaller islands located around it. The waters of Isle Royale are said to contain the most productive native fishery in Lake Superior, as well

as the most genetically diverse Lake Trout populations in the entire lake. The watersheds are completely forested, and are some of the most intact in the Lake Superior basin. The coasts are dominated by exposed rocky shores and cliffs.



Important habitat sites for Lake Trout and Lake Whitefish can be found around Isle Royale. Isle Royale National Park is noted as a State Important Bird Area. The Islands of Isle Royale are home to 18 species of mammal, in comparison to the 40 mammal species found on the mainland. Almost 29% of the coastal zone in this regional unit is coastal wetlands; these coastal wetlands account for almost 10% of the Lake Superior total coastal wetlands. Since over 99% of this regional unit is protected as a park, these coastal wetlands are also protected. At least 88 species and communities of conservation concern have been documented in this regional unit, including Kiyi and Gray Wolf.^{1,2}

¹Data included here were provided by the Michigan Natural Features Inventory of Michigan State University, and were current as of August 1, 2014. These data are not based on an exhaustive inventory of the state. The lack of data for any geographic area shall not be construed to mean that no significant features are present.

²For a full list of the species and communities documented in the regional unit please see the corresponding [regional unit chapter](#) in Vol. 2 of the Lake Superior Biodiversity Conservation Assessment.

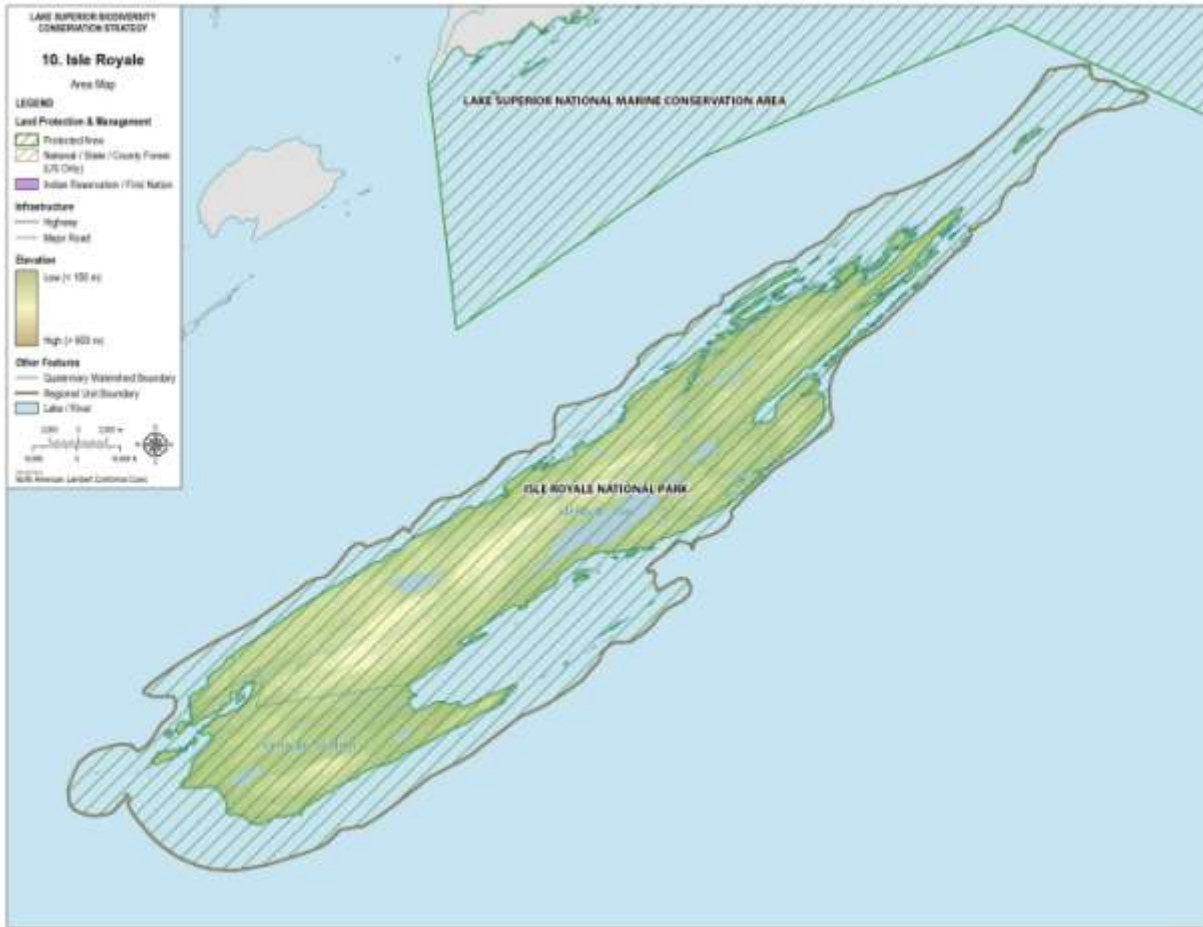
Report Card ³		Overall Grade: A
Conservation Target	Grade	Conservation Target Notes
Nearshore	B	Region is adversely affected by invasive species and warming water temperatures.
Embayments & Inshore	B	Seventeen different species can be found around the embayments and shoreline.
Islands	A	The island supports 18 species of mammal and is heavily forested.
Coastal Wetlands	A-	Almost 29% of the coastal zone is wetland.
Coastal Terrestrial	A+	The coastal zone is one of the most intact in the entire Great Lakes.
Tributaries & Watersheds	A	Several streams support Coaster Brook Trout, many types of wetlands, and a high abundance of clams.

Overview of Conservation Opportunities

Threats to the region arise from invasive species, both aquatic and terrestrial, and historic high levels of mercury and PCBs in the lakes. Active projects involve stocking native fish populations and ecological studies (e.g., wolves, breeding birds). Coordination and planning efforts surrounding the emerging invasive species and climate change impacts will be needed moving forward.

³Report Card grades are intended to denote relative (within Lake Superior basin) condition/health and stresses for each biodiversity target in the region based on available condition and stress indices. A more detailed explanation and expert comments on grades are available in the Lake Superior Biodiversity Conservation Assessment - Volume 2: Regional Unit Summaries.

Area Map



Conservation Actions

The Lake Superior community has a strong and ongoing history of taking action to restore and protect the lake's extraordinary biodiversity. Actions are occurring at all scales – from national, state, provincial, tribal, First Nations, Métis, and municipal programs, to lakewide initiatives, and local projects by communities, businesses and households. Some important habitats currently have a conservation designation with a corresponding management strategy. Active supervision of these areas is essential to sustaining biodiversity. The table below presents next steps for conserving and protecting biodiversity in this regional unit. Other existing plans relevant to conserving habitats and species in this region should continue to be implemented. A list of existing plans relevant to the next steps presented below is presented at the end of this document.

Regional Plan Next Steps

There is some variation among Regional Plans in how future actions from existing plans were incorporated into this document, based on advice from the implementers of those plans in the region. Similarly, implementation approaches vary greatly among regional units. The Lake Superior Partnership serves an important role in facilitating cooperation among agencies to support on-the-ground action. Priority implementation actions developed through the Partnership are identified in the Lake Superior LAMP, Lake Partnership committee work plans, and agency specific action plans.

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
Lakewide Strategy 1: Restore and protect a system of representative, high quality habitats.			
<i>Common Actions For All Regional Plans</i> Maintain or enhance areas where large blocks of land with natural cover exist or could be expanded. Preserve sites that have high species diversity and/or critical habitat for fish or wildlife.		Multiple	1.1
Protect the habitats of biological significance with special consideration to environmentally-sensitive sites in nearshore areas.	Protect or restore sensitive habitat for Lake Trout.	Nearshore	1.1
	Protect or manage sensitive habitat for Lake Whitefish.		
	Protect or manage sensitive habitat for Lake Herring/Cisco.		
Protect the habitats of biological significance with special consideration of important fish spawning sites in the tributaries.	Protect the integrity of the region’s extensive coastal wetlands.	Coastal Wetlands	1.1
Protect the sensitive habitats of Isle Royale.	Identify and protect important fish spawning habitats.	Multiple	1.1
Protect the sensitive habitats of Isle Royale.	Inventory, monitor, and protect the rare plants and animals and their habitat.	Multiple	1.6
Protect the habitats of biological significance with special consideration given to tributaries supporting Coaster Brook Trout, Large Marble Butterfly, Boreal Chorus Frog, and Giant Northern Pea Clam.	Protect and restore habitats by favoring long-lived conifer and adding large woody material to streams.	Tributaries & Watersheds	1.1

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
Restore diversity and structure in northern hardwood ecosystems.	Manage northern hardwood ecosystems to promote mid-tolerant tree species (Red Oak, Yellow Birch, Ash, and White Pine) and restore long-lived conifers.	Tributaries & Watersheds	1.1
	Maintain and promote large standing and down dead trees for cavity nesters and other wildlife and fish species.		
Achieve and maintain young forest habitats.	Regenerate Aspen, Paper Birch, and Jack Pine where these stands are at risk of transitioning to later successional forest types.	Tributaries & Watersheds	1.3
Protect water quality in the region’s streams.	Inventory and repair eroding trails and recreation sites near waterbodies.	Tributaries & Watersheds	1.4
	Develop a wilderness designation for Outstanding Water Resources Areas.		1.6
Increase people's awareness of, and challenges to, conserving critical aspects of Lake Superior’s biodiversity, including cold water tributaries and old growth habitats.	Support the outreach and education efforts in Isle Royale National Park.	Tributaries & Watersheds	1.8
Restore wetland habitats that have been hydrologically altered by trails.	Inventory, assess, and remove/restore trails from wetlands where the hydrology and wetland function have been impaired.	Tributaries & Watersheds	1.3
Manage openings to provide habitats of biological significance and promote existing pollinator habitat as well as restore/enhance areas for pollinators.	Inventory, assess, and restore natural openings to native plant species.	Multiple	1.10
Lakewide Strategy 2: Manage plants and animals in a manner that ensures diverse, healthy, and self-sustaining populations.			
<i>Common Actions For All Regional Plans</i> Review lists of regional species of conservation concern and identify gaps in monitoring, planning, and related conservation actions.		Multiple	2.7
Continue assessment of the inshore fish community.	Continue the work being conducted by researchers on Lake Trout morphotypes and habitat preferences.	Embayments & Inshore	2.4

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
Restore and protect self-sustaining Coaster Brook Trout populations.	Determine the highest quality cold water habitats and prioritize projects to protect and connect habitats, principally Siskiwit Bay.	Tributaries & Watersheds	2.4
	Continue assessment and research of Coaster Brook Trout populations in harbors, embayments, and tributaries.	Multiple	2.7
Restore and protect self-sustaining Lake Whitefish populations in as many of the original, native habitats as is practical, with emphasis in priority areas.	Conduct annual survey(s) to determine Lake Whitefish population status and trends.	Nearshore	2.7
Protect sensitive reptiles and amphibians, particularly Boreal Chorus Frogs and Mudpuppies.	Document the presence of sensitive herptofauna and prioritize protection for specific habitat types.	Tributaries & Watersheds	2.7
	Increase usage of the Michigan Herp Atlas to document locations of sensitive herptofauna and native species.		
	Conduct pre- and post-assessment of Mudpuppy populations to determine viability and the effects of TFM (piscicide) use to reduce Sea Lamprey populations.		
Protect self-sustaining turtle populations in the region.	Conduct surveys to determine if turtles are vulnerable at road-stream crossings.	Tributaries & Watersheds	2.7
	Evaluate the impact of subsidized mesopredators (e.g., Raccoons and Skunks) on turtle nest predation.		2.3
Protect self-sustaining Moose populations in the region.	Manage habitat to provide food sources and adequate cover for Moose in the face of a changing climate.	Tributaries & Watersheds	2.4
Increase people's awareness of, and challenges to, conserving Lake Superior's biodiversity, including the Common Loon, Gray Wolf, Piping Plover, and threatened plant species.	Develop signs to post at boat landings and education materials to inform users of best practices to minimize disturbance.	Multiple	2.3
	Support and promote the elimination of the use of lead in tackle and ammunition.		

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
Lakewide Strategy 3: Reduce the impact of existing aquatic invasive species and prevent the introduction of new ones.			
<i>Common Actions For All Regional Plans</i> Control high priority infestations of aquatic species, including Sea Lamprey.		Multiple	3.2
Prevent the spread of high priority aquatic invasive species in the region.	Prevent the spread of aquatic invasive species from ballast water via outreach and education.	Nearshore	3.3
	Install boat wash stations at Lake Superior landings (e.g., Siskiwit Bay, Tobin Harbor).	Multiple	3.3
	Support the use of boat wash stations at high use landings at inland lakes.	Tributaries & Watersheds	3.3
	Inventory non-invaded lakes and initiate rapid response protocols when aquatic invasive species are detected.	Multiple	3.1
	Control high priority infestations (e.g., Spiny Water Flea, Curly Pondweed, and Rusty Crayfish).		
Lakewide Strategy 4: Adapt to climate change.			
<i>Common Actions For All Regional Plans</i> Incorporate climate change model projections and adaptive management measures into natural resource management plans.		Multiple	4.1
Conduct climate change vulnerability assessments for fisheries, herptofauna, priority habitats and species, and nearshore water quality.	Utilize existing forest ecosystem climate change vulnerability report recommendations in project planning.	Tributaries & Watersheds	4.1
Identify and evaluate probable climate change impacts on cold-water dependent aquatic species, especially Coaster Brook Trout.	Conduct intensive monitoring of high quality cold-water streams for climate change modeling and detection.	Tributaries & Watersheds	4.10

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
Implement adaptation actions to account for changes in variability and/or frequency in air and water temperatures, water levels, storm events, droughts, etc.	Replace inadequate road and stream crossings in vulnerable watersheds; ensure they can sustain at least a 100-year flow event.	Tributaries & Watersheds	4.2
Develop and implement a long term climate change monitoring strategy.	Identify and monitor priority stream gauge stations to track how discharge and temperature could be changing with respect to climate change.	Multiple	4.13
	Identify and monitor priority watersheds to measure nutrient and sediment loading.		4.13
Implement adaptive plant and forestry management practices that respond to climate change to minimize possible disturbances that impact Lake Superior.	Address Spruce decline and enhance riparian forest diversity and resiliency.	Multiple	4.3
Lakewide Strategy 5: Reduce the negative impacts of dams and barriers by increasing connectivity and natural hydrology between the lake and tributaries.			
Inventory, assess, and prioritize barrier removal projects to restore aquatic habitat connectivity and provide for self-sustaining native populations of aquatic organisms in the region.	Estimate risk of failure for infrastructure in present and future climates.	Multiple	5.1
	Prioritize infrastructure replacement projects and replace those with the best cost/benefit ratio.		
Lakewide Strategy 6: Address other existing and emerging threat that may impact important habitat or native plant and animal communities.			
Prevent the spread of high priority terrestrial invasive species in the region.	Control high priority infestations (e.g., Garlic Mustard, Common/Glossy Buckthorn, and 12 new invaders).	Multiple	6.8
Manage forest structure and composition to provide for healthy, resilient forests.	Monitor implementation and effectiveness of best management practices throughout the region.	Multiple	6.6
	Maintain tree vigor and diversity of species, age class, and patch size to promote resilient forests in the face of new threats (e.g., Emerald Ash Borer, Hemlock Woolly Adelgid, Oak Wilt).		

Regional Plan Development

Regional Plans are informed by a technical assessment, including maps of: 1. Coastal and Watershed Features; 2. Condition, and; 3. Important Habitat Sites. This information is available at: www.natureconservancy.ca/superiorbca .

The public and stakeholders who are connected to these areas provided input to the Next Steps in each Regional Plan. All input was considered and incorporated whenever possible and when relevant to a lakewide biodiversity conservation targets and threats. To contribute an update to this Regional Plan, please contact superiorplans@glncpo.net.

Existing Plans

There is a strong ongoing history of action to restore and protect Lake Superior's extraordinary biodiversity. Actions are already occurring at all scales, from national programs to individual efforts. Some important habitats currently have a conservation designation with a corresponding management strategy. Active supervision of these areas is essential to sustaining biodiversity. Other existing plans relevant to conserving habitats and species in this region should continue to be implemented, including but not limited to:

- A Basin-wide Fish Habitat Strategic Plan for the Great Lakes
- Great Lakes Fishery Commission – A Brook Trout rehabilitation plan for Lake Superior
- Great Lakes Fishery Commission – A Lake Trout restoration plan for Lake Superior
- Great Lakes Fishery Commission – Fish-community objectives for Lake Superior
- Lake Superior Aquatic Invasive Species Complete Prevention Plan
- Lake Superior Climate Adaptation, Mitigation, and Implementation Plan
- Lake Superior Climate Change Adaptation Plan
- Michigan Aquatic Invasive Species State Management Plan
- Michigan Climate Action Plan
- Michigan DNR Invasive Species Strategy
- Michigan DNR Fisheries Strategic Plan
- Michigan Forest Action Plan and State Forest Management Plans
- Michigan Great Lakes Plan
- Michigan Wildlife Action Plan
- National Fish, Wildlife, and Plants Climate Adaptation Strategy