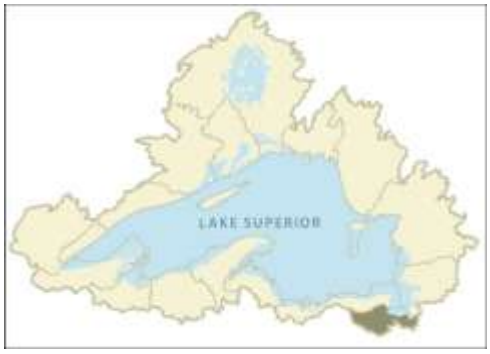
Tahquamenon, Waiska, and St. Marys Regional Plan

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@glnpo.net

19. Tahquamenon, Waiska, and St. Marys

The Tahquamenon, Waiska[1], and St. Marys region extends from Emerson to Sault Ste. Marie and the Michigan/Ontario border at the St. Marys River. The Bay Mills Indian Community is part of this regional unit. The reservation of the Sault Tribe of Chippewa Indians is also located in this regional unit. The watersheds are dominated by forest cover. Coastal habitats include sand beaches and coastal wetlands with scattered rocky shores. Coastal wetlands are found in over 53% of the coastal zone in this regional unit.



The region contains important habitat sites for Lake Trout and Lake Whitefish. Whitefish Bay is important embayment habitat for Lake Sturgeon. There are extensive coastal wetlands in Whitefish Bay and at the mouth of the St. Marys River. Tahquamenon Falls State Park and the Hiawatha National Forest are part of this regional unit. Tahquamenon Bay contains rare plant and animal habitat. The St. Marys River is an important fish spawning area. At least 65 species and communities of conservation concern have been documented in this regional unit, including Cisco and Spoonhead Sculpin.[2,3]

[1]Waiska River and Bay, also known as Waishkey River and Bay, were originally named after an Ojibwe chief who signed several treaties on behalf of his band. His name was recorded on these documents variously as 'Wayishkey' and 'Wayishkee'. The descendants of this chief are still present in Bay Mills area and spell their name 'Waishkey'.

[2]Data 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.

[3]For 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.

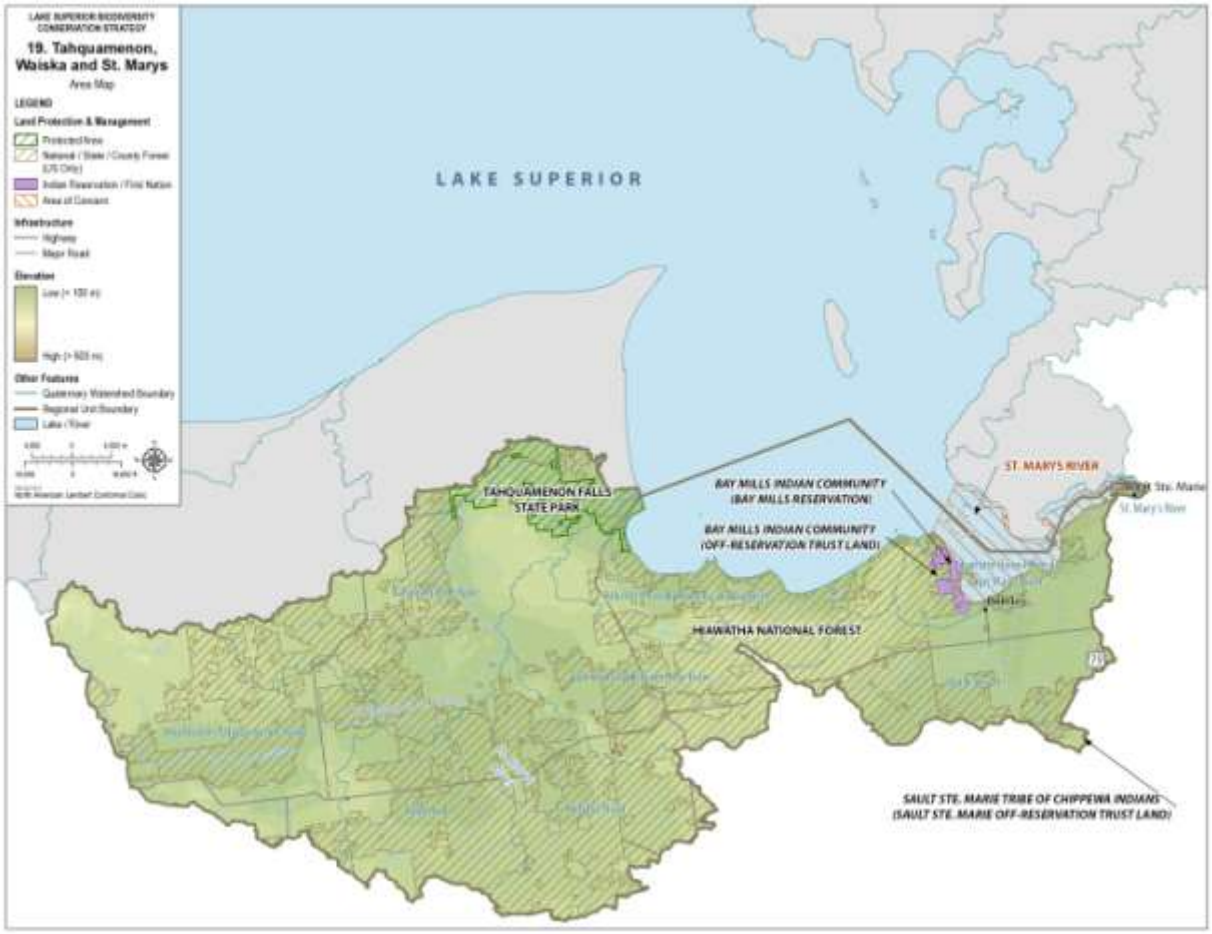
Report Card[4]		**Overall Grade: B-**
Conservation Target	***Grade***	***Conservation Target Notes***
Nearshore	C	The region is adversely affected by invasive species, sedimentation, and warming water temperatures.
Embayments & Inshore	C	Whitefish Bay is important for Lake Sturgeon. The region is adversely impacted by invasive species, sediment loading, and warming water temperatures.
Islands	A	
Coastal Wetlands	C	There are extensive coastal wetlands at Whitefish Bay and the mouth of the St. Marys River. The region is impacted by development and shoreline hardening.
Coastal Terrestrial	A	Almost 94% of this zone is natural cover.
Tributaries & Watersheds	C	The Tahquamenon River is a historical spawning tributary for Lake Sturgeon. The region is impacted by tributary dams, invasive species, and sedimentation.

Overview of Conservation Opportunities

The region is impacted by terrestrial invasive species and forest fragmentation. Additional protection of intact pieces of forest could reduce the impact of forest fragmentation. The St. Marys River Area of Concern and the Cannelton Industries Inc. Superfund site impact the region with point source pollution and contaminated sediments. An assessment of the extent of invasive species and improved education efforts would benefit the region.

[4]Report 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, to 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.**			
Common Actions For All Regional Plans 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, manage, or restore sensitive habitat for Lake Trout.	Nearshore	1.1
	Protect, manage, or restore sensitive habitat for Lake Whitefish.		
	Protect the integrity of the Lake Superior coast.	Coastal Terrestrial	1.1
	Protect the integrity and connectivity of the region's extensive coastal wetlands, particularly in the region of Whitefish Bay and the mouth of the St. Marys River.	Coastal Wetlands	1.1
Protect the habitats of biological significance with special consideration of important fish spawning sites in the tributaries.	Identify and protect important fish spawning habitats.	Tributaries & Watersheds	1.1
Restore habitats of biological significance for Lake Sturgeon.	Restore coastal wetlands, where feasible, near Whitefish Bay.	Coastal Wetlands	1.1
Protect the sensitive habitats of the Tahquamenon River watershed.	Inventory, monitor, and protect the rare plants and animals and their habitat.	Multiple	1.6

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
Protect the habitats of biological significance.	Protect and restore habitats by planting/favoring long-lived conifer and adding large woody material to streams.	Tributaries & Watersheds	1.1
Protect the habitats of biological significance with special consideration given to Jack Pine habitats.	Support and manage habitats for the Kirtland's Warbler.	Tributaries & Watersheds	1.2
Protect water quality in the tributaries of the Tahquamenon River and Waiska River.	Decommission unnecessary roads.	Tributaries & Watersheds	1.4
	Monitor water quality in tributaries that may be affected by mining activities.	Multiple	
	Inventory and repair eroding roads, trails, landings, and recreation sites near waterbodies.	Tributaries & Watersheds	
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.		1.3
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
Increase people's awareness of, and challenges to, conserving critical aspects of Lake Superior's biodiversity, including cold water tributaries, barrens, and old growth habitats.	Support the outreach and education efforts in Tahquamenon Falls State Park and Hiawatha National Forest.	Tributaries & Watersheds	1.8
Restore wetland habitats that have been hydrologically altered by roads, railroads or trails.	Inventory, assess, and remove/restore roads, trails, railroads from wetlands where the hydrology and wetland function have been impaired.	Tributaries & Watersheds	1.3
Manage natural 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
Protect and preserve critical dune habitat from erosion.	Inventory, assess, and develop management plans to address threats.	Coastal Terrestrial	1.1

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
Lakewide Strategy 2: **Manage plants and animals in a manner that ensures diverse, healthy, and self-sustaining populations.**			
Common Actions For All Regional Plans Review lists of regional species of conservation concern and identify gaps in monitoring, planning, and related conservation actions.		Multiple	2.7
Restore the inshore fish community.	Conduct an assessment of the inshore fish community.	Embayments & Inshore	2.4
Achieve and maintain genetically diverse self-sustaining populations of Lake Trout that are similar to those found in the lake prior to 1940.	Identify any new potential Lake Trout restoration or protection actions in the region.	Nearshore	2.4
	Conduct annual survey(s) to determine Lake Trout population status and trends.		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
Restore and protect self-sustaining Lake Sturgeon populations in each tributary where they historically used to spawn (i.e., minimum 1500 adults), particularly the Tahquamenon River.	Identify and take the actions necessary to rehabilitate Lake Sturgeon in the region.	Tributaries & Watersheds	2.4
Restore and protect self-sustaining fish populations within tributaries of the Tahquamenon and Waiska Rivers.	Determine the highest quality cold water habitats and prioritize projects to protect and connect habitats.	Tributaries & Watersheds	2.4
Protect sensitive reptiles and amphibians, particularly Wood Turtles, Blanding's Turtles, Mudpuppies, Eastern Newts, Mink Frogs, Smooth Green Snakes, and Ring-Necked Snakes.	Document the presence of sensitive herptofauna and prioritize protection of specific habitat types, particularly in the region of the Tahquamenon River.	Multiple	2.7
	Maintain large upland openings where sensitive snake populations exist.		
	Determine where turtles are most vulnerable at road-stream crossings and install protective devices.		
	Evaluate the impact of subsidized mesopredators (e.g., Raccoons and Skunks) on turtle nest predation.		2.3

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
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
	Manage Deer densities at a level compatible with viable Moose populations.		
Increase people's awareness of, and challenges to, conserving Lake Superior's biodiversity, including the State Threatened Common Loon.	Develop signs to post at boat landings and education materials to inform water craft users of best practices to minimize disturbance.	Tributaries & Watersheds	2.4
	Support and promote the elimination of the use of lead in tackle and ammunition.		
Lakewide Strategy 3: **Reduce the impact of existing aquatic invasive species and prevent the introduction of new ones.**			
Common Actions For All Regional Plans Control high priority infestations of aquatic invasive species, including continued control of Sea Lamprey.		Multiple	3.2
Prevent the spread of high priority aquatic invasive species in the region.	Support the region's aquatic invasive species prevention groups.	Tributaries & Watersheds	3.11
	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 and other "super-spreader" lakes.	Tributaries & Watersheds	3.3
	Support the use of boat wash stations at high use landings and events (e.g., fishing tournaments) at other inland lakes.		
	Inventory non-invaded lakes and initiate rapid response protocols when aquatic invasive species are detected.	Multiple	3.1
	Control high priority infestations (e.g., Eurasian Watermilfoil, Curly Pondweed, and Rusty Crayfish).		

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
Lakewide Strategy 4: **Adapt to climate change**.			
Common Actions For All Regional Plans 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 Brook Trout and Mudpuppies.	Conduct intensive monitoring of high quality cold-water streams for climate change modeling and detection.	Tributaries & Watersheds	4.10
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 at priority stream gauge stations to track how discharge and temperature could be changing with respect to climate change.	Multiple	4.13
	Identify and monitor at priority watersheds to measure nutrient and sediment loading.		
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.	Tributaries & Watersheds	4.3

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
Lakewide Strategy 5: **Reduce the negative impacts of dams and barriers by increasing connectivity and natural hydrology between the lake and tributaries.**			
Common Actions For All Regional Plans Address barriers to fish passage created by dams, hydroelectric generation, or misplaced or wrong sized culverts. Maintain flows and water levels on managed streams, rivers and lakes that emulate natural conditions (i.e., magnitude, duration, timing, and pattern).		Tributaries & Watersheds	5.2
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.	Map unmapped roads in the Tahquamenon River and Waiska River watersheds.	Tributaries & Watersheds	5.1
	Develop a map of subwatersheds to display watershed ratings of infrastructure vulnerability.		
	Inventory road/stream crossings in watersheds with a high and very high infrastructure vulnerability rating.		
	Estimate risk of failure for infrastructure in present and future climates.		
	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.**			
Promote best management practices and consideration of important habitat areas and species in the region during environmental assessment and regulatory processes for mining and related activities.	Incorporate consideration of Lake Superior Biodiversity Conservations Strategy goals into mining related reviews within the region.	Tributaries & Watersheds	6.1
Prevent the spread of high priority terrestrial invasive species in the region.	Support the region's Cooperative Weed Management Area, Eastern Upper Peninsula.	Tributaries & Watersheds	6.8

Regional Objective	Next Step	Conservation Target	Primary Lakewide Strategy
	Control high priority infestations throughout the region (e.g., Garlic Mustard, Japanese Barberry, Bell's/Morrow's/Tartarian Honeysuckle, Purple Loosestrife, Common/Glossy Buckthorn, and 12 new invaders).		
Manage forest structure and composition to provide for healthy, resilient forests.	Practice sustainable forestry using best management practices to protect soil and water resources.	Tributaries & Watersheds	6.6
	Monitor implementation and effectiveness of best management practices across land ownerships throughout the region.		
	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 Wooly 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. Oversight was provided by a Steering Committee from the Lake Superior Binational Program. 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@glnpo.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
- Bay Mills Indian Community Conservation Plan
- Bay Mills Indian Community Invasive Species Management Plan
- Bay Mills Indian Wetland Management and Protection Plan
- Great Lakes Fishery Commission – A Brook Trout rehabilitation plan for Lake Superior
- Great Lakes Fishery Commission – A Lake Sturgeon 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
- Kirtland's Warbler Recovery Plan
- 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 Fisheries Strategic Plan
- Michigan DNR Invasive Species Strategy
- 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