

12. St. Louis and Cloquet

HEALTHY WATERS REPORT CARD

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

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>



Clough Island is located in the St. Louis River Estuary – one of the largest estuaries in the Great Lakes. Clough Island was protected by The Nature Conservancy, the Wisconsin Department of Natural Resources (WDNR) and the U.S. Fish and Wildlife Service in 2010. As of 2011 the WDNR owns and manages Clough Island.

Summary/ Description

The St. Louis and Cloquet region includes the westernmost portion of the Lake Superior watershed.

The St. Louis and Cloquet regional unit is 8,677 km² in size, including the associated nearshore waters. This region encompasses only a small portion of the Lake Superior shoreline, the Duluth-Superior harbour from Duluth, Minnesota to Superior, Wisconsin. However, the region extends inland to the north and to the west, into Minnesota, and includes the communities of Hoyt Lakes, Virginia, Hibbing, Floodwood and Cloquet. The Fond du Lac Indian Reservation is located in this regional unit and the Fond du Lac Band of Lake Superior Chippewa is a significant landholder in the regional unit. The St. Louis and Cloquet regional unit is part of the territory ceded in the Treaties of 1842 and 1854. The signatory tribes retain rights to hunt, fish, and gather within the regional unit (A. McCammon Soltis, pers. comm., January 5 2015).

The St. Louis River is the largest U.S. tributary and the second largest tributary to Lake Superior (Minnesota PCA 2012c). The St. Louis River is a very biologically productive area and becomes an estuary in its lower reaches. The Cloquet and Whiteface rivers are the main tributaries. This regional unit contains both highly developed areas, as well as high quality areas. The St. Louis and Cloquet regional unit combines two tertiary (HUC 8) watersheds, St. Louis and Cloquet, and contains 22 quaternary (HUC 10) watersheds. The watersheds of this region are dominated by forests, but the coastal areas have the highest amount of developed land and artificial shoreline in Lake Superior.

TABLE 12.1: St. Louis and Cloquet BY THE NUMBERS

Land and Water Cover	Region (km²)	Region %	Lake Superior Total (km²)	Notes
<i>Agriculture</i>	178.45	1.84	1,441.07	
<i>Developed</i>	237.85	2.45	389.55	
<i>Forest</i>	8,038.85	82.70	107,747.13	
<i>Associated Nearshore Waters</i>	88.83	0.91	17,868.03	
<i>Other</i>	979.77	10.08	8,227.57	
<i>Water (inland)</i>	196.60	2.02	9,473.05	
Total Area	9,720.34	100	145,146.40	
Coastal Features	Region	Region %	% of Lake Superior Total for Coastal Feature	
<i>Coastline (km)</i>	88.65	NA	1.52	Based on SOLEC shoreline
<i>Sand Beaches (km)</i>	8.94	10.08	1.39*	*% of Lake Superior Total Sand Beaches
<i>Coastal Wetlands (km²)</i>	30.95	20.22*	2.81**	*% of Regional Coastal Area ** % of Lake Superior Total Coastal Wetlands
<i>Natural Cover in Coastal Zone</i>	73.02	47.69*	1.18**	*% of Regional Coastal Area ** % of Lake Superior Total Natural Cover in Coastal Area
<i>Number of Islands</i>	2*	NA	0	*Based on (Henson et al. 2010). Additional islands may be present in the regional unit
Condition	Region	Region %	% of Lake Superior Total	
<i>Population Density (persons/km²)</i>	15.83	NA		
<i>Road Density (km/km²)</i>	0.69	NA		
<i>Number of Dams and Barriers</i>	2478	NA	10.5	
<i>Artificial Shoreline (km)</i>	45.88	51.75	20.13	
Land Ownership & Protection	Region (km²)	Region %	Regional Area (km²)	
<i>Private</i>	5,986.48	62.16	9,631.51	Regional area based on landmass
<i>Public/Crown</i>	3,181.32	33.03	9,631.51	
<i>Tribes/ First Nations</i>	344.46	3.58	9,631.51	
<i>Parks & Protected Areas (total)</i>	119.25	1.24	9,631.51	
<i>Parks & Protected Areas (coast)</i>	4.76	3.11*	153.11**	*% of Regional Coastal Area **Regional Coastal Area (km ²)

IMPORTANT BIODIVERSITY FEATURES

Nearshore and Inshore Waters

- St. Louis Bay is noted as a Lake Superior embayment important for Lake Sturgeon (Auer 2003).
- North Bay is a proposed site for the Duluth Natural Areas Program (DNAP). North Bay is also located within a Minnesota Biological Survey Site of Outstanding Biodiversity Significance (B. Carlson, pers. comm., March 20 2013).
- Rask Bay is within a Minnesota Biological Survey Site of Outstanding Biodiversity Significance (B. Carlson, pers. comm., March 20 2013).

Coastal Zone and Islands

- The 12,000 acre St. Louis River Estuary wetland complex is one of the largest estuarine wetland complexes in the Lake Superior Basin. Areas described as wilderness-like are still found in the upper estuary (U.S. EPA 2013c), and the estuary shoreline is a mix of forest, wetlands and industry (Minnesota DNR 2012b).
- The estuary provides critical habitat for a number of migrating and breeding birds; up to 230 different species have been observed in the area (Allen 2013). Included in the 115 known species of breeding birds are common terns, which are listed as endangered in Wisconsin and threatened in Minnesota (Allen 2013). Nearly two-thirds of the entire Lake Superior basin population of common terns have nested in the estuary in recent years (Allen 2013).
- In total, 45 species of native fish have been documented in the estuary, and it is an important area for migratory fish species that spawn upstream of Lake Superior (Allen 2013). A number of other species, including Wolf, Black Bear, Bobcat, Mink, Beaver and River Otter all use the estuary habitat (TNC No date a).
- Spirit Island and Clough Island are key islands for biodiversity.
- The Wisconsin Department of Natural Resources (WDNR) has identified primary coastal wetlands deemed to be ecologically significant coastal wetlands. Several of these Lake Superior ecologically significant coastal wetlands are located in the St. Louis and Cloquet regional unit, including S-01 Red River Breaks – St. Louis River Marshes, S-02 Oliver Marsh, S-03 Superior Municipal Forest and S-04 Pokegama Carnegie Wetlands (WDNR 2012c). A complete list of the Lake Superior ecologically significant wetlands and their specific site attributes is available on the WDNR website (WDNR 2012c, 2012d).

Tributaries and Watersheds

- The St. Louis River is 195 miles (314 kilometres) long and its watershed drains nearly 3,600 square miles (9,300 square kilometres) (Minnesota PCA 2012b). The upper St. Louis River watershed is largely remote and forested, with bluffs and wooded hills (Minnesota DNR 2012a). The Fond du Lac Dam is 21 miles (34 kilometres) upstream of Lake Superior; at the dam there is a marked difference in hydrologic variables between upstream and downstream segments of the river. For this reason agencies like the Minnesota Pollution Control Agency (Minnesota PCA) address the two segments separately (Minnesota PCA 2012b).
- Historically 21 tributaries in Lake Superior had Lake Sturgeon spawning runs. One of these historical spawning tributaries, the St. Louis River, is in the St. Louis regional unit. The Lake Sturgeon population status in the St. Louis River is reintroduced and the population trajectory is unknown (Golder Associates Ltd. 2011). Natural reproduction of Lake Sturgeon in the St. Louis River following

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28 years of stocking was first documented in 2011 (W. Blust, pers. comm., March 6 2013). The St. Louis River is one of ten Lake Superior tributaries with recent evidence of natural reproduction (as of 2012). This is the same number of rivers as in 2005, however the specific tributaries have changed (Lake Superior Lake Sturgeon Work Group 2012, unpublished data).

- A Lake Sturgeon Rehabilitation Plan for Lake Superior (Auer 2003) identifies the St. Louis River as one of the seventeen tributaries to Lake Superior in which there should be a focus on Lake Sturgeon rehabilitation.
- The Cloquet River is a main tributary of the St. Louis River. It flows approximately 100 miles (161 kilometres) from Cloquet Lake to the St. Louis River, and it is relatively undeveloped, especially in the upper reaches (Minnesota PCA 2012b). Above Island Lake are areas classified as both primitive and as natural areas in the St. Louis River Management Plan. This plan also notes the river's exceptional recreational and scenic value (Minnesota PCA 2011a). Farmland, recreational homes and hydro power uses are found in the lower part of the river, but there are no large towns or cities along the river (Minnesota PCA 2011a, Minnesota DNR 2013a). A number of common game fish are found in the Cloquet River, and a small number of Brook Trout are found in the far upper reaches. Wildlife species found in this area include timber wolves, bobcats, Canadian Lynx, Moose, Black Bears and Bald Eagles (Minnesota DNR 2013a). Lakes are prominent features of the landscape in the Cloquet portion of the region, unlike most areas of the Lake Superior basin, which tend to be poorly drained or consist of rivers draining elevated terrain (Minnesota PCA 2011a).
- The Whiteface River is another main tributary of the St. Louis River. It flows 80 miles (129 kilometres) from the Whiteface Reservoir to the St. Louis River (Minnesota PCA 2012b). The federal government owns much of the land in the headwaters of the St. Louis, Cloquet and Whiteface rivers, while land ownership varies in other sections of each river (Minnesota PCA 2012b).
- The St. Louis/Red River Breaks Streambank Protection Area includes 6,500 acres of land owned by the Wisconsin Department of Natural Resources. This area is characterized by steep, branching ravines which flow into the Red River and St. Louis River, and is protected to protect water quality (WDNR 2012b, R. O'Connor, pers. comm., March 15 2013).
- The red clay plain near Superior, Wisconsin is the location of more than a dozen rare plant species, including some that are found nowhere else in Wisconsin (R. O'Connor, pers. comm., March 15 2013).

Figure 12.1: St. Louis and Cloquet - Coastal and Watershed Features

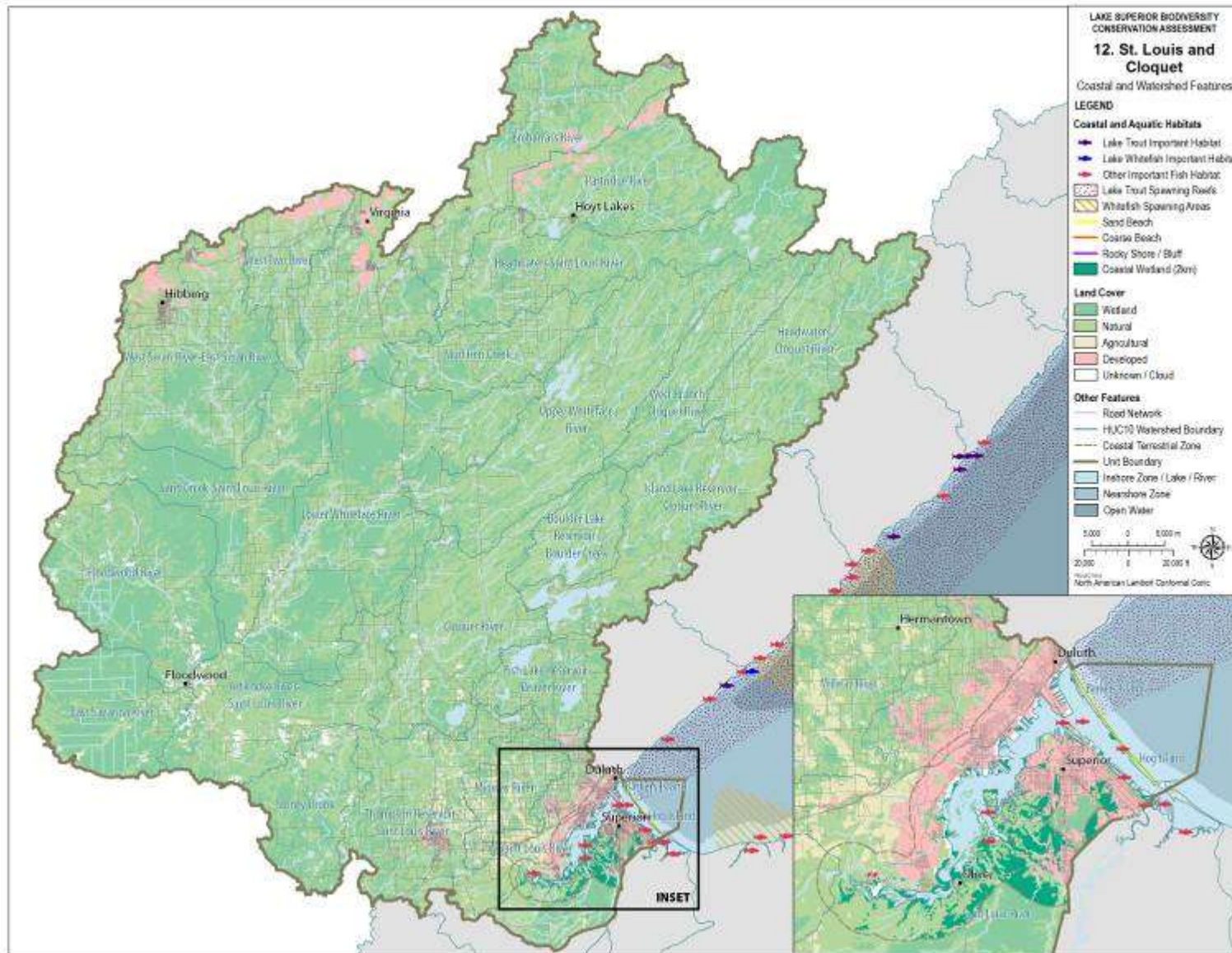


TABLE 12.2: St. Louis and Cloquet CONDITION AND TRENDS

Target (Data Source)	Condition	Trends
Offshore ¹	NA	
Nearshore ¹	D (0.03)	
Embayments and Inshore ^{1,2}	D (0.20)	
Coastal Wetlands ^{2,3}	D (0.300)	Local experts believe a condition score of C may be accurate for coastal wetlands in this regional unit. Several high quality wetlands help to provide some balance for those that are severely degraded (C. Hagen et al., pers. comm., March 20 2013). An estimated 7,700 acres of wetland and open water habitat have been lost from the estuary (U.S. EPA 2013c).
Islands ⁴	A	Local experts believe a condition score of B may be accurate for islands in this regional unit. Many islands have invasive species; if left unmanaged these invasive species will degrade island biodiversity (C. Hagen et al., pers. comm., March 20 2013).
Coastal Terrestrial ³	C (0.500)	
Tributaries and Watersheds ²	D (0.37)	Natural reproduction of Lake Sturgeon in the St. Louis River following 28 years of stocking was first documented in 2011. The Lake Sturgeon population had been extirpated due to pollution and overfishing (W. Blust, pers. comm., March 6 2013).

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)

IMPORTANT ISSUES & THREATS

- The St. Louis River Area of Concern (AOC) is located in three regional units, including the St. Louis and Cloquet regional unit. The St. Louis River has faced issues of habitat loss and degradation, and pollution and contamination, especially in its lower reaches. The lower 39 miles (63 kilometres) of the St. Louis River are the main focus of the St. Louis River Remedial Action Plan (RAP) (U.S. EPA 2013c) and are designated as a Lake Superior Area of Concern (AOC). The St. Louis River Expanded Study Area encompasses the entire St. Louis and Cloquet regional unit. Nine beneficial use impairments were identified in the St. Louis River AOC (U.S. EPA 2013c).
- The lower St. Louis River has long been used for transportation. Native Americans and early European explorers used the St. Louis River as a linkage between the Great Lakes and the Mississippi River system, by way of a 6 mile portage between the East Savannah River (near Floodwood, Minnesota) and the West Savannah River and the Mississippi River system (Minnesota DNR 2012b). Transportation continues to be a major part of the St. Louis River today, and Great Lakes freighters use the lower reaches as a shipping channel. The Duluth-Superior Harbor is at the end of the estuary, and is one of the busiest ports on the Great Lakes (Minnesota PCA 2012c).
- Major cities and industries are part of the landscape of the lower estuary, with urban development, an industrial harbour and a major port within this area (U.S. EPA 2013c). Dredging restrictions and containment actions in parts of the St. Louis River AOC, in place due to sediments containing elevated levels of toxic, bio-accumulative contaminants, have negative economic consequences, in addition to the negative environmental impacts of the contaminated sediments. Minnesota and Wisconsin are conducting sediment characterization and assessment projects in the St. Louis River AOC, to determine prioritization for areas requiring remediation and restoration (LSBP 2012).
- The ports of Two Harbors, Minnesota, Superior, Wisconsin-Duluth, Minnesota and Presque Isle-Marquette, Michigan have been identified as sites at high risk for invasion by aquatic invasive species, due to ballast water from laker traffic (Rup et al. 2010 as cited in International Joint Commission (IJC) Work Group on Aquatic Invasive Species Rapid Response 2011).
- Pollution and habitat degradation have caused significant impairments, specifically to the St. Louis AOC region. An estimated 7,700 acres of wetland and open water habitat have been lost from the estuary (U.S. EPA 2013c). The continued loss of habitat remains an issue for the St. Louis River (U.S. EPA No date). The loss of habitat in the St. Louis estuary over 100 years ago contributed to the extirpation of the stock of Lake Whitefish that spawned in this area (Horns et al. 2003). Work by the Great Lakes Environmental Indicators Project has found contamination from polycyclic aromatic hydrocarbons (PAHs) in the St. Louis River, and in other areas of industrial activity (LSBP 2008).
- Levels of mercury in fish tissue remain a cause for impairment in this region. Fish consumption advisories based on mercury and polychlorinated biphenyls (PCBs) are issued by both Minnesota and Wisconsin for Lake Superior and the St. Louis River (U.S. EPA No date). The levels of mercury and PCBs in fish tissues also exceed the levels established for the protection of aquatic life and fish eating birds (U.S. EPA No date).
- The Cloquet River Valley was extensively forested before widespread logging. Estimates put the amount of pine in the valley at eight billion board feet; by 1925 nearly all of the pine stands had been logged. Some small areas of mature white and red pine are still scattered amongst second-growth forests (Minnesota DNR 2013a). During times of extensive logging, loggers blasted away rock formations, curves, and logjams in the St. Louis River, to allow log drives to move freely downriver (Minnesota DNR 2012b). Logging and forest fragmentation continue to be primary stressors of the upper Cloquet River. Forest cover has been converted from the historic conifer forest to the present aspen-dominated forest cover. Efforts to restore the forest to its original composition are underway (C. Hagen et al., pers. comm., March 20 2013).

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- Forest fragmentation as a result of housing development is an emerging concern in Minnesota. The forest that is present lacks much of its natural conifer component (E. Perry, pers. comm., February 26 2013).
- Invasive species including but not limited to zebra mussels, round goby, rusty crayfish and purple loosestrife are found in the lower St. Louis River, including on Clough Island (Minnesota DNR 2012b, TNC No date a). Competition from invasive species is a threat to the region (U.S. EPA 2013e). Purple loosestrife in wetlands in the lower estuary in Minnesota and Wisconsin is being subjected to bio-control as a management measure (U.S. EPA 2013c).
- Due to the proximity of the headwaters to the Mesabi Iron range, there is intensive mining (e.g. US Steel-Minntac Mine. In addition to mines in current operation, there are additional proposed mines (e.g. PolyMet-NorthMet Mine) (See Figure 3.4 Mining in Lake Superior Basin in Volume 1: Lakewide Assessment). Future threats to the region include those related to infrastructure transportation changes, including changes to roads, rail and shipping (C. Hagen et al., pers. comm., March 20 2013).
- The Arrowhead Refinery Co. Superfund Site is a 10 acre site located in Hermantown, Minnesota, in St. Louis County. The site is located within a white cedar wetland. The Arrowhead Refinery Co. reclaimed waste oil from 1945 to 1977. Waste sludge amounting to 7,000 cubic yards was disposed of on the property in an unlined 2 acre lagoon. The State of Minnesota found PCBs, phenols, cyanide, lead, barium, arsenic, cadmium, chromium and selenium contaminating the ground and surface water near the site (U.S. EPA 2012a ; U.S. EPA 2013f). The site has now been fully remediated and the MPCA and EPA will begin the process to delist the site from the National Priorities List (NPL) (U.S. EPA 2013f).
- The St. Louis River Superfund Site is two Superfund Sites, the St. Louis River/Interlake/Duluth Tar site (SLRIDT) and the U.S. Steel site. The SLRIDT site is 255 acres of land, river embayments, wetlands and shipping slips located on the St. Louis River, four miles upstream of Lake Superior. The U.S. Steel site is eight miles upstream from Lake Superior, on the St. Louis River. The U.S. Steel site consists of 500 acres of land and 200 acres of sediment. Both sites have been contaminated by past industrial operations and disposal activities, resulting in contamination of soil, groundwater and sediment. The U.S. Steel site 2008 Five Year Review noted that the migration of contaminants to the St. Louis River is occurring (U.S. EPA 2013g)

CONSERVATION IN ACTION

PARKS & PROTECTED AREAS

- Jay Cooke State Park
- Cloquet Valley State Forest
- Superior National Forest
- Boundary Waters Canoe Area Wilderness (within Superior National Forest)
- Savanna Portage State Park
- The Superior Municipal Forest is 4,400 acres and the third largest forest within a city in the United States (City of Superior No date a).
- Wisconsin Point is a 3 mile 229 acre area that combined with Minnesota Point (7 miles long) is the largest freshwater sandbar in the world (City of Superior No date b, City of Duluth 2013a).
- The St. Louis River Estuary has been named a National Estuarine Research Reserve (NERR). The Lake Superior National Estuarine Research Reserve includes estuarine wetlands and red clay bluffs which are steep and highly erodible, as well as Wisconsin Point, the largest freshwater bay mouth sand bar in the world (NERRS 2010).
- Two Wisconsin State Natural Areas and 11 Wisconsin Priority Wetlands are located in the boundaries of the Lake Superior NERR (NERRS 2010).

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- The Duluth Natural Areas Program permanently conserves the most ecologically significant lands owned by the City of Duluth and private landowners who have volunteered their lands for consideration (City of Duluth 2013b).
- Magney-Snively Forest (B. Carlson, pers. comm., March 20 2013).
- City of Duluth Mission Creek Forest (B. Carlson, pers. comm., March 20 2013).

EXISTING PROGRAMS & PROJECTS

- The U.S. EPA has developed a state of the art early detection design for invasive fish species, using the St. Louis River Estuary as a case study (G. Czapinski, pers. comm., March 20 2013).
- The U.S. Fish and Wildlife Service is undertaking early detection monitoring for new invasive fish species in the St. Louis River Estuary using the design developed by the U.S. EPA (G. Czapinski, pers. comm., March 20 2013).
- The 1854 Treaty Authority is conducting forage fish community monitoring in the St. Louis River Estuary and propagates and monitors wild rice in the treaty area, including the Cloquet River watershed. (G. Czapinski, pers. comm., March 20 2013).
- The Fond du Lac Band of Lake Superior Chippewa is a significant landholder in this regional unit (C. Hagen et al., pers. comm., March 20 2013).
- The St. Louis and Cloquet regional unit contains a number of areas identified as biologically important by the Lake Superior Binational Program Habitat Committee (2006) (Table 12.3, Figure 12.3).
- There are a number of Minnesota Biological Survey (MBS) Sites delineated in the Minnesota portion of the St. Louis and Cloquet regional unit, some of which have been ranked with Outstanding or High Biodiversity Significance, based on statewide ranking criteria. The Minnesota Department of Natural Resource's MBS systematically collects, interprets, and delivers data on the distribution and ecology of native plants, animals, native plant communities, and functional landscapes throughout the state. MBS conducts landscape assessments, field surveys and monitoring activities, and provides data and tools to guide conservation and management within *MBS Sites of Statewide Biodiversity Significance* (MBS Sites). Biodiversity information includes the location and biodiversity significance rank of MBS Sites, the location and status of rare species populations, the type and condition of native plant communities, and, for selected sites, *MBS Ecological Evaluation* reports (Minnesota DNR 2013e, B. Carlson, pers. comm., March 20 2013). The MBS Sites located within the St. Louis and Cloquet regional unit are Cloquet, Cloquet River, Headwaters and Mission Creek (L. Gerdes, pers. comm., March 18 2013).
- The WDNR has a Designated Waters designation for waterbodies with permit requirements. Designated Waters include Areas of Special Natural Resource Interest (ASNRI), Public Rights Features (PRF) and Priority Navigable Waters (PNW) (WDNR No date). These designations offer protection for various important waters, including Wild Rice Waters and Outstanding and Exceptional Resource Waters (C. Hagen et al., pers. comm., March 20 2013).
- The headwaters of the Stoney Brook watershed are located in the Fond du Lac Band reservation, and they are designated as Outstanding Reservation Reserve Waters (ORRWs) by the Fond du Lac Band (LSBP 2008, N. Schudlt, pers. comm., March 19 2013).
- The Outstanding Reservation Reserve Waters designated by the Fond du Lac Band include the Band's wild rice waters. The designation comes from the Fond du Lac Band's promulgation of water quality standards and antidegradation procedures (N. Schudlt, pers. comm., March 19 2013).
- The St. Louis River Alliance started as a Citizens Advisory Committee, and helped develop the Remedial Action Plan (RAP) for the St. Louis River AOC. The group contributes volunteer hours

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towards river clean-up, macroinvertebrate monitoring, and invasive species removal. The Lower St. Louis River Habitat Plan was created by the St. Louis River Alliance, along with city, county, state and federal groups. The plan is used to protect, enhance and restore the river (U.S. EPA 2013c).

- The Duluth Natural Areas Program (DNAP) identifies and conserves ecologically significant city-owned lands, as well as private lands which are voluntarily identified with the support and consent of the landowner. Nominated properties are reviewed by city government and the eligibility of the property is determined by scientific criteria and the development of a management plan (City of Duluth 2013).
- A number of projects involving multiple agencies have resulted in the purchase and protection of lands in this region. The Wisconsin Department of Natural Resources' St. Louis River Streambank Protection Project purchased 6,900 acres along the St. Louis River, the Red River, and the main tributaries of the Red River. Another 22,000 acres were acquired along the St. Louis, Cloquet and Whiteface rivers by the St. Louis River Board, and were then transferred to the Minnesota Department of Natural Resources (U.S. EPA 2013c).
- In 2010 The Nature Conservancy acquired the 358 acre Clough Island, the largest island in the St. Louis River Estuary, in order to preserve critical habitat for migratory and breeding birds and fish (Allen 2013; TNC 2010). The acquisition of Clough Island was aided by WDNR Stewardship Funding, and the US Fish and Wildlife Service. The WDNR became the owner of Clough Island in 2011 (C. Hagen et al., pers. comm., March 20 2013). A recent grant to initiate restoration work on Clough Island included funding for invasive species control and the planting of thousands of conifer trees (R. O'Connor, pers. comm., March 15 2013).
- Reintroduction of Lake Sturgeon to the estuary has been undertaken by the Minnesota Department of Natural Resources and the Wisconsin Department of Natural Resources (TNC 2010).
- The University of Wisconsin-Extension has been designated by the State of Wisconsin as the lead state agency for the Lake Superior NERR, and has led the development of a five year management plan (University of Wisconsin-Extension 2010). Wisconsin's Wildlife Action Plan identified the St. Louis River Freshwater Estuary complex and the associated wetland and boreal forests as areas of continental significance (NERRS 2010).
- Wisconsin's Wildlife Action Plan identified a number of Conservation Opportunity Areas for Wildlife Species of Greatest Conservation Need. In the Superior Coastal Plain Ecological Landscape several areas of State, Continental and Global Significance were identified, including some in the St. Louis and Cloquet regional unit (WDNR 2008a, 2008b, 2008c).
- Large tracts of land in the Cloquet River Watershed portion of this region are owned by Minnesota Power. The Boulder Lake Environmental Learning Center is sponsored by Minnesota Power and provides programming for recreational users of the 18,000 acre Boulder Lake Management Area and Cloquet River (Minnesota PCA 2011a). Many other organizations work within the Cloquet River Watershed, including the Friends of the Cloquet Valley State Forest (Minnesota PCA 2011a).
- The Wisconsin Wetlands Association has identified a set of representative high quality wetlands in different regions of Wisconsin. These are referred to as Wetland Gems, and were identified by building on existing conservation planning efforts (Wisconsin Wetlands Association No date a). Several Wetland Gems are in the Superior Region, including some in the St. Louis and Cloquet regional unit (Wisconsin Wetlands Association No date b).
- The Sax-Zim Bog is a 98,657 hectare (243,786 acre) State Important Bird Area (IBA) located within the St. Louis and Cloquet regional unit (National Audubon Society 2013, 2012). This IBA is a known wintering area for hawks and owls, and also provides habitat for over 240 species of migrant and breeding birds (Minnesota DNR 2013d).

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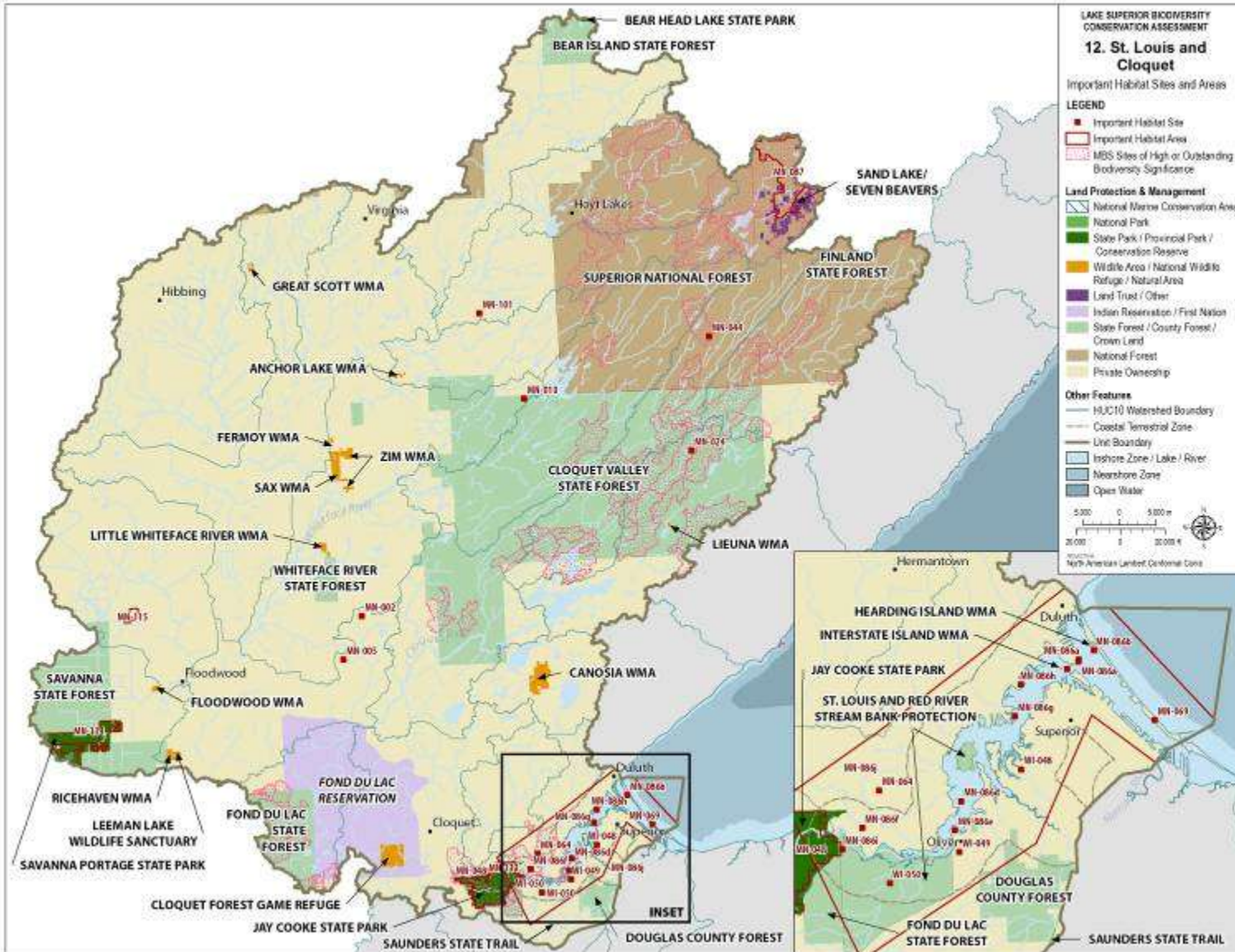
- Wisconsin Point is another State Important Bird Area in the St. Louis and Cloquet regional unit; this site is 77% open water (National Audubon Society 2013, 2012). The City of Superior and partners have developed a plan for Wisconsin Point (C. Hagen et al., pers. comm., March 20 2013).
- Many other diverse programs and projects focus on parts of the St. Louis and Cloquet regional unit and 34 Citizen-based Groups are noted to do work in the St. Louis- Cloquet regional unit (U.S. EPA 2013h, 2013i). A number of other projects, undertaken by the Minnesota Pollution Control Agency and partner organizations are completed, in progress, or scheduled to start; these include the St. Louis River Citizens River Watch, the Cloquet River Major Watershed WRAP Strategy and the Mercury Pollutant Reduction Plan. The St. Louis River Trail Association promotes recreational opportunities based on good environmental stewardship, and non-motorized hiking along a natural surface trail they aim to build and maintain along the St. Louis River in Northern Minnesota (SLRT 2012). The City of Duluth and the University of Minnesota – Duluth collaborated on an urban stream awareness project, designed to increase public understanding of and demonstrate the importance of aquatic ecosystems (Minnesota PCA 2012c). Other initiatives include the Sand Lake-Seven Beavers Forest Collaborative and St. Louis County Cooperative Weed Management Area (B. Carlson, pers. comm., March 20 2013).
- The Minnesota Department of Natural Resources is undertaking a spawning habitat enhancement and shoreline restoration project at Chambers Grove, in the St. Louis River estuary. By removing 800 feet of hardened shoreline, a critical spawning area for Lake Sturgeon, Walleye, and Smallmouth Bass will be restored to viable spawning habitat. The natural function of the shoreline will also be restored. The project is funded through NOAA Fisheries, with funds from the Great Lakes Restoration Initiative (National Oceanic and Atmospheric Administration No date).

TABLE 12.3: St. Louis and Cloquet IMPORTANT HABITAT SITES AND AREAS

<i>Code</i>	<i>Site/ Area</i>	<i>Important Habitat Site/Area Name</i>	<i>Key Features</i>
MN-002	Site	Alborn Fen	Poor Fen, sedge subtype, rare plant habitat
MN-005	Site	Arlberg Bog	Rare plant habitat
MN-010	Site	Blackfoot Lake Peatland	Poor Fen, Sedge subtype, rare plant habitat
MN-024	Site	Cloquet River Macrosite	Rare animal habitat
MN-044	Site	Hornby Lake	Rare plant habitat
MN-048	Area	Jay Cooke State Park	Rare plant habitat, northern hardwood forest
MN-064	Site	Magney Hardwoods Forest	Old growth mixed hardwoods/conifer forest and northern hardwoods forest; rare plant habitat
MN-069	Site	Minnesota Point	Rare plant habitat, unique geomorphic formation, old growth pine forest
MN-086a	Site	Interstate Island	Rare animal habitat, colonial waterbird nesting habitat
MN-086b	Site	Hearding Island	Open dunes, representative natural plant community
MN-086d	Site	Spirit Lake Point	Great Lakes marsh, migratory wildlife habitat
MN-086e	Site	Mud Lake	Great Lakes marsh, migratory wildlife habitat
MN-086f	Site	Fond Du Lac	Great Lakes marsh, migratory wildlife habitat
MN-086g	Site	Grassy Point	Great Lakes wetland complex
MN-086h	Site	Bong Bridge	Rare animal habitat
MN-086i	Site	Swamp Lake	Rare animal habitat
MN-086j	Area	St. Louis Estuary	Great Lakes freshwater estuary, rare plant and animal habitat, colonial waterbird nesting habitat
MN-087	Area	Sand Lake Peatland	Large patterned peatland, significant bog and fen features, rare plant habitat, rare animal habitat, geological processes
MN-101	Site	Tikander	Rare animal habitat, rare plant habitat, colonial waterbird nesting habitat
MN-111	Area	Hemlock Ravine SNA	Rare plant habitat, old growth northern hardwoods, white pine, and eastern hemlock forest
MN-114	Area	Savanna Portage State Park	Northern hardwood forest
MN-115	Area	Tettegouche State Park	Northern hardwood forest, Northern hardwood-conifer forest, old growth white cedar forest, complex of forested highlands, wetlands, streams and lakes with high biodiversity, Shoreline cliffs, rare animal habitat
WI-048	Site	Superior Municipal Forest	Great Lakes pine forest, rare plant and animal habitat, Great Lakes freshwater estuary
WI-049	Site	Oliver Wetlands	Great Lakes freshwater estuary, coastal marsh, migratory bird habitat
WI-050	Site	Red River	Rare plant habitat, eroding red clay bluffs, fish spawning habitat

In the St. Louis and Cloquet Unit, there are potentially many additional priority areas for conservation. One is the region around the headwaters of the St. Louis River, including but not limited to the Sand Lake Peatland Scientific and Natural Area. It is a large landscape of high ecological quality storing lots of water for the river, and only parts have been protected.

Figure 12.3: St. Louis and Cloquet - Important Habitat Sites and Areas



*The St. Louis Red River Streambank Protection Area is not a State Park, but was classified with this category due to the state ownership of the site.

TABLE 12.4: St. Louis and Cloquet LIST OF SPECIES AND COMMUNITIES OF CONSERVATION CONCERN

At least 168 species and communities of conservation concern have been documented in the regional unit. 87 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). 14 species and communities were once known to occur here, but have current conservation ranks of F (Failed to find) or H (Historical). A further 67 species and communities of conservation concern are known to occur in this regional unit, but are currently not ranked for viability.¹³

<i>Present Records (Viability Rankings of A to E)</i>	
Scientific Name	Common Name
Accipiter gentilis	Northern Goshawk
Acipenser fulvescens	Lake Sturgeon
Actaea pachypoda	White Baneberry
Ammophila breviligulata ssp. breviligulata	Beach Grass
Boreal forest	Boreal Forest
Botaurus lentiginosus	American Bittern
Botrychium acuminatum	Pointed Moonwort
Botrychium ascendens	Upward-lobed Moonwort
Botrychium caespitose	Prairie Moonwort
Botrychium lineare	Narrowleaf Grape Fern
Botrychium lunaria	Common Moonwort
Botrychium matricariifolium	Matricary Grapefern
Botrychium michiganense	Michigan Moonwort
Botrychium mormo	Goblin Fern
Botrychium oneidense	Blunt-lobed Grapefern
Botrychium pallidum	Pale Moonwort
Botrychium rugulosum	St. Lawrence Grapefern
Botrychium simplex	Least Moonwort
Calamagrostis stricta	Slim-stem Small Reed Grass
Callitriche heterophylla	Larger Water-starwort
Caltha natans	Floating Marsh-marigold
Canadanthus modestus	Northwestern Sticky Aster
Carex exilis	Coastal Sedge
Carex garberi	Garber's Sedge

¹³ For the Minnesota portions of this unit, data included here were provided by the Division of Ecological and Water Resources, Minnesota Department of Natural Resources (DNR), and were current as of December 3 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.

For the Wisconsin portions of this unit, data included here were provided by the Bureau of Natural Heritage Conservation, Wisconsin Department of Natural Resources (DNR). Although the NHI database is the most up-to-date and comprehensive database on the occurrences of rare species and natural communities available, many areas of the state have not been inventoried. Similarly, the presence of one rare species at a location does not imply that all taxonomic groups have been surveyed for at that site. As such, the data should be interpreted with caution and an "absence of evidence is not evidence of absence" philosophy should be followed.

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<i>Carex gynandra</i>	A Species of Sedge
<i>Carex nigra</i>	Smooth Black Sedge
<i>Carex novae-angliae</i>	New England Sedge
<i>Carex ormostachya</i>	Necklace Spike Sedge
<i>Carex pallescens</i>	Pale Sedge
<i>Carex rossii</i>	Ross' Sedge
<i>Coregonus zenithicus</i>	Shortjaw Cisco
<i>Cygnus buccinator</i>	Trumpeter Swan
<i>Cypripedium arietinum</i>	Ram's-head Lady's-slipper
<i>Deschampsia flexuosa</i>	Slender Hairgrass
<i>Drosera anglica</i>	English Sundew
<i>Eleocharis compressa</i>	Flat-stemmed Spike-rush
<i>Eleocharis flavescens</i> var. <i>olivacea</i>	Olivaceous Spike-rush
<i>Eleocharis nitida</i>	Neat Spike-rush
<i>Elliptio complanata</i>	Eastern Elliptio
Emergent marsh	Emergent Marsh
<i>Equisetum palustre</i>	Marsh Horsetail
<i>Falco peregrinus</i>	Peregrine Falcon
Forested seep	Forested Seep
<i>Geocaulon lividum</i>	Northern Comandra
<i>Geum macrophyllum</i> var. <i>macrophyllum</i>	Large-leaved Avens
<i>Glyptemys insculpta</i>	Wood Turtle
<i>Haliaeetus leucocephalus</i>	Bald Eagle
<i>Hemidactylium scutatum</i>	Four-toed Salamander
<i>Hydroptila novicola</i>	A Caddisfly
<i>Ixobrychus exilis</i>	Least Bittern
<i>Juncus stygius</i> var. <i>americanus</i>	Bog Rush
<i>Juncus vaseyi</i>	Vasey's Rush
<i>Littorella americana</i>	American Shore-plantain
<i>Lycaeides idas nabokovi</i>	Nabokov's Blue
<i>Microtus chrotorrhinus</i>	Rock Vole
Northern Poor Fen Class	Northern Poor Fen
Northern sedge meadow	Northern Sedge Meadow
<i>Ophiogomphus anomalus</i>	Extra-striped Snaketail
<i>Oxyethira itascae</i>	A Caddisfly
<i>Parnassia palustris</i>	Marsh Grass-of-Parnassus
<i>Perimyotis subflavus</i>	Tricolored Bat
<i>Petasites sagittatus</i>	Arrow-leaved Sweet-coltsfoot
<i>Phalacrocorax auritus</i>	Double-crested Cormorant
<i>Pinguicula vulgaris</i>	Common Butterwort
<i>Piptatherum canadense</i>	Canada Mountain-Ricegrass
<i>Polemonium occidentale</i> ssp. <i>lacustre</i>	Western Jacob's Ladder
<i>Ranunculus cymbalaria</i>	Seaside Crowfoot
Red Oak - Sugar Maple - Basswood - (Bluebead Lily) Forest Type	Red Oak - Sugar Maple - Basswood - (Bluebead Lily) Forest
<i>Rhynchospora fusca</i>	Sooty-colored Beak-rush
<i>Rubus chamaemorus</i>	Cloudberry
<i>Salix planifolia</i>	Tea-leaved Willow
<i>Schoenoplectus torreyi</i>	Torrey's Bulrush
<i>Setophaga caerulescens</i>	Black-throated Blue Warbler
<i>Shepherdia canadensis</i>	Canada Buffaloberry
<i>Sorex fumeus</i>	Smoky Shrew
<i>Sticta fuliginosa</i>	Peppered moon lichen
<i>Streptopus amplexifolius</i>	White Mandarin
<i>Stuckenia vaginata</i>	Sheathed Pondweed
Sugar Maple - Basswood - (Bluebead Lily) Forest Type	Sugar Maple - Basswood - (Bluebead Lily) Forest

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Sugar Maple - Basswood - (Horsetail) Forest Type	Sugar Maple - Basswood - (Horsetail) Forest
Torreyochloa pallida	Torrey's Manna-grass
Torreyochloa pallida var. fernaldii	Pale Manna Grass
Tsuga canadensis	Eastern Hemlock
Utricularia geminiscapa	Hidden-fruited Bladderwort
Utricularia resupinata	Lavendar Bladderwort
White Pine - White Spruce - Paper Birch Forest Type	White Pine - White Spruce - Paper Birch Forest
Xyris montana	Montane Yellow-eyed Grass
Historical or Failed to Find Records	
Scientific Name	Common Name
Actinonaias ligamentina	Mucket
Adlumia fungosa	Climbing Fumitory
Allium schoenoprasum	Chives
Botrychium lanceolatum ssp. angustisegmentum	Lanceleaf Grapefern
Calamagrostis lacustris	Marsh Reedgrass
Calypso bulbosa	Fairy Slipper
Carex merritt-fernaldii	Fernald's Sedge
Charadrius melodus	Piping Plover
Cicindela hirticollis rhodensis	Hairy-necked Tiger Beetle
Hudsonia tomentosa	Beach-heather
Leucophysalis grandiflora	Large-flowered Ground-cherry
Phacelia franklinii	Franklin's Phacelia
Pyrgus centaureae freija	Grizzled Skipper
Sterna hirundo	Common Tern
Unranked Records	
Scientific Name	Common Name
Adoxa moschatellina	Moschatel
Aegolius funereus	Boreal Owl
Ahtiana aurescens	Eastern candlewax lichen
Ammodramus leconteii	Le Conte's Sparrow
Ammodramus nelsoni	Nelson's Sparrow
Anguilla rostrata	American Eel
Arethusa bulbosa	Dragon's-mouth
Aspen - Birch - Basswood Forest Type	Aspen - Birch - Basswood Forest
Bartramia longicauda	Upland Sandpiper
Bidens discoidea	Bur-marigold
Black Spruce Bog Type	Black Spruce Bog
Botrychium minganense	Mingan Moonwort
Buteo lineatus	Red-shouldered Hawk
Cardamine pratensis	Cuckoo Flower
Carex flava	Yellow Sedge
Carex michauxiana	Michaux's Sedge
Ceratophyllum echinatum	Spiny Hornwort
Claytonia caroliniana	Carolina Spring-beauty
Colonial Waterbird Nesting Area	Colonial Waterbird Nesting Site
Coturnicops noveboracensis	Yellow Rail
Elatine triandra	Three Stamened Waterwort
Eleocharis mamillata	Mamillate Spike-rush
Elodea bifoliata	Twoleaf Waterweed
Emydoidea blandingii	Blanding's Turtle
Ephemeral pond	Ephemeral Pond
Erebia mancinus	Taiga Alpine
Esker (quaternary)	Esker (Quaternary)

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<i>Etheostoma microperca</i>	Least Darter
<i>Grus canadensis</i>	Sandhill Crane
<i>Hydroprogne caspia</i>	Caspian Tern
Ice composite (quaternary)	Ice Composite (Quaternary)
Igneous unit or sequence (middle proterozoic)	Igneous Unit or Sequence (Middle Proterozoic)
Lake and wetland deposition (quaternary)	Lake and Wetland Deposition (Quaternary)
<i>Lasmigona compressa</i>	Creek Heelsplitter
<i>Ligumia recta</i>	Black Sandshell
<i>Lobaria quercizans</i>	Smooth lungwort
<i>Malaxis monophyllos</i> var. <i>brachypoda</i>	White Adder's-mouth
Mixed unit or sequence (lower proterozoic, upper proterozoic)	Mixed Unit or Sequence (Lower Proterozoic, Upper Proterozoic)
<i>Myotis septentrionalis</i>	Northern Myotis
<i>Myriophyllum tenellum</i>	Leafless Water Milfoil
<i>Najas gracillima</i>	Thread-like Naiad
Native Plant Community, Undetermined Class	Native Plant Community, Undetermined Class
<i>Notropis anogenus</i>	Pugnose Shiner
<i>Oporornis agilis</i>	Connecticut Warbler
Outwash plain (quaternary)	Outwash Plain (Quaternary)
<i>Platanthera clavellata</i>	Club-spur Orchid
<i>Poa sylvestris</i>	Woodland Bluegrass
<i>Potamogeton oakesianus</i>	Oakes' Pondweed
<i>Potamogeton vaseyi</i>	Vasey's Pondweed
<i>Pyrola minor</i>	Small Shinleaf
<i>Ranunculus gmelinii</i>	Small Yellow Water Crowfoot
<i>Ranunculus lapponicus</i>	Lapland Buttercup
<i>Salix pellita</i>	Satiny Willow
Sand Beach (Lake Superior) Type	Sand Beach (Lake Superior)
<i>Scirpus pedicellatus</i>	Woolgrass
<i>Sparganium glomeratum</i>	Clustered Bur-reed
<i>Spermophilus franklinii</i>	Franklin's Ground Squirrel
<i>Spiranthes casei</i> var. <i>casei</i>	
Stream erosion (holocene)	Stream Erosion (Holocene)
Stream erosion (quaternary)	Stream Erosion (Quaternary)
Stream process (holocene)	Stream Process (Holocene)
<i>Strix nebulosa</i>	Great Gray Owl
<i>Sturnella neglecta</i>	Western Meadowlark
Sugar Maple Forest (North Shore) Type	Sugar Maple Forest (North Shore)
<i>Tomenthypnum falcifolium</i>	Curved-leaved golden moss
<i>Utricularia gibba</i>	Humped Bladderwort
<i>Waldsteinia fragarioides</i> var. <i>fragarioides</i>	Barren Strawberry