

14. Bad-Montreal

HEALTHY WATERS REPORT CARD

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

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>



The Bad River Kakagon Slough complex. Photo supplied by Ryan O'Connor, WDNR. Photo taken by Christina Isenring, WDNR.

Summary/ Description

The Bad-Montreal region is located along the southern shore of Lake Superior, and is 3,764 km² in size, including the associated nearshore waters. The regional unit extends along the shore from just east of Ashland to the mouth of the Montreal River, and the state boundary line between Wisconsin and Michigan. In this Biodiversity Conservation Assessment the Beartrap Creek subwatershed is considered part of the Lower Bad River subwatershed and the Bad-Montreal regional unit. This regional unit delineation reflects local management boundaries as adopted and managed by the Bad River Band of the Lake Superior Tribe of Chippewa Indians and the Wisconsin Department of Natural Resources (N. Tillison, pers. comm., April 26 2013). These locally adopted management boundaries place the Chequamegon Point barrier spit and Long Island in the Bad-Montreal regional unit. Most of the reservation of the Bad River Band of Lake Superior Tribe of Chippewa Indians is located in this regional unit. The Bad-Montreal regional unit is part of the territory ceded in the Treaty of 1842. The signatory tribes retain rights to hunt, fish, and gather within the regional unit (A. McCammon Soltis, pers. comm., January 5 2015). Inland, the western and central portions of the regional unit is comprised of three Wisconsin counties (Bayfield, Ashland and Iron, and the easternmost portion extends into one Michigan county (Gogebic County) (USDA NRCS No date d). The 25 mile Penoquee-Gogebic Range is found in this regional unit, in Iron and Ashland counties (TNC No date b). This unit is referred to as HUC 04010302, and it is the easternmost region of Subregion 0401 – Western Lake Superior. The Bad and Montreal Rivers are the main tributaries and both drain to Lake Superior. The Montreal River forms the Wisconsin / Michigan state border for thirty miles upstream of Lake Superior (USDA NRCS No date d). Public and tribal ownership account for a large portion of ownership in the regional unit, which is described as forested; wetlands and agriculture also account for some land use (USDA NRCS No date d). The Bad-Montreal regional unit contains one tertiary (HUC 8) watershed, Bad-Montreal, and 7 quaternary (HUC 10) watersheds. The watershed is primarily forest, with some agricultural lands. The shoreline includes extensive coastal wetlands and sand beaches.

TABLE 14.1: Bad-Montreal BY THE NUMBERS

Land and Water Cover	Region (km²)	Region %	Lake Superior Total (km²)	Notes
Agriculture	254.41	6.02	1,441.07	
Developed	6.75	0.16	389.55	
Forest	2,995.10	70.83	107,747.13	
Associated Nearshore Waters	750.57	17.75	17,868.03	
Other	192.99	4.56	8,227.57	
Water (inland)	28.58	0.68	9,473.05	
Total Area	4,228.41	100	145,146.40	
Coastal Features	Region	Region %	% of Lake Superior Total for Coastal Feature	
Coastline (km)	76.45	NA	1.31	Based on SOLEC shoreline
Sand Beaches (km)	19.88	26.01	3.09*	*% of Lake Superior Total Sand Beaches
Coastal Wetlands (km ²)	47.77	45.00*	4.33**	*% of Regional Coastal Area ** % of Lake Superior Total Coastal Wetlands
Natural Cover in Coastal Zone	101.99	96.08*	1.65**	*% of Regional Coastal Area ** % of Lake Superior Total Natural Cover in Coastal Area
Number of Islands	13	NA	0.5	
Condition	Region	Region %	% of Lake Superior Total	
Population Density (persons/km ²)	5.08	NA		
Road Density (km/km ²)	0.85	NA		
Number of Dams and Barriers	1,516	NA	6.4	
Artificial Shoreline (km)	1.14	1.49	0.50	
Land Ownership & Protection	Region (km²)	Region %	Regional Area (km²)	
Private	1,568.65	45.11	3,477.68	Regional area based on landmass
Public/Crown	1,300.17	37.39	3,477.68	
Tribes/ First Nations	488.05	14.03	3,477.68	
Parks & Protected Areas (total)	120.81	3.47	3,477.68	
Parks & Protected Areas (coast)	1.24	1.17*	106.16**	*% of Regional Coastal Area **Regional Coastal Area (km ²)

Important Biodiversity Features

Nearshore and Inshore Waters

- The nearshore and inshore waters of this regional unit provide areas of Important Habitat for Lake Whitefish and for Lake Trout (Lake Superior Binational Program Habitat Committee 2006) (Figure 14.1).
- Chequamegon Bay is noted as a Lake Superior embayment important for Lake Sturgeon (Auer 2003). In the Bad-Montreal regional unit this embayment and the nearshore zone, which provides corridors for movement, are identified as critical management areas for Lake Sturgeon in the Lake Superior basin (Auer 2003).

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- The waters off of Marble Point on the Bad River Indian Reservation are noted to be critical spawning and nursery habitat for fish and wildlife, including Cisco and Lake Trout (WDNR 1999a).

Coastal Zone and Islands

- The Kakagon and Bad River Sloughs is a 4,355 ha largely undeveloped wetland complex, located at the mouth of the Bad River on Lake Superior (Ramsar & Wetlands International 2013). As of 2012, the Kakagon and Bad River Sloughs site is designated as a Ramsar Wetland of International Importance. The site is comprised of sloughs, bogs and coastal lagoons, and is located in the Bad-Montreal regional unit, to reflect locally adopted management boundaries. The area is located on the Bad River Band of Lake Superior Tribe of Chippewa Indians Reservation, and is a Conservation Area under tribal management through an Integrated Resource Management Plan (Ramsar & Wetlands International 2013, USDA NRCS No date d). The slough is the largest freshwater estuary remaining on Lake Superior and may also be in the most pristine condition; it is an important spawning area for the fish community of Lake Superior and it is the Great Lakes' largest remaining natural wild rice bed (USDA NRCS No date d, BRWA 2013a, Ramsar & Wetlands International 2013).
- Long Island is a site for the Piping Plover (*Charadrius melodus*), an endangered species (Ramsar & Wetlands International 2013).
- The Bad-Montreal regional unit contains several areas which are noted to be Important Habitat Sites, as well as an Important Habitat Area (Lake Superior Binational Program Habitat Committee 2006) (Table 14.3, Figure 14.3).
- The Wisconsin Department of Natural Resources (WDNR) has identified primary coastal wetlands deemed to be ecologically significant coastal wetlands. This assessment has been completed for both the Lake Superior and Lake Michigan basins. Site S-21 Bad River-Kakagon Sloughs is located in the Bad-Montreal regional unit (WDNR 2012d). A complete list of the Lake Superior ecologically significant wetlands and their specific site attributes is available on the WDNR website (WDNR 2012c, 2012d).



Wild rice in the Kakagon and Bad River Slough complex. Photo supplied by Cyrus Hester, Bad River Band of the Lake Superior Tribe of Chippewa Indians. Photo credit: Mike Wiggins Jr.

Tributaries and Watersheds

- Rivers and streams in this regional unit are known to be important to Lake Sturgeon, Brook Trout, Walleye and introduced salmon, steelhead and Brown Trout (USDA NRCS No date d, BRWA 2013a, W. Blust, pers. comm., March 6 2013).
- The Bad River provides important spawning habitat for Lake Sturgeon and Walleye (W. Blust, pers. comm., March 6 2013).
- The headwater streams and wetlands of the Bad River watershed are also critical to cold-water fisheries, climate resilience and downstream flow regimes (C. Hester and N. Tillison, pers. comm., March 25 2013, TNC No date b).
- Historically 21 tributaries in Lake Superior had Lake Sturgeon spawning runs. Three of these historical spawning tributaries, the Bad River, the White River (Wisconsin) and the Montreal River are in the Bad-Montreal regional unit. The Bad River and White River are now recognized as one

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Lake Sturgeon population, for which the population status is extant and the population trajectory is stable. The Montreal River population status is extirpated (Golder Associates Ltd. 2011).

- The Bad River is one of ten Lake Superior tributaries where Lake Sturgeon have currently been documented spawning (as of 2012); this is the same number as 2005, however the specific tributaries have changed (Lake Superior Lake Sturgeon Work Group 2012, unpublished data). The White River (Wisconsin) had been removed as it is a tributary to the Bad River and is not a separate spawning population (Lake Superior Lake Sturgeon Work Group 2012, unpublished data). Genetic studies support the viewpoint that the same fish use spawning locations in both the Bad and White rivers (Lake Superior Lake Sturgeon Work Group 2012, unpublished data).
- The Lake Sturgeon population in the Bad River is one of two Lake Superior populations which meets the criteria for self-sustaining, as defined in the Auer (2003) Lake Sturgeon Rehabilitation Plan for Lake Superior (Lake Superior Lake Sturgeon Work Group 2012, unpublished data)
- A Lake Sturgeon Rehabilitation Plan for Lake Superior (Auer 2003) identifies the Bad River as one of the seventeen tributaries to Lake Superior in which there should be a focus on Lake Sturgeon rehabilitation.
- The entire White River, from the headwaters to Lake Superior is a State of Wisconsin fishery, natural or wildlife area (S. Toshner, pers. comm., March 6 2013). Eighteen Mile Creek and Long Lake Branch are two White River tributaries with high ecological importance (WDNR 2013b).
- The Penokee Range is noted to have extensive forests and unusual features, including high-gradient, soft headwater streams and glades of open bedrock (WDNR 2005).

Figure 14.1: Bad-Montreal - Coastal and Watershed Features

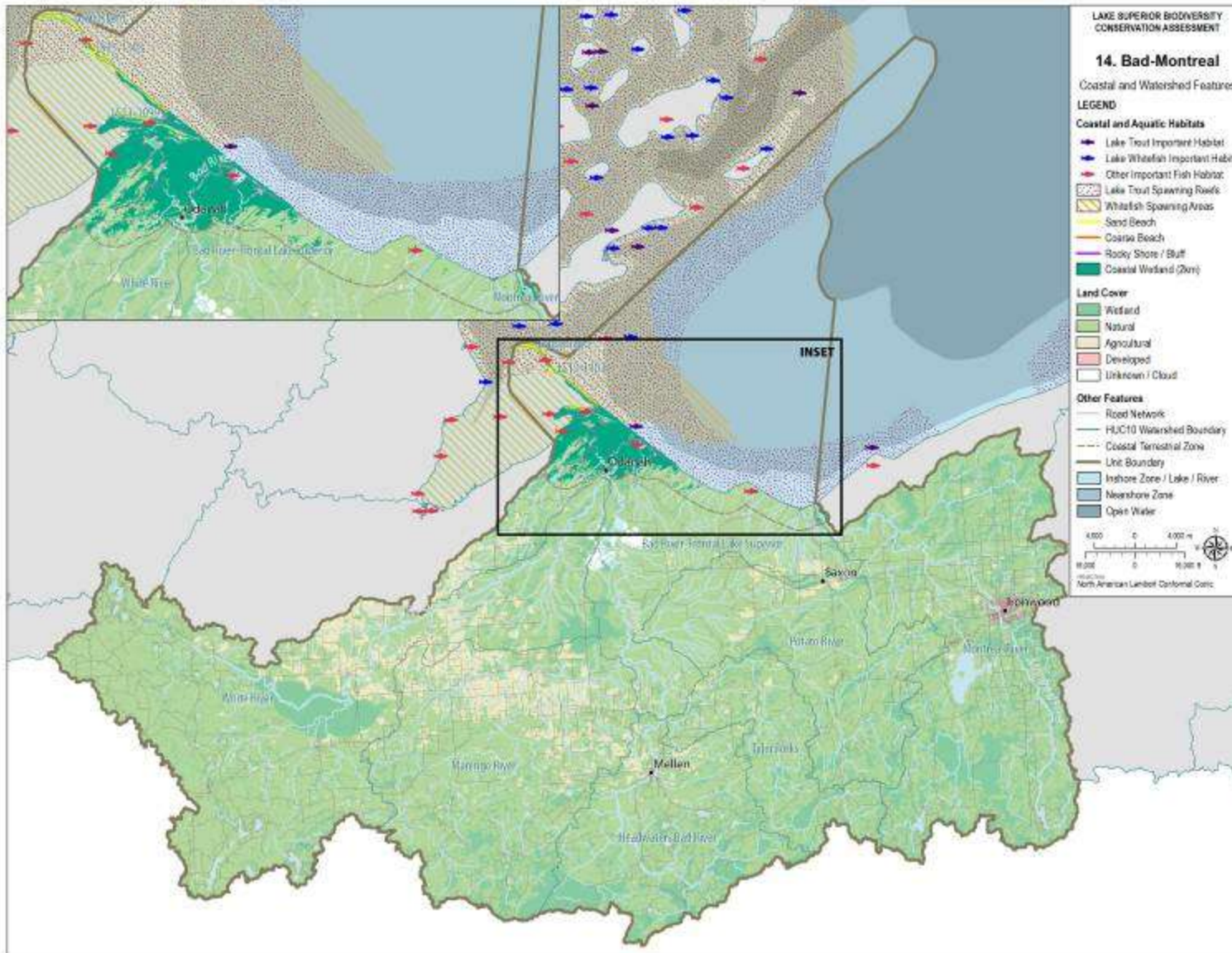


TABLE 14.2: Bad-Montreal CONDITION AND TRENDS

Target (Data Source)	Condition	Trends
Offshore ¹	NA	
Nearshore ¹	C (0.50)	
Embayments and Inshore ^{1,2}	C (0.53)	
Coastal Wetlands ^{2,3}	B (0.674)	Local experts believe a condition score of B may be low for the coastal wetlands target, due to the presence of the Kakagon and Bad River Sloughs. At over 10,000 acres, this wetland complex is the largest, most pristine freshwater estuary and coastal wetland complex on the largest freshwater lake in the world (R. O'Connor, pers. comm., March 15 2013). The B score is driven by the assessment of watershed stresses and the condition of nearshore waters.
Islands ⁴	A	
Coastal Terrestrial ³	A+ (0.972)	Local experts believe a condition score of B may be accurate for the coastal terrestrial portion of this regional unit (C. Hagen et al., pers. comm., March 20 2013).
Tributaries and Watersheds ²	C (0.55)	

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>

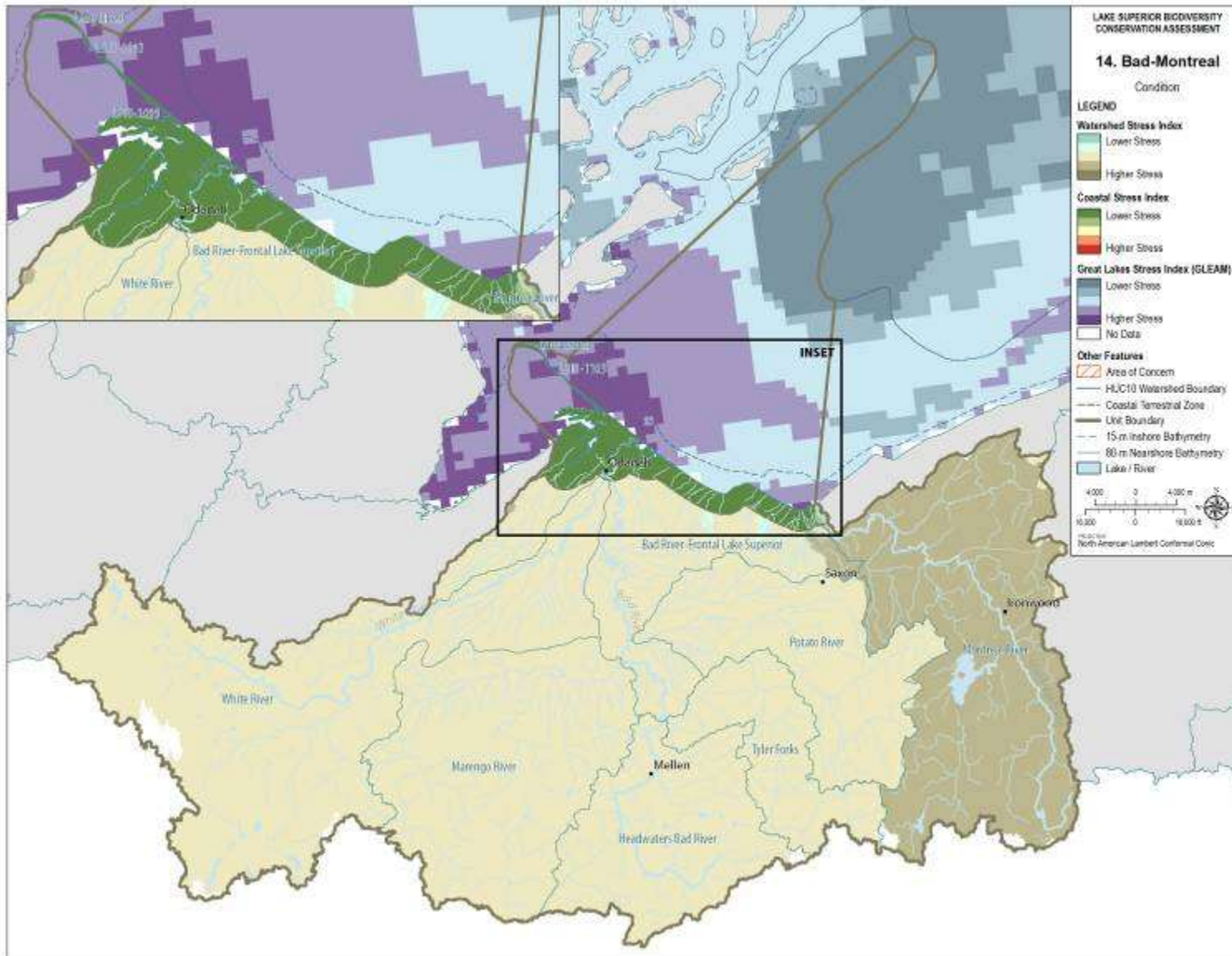
1: Great Lakes Cumulative Stress (GLEAM 2012, Allan et al. 2013)

2: Watershed Stress Index (GLEI 2013)

3: Coastal Condition Index (developed for this report)

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

Figure 14.2: Bad-Montreal - Condition



Important Issues & Threats

- Non-native invasive species, including purple loosestrife, ruffe and sea lamprey have been noted as threat to the Lower Bad River Watershed (WDNR 1999b). Significant purple loosestrife infestations along rivers in the watershed were noted by the Great Lakes Indian Fish and Wildlife Commission. Common buckthorn and spotted knapweed have also been noted (WDNR 1999b).
- Invasive species are noted to be a large ecological threat to the Kakagon and Bad River Sloughs (Ramsar & Wetlands International 2013).
- Mining companies own a band of land approximately 22 miles long and 22,000 acres in size in the Penokee Range (TNC No date b). Mining in the Penokee-Gogebic Range could impact much of the headwaters in the Bad River watershed, and is viewed as a significant ecological threat to the Kakagon and Bad River Sloughs (Ramsar & Wetlands International 2013, TNC No date b). Impacts throughout the Bad River watershed will have downstream impacts on the sloughs and Lake Superior. In total, 71 miles of perennial and intermittent waters flow through the mining land, including a number of rivers and streams designated as Exceptional or Outstanding Resource Waters by the State of Wisconsin (TNC No date b).
- The Montreal River watershed was noted to be much influenced by the mining history of the area (WDNR 1999a).
- A number of waterbodies within the Bad-Montreal regional unit are listed as impaired. Reasons for impairment include mercury and PCBs. Affected uses include aquatic consumption (USDA NRCS No date c, U.S. EPA 2013k).
- Excessive sediments are a concern in the Bad River Watershed, a "flashy" system in the red clay plain of the Great Lakes Basin. Land use practices, such as silviculture and agricultural practices, have great potential to cause erosion and/or sedimentation problems, particularly if best management practices are not properly implemented and maintained (Bad River Band of Lake Superior Tribe of Chippewa Indians 2006).
- Erosion and slumping of streambanks, channels and gullies leading to sedimentation is the largest non-point resource concern in the Bad-Montreal regional unit. Sediments have a negative effect on fish spawning sites, fish movements, aquatic habitats and Lake Superior (USDA NRCS No date d). The presence of red clay soils interspersed with sands is one natural factor that contributes to this problem. Some water courses are also deeply entrenched, with high banks of up to seventy feet in some locations (USDA NRCS No date d). Other factors contributing to the erosion and slumping include the conversion of native forests to grass and aspen, and in some areas, overgrazing (USDA NRCS No date d). The strategy in place to address this issue is to "slow the flow" of runoff, minimizing channel degradation and erosion (C. Hagen et al., pers. comm., March 20 2013).
- The majority of soils in the regional unit (57%) are classified as poorly suited to most kinds of field crops, based on Land Capability Classification. Other classifications for the soil in the regional unit include moderately well suited (32%), well-suited (5%) and unsuited (5%). These classifications reflect generally how suitable the soils are for typical field crops (USDA NRCS No date d).
- Nutrients entering the watershed from private septic systems and barnyards are a concern (USDA NRCS No date d). Nutrients and bacteria entering the watershed from private septic systems, agriculture (e.g., livestock management, etc.), and municipal wastewater treatment are a concern, particularly in the Marengo River and Beartrap Creek Subwatersheds (Bad River Band of Lake Superior Tribe of Chippewa Indians 2006).
- Hydroelectric power production activities associated with the Gile Flowage may have a negative impact on the fisheries. The Gile Flowage is associated with the Montreal River watershed (USDA NRCS No date d).

- Forest fragmentation through real estate development is an emerging concern in the Upper Peninsula Lake Superior watersheds. Large tracts of forest lands owned by corporate land holders are being sold to companies which run real estate investment trusts; smaller parcels are then developed (W. Taft, pers. comm., February 25, 2013).

Conservation In Action

Parks & Protected Areas

- Bad River Band of the Lake Superior Tribe of Chippewa Indians' Reservation
- Chequamegon National Forest
- Ottawa National Forest
- Copper Falls State Park
- Iron County Forest

Existing Programs & Projects

- A number of waterbodies in the Wisconsin portion of this regional unit have been designated as high quality waters through the state Outstanding Resource Waters (ORWs) or Exceptional Resource Waters (ERWs)¹⁶ designations (USDA NRCS No date d). Over 60 waterbodies, including the Bad River and the Bad River Slough had received one of these designations at the time of the Rapid Watershed Assessment (USDA NRCS No date d).
- All of the waterbodies within the Bad River Indian Reservation portion of this regional unit have been designated as high quality waters through the tribal Outstanding Tribal Resource Waters (OTRWs), ORWs or ERWs designations. The Kakagon and Bad River Slough complex, along with the majority of the Bad River itself, are considered OTRWs, waters supporting wild rice and other sensitive and unique resources (Bad River Band of Lake Superior Tribe of Chippewa Indians 2011).
- The Bad River Band of Lake Superior Tribe of Chippewa Indians has a Non-point Source Management Program for the Bad River, through the Bad River Natural Resources Department (C. Hester and N. Tillison, pers. comm., March 25 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).
- 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 Bad-Montreal regional unit (WDNR 2008a, 2008b, 2008c).
- Road stream crossings which are barriers to fish passage and contribute to increased sedimentation have been identified as major concerns in the Bad River watershed. The Bad River Watershed Association (BRWA) and partners, including the US Fish and Wildlife Service, Wisconsin DNR, Ashland County, Iron County, Bayfield County, local towns and local landowners are working to address the issue through the Culvert Restoration Program. The program identifies and inventories all road/stream crossings in the Bad River watershed, and prioritizes crossings which need repair. Education and finding sources of funding are additional facets of the program (BRWA 2013b).

¹⁶ ORWs receive the highest protection standards Wisconsin offers, while ERWs receive the next highest protection. ORWs usually do not have any point source pollution, whereas waters with an existing point source are likely to be designated ERWs (WDNR 2012a).

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- The Chequamegon Bay Area Partnership (CBAP) recently published a Strategic Priorities document that outlines important issues and threats to the Chequamegon Bay area (CBAP 2013).
- There are watershed partnership efforts underway to implement the Fish Creek Watershed Restoration and Management Plan and the Marengo River Watershed Action Plan. Fish Creek and the Marengo River quaternary watersheds are two of the largest sediment contributors to the Chequamegon Bay area (M. Hudson, pers. comm., March 20 2013, C. Hagen et al., pers. comm., March 20 2013).
- The Bayfield Regional Conservancy, a land trust working within the Nemadji to Fish Creek and the Bad-Montreal regional units, has developed strategic conservation plans for areas in these regional units (M. Hudson, pers. comm., March 20 2013).
- The White River Properties Group (WRPG) Draft Master Plan and Environmental Assessment is currently in development. The final Master Plan should be finished in fall 2013 (S. Toshner, pers. comm., March 6 2013).
- 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 the Kakagon Sloughs in the Bad-Montreal regional unit (Wisconsin Wetlands Association No date b).
- A number of State Important Bird Areas (IBAs) are located in the Bad-Montreal regional unit. These IBAs are Bibon Swamp IBA, Camp Nine Pines IBA, Kakagon-Bad River Wetlands and Forest Corridor IBA, Moose Lake Old-Growth Forest-Muskeg IBA, Owen-Teal Forest IBA, Penokee Range IBA and St. Peter's Dome-North Country IBA (National Audubon Society 2013, 2012).
- The Natural Resources Conservation Service (NRCS) Performance Results System (PRS) provides support for reporting the development and delivery of conservation programs. From 1999 to 2007 plans were made for a total of 50,367 acres of Total Conservation Systems. From 1999 to 2007 the Total Conservation Systems Applied amounted to 17,080 acres. The activities which contributed the largest amount to the Total Conservation Systems Applied were Total Wildlife Habitat (9,920 acres), Erosion Control Total Soil Saved (5,739 tons/year), Riparian Forest Buffers (5,661 acres) and Total Nutrient Management (3,137 acres). Additional activities involved prescribed grazing, residue management, wetlands (created, restored or enhanced) and tree and shrub establishment (USDA NRCS No date c).
- The watershed assessment score is used to assess the agricultural non-point pollution potential of Wisconsin watersheds, relative to one another. Based on the criteria used in the model¹⁷, watershed assessment values ranged from 0.0 (lowest conservation need) to 24.4 (highest conservation need). The score for the Bad Montreal Watershed assessment was 1.6 (USDA NRCS No date d).
- A large portion of the Bad-Montreal watershed is a riparian project area of the Conservation Reserve Enhancement Program (CREP). Landowners who agree to fifteen year agreements may have filter strips, riparian buffers and grassed waterways installed, with annual payments available. In Bad-Montreal this project is located in three counties (northern Bayfield, Ashland and Iron) (USDA NRCS No date d).
- The "Slow the Flow" Program has been adopted by the Lake Superior Partner team, as a way to help manage water run-off in clay soils (University of Wisconsin Extension 2011).

¹⁷ Factors used to calculate the watershed assessment score in the model included acres of cropland, acres of highly erodible land, and the number of animal units in the watershed (USDA No date d).

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- Trout Unlimited – Wild Rivers Chapter is very active in the Bad-Montreal watershed (S. Toshner, pers. comm., March 6 2013).
- Friends of the White River is very active in the Bad-Montreal watershed (S. Toshner, pers. comm., March 6 2013).
- Key partners in the Bad-Montreal regional unit include the Chequamegon Bay Area Partnership and the Bad River Watershed Association (C. Hagen et al., pers. comm., March 20 2013). Additional partners in the Bad-Montreal regional unit are noted in the Rapid Watershed Assessment (USDA NRCS No date d).
- 25 Citizen-based Groups are noted to do work in the Bad-Montreal regional unit (U.S. EPA 2013k).
- The White River Property Group (WRPG) is a combination of state managed lands, including approximately 1,000 acres of State Wildlife Area (White River Wildlife Area), 4,698 acres of Fishery Area (White River Fishery Area, including the Sajdak Springs State Natural Area which is located within the Fishery Area boundary) and 9,263 acres of State Natural Area (Bibon Swamp State Natural Area). In total nearly 15,000 acres are protected as state managed lands, although in the middle segment of the White River Fishery Area project boundary 90% of land is privately owned (WNDR 2013b).

TABLE 14.3: Bad-Montreal IMPORTANT HABITAT SITES AND AREAS

<i>Code</i>	<i>Site/ Area</i>	<i>Important Habitat Site/Area Name</i>	<i>Key Features</i>
WI-001	Site	Montreal River Mouth	Great Lakes costal wetland, old growth white cedar forest
WI-002	Site	Saxon Harbor	Lake Superior beach, fish spawning area
WI-003	Site	Graveyard Creek	Coastal wetlands, spawning habitat for brook and Rainbow Trout and Coho Salmon
WI-004	Site	Marble Point	Spawning habitat for Lake Trout, exposed rocky cliff shore
WI-005	Area	Kakagon Sloughs/Bad River	Largest, healthiest fully-functioning estuarine system in the upper Great Lakes. Rare plant and animal habitat, high biodiversity
WI-006	Site	Honest John Lake	Coastal wetland includes bog communities, patches of open water, sedge meadow, low shrub and lowland coniferous forest
WI-007	Site	Oak Point	Coastal wetland. Bog communities are present as linear strips occupying swales between the forested ridges
WI-008	Site	Long Island	Lake dune landforms, sand beach. Emergent vegetation is common offshore. Rare plant and animal habitat
WI-009	Site	Bibon Swamp	Large wetland complex, largest cold water stream system
WI-034e	Area	Iron River Watershed	Fish spawning habitat
WI-054	Area	Copper Falls State Park	River gorge with falls, old growth mixed northern hardwoods forest
WI-056	Area	Rainbow Lake Wilderness Area	Representative plant communities, northern hardwood and mixed conifer/deciduous forest communities, old growth forest, diverse habitat types, rare plant and animal habitat.

Figure 14.3: Bad-Montreal - Important Habitat Sites and Areas

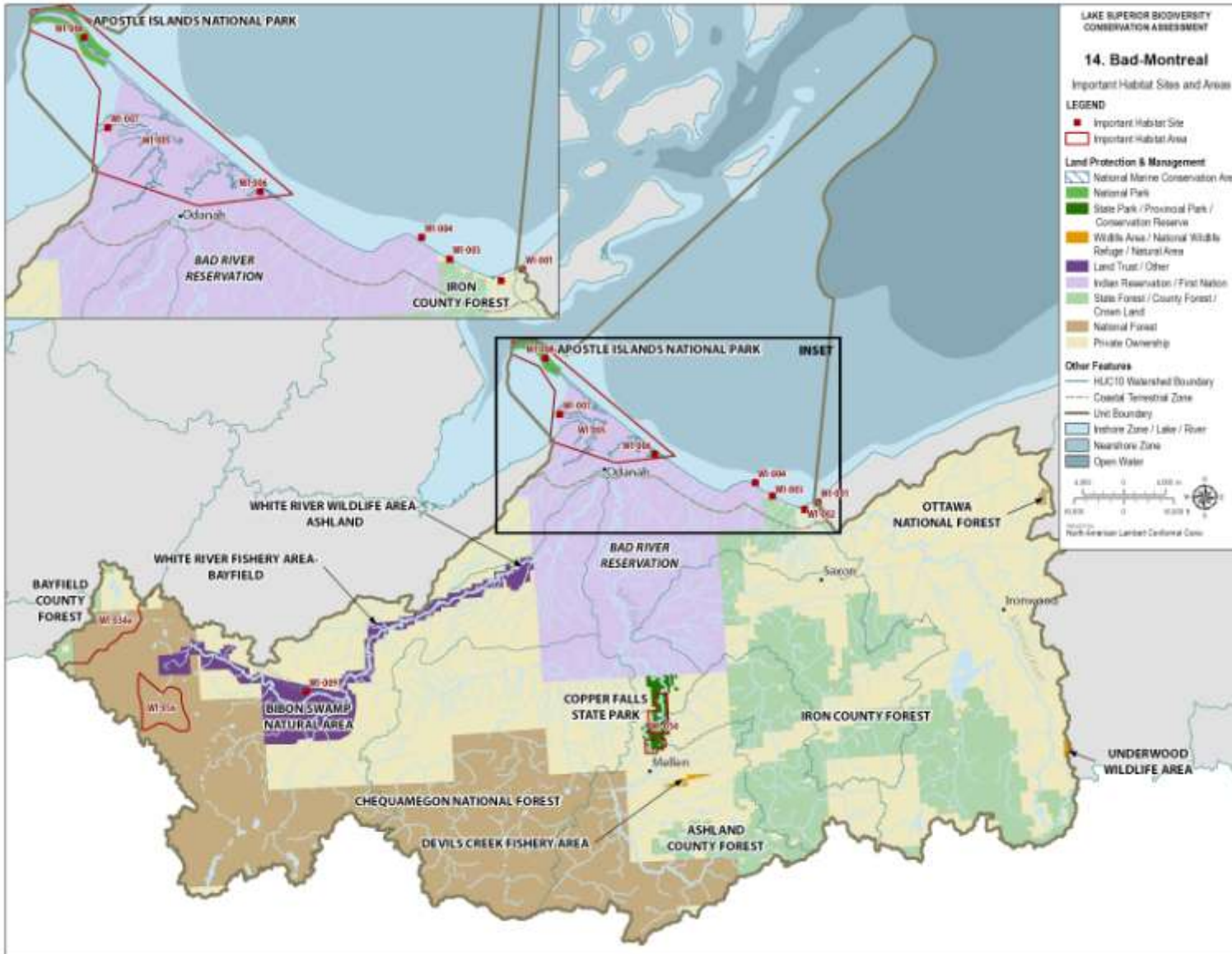


TABLE 14.4: Bad-Montreal LIST OF SPECIES AND COMMUNITIES OF CONSERVATION CONCERN

At least 145 species and communities of conservation concern have been documented in the regional unit. 84 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). 20 species and communities were once known to occur here, but have current conservation ranks of H (Historical). A further 41 species and communities of conservation concern are known to occur in this regional unit, but are currently not ranked for viability.¹⁸

<i>Present Records (Viability Rankings of A to E)</i>	
Scientific Name	Common Name
<i>Agabates acuductus</i>	A Water Scavenger Beetle
Alder thicket	Alder Thicket
<i>Arabis missouriensis</i>	Missouri Rock-cress
<i>Asplenium trichomanes</i>	Maidenhair Spleenwort
Bat Hibernaculum	Bat Hibernaculum
Black spruce swamp	Black Spruce Swamp
Boreal forest	Boreal Forest
<i>Botrychium minganense</i>	Mingan's Moonwort
<i>Botrychium oneidense</i>	Blunt-lobe Grape-fern
<i>Botrychium rugulosum</i>	Rugulose Grape-fern
<i>Callitriche hermaphroditica</i>	Autumnal Water-starwort
<i>Callitriche heterophylla</i>	Large Water-starwort
<i>Cardamine maxima</i>	Large Toothwort
<i>Carex lenticularis</i>	Shore Sedge
<i>Carex novae-angliae</i>	New England Sedge
<i>Charadrius melodus</i>	Piping Plover
Clay seepage bluff	Clay Seepage Bluff
<i>Cygnus buccinator</i>	Trumpeter Swan
<i>Cypripedium arietinum</i>	Ram's-head Lady's-slipper
<i>Cystopteris laurentiana</i>	Laurentian Bladder Fern
<i>Drosera anglica</i>	English Sundew
Dry cliff	Dry Cliff
<i>Dryopteris expansa</i>	Spreading Woodfern
<i>Eleocharis robbinsii</i>	Robbins' Spike-rush
<i>Elliptio complanata</i>	Eastern Elliptio
Emergent marsh - wild rice	Emergent Marsh - Wild Rice

¹⁸ For the Michigan portions of this unit, 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.

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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Ephemeral pond	Ephemeral Pond
Epiaeschna heros	Swamp Darner
Eptesicus fuscus	Big Brown Bat
Eriophorum chamissonis	Russet Cotton-grass
Falciptennis canadensis	Spruce Grouse
Geum macrophyllum var. macrophyllum	Large-leaved Avens
Glaucomys sabrinus	Northern Flying Squirrel
Gnaphalium sylvaticum	Woodland everlasting
Goodyera oblongifolia	Giant Rattlesnake-plantain
Great lakes dune	Great Lakes Dune
Haliaeetus leucocephalus	Bald eagle
Hardwood swamp	Hardwood Swamp
Interdunal wetland	Interdunal Wetland
Ixobrychus exilis	Least Bittern
Lake--deep, soft, drainage	Lake--Deep, Soft, Drainage
Lake--deep, soft, seepage	Lake--Deep, Soft, Seepage
Lake--deep, very soft, seepage	Lake--Deep, Very Soft, Seepage
Lake--shallow, soft, drainage	Lake--Shallow, Soft, Drainage
Lake--soft bog	Lake--Soft Bog
Littorella uniflora	American Shoreweed
Martes americana	American Marten
Melica smithii	Smith's Melic Grass
Mesic floodplain terrace	Mesic Floodplain Terrace
Moehringia macrophylla	Large-leaved Sandwort
Moist cliff	Moist Cliff
Muskeg	Muskeg
Myotis lucifugus	Little Brown Bat
Northern dry forest	Northern Dry Forest
Northern dry-mesic forest	Northern Dry-mesic Forest
Northern mesic forest	Northern Mesic Forest
Northern wet forest	Northern Wet Forest
Northern wet-mesic forest	Northern Wet-mesic Forest
Open bog	Open Bog
Oporornis agilis	Connecticut Warbler
Orobanche uniflora	One-flowered Broomrape
Osmorhiza berteroi	Chilean Sweet Cicely
Parnassia palustris	Marsh Grass-of-Parnassus
Petasites sagittatus	Arrow-leaved Sweet-coltsfoot
Platanthera flava var. herbiola	Pale Green Orchid
Platanthera hookeri	Hooker's Orchid
Poor fen	Poor Fen
Potamogeton confervoides	Algae-like Pondweed
Potamogeton vaseyi	Vasey's Pondweed
Pyrola minor	Lesser Wintergreen
Rhynchospora fusca	Brown Beak-rush
Salix cordata	Sand Dune Willow
Schoenoplectus torreyi	Torrey's Bulrush
Shrub-carr	Shrub-carr
Sparganium glomeratum	Northern Bur-reed
Spring pond	Spring Pond
Springs and spring runs, soft	Springs and Spring Runs, Soft
Stream--fast, hard, cold	Stream--Fast, Hard, Cold
Stream--fast, soft, cold	Stream--Fast, Soft, Cold
Stream--slow, soft, warm	Stream--Slow, Soft, Warm
Streptopus amplexifolius	White Mandarin
Tamarack (poor) swamp	Tamarack (Poor) Swamp

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Utricularia resupinata	Northeastern Bladderwort
Vaccinium vitis-idaea ssp. minus	Mountain Cranberry
Historical Records	
Scientific Name	Common Name
Adlumia fungosa	Climbing Fumitory
Amerorchis rotundifolia	Round-leaved Orchis
Botrychium mormo	Little Goblin Moonwort
Calamagrostis stricta	Slim-stem Small Reed Grass
Calypso bulbosa	Calypso or fairy-slipper
Carex merritt-fernaldii	Fernald's Sedge
Dryopteris filix-mas	Male fern
Dryopteris fragrans	Fragrant Fern
Equisetum palustre	Marsh Horsetail
Glycyrrhiza lepidota	Wild Licorice
Glyptemys insculpta	Wood turtle
Gymnocarpium robertianum	Limestone Oak Fern
Leucophysalis grandiflora	Large-flowered Ground-cherry
Listera convallarioides	Broad-leaved Twayblade
Napaeozapus insignis	Woodland Jumping Mouse
Penstemon pallidus	Pale Beardtongue
Polystichum braunii	Braun's Holly-fern
Ranunculus gmelinii	Small Yellow Water Crowfoot
Senecio congestus	Marsh Ragwort
Woodsia oregana ssp. cathcartiana	Oregon Woodsia
Unranked Records	
Scientific Name	Common Name
Accipiter gentilis	Northern Goshawk
Acipenser fulvescens	Lake Sturgeon
Agabus leptapsis	A Predaceous Diving Beetle
Ammodramus leconteii	Le Conte's Sparrow
Arphia conspersa	Speckled Rangeland Grasshopper
Asio otus	Long-eared Owl
Bird Rookery	Bird Rookery
Botaurus lentiginosus	American Bittern
Brachycentrus lateralis	A Humpless Casemaker Caddisfly
Buteo lineatus	Red-shouldered Hawk
Canis lupus	Gray Wolf
Catharus ustulatus	Swainson's Thrush
Cicindela hirticollis rhodensis	Beach-dune Tiger Beetle
Cochlicopa morseana	Appalachian Pillar
Contopus cooperi	Olive-sided Flycatcher
Coturnicops noveboracensis	Yellow Rail
Deschampsia cespitosa	Tufted Hairgrass
Etheostoma microperca	Least Darter
Hendersonia occulta	Cherrystone Drop
Hydroprogne caspia	Caspian Tern
Isogenoides frontalis	A Perlodid Stonefly
Isogenoides olivaceus	A Perlodid Stonefly
Laccobius agilis	A Water Scavenger Beetle
Lanius ludovicianus	Loggerhead Shrike
Lepidostoma libum	A Lepidostomatid Caddisfly
Maccaffertium pulchellum	A Flat-headed Mayfly
Melanoplus flavidus	Blue-legged Grasshopper

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Migratory Bird Concentration Site	Migratory Bird Concentration Site
Myotis septentrionalis	Northern Long-eared Bat
Northern sedge meadow	Northern Sedge Meadow
Notropis anogenus	Pugnose Shiner
Pieris virginiensis	West Virginia White
Poecile hudsonicus	Boreal Chickadee
Psilotreta indecisa	A Caddisfly
Regulus calendula	Ruby-crowned Kinglet
Setophaga cerulea	Cerulean Warbler
Shore fen	Shore Fen
Sorex palustris	Water Shrew
Stream--slow, hard, cold	Stream--Slow, Hard, Cold
Vertigo paradoxa	Mystery Vertigo
Zoogenetes harpa	Boreal Top