NAMEKAGON LAKE
SENSITIVE AREA SURVEY AND MANAGEMENT GUIDELINES

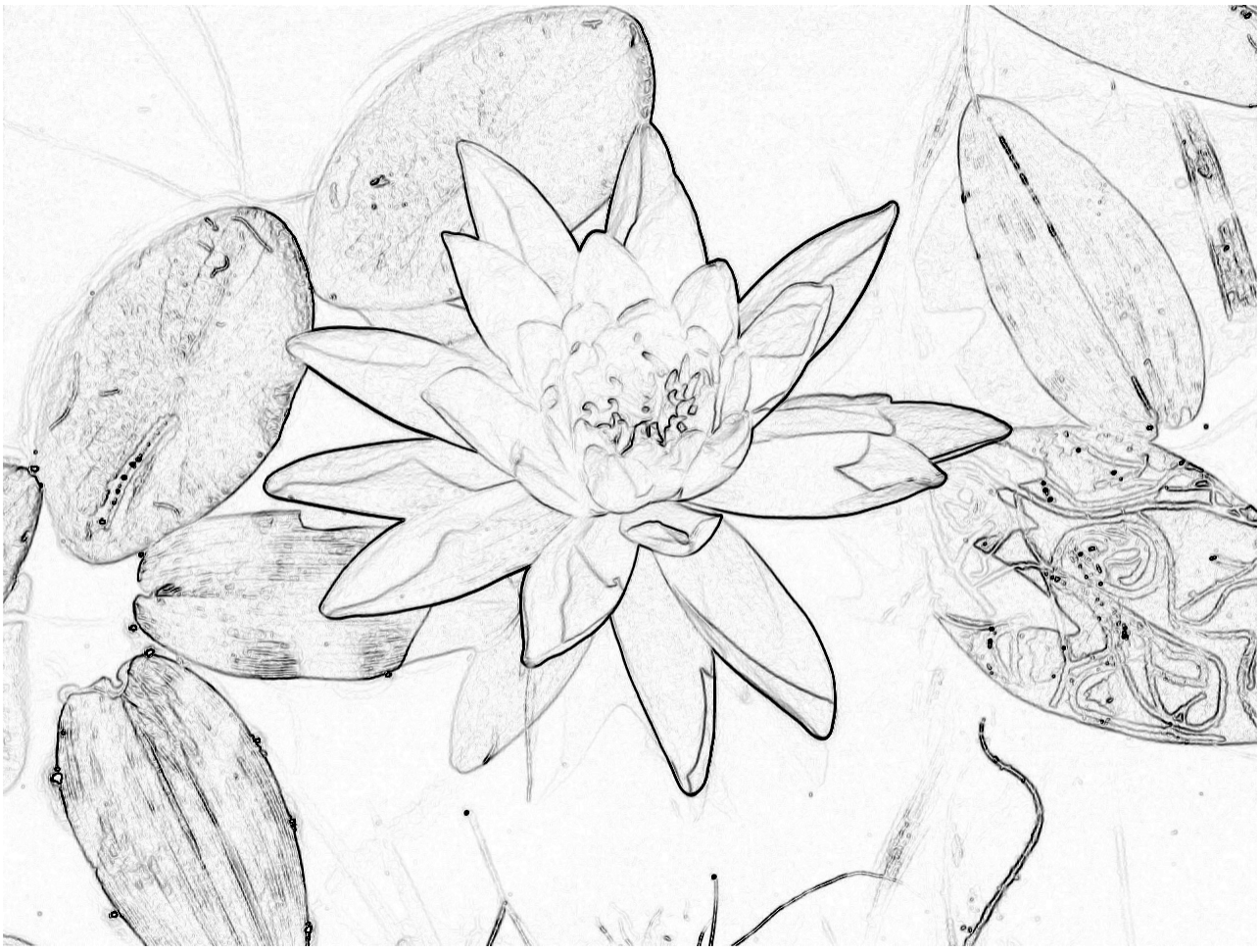

Photo: Frank Koshere

Namekagon Lake Sensitive Area Survey and Management Guidelines

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NAMEKAGON LAKE (BAYFIELD COUNTY)
SENSITIVE AREA SURVEY REPORT

Survey Date(s): 17 July 2000
18 July 2000
19 July 2000
15 August 2000

Number of Sensitive Areas: 33

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INTRODUCTION

General Lake Information

Namekagon Lake in Bayfield County is a large drainage lake, which has both inlet and outlet stream flows. The lake includes a number of basins with natural surface water connections: Jackson Lake, Cranberry Lake, Namekagon Lake, and Garden Lake. Namekagon Lake is 3227 acres with a maximum depth of 50 feet and an average depth of 16 feet.

The habitats present in Namekagon Lake are very diverse and support a balanced fishery. Muskellunge, northern pike, walleye, and large- and smallmouth bass are the top predators in the lake. Walleye are abundant with the present population being supported solely by natural reproduction. Fall recruitment surveys show above average numbers of fingerling walleye in most years. There is no minimum length for walleye, but only one fish over 14 inches is allowed in order to preserve the adult spawning population. Smallmouth bass are abundant in the lake, as well, and natural reproduction maintains the population. Largemouth bass are relatively abundant in the lake. Muskellunge are present in the lake and are stocked every other year at a rate of one fish per acre. The current muskellunge size limit of 50 inches promotes a trophy fishery. Bluegills are the dominant panfish species present. Their numbers and size structure are above average. Black crappie are moderate in numbers and above average in size structure. Other panfish species (i.e. yellow perch and rock bass) are also present. Wisconsin Department of Natural Resources fisheries staff comprehensively surveyed Namekagon Lake in 2002 as part of treaty assessment studies, and a report will be prepared in 2003.

Shoreland areas on Lake Namekagon provide optimum habitat for many species of wildlife. On the upland, standing dead and dying trees (snags) provide forage sites for insect-eating birds and eventually nesting sites for woodpeckers and songbirds. Cavities in trees provide den sites for many species of birds and mammals. Downed and rotting logs provide homes to many species of wildlife including salamanders, small mammals and invertebrates. Downed logs in or near the water (large woody cover) are especially valuable for resting and feeding areas. Vegetation near the shore and in the water is used for nesting shelter as well as food. Wildlife habitat on Namekagon Lake is best where the shoreline is undeveloped or has been allowed to remain mostly natural. Much of the woody cover has been removed from the water and upland along developed shorelines. Removing large woody cover in the water and understory cover (brush) on the shore degrades fish and wildlife habitat.

The aquatic plant diversity (number of different species) in Namekagon Lake is above average for northern Wisconsin, and the aquatic plant community is balanced and ecologically beneficial. Forty-five aquatic/wetland plant species were found during the survey. Generally plant densities are low to moderate, with only a few large plant beds on the lake. Aquatic plant management permits are required for plant control in areas with any species of concern and for chemical control and mechanical harvesting. A permit is not required for manual removal of aquatic plants in an area less than 30 feet wide along the shoreline, provided the removal is authorized or performed by the riparian property owner and is not located within a designated sensitive area. Please contact your aquatic plant management specialist before conducting any aquatic plant control on Namekagon Lake.

Sensitive Area Designations

Wisconsin Department of Natural Resources staff conducted the Namekagon Lake sensitive area designation survey in July and August of 2000 as part of a pilot study to produce DNR protocol guidelines for conducting and implementing sensitive area surveys. Surveys of this type are an integrated team approach to resource management because they utilize DNR resource managers with expertise in water resources, fisheries, wildlife, water management, and law enforcement. As a team, resource experts collaborate to identify locations around a lake that are critical to the future health and balance of the lake's ecosystem. Sensitive area surveys provide lake organizations, owners of shoreline property, county zoning officials, DNR personnel, and other interested individuals with site information that can be used to make management recommendations that will help protect and improve the overall health of lakes.

Thirty-three sites in Namekagon Lake contain critical habitat and were designated as sensitive areas (Appendix A). Natural resource managers identified these areas and recommended how these sites may be protected under Wisconsin's existing natural resource protection laws. For a discussion of basic actions that people can take to help manage sensitive areas, refer to the document *Guidelines for Protecting, Maintaining, and Understanding Lake Sensitive Areas* (Appendix B). Department staff wrote this document to explain to citizens what they can do to help preserve or restore critical lake

habitat and to further explain to those people why certain habitat types are important to the health of lakes.

Sensitive Areas Defined
What is meant by the term 'designated sensitive area'? Sensitive areas are usually located in areas that consist of endangered or rare species, aquatic/wetland vegetation, terrestrial vegetation, gravel/rubble lake bottom substrate, and/or areas that contain large woody cover. These areas often provide water quality benefits to the lake, reduce shoreline erosion, and contain the habitat needed to sustain many species of fish and wildlife. A designated sensitive area alerts interested individuals (e.g. DNR personnel, county zoning personnel, and lake associations) that the area contains important habitat that is vital to sustaining a healthy lake ecosystem and/or features an endangered plant or animal. Therefore, existing data that describe sensitive area habitat features and concerns at a site will facilitate permit reviews and decisions regarding water-based actions affecting that site. These data will guide a permit decision to protect important ecological features of the site.

Shoreland Management

Wisconsin's Shoreland Management Program, a partnership between state and local government, works to protect clean water, habitat for fish and wildlife, and natural scenic beauty. The Program establishes minimum standards for lot sizes, structural setbacks, shoreland buffers, vegetation removal and other activities within the shoreland zone. The shoreland zone includes land within 1000 feet of lakes, 300 feet of rivers, and floodplains. With research demonstrating that current standards may be inadequate to protect water resources and the fish and animals that depend on them, many communities have chosen to go beyond the minimum standards to ensure that Wisconsin's natural resources are adequately protected. This report will provide management guidelines for activities within the lake and in the immediate shoreland area. Before any recommendations in this report are completed please check with the DNR and/or local governments for required approvals.

A vital step in protecting Wisconsin's water resources is to maintain an adequate buffer. A shoreland buffer should extend from the water onto the land at least 35 to 50 feet. Studies have shown that buffers less than 35 feet are not effective at preventing water pollution. Deeper buffers of 50 feet or more can help provide important wildlife habitat for songbirds, turtles, frogs, and other animals, as well as help to filter out pollutants from runoff. In general, no mowing should occur in the buffer area, except perhaps in a viewing access corridor. This buffer should match the typical ecosystem in Northwestern Wisconsin and include three layers of vegetation: herbaceous, shrub and tree canopy.

In addition, the reader should also investigate other innovative ways to reduce the impacts of runoff flowing into the lake while improving critical shoreline habitat. This may include using phosphorus-free fertilizer; installing rain gardens; setting the lawnmower blade at a higher mower height; decreasing the area of impervious surfaces by redirecting water flow to where it can seep and filter; and/or restoring aquatic plant communities.

Exotic Species Alert

The survey team found Purple Loosestrife (*Lythrum salicaria*) in one sensitive area site: Site 3 (Upper Lake – UL/3). Purple loosestrife is an invasive plant species that can quickly overtake native plant species, which provide wildlife habitat, thus reducing the overall biological diversity of the area. Prompt action should be given to the control of this plant. There are many methods to control purple loosestrife and other exotic species, so contact a DNR aquatic plant specialist for assistance. No other exotic plant or animal species was discovered in Lake Namekagon during this survey.

Many aquatic exotic species (e.g. eurasian watermilfoil, smelt, and zebra mussels) are introduced by human activities such as boating, fishing, and releasing aquarium pets. Exotic species are more likely to become established in disturbed areas (e.g. boat landings, dredge sites, or docks) or where native plants are sparse. Protection of native plant beds may thwart or slow the establishment and spread of exotics should they be introduced into the lake system.

WHOLE-LAKE MANAGEMENT RECOMMENDATIONS

Survey participants identified a total of 33 sensitive area sites (Table 1) in Lake Namekagon. These sites include approximately 17.5 miles, or about 40%, of Namekagon Lake shoreline. The sites have been selected primarily because of two major habitat features: 1) aquatic vegetation or 2) gravel/rubble substrate. To assist in site descriptions, survey staff divided the main lake into three areas that correspond to natural delineations in the basins. These areas include: Upper Lake, Middle Lake, and Lower Lake.

Table 1. Namekagon Lake sensitive area designation sites and corresponding primary reason, based on habitat features, for site selection.

NAMEKAGON LAKE		**Aquatic Vegetaion Habitat**	**Gravel/Rubble Substrate Habitat**
Site Name	**Site Code**	**Site Numbers**	
Upper Lake	UL	1, 3, 4, 5, 6, 7, 9	2, 8, 10, 11, 13
Jackson Lake	JL	5	
Anderson Bay	AB	12	
Middle Lake	ML	19, 20, 21, 22, 24	14, 15, 18, 23, 25, 26
Mumms Bay	MB	16, 17	
Lower Lake	LL	27, 28, 29	
Garden Lake	GL	30, 31, 32	33

1. Sensitive Area Sites Based on Aquatic Vegetaion Habitat

The twenty-two aquatic vegetation-based sites contain aquatic plant communities that provide critical habitat for fish and wildlife, as well as for shoreline erosion prevention and bank stabilization. Refer to Appendix C for a summary list of all aquatic plants that were identified in this survey.

Management Recommendations:

1. Limit the removal of aquatic vegetation to the construction of navigation channels only. If navigation channels are necessary, minimize the length and width of the channel. Note that at some sensitive area sites, removal of any aquatic vegetation is not recommended.

2. Control the spread of exotic species such as purple loosestrife. Contact a DNR aquatic plant specialist for assistance in controlling exotic species.

3. Prohibit littoral zone alterations covered by Chapter 30 Wisconsin Statutes, unless there is clear evidence that such alterations would benefit the lake's ecosystem. Examples of such alterations regulated in Chapter 30 include: placement of rip-rap on lake beds or banks with the intent to improve stability; dredging of lake bottom material with the intent to improve recreational habitat or navigable access; and placement of fish cribs or similar devices with the intent to improve fishing habitat.

4. Do not remove large woody cover such as logs, downed trees, and stumps within the littoral zone in order to provide cover habitat for fish, wildlife, and other organisms.

5. Preserve/restore the terrestrial vegetation for shoreline cover. Keep lake view corridors to a minimum of 30 feet or less. Natural vegetative cover acts as a buffer against shoreline erosion and silt runoff. Rock rip-rap is often not required for shoreline stabilization if a healthy plant community already exists.

6. Use best management practices within the lake's watershed (such as those covered in *Wisconsin's Forestry Best Management Practices for Water Quality*, WDNR publication # FR093) to reduce the potential of silt, debris, or nutrients from entering the lake system.

7. Encourage local contractors and town and county road crews to learn and implement best management practices in road design, maintenance, and construction to protect water quality. Training is available at University of Wisconsin Extension workhops.

2. Sensitive Area Sites Based on Gravel/Rubble Substrate Habitat

The eleven fishery-based sensitive area designation sites contain gravel and rubble lake bottom substrate that provides important seasonal habitat for successful walleye and/or smallmouth bass spawning. Walleyes require areas of clean gravel/rubble substrate void of sediment for natural reproduction to occur in a lake. The ideal spawning habitat for smallmouth bass is an area of gravel/rubble substrate containing a shallow layer of fine sediments. The bass clears away a small portion of the fine sediment layer to expose gravel, therein constructing a "nest" in which to spawn. If these types of habitat are degraded, the natural walleye and smallmouth bass populations may decline or be lost altogether.

Management Recommendations:

1. Prohibit alterations of gravel/rubble substrate at these sites, unless alterations would improve fish spawning succes. Chapter 30 Wisconsin Statutes requires permits for such alterations.

2. Utilize proper erosion control measures to preserve gravel/rubble habitat if near-shore construction should occur in these areas. Uncontrolled or poorly conducted construction activities would threaten important fish spawning habitat.

3. Preserve/restore natural vegetative buffers along the shoreline to provide the best long-term and natural protection against shoreline erosion and silt runoff.

4. Aquatic plant management may be appropriate in certain circumstances (e.g. exotic species control). In general, however, aquatic vegetation removal is not advisable because aquatic plants provide protective cover, shade, food sources, and reproductive areas for fish, macroinvertebrates, and/or wildlife.

RESOURCE VALUES SITE BY SITE

Site 1. Upper Lake 1 (UL/1)

Site 1 is located in the north central bay of the upper basin, near the Namekagon Lake Recreation Area (start point 46.244377 N, 91.093855 W). The area consists of undisturbed aquatic (Table 2) and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 990 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Bottom substrate consists of silt, detritus, and wood chips. The riparian zone consists of wetland and developed areas. Herbs, shrubs, trees and lawn are present and make up the shoreland buffer character from the waters edge to 35 feet inland. The wetland type present at the site is shrub/scrub deciduous. Large woody cover is not present at the site, and the natural scenic beauty (NSB) is poor.

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for Northern Pike, Muskellunge, Largemouth Bass, and panfish species at this site.

Table 2. Aquatic plants found at Site 1 by plant category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Scirpus* spp., *Eleocharis acicularis.*	*Pontederia cordata, Typha* spp., *Sagittaria* spp.	
Floating-Leaf Plants:	*Nymphaea* spp.	*Nuphar* spp.	
Submersed Plants:	*Ceratophyllum* spp., *Vallisneria americana, Myriophyllum sibiricum, Najas* spp., *Drepanpocladus*	*Bidens beckii, Elodea canadensis, Utricularia* spp., *Myriophyllum heterophyllum*	
Pondweeds (Potamogetons):	*Potamogeton gramineus, Potamogeton robbinsii, Potamogeton amplifolius , Potamogeton praelongus, Potamogeton zosteriformis,*	*Potamotgeton richardsonii*	
Turf Formers/Rosettes:	*E. acicularis*	*Sagittaria* spp.	
Algae:	Filamentous		
Exotics:			

Emergent and floating leaf vegetation as well as shoreland shrubs and brush provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, and/or feeding include upland wildlife, furbearers, reptiles, amphibians, and birds. Survey participants noted numerous ducks at this site.

Management Recommendations:
1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

Site 2. Upper Lake 2 (UL/2)

Site 2 is located on the gravel bar point west of Missionary Point (start point 46.242103 N, 91.101912 W). The shoreline consists of gravel substrate suitable for the natural reproduction habits of walleye and smallmouth bass, and thus the substrate provides the primary reason for site selection. Site length is approximately 506 feet. The important habitat of the sensitive area is located within the littoral zone. Shrubs, trees, and lawn

characterize the riparian zone. Large woody cover is not present at the site, and the NSB is average.

This site provides unique features and important seasonal habitat for walleye, smallmouth bass, perch, and suckers. The area offers gravel lake bottom substrate and aquatic vegetation nearby for the benefit of natural reproduction and feeding opportunities for fish.

Management Recommendations:
1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.

Site 3. Upper Lake 3 (UL/3)

Site 3 is located in the northwestern bay of the upper basin, close to Cranberry Lake (start point 46.24293 N, 91.103592 W). The area consists of undisturbed aquatic and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 3523 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Bottom substrate consists of muck and detritus. The shoreland buffer consists of wetland and developed areas. Herbs, shrubs, trees and lawn are present and make up the shoreland buffer character from the water's edge to 35 feet inland. The wetland type present at the site is shrub/scrub deciduous. No large woody cover is visible, and NSB is average.

Table 3. Aquatic plants found at Site 3 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Carex* spp., *Eleocharis* spp.	*Scirpus* spp., *P. cordata*	*Typha* spp., *Sparganium fluctuans*
Floating-Leaf Plants:	*Lemna spp., Nuphar spp.*	*Nympaea spp.*	
Submersed Plants:	*V. americana*	*E. canadensis, Ceratophyllum* spp.	*M. heterophyllum*
Pondweeds (Potamogetons):	*Potamogeton epihydrus, P.praelongus, P. zosteriformis,* fineleaf pondweed spp.	*P. amplifolius*	
Turf Formers/Rosettes:	*Eleocharis* spp.		
Algae:	*Nitella flexilus,* filamentous		
Exotics:	*Lythrum salicaria*		

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site.

Emergent and floating leaf vegetation as well shoreland shrubs and brush provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, and/or feeding include upland wildlife, furbearers, reptiles, amphibians, and birds. Survey participants observed a beaver lodge and an osprey fishing at this site.

Management Recommendations:
1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Control the presence and prevent the spread of purple loosestrife.
4. Maintain biological integrity of the site to preserve the existing wildlife species.

Site 4. Upper Lake 4 (UL/4)

Site 4 consists of the entire channel between the upper basin of Namekagon Lake and Jackson Lake (start point 46.239485 N, 91.11427 W). The area consists of undisturbed aquatic (Table 4) and terrestrial/wetland vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1.2 miles. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Bottom substrate consists of muck and detritus. The riparian zone consists of wetland and wooded areas. Herbs, shrubs, and trees are present and make up the shoreland buffer character from the waters edge to 35 feet inland. The wetland type present at the site is shrub/scrub deciduous. No large woody cover is visible at the site, and the NSB is outstanding.

Table 4. Aquatic plants found at Site 4 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Scirpus* spp., *Sagittaria* spp., *Eleocharis* spp., *Iris spp., Decodon verticillatus, Dulichium arundinaceum*	*Typha* spp.	*P. cordata, Sparganium* spp.
Floating-Leaf Plants:	*Lemna* spp., *Nuphar spp., Nymphaea* spp., *Brasenia schreberi*		
Submersed Plants:	*E. canadensis*		
Pondweeds (Potamogetons):	*P. amplifolius, P. richardsonii, P. epihydrus, P. zosteriformis,* fine-eaf pondweed spp.		
Turf Formers/Rosettes:	*Sagittaria spp., Eleocharis* spp.		
Algae:	Filamentous		
Exotics:			

This site is unique in comparison to the rest of the lake in that it offers a large continuous channel of littoral zone habitat. It provides a corridor for fish and wildlife, as well as a connection between lakes, and it contains a highly diverse biological community.

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site. This site contains some of the best largemouth bass habitat in the entire lake.

Emergent and floating leaf vegetation as well shoreland shrubs and brush provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, and/or feeding include upland wildlife, furbearers, reptiles, amphibians, and birds. Indeed survey participants noted a beaver lodge, an osprey, and several ducks at this site.

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Ensure that future development preserves outstanding natural scenic beauty.
5. Create a "Slow – No Wake" zone to protect the biological integrity of the wetland area and the surface water connection corridor.

Site 5. Jackson Lake 1 (JL/1)

Site 5 is located along the northern shore of Jackson Lake (start point 46.254503 N, 91.109627 W). The area consists of undisturbed aquatic (Table 5) and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 3542 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Bottom substrate consists of muck and detritus. The gently sloping riparian zone consists of wetland, woodland, and developed areas. Herbs, shrubs, trees and lawn are present and make up the shoreland buffer character from the water's edge to 35 feet inland. There is no visible large woody cover, nor is there a NSB rating at Site 5.

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site.

Emergent and floating leaf vegetation as well as shoreland shrubs and brush provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, and/or feeding include upland wildlife, furbearers, reptiles, amphibians, and birds. Indeed survey participants noted numerous ducks at this site.

Table 5. Aquatic plants found at Site 5 by plant category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	Burreed spp.	*Scirpus* spp., *Eleocharis spp., Typha* spp., *S. fluctuans*	*P. cordata*
Floating-Leaf Plants:	*Lemna* spp.	*Nuphar* spp., *Nymphaea* spp.	
Submersed Plants:		*E. canadensis, M. heterophyllum*	*Ceratophyllum* spp.
Pondweeds (Potamogetons):	*P. gramineus, P. amplifolius , P. praelongus*, fineleaf pondweed spp.	*P. epihydrus*	*P. zosteriformis*
Turf Formers/Rosettes:	*Eleocharis* spp.		
Algae:	Filamentous		
Exotics:			

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.

Site 6. Upper Lake 5 (UL/5)

Site 6 is located around the entire shoreline of the Chief Namekagon Island in the upper basin (start point 46.238003 N, 91.107302 W). The area consists of undisturbed aquatic and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1395 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Bottom substrate consists of gravel and sand. The riparian zone consists of wooded area. Shrubs and trees are present and make up the shoreland buffer character from the waters edge to 35 feet inland. Large woody cover is present at the site, and the NSB is good.

This site is unique in comparison to the rest of the lake because it is a state-owned, non-developed island that contains a high level of plant and animal diversity and habitat.

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site.

Table 5. Aquatic plants found at Site 6 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Scirpus* spp., *Carex* spp., *Eleocharis* spp., *Typha* spp.	*Sagittaria* spp.	
Floating-Leaf Plants:	*Nuphar spp., Nymphaea spp., Polygonum amphibium*		
Submersed Plants:	*E. canadensis, Ceratophyllum* spp.,*V. americana., M. heterophyllum, Myriophyllum alterniphlorum, Zosterella dubia*	*Najas* spp.	
Pondweeds (Potamogetons):	*P. richardsonii*	*P. gramineus, P. amplifolius, P. epihydrus, P. zosterformis*	
Turf Formers/Rosettes:	*Isoetes, Eleocharis* spp.	*Sagittaria* spp.	
Algae:	*Chara* spp., Filamentous		
Exotics:			

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, and/or feeding include upland wildlife, furbearers, reptiles, amphibians, and birds.

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

Site 7. Upper Lake 6 (UL/6)

Site 7 is located just south of the Jackson Lake outlet, on the western shoreline of the upper basin (start point 46.236623 N, 91.117383 W). The area consists of undisturbed aquatic and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1385 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Bottom substrate consists of gravel and sand. The gently sloping riparian zone consists of wetland, wooded, and developed areas. Herbs, shrubs and trees are present and make up the shoreland buffer character from the waters edge to 35 feet inland. There is no visible large woody cover, and the NSB is outstanding.

This site is unique in comparison to the rest of the lake in that it offers a large continuous area of emergent, floating leafed, and submersed aquatic vegetation that containsa high level of plant and animal diversity and habitat.

Table 6. Aquatic plants found at Site 7 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Sagittaria* spp., *Typha* spp., *Dulichium arundinaceum*	*P. cordata*	*Eleocharis* spp., *Sparganium* spp.
Floating-Leaf Plants:	*P. amphibium*	*Nuphar* spp., *Nymphaea* spp.	
Submersed Plants:	*B. beckii, E. canadensis, Utricularia* spp., *V. americana, M. alterniphlorum, Najas* spp.	*M. heterophyllum*	
Pondweeds (Potamogetons):	*P. praelongus, P. richardsonii, P. epihydrus,* fineleaf pondweed spp.	*P. amplifolius, P. zosterformis*	*P. gramineus*
Turf Formers/Rosettes:	*Sagittaria* spp.		*Eleocharis* spp.
Algae:	*Chara* spp., Filamentous		
Exotics:			

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, and/or feeding include upland wildlife, furbearers, reptiles, amphibians, and birds. Survey participants observed gadwall and mallard ducks, and they heard mink and bullfrogs at this site.

Management Recommendations:
1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain the biological integrity of the area to preserve the existing wildlife species found in the area.
4. Ensure that future development preserves outstanding natural scenic beauty.

Site 8. Upper Lake 7 (UL/7)

Site 8 is located on the southern shoreline of the upper basin on the point bar prior to the corridor that connects the upper and middle basins (start point 46.233183 N, 91.105207

W). The shoreline consists of gravel substrate suitable for the natural reproduction habits of walleye and smallmouth bass, and thus the substrate provides the primary reason for site selection. Site length is approximately 1838 feet. The important habitat of the sensitive area is located within the littoral zone. The gently sloping riparian zone includes wooded and developed areas. There is no large woody cover, and NSB is average.

This site provides unique features and important seasonal habitat for walleye, smallmouth bass, perch, and suckers. The area contains gravel lake bottom substrate and aquatic vegetation nearby that enhance natural reproduction and feeding opportunities for fish.

Management Recommendations:
1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.

Site 9. Upper Lake 8 (UL/8)

Site 9 is located on the northern shore of the eastern bay in the upper basin (start point 46.244342 N, 91.083588 W). The area consists of undisturbed aquatic (Table 7), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1604 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Sand and muck constitute the bottom substrate. The gently sloping riparian zone consists of wetland and wooded areas with woody cover present at the site. There is no NSB description for this site.

Table 7. Aquatic plants found at Site 9 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:		*Scirpus* spp., *Sagittaria spp., P. cordata, Typha spp.*	*Eleocharis* spp., *Sparganium* spp.
Floating-Leaf Plants:		*Nuphar* spp., *Nymphaea spp.*	
Submersed Plants:	*Utricularia* spp., *V. americana, Najas* spp.	*M. heterophyllum*	
Pondweeds (Potamogetons):	*P. praelongus, P. richardsonii*	*P. epihydrus, P. zosterformis*	*P. gramineus, P. amplifolius*
Turf Formers/Rosettes:		*Sagittaria spp*	*Eleocharis* spp.
Algae:		Filamentous	
Exotics:			

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, and/or feeding include upland wildlife, furbearers, reptiles, amphibians, and birds.

Management Recommendations:
1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

Site 10. Upper Lake 9 (UL/9)

Site 10 is located in the northeastern portion of the eastern bay of the upper basin (start point 46.244032 N, 91.079913 W). The shoreline consists of sand substrate suitable for the natural reproduction habits of panfish, and thus the substrate provides the primary reason for site selection. Site length is approximately 428 feet. The important habitat of the sensitive area is located within the littoral zone. The gently sloping riparian zone contains wooded and developed areas. Large woody cover is not visible, and there is no NSB description for this site.

This site provides unique features and important seasonal habitat for panfish species. These fish utilize the sand substrate to create spawning nests in addition to the nursery and feeding benefits.

Management Recommendations:
1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.

Site 11. Upper Lake 10 (UL/10)

Site 11 is located in the central portion of the eastern bay of the upper basin (start point 46.238037 N, 91.07845 W). The shoreline consists of rubble, gravel, and sand substrate with intermittent boulders suitable for the natural reproduction habits of walleye and smallmouth bass, and thus the substrate provides the primary reason for site selection. Site length is approximately 2270 feet. The important habitat of the sensitive area is located within the littoral zone. The gently sloping riparian zone contains wooded and developed portions. Large woody cover is present at the site. There is no NSB description for this site.

This site provides unique features and important seasonal habitat for walleye and smallmouth bass. In addition to the gravel/rubble substrate that provides spawning,

nursery, and feeding areas for these fish species, there are boulders that enhance fish habitat. There are also microhabitats containing woody cover and aquatic plants that provide additional protective cover for fish.

Management Recommendations:
1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.
2. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

Site 12. Anderson Bay 1 (AB/1)

Site 12 includes almost the entire bay(s) east of Anderson Island (start point 46.22777 N, 91.083992 W). The area consists of undisturbed aquatic (Table 9) and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 2.4 miles. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Bottom substrate consists of muck and wood. The gently sloping riparian area is mostly wooded and wetland with some developed areas, and the littoral zone is expansive and very biologically diverse. Large woody cover is present at this site, and NSB is outstanding.

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site. The woody cover enhances protective cover for fish.

Table 9. Aquatic plants found at Site 12 by plant category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Scirpus* spp., *Eleocharis* spp., *Typha* spp.	*P. cordata*	*Sparganium* spp.
Floating-Leaf Plants:	*Nuphar mycrophylla, B. schreberi, P. amphibium.*	*Nuphar* spp. (largeleaf)	*Nymphaea* spp.
Submersed Plants:	*E. canadensis, Ceratophyllum* spp., *Utricularia* spp., *V. americana, M. heterophyllum, Najas* spp.		
Pondweeds (Potamogetons):	*P. robbinsii, P. praelongus, P. epihydrus,*	*P. amplifolius, P. richarsonii, P. zosteriformis*	*P. gramineus*
Turf Formers/Rosettes:	*Eleocharis* spp.		
Algae:	*Chara* spp., Filamentous		
Exotics:			

Emergent and floating leaf vegetation as well shoreland shrubs and brush provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding and/or nursery purposes include upland wildlife,

furbearers, reptiles, amphibians, and/or birds. Survey participants saw an otter, beaver lodges, loon nesting areas and deer at this site.

Management Recommendations:
1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.
5. Ensure that future development preserves outstanding natural scenic beauty.

Site 13. Upper Lake 11 (UL/11)

Site 13 is located in the central portion of the eastern bay of the upper basin (start point 46.233213 N, 91.085153 W). The shoreline consists of gravel and sand substrate suitable for the natural reproduction habits of walleye and smallmouth bass, and thus the substrate provides the primary reason for site selection. Site length is approximately 3487 feet. The important habitat of the sensitive area is located within the littoral zone. The steeply sloping riparian zone is mostly wooded. There is no visible large woody cover at the site, and there is no NSB description.

This site provides unique features and important seasonal habitat for walleye and smallmouth bass. The site contains gravel, rubble, and overhanging trees that provide spawning, nursery, feeding, and/or protective cover areas for fish.

Shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover include upland wildlife, furbearers, reptiles, amphibians, and birds.

Management Recommendations:
1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.

Site 14. Middle Lake 1 (ML/1)

Site 14 is located on the gravel/sand bar off of Eagle Point (start point 46.22112 N, 91.10265 W). The shoreline consists of rubble, gravel, and sand substrate suitable for the natural reproduction habits of walleye and smallmouth bass, and thus the substrate provides the primary reason for site selection. Site length is approximately 1522 feet. The important habitat of the sensitive area is located within the littoral zone. The moderately sloping riparian area contains wooded and developed areas. Large woody cover is not visible at the site, and the NSB is average.

This site provides unique features and important seasonal habitat for walleye and smallmouth bass. The site contains gravel, rubble, and overhanging trees that provide spawning, nursery, feeding, and/or protective cover areas for fish.

Shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover include upland wildlife, furbearers, reptiles, amphibians, and birds.

Management Recommendations:
1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.

Site 15. Middle Lake 2 (ML/2)

Site 15 is located on the gravel/rubble bar on the north side of Picnic Point (start point 46.213885 N, 91.102848 W). The shoreline consists of gravel and rubble substrate suitable for the natural reproduction habits of walleye, and thus the substrate provides the primary reason for site selection. Site length is approximately 1066 feet. The important habitat of the sensitive area is located within the littoral zone. The moderately sloping riparian area contains wooded and developed areas. There is no large woody cover visible at the site, and there is no NSB description.

This site provides unique features and important seasonal habitat for walleye. The site contains gravel and rubble that provides spawning, nursery, and/or feeding areas for walleye and other fish. The site is unique because the gravel substrate a good distance out from the shoreline.

Management Recommendations:
1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.

Site 16. Mumms Bay 1 (MB/1)

Site 16 is located on the northern shore of Mumms Bay, which is on the eastern side of the middle basin (start point 46.214782 N, 91.099392 W). The area consists of undisturbed aquatic (Table 10), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 718 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Sand, silt, and muck constitute the bottom substrate. The gently sloping riparian zone consists of wetland with woody cover present at the site. The NSB is average.

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site. The large woody cover that is present enhances the protective cover available to fish.

Table 10. Aquatic plants found at Site 16 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Sagittaria* spp., *Sparganium spp., Iris* spp., Bog rosemary	*Carex* spp., *P. cordata, Typha* spp.	
Floating-Leaf Plants:	*N. mycrophylla, Nymphaea* spp.	*Nuphar* spp.(largeleaf)	
Submersed Plants:	*E. canadensis, Ceratophyllum spp., Utricularia spp., M. heterophyllum*	*V. americana*	
Pondweeds (Potamogetons):	*P. gramineus, P. amplifolius , P. richardsonii, P. epihydrus, P. zosterformis*		
Turf Formers/Rosettes:	*Sagittaria* spp.		
Algae:	Filamentous		
Exotics:			

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds. Survey participants observed many birds at Site 16.

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain the biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

Site 17. Mumms Bay 2 (MB/2)

Site 17 is located along the eastern shore of Mumms Bay, which is on the eastern side of the middle basin (start point 46.211783 N, 91.094748 W). The area consists of undisturbed aquatic (Table 11), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1720 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Gravel, sand, and muck constitute the bottom substrate. The gently sloping riparian zone consists of wetland and wooded areas with large woody cover present at the site. The NSB is outstanding because of the high diversity and large wetland complex.

Table 11. Aquatic plants found at Site 17 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Carex lacutris, Sagittaria latifolia, Sparganium fluctuans, Sparganium* spp.	*P. cordata, Typha* spp.	
Floating-Leaf Plants:	*Lemna* spp., *P. amphibium*	*Nuphar spp., Nymphaea spp.*	
Submersed Plants:	*E. canadensis, Utricularia* spp., *V. americana*	*M. heterophyllum*	
Pondweeds (Potamogetons):	*P. amplifolius , P. richardsonii,, P. zosterformis*	*P. gramineus*	
Turf Formers/Rosettes:	*S. latifolia*		
Algae:	*Chara* spp., *Nitella* spp., Filamentous		
Exotics:			

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site. The large woody cover that is present enhances the protective cover available to fish.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds. Additionally, Site 17 is the only site where survey participants observed a freshwater sponge (phylum porifera).

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.
5. Ensure that future development preserves outstanding natural scenic beauty.

Site 18. Middle Lake 3 (ML/3)

Site 18 is located along the entire shoreline of Champaign Island, which is just outside Mumms Bay (start point 46.209715 N, 91.107987 W). The area consists of undisturbed aquatic (Table 12), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1231 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone.

Gravel and sand constitute the bottom substrate. The moderately sloping riparian zone is wooded with large woody cover present at the site. The NSB is good.

Table 12. Aquatic plants found at Site 18 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Scirpus* spp., *Eleocharis* spp., *Sagittaria* spp., *P. cordata, Typha* spp.		
Floating-Leaf Plants:	*P. amphibium*		
Submersed Plants:	*Ceratophyllum* spp., *M. heterophyllum, Najas* spp.	*E. canadensis, V. americana*	
Pondweeds (Potamogetons):	*P. amplifolius , P. richardsonii*	*P. gramineus*	
Turf Formers/Rosettes:	*Isoetes* spp., *Eleocharis* spp., *Sagittaria* spp.		
Algae:	*Chara* spp.		Filamentous
Exotics:			

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site. The large woody cover that is present enhances the protective cover available to fish. The gravel and sand substrates provide spawning and nursery areas for walleye and/or smallbouth bass.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds. Survey participants observed an eagle's nest and outstanding heron habitat at Site 18.

Management Recommendations:
1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

Site 19. Middle Lake 4 (ML/4)

Site 19 is located along the southwestern shoreline of Bergundy Point (start point 46.20751 N, 91.106998 W). The area consists of undisturbed aquatic (Table 13), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site

selection, although this site is important for fisheries, as well. Site length is approximately 354 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Rubble, gravel, sand, and rock constitute the bottom substrate. The gently sloping riparian zone is wooded with large woody cover present at the site. There is no NSB description this site.

Table 13. Aquatic plants found at Site 19 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:			
Floating-Leaf Plants:	*Nuphar spp., Nymphaea spp.*		
Submersed Plants:	*E. canadensis, Ceratophyllum spp., V. americana, M. heterophyllum*		
Pondweeds (Potamogetons):	*P. gramineus, P. richardsonii, P. zosteriformis*	*P. amplifolius,* fineleaf pondweed spp.	
Turf Formers/Rosettes:			
Algae:			
Exotics:			

Emergent and submersed aquatic vegetation in addition to rock, rubble, and wood provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, walleye, smallmouth bass, and panfish at this site. The large woody cover that is present enhances the protective cover available to fish. The gravel, rubble, and sand substrate provides superior spawning and nursery areas for walleye and/or smallbouth bass.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds. Survery participants observed turtles sunning themselves here.

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.
6. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for walleye and smallmouth bass.

Site 20. Middle Lake 5 (ML/5)

Site 20 is located along the central western shoreline in the middle basin and includes two large bays that constitute a continuous wetland complex (start point 46.2083 N, 91.127945 W). The area consists of undisturbed aquatic (Table 14), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 5154 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Sand, muck, and detritus constitute the bottom substrate. The gently sloping riparian zone includes wooded and wetland areas with woody debris present at the site. The NSB is outstanding because of its high diversity and large wetland complex.

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site. The abundant bulrushes are especially important for muskellunge spawning and nursery habitat. The large woody cover that is present enhances the protective cover available to fish.

Table 14. Aquatic plants found at Site 20 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Scirpus* spp., *P. cordata, Typha* spp.	*Sagittaria* spp.	*Eleocharis* spp.
Floating-Leaf Plants:	*Nymphaea* spp.	*Nuphar* spp.	
Submersed Plants:	*E. canadensis*	*V. americana, M. alterniflorum*	*M. heterophyllum*
Pondweeds (Potamogetons):	*P. amplifolius,* fineleaf pondweed spp.	*P. gramineus, P. richardsonii*	
Turf Formers/Rosettes:	*Isoetes* spp.	*Sagittaria* spp.	*Eleocharis* spp.
Algae:	Filamentous		
Exotics:			

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds.

Site 20 is unique in that there are three wetland habitat types with undisturbed corridors that connect each: 1) shrub carr; 2) tamarack/blue spruce bog; and 3) shallow marsh. These areas may potentially contain endangered species.

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.
5. Ensure that future development preserves outstanding natural scenic beauty.
6. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.

Site 21. Middle Lake Site 6 (ML/6)

Site 21 is located along the northeastern shoreline of Paines Island (start point 46.215833 N, 91.11781 W). The area consists of undisturbed aquatic (Table 15) and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1052 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone, and rubble, gravel, sand, and detritus constitute the bottom substrate. The riparian zone is a woody area with large woody cover present at the site. There is no NSB description for Site 21.

Table 15. Aquatic plants found at Site 21 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Scirpus* spp., *P. cordata, Typha* spp.	*Sagittaria* spp.	*Eleocharis* spp.
Floating-Leaf Plants:	*Nymphaea* spp.	*Nuphar* spp.	
Submersed Plants:	*E. canadensis*	*V. americana, M. alterniflorum*	*M. heterophyllum*
Pondweeds (Potamogetons):	*P. amplifolius,* fineleaf pondweed spp.	*P. gramineus, P. richardsonii*	
Turf Formers/Rosettes:	*Isoetes* spp.	*Sagittaria* spp.	*Eleocharis* spp.
Algae:	Filamentous		
Exotics:			

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, walleye, smallmouth bass, and panfish at this site. The large woody cover that is present enhances the protective cover available to fish. The gravel, rubble, and sand substrate provides superior spawning and nursery areas for walleye and/or smallbouth bass.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, feeding, and/or nursery areas include birds.

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.
5. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for walleye and smallmouth bass.

22. Middle Lake Site 7 (ML/7)

Site 22 is located in the northwestern bay of the middle basin near the Namekagon River outlet, which is southwest of Juneks Point (start point 46.225087 N, 91.11776 W). The area consists of undisturbed aquatic (Table 16), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 2971 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Muck and detritus constitute the bottom substrate. The gently sloping riparian zone includes wetland, wooded, and developed areas with large woody cover present at the site. There is not a NSB description for Site 22.

Table 16. Aquatic plants found at Site 22 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Typha* spp.	*Eleocharis* spp., *P. cordata*	
Floating-Leaf Plants:	*Nymphaea* spp.	*Nuphar* spp.	
Submersed Plants:	*B. beckii, Ceratophyllum* spp.	*E. canadensis, Utricularia spp., M. heterophyllum*	*V. americana*
Pondweeds (Potamogetons):	*P. amplifolius, P. zosteriformis*	*P. gramineus, P. richardsonii*	*P. robbinsii*
Turf Formers/Rosettes:			
Algae:	*Chara* spp.	Filamentous	
Exotics:			

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site. Large woody cover enhances protective cover for fish.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland

wildlife, furbearers, reptiles, amphibians, and birds. Indeed survey participants saw turtles at Site 22.

Management Recommendations:
1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.
5. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for walleye and smallmouth bass.
6. Create a "Slow – No Wake" zone to protect the biological integrity of the wetland bay and stream outlet.

23. Middle Lake Site 8 (ML/8)

Site 23 is located off the tip of the first southern penninsula on Juneks Point (start point 46.223745 N, 91.115783 W). The shoreline consists of rubble, gravel, and sand substrate that is suitable for the natural reproduction habits of walleye and smallmouth bass, and thus the substrate provides the primary reason for site selection. Site length is approximately 807 feet. The important habitat of the sensitive area is located within the littoral zone. The genlty sloping riparian zone includes wooded and developed areas, and large woody cover is present at the site. There is no NSB description for Site 23.

This site provides unique features and important seasonal habitat for walleye and smallmouth bass. The site contains gravel, rubble, and rocks that provide spawning, nursery, feeding, and/or protective cover areas for fish.

Management Recommendations:
1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.
2. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

24. Middle Lake Site 9 (ML/9)

Site 24 is located in the northern bay of the middle basin, which is also the southcentral bay of Juneks Point (start point 46.226015 N, 91.110493 W). The site extends from the Juneks Point shoreline to the small island in the middle of the bay. The area consists of undisturbed aquatic (Table 17), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1.0 mile. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Muck and detritus constitute the bottom substrate. The gently sloping

riparian zone includes wetland, wooded, and developed areas with large woody cover present at the site. There is not a NSB description for this site.

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site. The abundant bulrushes are especially important for muskellunge spawning and nursery habitat. Woody debris enhance protective cover available to fish.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds. Survey participants observed numerous birds at Site 24.

Table 17. Aquatic plants found at Site 24 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Carex* spp., *Sparganium* spp.	*Scirpus* spp., *Eleocharis* spp., *P. cordata*	*Typha* spp.
Floating-Leaf Plants:	*Nuphar* spp., *Nymphaea* spp.		
Submersed Plants:		*E. canadensis, Ceratophyllum spp., M. heterophyllum, Najas* spp.	*V. americana*
Pondweeds (Potamogetons):	*P. amplifolius, P. zosteriformis*	*P. gramineus, P. richardsonii*	*P. robbinsii*
Turf Formers/Rosettes:		*Eleocharis* spp.	
Algae:			*Chara* spp., Filamentous
Exotics:			

Management Recommendations:
1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

25. Middle Lake Site 10 (UL/10)

Site 25 is located off the tip of the second southern penninsula/island on Juneks Point (start point 46.22285 N, 91.107923 W). The shoreline consists of rubble, gravel, and sand substrate that is suitable for the natural reproduction habits of walleye and

smallmouth bass, and thus the substrate provides the primary reason for site selection. Site length is approximately 590 feet. The important habitat of the sensitive area is located within the littoral zone. The genlty sloping riparian zone includes developed areas, and there is no visible large woody cover. There is no NSB description for Site 25.

This site provides unique features and important seasonal habitat for walleye and smallmouth bass. The site contains gravel, rubble, and rocks that provide spawning, nursery, feeding, and/or protective cover areas for fish.

Management Recommendations:
1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.

26. Middle Lake Site 11 (UL/11)

Site 26 is located along the eastern shoreline of Juneks Point in the corridor between the upper and middle basins (start point 46.227395 N, 91.098087 W). The shoreline consists of rubble, gravel, and sand substrate that is suitable for the natural reproduction habits of walleye and smallmouth bass, and thus the substrate provides the primary reason for site selection. Site length is approximately 1369 feet. The important habitat of the sensitive area is located within the littoral zone. The genlty sloping riparian zone includes wooded and developed areas, and large woody cover is present at the site. The NSB is average.

This site provides unique features and important seasonal habitat for walleye and smallmouth bass. The site contains gravel, rubble, rocks, and wood that provide spawning, nursery, feeding, and/or protective cover areas for fish.

Management Recommendations:
1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.
2. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

27. Lower Lake Site 1 (LL/1)

Site 27 is located in the southeastern bay of the lower basin (start point 46.203678 N, 91.075075 W). The area consists of undisturbed aquatic (Table 18), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 3258 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Muck constitutes the bottom substrate. The gently sloping riparian zone includes a floating bog wetland with woody debris common at the site. The NSB is good.

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site. Large woody cover and floating bog enhance protective cover available to fish.

Table 18. Aquatic plants found at Site 27 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:		*Sagittaria* spp., *P. cordata, Typha* spp., *Sparganium* spp.	
Floating-Leaf Plants:		*Nuphar* spp., *Nymphaea* spp.	
Submersed Plants:	*B. beckii, Ceratophyllum* spp., *Utricularia* spp., *Zosterella dubia, Najas* spp.	*V. americana, M. heterophyllum,*	
Pondweeds (Potamogetons):	*P. gramineus, P. praelongus, P. richardsonii, P. epihydrus,* Fineleaf pondweed spp.	*P. pectinatus, P. amplifolius, P. zosteriformis*	
Turf Formers/Rosettes:		*Sagittaria* spp	
Algae:	Filamentous		
Exotics:			

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.
5. Create a "Slow – No Wake" zone to protect the biological integrity of the wetland bay and connection corridor.

Site 28. Lower Lake 2 (LL/2)

Site 28 is located along the northcentral shoreline of the lower basin (start point 46.21305 N, 91.082039 W). The area consists of undisturbed aquatic (Table 19), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1492 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Sand constitutes the bottom substrate. The gently sloping riparian zone includes shrub/scrub deciduous wetland, wooded, and developed areas with woody debris present at the site. The NSB is poor.

Emergent and submersed aquatic vegetation provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, muskellunge, largemouth bass, and panfish species at this site.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for

protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds.

Table 19. Aquatic plants found at Site 28 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*B. beckii, Carex* spp.*, Sagittaria* spp.*, P. cordata, Typha spp.*	*Scirpus acutus, Eleocharis* spp.	*Sparganium* spp.
Floating-Leaf Plants:	*Nuphar* spp.		
Submersed Plants:	*B. beckii, Ceratophyllum* spp.*, V. americana, Myriophyllum hydrophyllum*		
Pondweeds (Potamogetons):			
Turf Formers/Rosettes:			
Algae:			
Exotics:			

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

Site 29. Lower Lake 3 (LL/3)

Site 29 is located along the northwestern shoreline of the lower basin (start point 46.205194 N, 91.096558 W). The area consists of undisturbed aquatic (Table 20), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1.1 miles. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Rubble and gravel constitute bottom substrate. The gently sloping riparian zone includes shrub/scrub deciduous and evergreen wetlands and wooded areas with large woody cover common at the site. The NSB is good.

Emergent and submersed aquatic vegetation, overhanging trees, rubble, gravel, and woody cover provide spawning, nursery, feeding, and/or protective cover habitat for walleye, northern pike, muskellunge, smallmouth and largemouth bass, panfish species, and perch at this site.

Table 20. Aquatic plants found at Site 29 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Scirpus* spp., *Carex* spp., *Eleocharis* spp., *Sagittaria* spp., *P. cordata, Typha* spp.	*Sparganium* spp.	
Floating-Leaf Plants:	*Nuphar* spp.		
Submersed Plants:	*Ceratophyllum* spp., *V. americana,*	*M. heterophyllum*	
Pondweeds (Potamogetons):	*P. amplifolius, P. richardsonii, P. zosteriformis*		
Turf Formers/Rosettes:	*Eleocharis* spp., *Sagittaria* spp.		
Algae:			
Exotics:			

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds.

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.
5. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for walleye and smallmouth bass.

Site 30. Garden Lake 1 (GL/1)

Site 30 is located in the far northeastern bay of Garden Lake (start point 46.215978 N, 91.049792 W). The area consists of undisturbed aquatic (Table 21), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 4960 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Sand and muck constitute bottom substrate. The gently sloping riparian zone includes shrub/scrub deciduous and evergreen wetland areas with large woody cover present at the site. The riparian zone is adjacent to a contiguous upland wooded wetland complex. The NSB is good.

Table 21. Aquatic plants found at Site 30 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Scirpus* spp., *Eleocharis* spp., *P. cordata, Typha* spp., *Zizania* spp.	*Sagittaria* spp.	*Sparganium* spp.
Floating-Leaf Plants:	*Nuphar* spp., *Nymphaea* spp.		
Submersed Plants:	*B. beckii, E. canadensis, Ceratophyllum* spp., *Utricularia* spp., *Myriophyllum sibiricum*	*V. americana, Najas* spp.	
Pondweeds (Potamogetons):	*P. richardsonii*	*P. gramineus*	
Turf Formers/Rosettes:			
Algae:	Filamentous		
Exotics:			

Emergent and submersed aquatic vegetation and woody cover provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, largemouth bass, panfish species, and perch at this site.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds.

Management Recommendations:
1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

Site 31. Garden Lake 2 (GL/2)

Site 31 is located in James Bay, which is a natural connection between Garden Lake and the middle basin (start point 46.206253 N, 91.068839 W). The area consists of undisturbed aquatic (Table 22), wetland, and terrestrial vegetation, and thus plants provide the primary reason for site selection. Site length is approximately 1.3 miles. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Sand constitutes bottom substrate. The gently sloping riparian zone

includes shrub/scrub deciduous wetland and wooded areas with large woody cover present at the site. The NSB is average.

Table 22. Aquatic plants found at Site 31 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Scirpus* spp., jewel weed spp.	*Sagittaria* spp., *P. cordata, Typha* spp., *Sparganium* spp., *Decodon verticillatus*	
Floating-Leaf Plants:	*Nuphar* spp.	*Nymphaea* spp.	
Submersed Plants:	*Ceratophyllum* spp., *M. hydrophyllum*	*Elodea* spp.	*V. americana*
Pondweeds (Potamogetons):	*P. gramineus, P. amplifolius, P. epihydrus, P. zosteriformis*		
Turf Formers/Rosettes:		*Isoetes* spp., *Sagittaria* spp.	
Algae:	Filamentous		
Exotics:			

Emergent and submersed aquatic vegetation, overhanging trees, and woody cover provide spawning, nursery, feeding, and/or protective cover habitat for northern pike, largemouth bass, panfish species, and perch at this site.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds.

Management Recommendations:

1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.
5. Create a "Slow – No Wake" zone to protect the biological integrity of the bay and connection corridor.

Site 32. Garden Lake 3 (GL/3)

Site 32 is located in Michigan Bay, which in the southwestern portion of Garden Lake (start point 46.202911 N, 91.068692 W). The area consists of undisturbed aquatic (Table 23), wetland, and terrestrial vegetation, and thus plants provide the primary reason for

site selection. Site length is approximately 841 feet. The important habitat of the sensitive area is located from the littoral to the near-shore terrestrial zone. Muck constitutes bottom substrate. The gently sloping riparian zone includes shrub/scrub deciduous wetland and wooded areas with large woody cover present at the site. The NSB is average.

Table 23. Aquatic plants found at Site 32 by category and abundance.

Aquatic Vegetation Category	Present	Common	Abundant
Emergents:	*Calla palustris*	*Sagittaria* spp., *Sparganium* spp.	
Floating-Leaf Plants:	*Lemna* spp., *P. amphibium*		
Submersed Plants:	*Ceratophyllum* spp., *M. hydrophyllum, Z. dubia*		*E. canadensis*
Pondweeds (Potamogetons):	*P. gramineus, P. richarsonii*	Fineleaf pondweed spp.	
Turf Formers/Rosettes:		*Sagittaria* spp.	
Algae:			
Exotics:			

Emergent and submersed aquatic vegetation, overhanging trees, and woody cover provide nursery, feeding, and/or protective cover habitat for northern pike, largemouth bass, and panfish species at this site.

Emergent and floating leaf vegetation as well as shoreland shrubs, brush, and snag trees provide important habitat for wildlife. Wildlife that may potentially use this site for protective cover, nesting, migration, feeding, and/or nursery areas include upland wildlife, furbearers, reptiles, amphibians, and birds.

Management Recommendations:
1. Shorelands and wetlands should be protected as much as possible under existing regulations, and shoreland management that is more protective than the minimum standards is encouraged.
2. No chemical or mechanical treatments for aquatic plants should be allowed within this area.
3. Maintain biological integrity of the site to preserve the existing wildlife species.
4. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

Site 33. Garden Lake 4 (GL/4)

Site 33 is located along the shoreline of the small island off the northeastern shore of Garden Lake (start point 46.210697 N, 91.078333 W). The shoreline consists of rubble and gravel substrate that is suitable for the natural reproduction habits of walleye and

smallmouth bass, and thus the substrate provides the primary reason for site selection. Site length is approximately 850 feet. The important habitat of the sensitive area is located within the littoral zone. The riparian zone is wooded, and large woody cover is common at the site. The NSB is good.

This site provides unique features and important seasonal spawning habitat for walleye and smallmouth bass. The site contains gravel, rubble, rocks, and wood that provide spawning, nursery, feeding, and/or protective cover areas for fish. Additionally, the island and its shoreline provide important habitat for cover, nesting, feeding, and/or resting areas for upland wildlife and raptors.

Management Recommendations:

1. No alterations of the shoreline or littoral zone should occur at this site location unless an alteration would improve the spawning habitat for these species.
2. Keep large woody cover in tact for beneficial macroinvertebrate, fish, and wildlife habitat.

CONCLUSION

Wisconsin Department of Natural Resources staff designated thirty-three sites on Namekagon Lake, Bayfield County as sensitive areas that contain important habitat for aquatic plants, fish, and/or wildlife. There are general and specific management recommendations to protect these sites and the entire lake as a whole. This report is a tool to use in conjunction with *Guidelines for Protecting, Maintaining, and Understanding Lake Sensitive Areas* (Appendix B) to guide management decisions. As shoreline development continues to increase, decision-makers and the general public must find ways to ensure that fish and wildlife habitat is not degraded. Sensitive area designations and reports provide detailed data that describe specific sites as well as the means to protect those sites.

All the data used to compile this report are available at the Department's Superior Service Center.