

# Nancy Lake Critical Habitat Designation Report

*Washburn County, WI*



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April 2013



## Critical Habitat Designation Program – Introduction

Wisconsin residents are concerned about the growing number of threats to sustainable healthy lakes in the state. Increases in shoreline development are changing lake ecosystems, and the conversion of natural lakeshore to residential development has greatly accelerated over the past 30 years. While many positive measures have been initiated within Wisconsin over the past few decades, habitat and water quality continue to be impacted.

Critical Habitat Designation is a program that includes formal designations of areas considered important to fish and wildlife. Critical Habitat is classified into three categories: sensitive areas, public rights features, and resource protection areas (uplands within the shoreline zone). These three elements combine to provide regulatory and management advice to the State of Wisconsin, counties, local units of governments, and others who are interested in protecting and preserving these unique habitats for future generations. Designation of Critical Habitat aims to serve four primary purposes:

- 1) Resource protection through science based regulatory review.
- 2) Community-based resource protection through community education, planning and zoning.
- 3) As a guide to land-trusts and others acquiring land and conservation easements.
- 4) A mechanism to track long-term changes in these habitats.

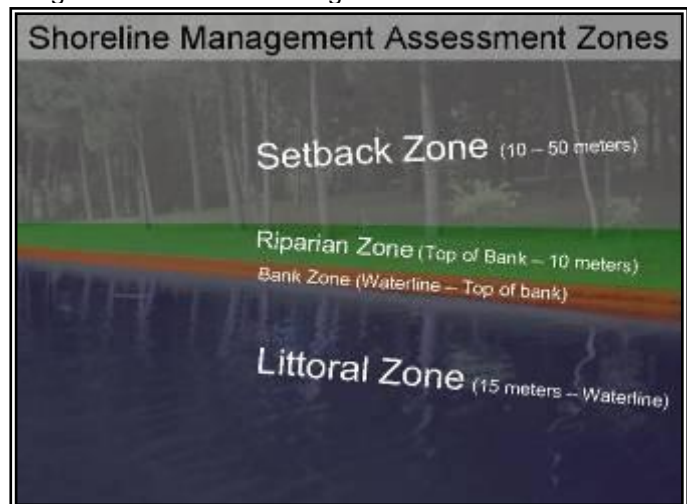
### Methods

Critical Habitat Designation occurred on Nancy Lake in Washburn County during 2008. Nancy Lake is a 772 acre lake with a max depth of 39 feet. Access to Nancy Lake is via two public boat launches, one on Karling Court and one on Three Mile Road.

Designations were conducted by a team consisting of the county fisheries biologist, water resources specialist, wildlife biologist, and critical habitat coordinator. Initially, DNR staff compiled and reviewed existing natural resource data that helped identify areas of focus related to fish, wildlife, endangered resources, and their habitats before going into the field. In the field, staff used existing natural resource data, delineation guidance, and professional judgment to establish the boundaries of the sites containing critical habitat. Critical Habitat Designation boundaries were recorded in the field using map grade Trimble Geo XM GPS Units. For each site, staff inventoried current shoreline management practices occurring along littoral, bank, riparian, and setback zones following standardized methods. Depending on the features of each area being delineated, standardized sampling of emergent and submergent aquatic vegetation, substrate, and woody habitat was also conducted.

Note: A detailed description of the Critical Habitat Designation program, associated methods, and the values of Critical Habitat can be found at <http://dnr.wi.gov/lakes/criticalhabitat/>. Detailed assessments of each Critical Habitat area including raw sampling data and GIS shape files are available by contacting your local DNR office.

Figure 1. Shoreline Management Zones



**General Lake Wide Recommendations.** Most of these actions will be good for the lake regardless if the site is within a designated Critical Habitat area or not. Emphasis of or exceptions to these general recommendations are discussed in more detail in the specific lake wide and site management recommendations. For example, planting native vegetation along shorelines will generally be beneficial to the lake and property owner. Shorelines that are dominated by established lawn, however, may be out of compliance with current zoning standards and higher priority for restoration since those areas tend to pollute the resource more while simultaneously being devoid of natural fish and wildlife habitat.

#### *Permanent Land Protection*

Permanently protect designated Critical Habitat areas. Permanent land protection tools include: land acquisition, conservation easements, and mutual covenants. Competitive funding opportunities exist for parcels that are large and of particular conservation value. Voluntary protection or private funding sources may be the primary protection methods for smaller parcels. Specific lake wide and site recommendations emphasize priority areas for permanent land protection.

#### *Shoreline Habitat Protection*

Maintain and protect large, mature pine, oak, and maple trees for nesting species such as eagles and ospreys. Unless there is a safety hazard, leave dead standing trees for cavity nesting wildlife. Wood ducks will nest up to a mile from the shoreline and prefer old oak and pine trees. Allow downed trees and branches to remain on the forest floor.

#### *Shoreline Restoration*

Leave natural shorelines undisturbed in accordance with local shoreline zoning rules. If the shoreline buffer does not exist or is disturbed, it should be replanted with native vegetation. Discontinue mowing lawn areas along the shore to allow native vegetation to grow back. The Washburn County Land & Water Conservation Department may provide shoreline restoration technical and funding assistance. Additionally, the Wisconsin Department of Natural Resources offers competitive shoreline restoration grants. Some local landscaping businesses may be able to assist landowners with site planning, including native plant selection.

#### *Runoff Control*

Implement lake and river water quality protection tools like rainwater gardens, rain barrels, infiltration pits and trenches, grass swales, etc. that divert and/or infiltrate water before it enters the lake or river. Similar to shoreline restoration, the Washburn County Land & Water Conservation Department may provide technical and funding assistance for these practices. Additionally, the Wisconsin Department of Natural Resources offers competitive lake protection grants. Some local landscaping businesses may be able to assist landowners with site planning, including plant selection.

#### *Septic Systems*

Inspect and maintain septic systems to prevent excess nutrient addition while protecting present water quality conditions. Ideally, a public sanitary sewer system should be constructed. Septic systems are not designed to remove the nutrients (i.e., phosphorous and nitrogen) that pollute water resources. Furthermore, septic water quickly moves through the local sandy soils and speeds delivery of potentially polluted water to the lake.

### *In-Lake Habitat Protection*

Consider local recreational boating ordinances (i.e., slow-no-wake) within designated critical habitat areas. Specific lake wide and site recommendations emphasize priority areas for these ordinances.

In general, native aquatic plants should not be actively managed (i.e., no raking, herbicide use, or mechanized removal) and, if within a designated critical habitat site, will require a permit for manual removal as well as chemical control. Lake wide and site specific recommendations describe exceptions to this general recommendation.

Aquatic plants are vital to a lake's ecosystem because they provide shelter for aquatic insects, invertebrates, amphibians, and fish, provide food for muskrats and waterfowl, and protect shorelines by absorbing and dissipating wave energy.

Near shore trees that fall into the water should be left in the water. These trees offer areas for turtles and amphibians to bask in the sun, a place for muskrats to feed, and protection for fish. There are opportunities with the DNR and Washburn County Land & Water Conservation Department to implement a project that replaces this valuable habitat in areas where wood has been removed from the lake.

**Specific Lake Wide Recommendations.** These management actions are recommended for all of Nancy Lake and are recommended based on lake type, geographic location, data collection results, and lake wide management opportunities and threats.

Eurasian Water Milfoil (EWM) treatments should only occur in developed areas and also restricted to only navigation channels and monotypic stands of EWM. Treating areas that are home to native aquatic plants opens the door to the spread of EWM.

**Specific Site Recommendations.** These management actions are specific to the given site and only supersede general and specific lake wide recommendations if explicitly stated.


## **Sites**

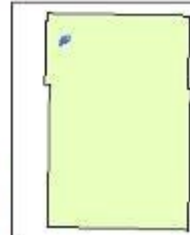
Seventeen areas are designated as Critical Habitat on Nancy Lake for a total of 337.3 acres. Twelve areas are classified as Sensitive Areas for rushes, emergent and floating leaf aquatic plants, and/or submergent aquatic plants. Five areas are classified as Public Rights Features for spawning substrate and woody habitat.

# Nancy Lake Critical Habitat Areas

Washburn County, Wisconsin



 Nancy Lake Critical Habitat Areas



Critical Habitat Polygon ID	Acreage	Justification	Justification	Justification	Classification
N-1	1.18	3	2	0	Sensitive Area
N-2	1.15	3	2	4	Sensitive Area
N-3	174.24	3	2	4	Sensitive Area
N-4	90.25	3	2	4	Sensitive Area
N-5	8.27	3	2	4	Sensitive Area
N-6	16.52	3	2	4	Sensitive Area
N-7	2.49	4	3	2	Sensitive Area
N-8	2.50	8	7	0	Public Rights Feature
N-9	1.26	8	0	0	Public Rights Feature
N-10	4.67	4	3	2	Sensitive Area
N-11	25.87	3	6	2	Sensitive Area
N-12	4.77	3	4	0	Sensitive Area
N-13	0.27	4	3	2	Sensitive Area
N-14	0.33	3	0	0	Sensitive Area
N-15	1.06	8	0	0	Public Rights Feature
N-16	1.56	8	7	0	Public Rights Feature
N-17	0.94	8	0	0	Public Rights Feature

Justifications	Justification Feature	Classification
1	Bio-diverse Submerged Aquatic Vegetation (SAV)	Sensitive Area
2	SAV Important to Fish and Wildlife Habitat	Sensitive Area
3	Emergent and Floating Leaf Vegetation	Sensitive Area
4	Rush Beds	Sensitive Area
5	Wild Rice Bed	Sensitive Area
6	Extensive Riparian Wetland	Sensitive Area
7	Woody Habitat	Public Rights Feature
8	Spawning Substrate	Public Rights Feature
9	Water Quality (springs, etc)	Public Rights Feature
10	Natural Scenic Beauty	Public Rights Feature
11	Navigational Thoroughfare	Public Rights Feature

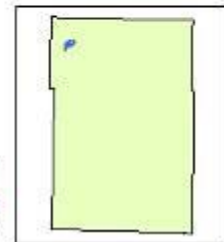
# Nancy Lake Area Wetlands

Washburn County, Wisconsin



- |   |   |
|---|---|
|  Aquatic Bed                       |  Emergent / Wet meadow |
|  Open Water                        |  Forested              |
|  Deep Water Lake                   |  Scrub / Shrub         |
|  Nancy Lake Critical Habitat Areas |   |

0 1,000 2,000 4,000 6,000 Feet



# N1 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas

0 75 150 300 Feet





## Nancy Lake Critical Habitat Site N1

Critical Habitat Site N1 is designated a Sensitive Area because of its Emergent and Floating Leaf Vegetation and Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat. It is 1.18 acres in size and is located in the little bay on the South end of Deep Lake.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Shorelines and buffers with lawn should be restored to comply with County Shoreland Zoning Ordinances.

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Asclepias incarnata</i>	Swamp milkweed	Emergent	5
<i>Carex lasiocarpa</i>	Woolly fruit sedge	Emergent	5
<i>Dulichium arundinaceum</i>	Three-way sedge	Emergent	9
<i>Eleocharis palustris</i>	Creeping spikerush	Emergent	6
<i>Juncus palocarpus f. submersus</i>	Brown-fruited rush	Emergent	8
<i>Pontederia cordata</i>	Pickerelweed	Emergent	9
<i>Sagittaria sp.</i>	Arrowhead	Emergent	-
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Emergent	5
<i>Brasenia schreberi</i>	Watershield	Floating Leaf	7
<i>Nuphar variegata</i>	Spatterdock	Floating Leaf	6
<i>Nymphaea odorata</i>	White water lily	Floating Leaf	6
<i>Potamogeton natans</i>	Floating-leaf pondweed	Floating Leaf	5
<i>Chara</i>	Muskgrasses	Submergent	7
<i>Elodea canadensis</i>	Common waterweed	Submergent	3
<i>Myriophyllum sibiricum</i>	Northern water-milfoil	Submergent	7
<i>Myriophyllum tenellum</i>	Dwarf water-milfoil	Submergent	10
<i>Najas flexilis</i>	Bushy pondweed	Submergent	6
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7
<i>Potamogeton gramineus</i>	Variable pondweed	Submergent	7
<i>Potamogeton illinoensis</i>	Illinois pondweed	Submergent	6
<i>Potamogeton robbinsii</i>	Robbins pondweed	Submergent	8
<i>Potamogeton zosteriformis</i>	Flat-stem pondweed	Submergent	6

N1 FQI	30.63
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Table 4. Shoreline Assessment of N1				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	3	21.5		
Accessory Structures	7	50.1		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	2	14.3		
Commercial Buildings	0	0		
Natural vegetation			574	77.8
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			164	22.2
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			738	100
<b>Bank Zone</b>				
Natural Bank			640	86.7
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			98	13.3
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			738	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	5	35.8		
Boat Lifts	8	57.2		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

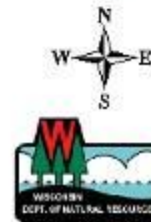
# N2 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas

0 75 150 300 Feet



## Nancy Lake Critical Habitat Site N2

Critical Habitat Site N2 is designated a Sensitive Area because of its Emergent and Floating Leaf Vegetation, Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat, and Bulrush Beds. It is 1.15 acres in size and is located along the southwest shore of Deep Lake.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur.

Do not remove rush beds. Place piers outside of rushes. If that is not possible, extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past. Rush beds are important habitat features that also protect against shoreline erosion by absorbing wave energy.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Shorelines and buffers with lawn should be restored to comply with County Shoreland Zoning Ordinances.

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Eleocharis palustris</i>	Creeping spikerush	Emergent	6
<i>Pontederia cordata</i>	Pickernelweed	Emergent	9
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Emergent	5
<i>Brasenia schreberi</i>	Watershield	Floating Leaf	7
<i>Nymphaea odorata</i>	White water lily	Floating Leaf	6
<i>Chara</i>	Muskgrasses	Submergent	7
<i>Myriophyllum sibiricum</i>	Northern water-milfoil	Submergent	7
<i>Myriophyllum tenellum</i>	Dwarf water-milfoil	Submergent	10
<i>Najas flexilis</i>	Bushy pondweed	Submergent	6
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7

N2 FQI	22.14
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Table 6. Shoreline Assessment of N2				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	4	41.6		
Accessory Structures	4	41.6		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Natural vegetation			98	19.3
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			377	74.2
Pastureland			0	0
Row Crop			0	0
Beach			33	6.5
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			508	100
<b>Bank Zone</b>				
Natural Bank			295	58.1
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			115	22.6
Artificial Beach			98	19.3
Seawalls			0	0
Total Shoreline			508	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	4	41.6		
Boat Lifts	3	31.2		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N3 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



### **Nancy Lake Critical Habitat Site N3**

Critical Habitat Site N3 is designated a Sensitive Area because of its Emergent and Floating Leaf Vegetation, Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat, and Bulrush Beds. It is 174.24 acres in size and encompasses the big shallow bay east of the state owned island.

Prioritize this area for permanent land protection through land trusts or conservation easements.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur. It appears that boat traffic is sufficient to maintain navigational channels through vegetation.

Do not remove rush beds. Place piers outside of rushes. If that is not possible, extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past. Rush beds are important habitat features that also protect against shoreline erosion by absorbing wave energy.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Shorelines and buffers with lawn should be restored to comply with County Shoreland Zoning Ordinances.

Table 7. N3 Aquatic Plants

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Carex comosa</i>	Bottle brush sedge	Emergent	5
<i>Carex sp.</i>	Sedges	Emergent	-
<i>Dulichium arundinaceum</i>	Three-way sedge	Emergent	9
<i>Eleocharis palustris</i>	Creeping spikerush	Emergent	6
<i>Juncus palocarpus f. submersus</i>	Brown-fruited rush	Emergent	8
<i>Pontederia cordata</i>	Pickerelweed	Emergent	9
<i>Sagittaria graminea</i>	Grass-leaved arrowhead	Emergent	9
<i>Sagittaria sp.</i>	Arrowhead	Emergent	-
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Emergent	5
<i>Brasenia schreberi</i>	Watershield	Floating Leaf	7
<i>Nuphar variegata</i>	Spatterdock	Floating Leaf	6
<i>Nymphaea odorata</i>	White water lily	Floating Leaf	6
<i>Potamogeton natans</i>	Floating-leaf pondweed	Floating Leaf	5
<i>Utricularia geminiscapa</i>	Twin-stemmed bladderwort	Free Floating	9
<i>Utricularia gibba</i>	Creeping bladderwort	Free Floating	9
<i>Utricularia vulgaris</i>	Common bladderwort	Free Floating	7
<i>Chara</i>	Muskgrasses	Submergent	7
<i>Eleocharis acicularis</i>	Needle spikerush	Submergent	5
<i>Elodea canadensis</i>	Common waterweed	Submergent	3
<i>Eriocaulon aquaticum</i>	Pipewort	Submergent	9
<i>Megalodonta beckii</i>	Water marigold	Submergent	8
<i>Myriophyllum sibiricum</i>	Northern water-milfoil	Submergent	7
<i>Myriophyllum tenellum</i>	Dwarf water-milfoil	Submergent	10
<i>Najas flexilis</i>	Bushy pondweed	Submergent	6
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7
<i>Potamogeton epihydrus</i>	Ribbon-leaf pondweed	Submergent	8
<i>Potamogeton foliosus</i>	Leafy pondweed	Submergent	6
<i>Potamogeton illinoensis</i>	Illinois pondweed	Submergent	6
<i>Potamogeton praelongis</i>	White-stem pondweed	Submergent	8
<i>Potamogeton pusillus</i>	Small pondweed	Submergent	7
<i>Potamogeton robbinsii</i>	Robbins pondweed	Submergent	8
<i>Schoenoplectus subterminalis</i>	Water bulrush	Submergent	9
<i>Vallisneria americana</i>	Wild celery	Submergent	6

N3 FQI	39.51
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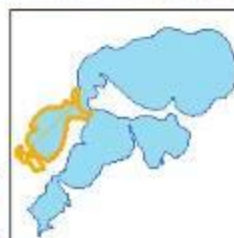
Table 8. Shoreline Assessment of N3				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	20	6.4		
Accessory Structures	14	4.5		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	2	0.6		
Accessory Structures	14	4.5		
Commercial Buildings	0	0		
Natural vegetation			16318	99.5
Shrub Layer Removed			33	0.2
Shrub & Ground Cover Removed			49	0.3
Established Lawn			0	0
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			5	0.03
Other			0	0
Not Visible			0	0
Total Shoreline			16400	100
<b>Bank Zone</b>				
Natural Bank			15908	97.0
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			443	2.7
Artificial Beach			49	0.3
Seawalls			0	0
Total Shoreline			16400	100
Boat Ramp	2	0.6		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	23	7.4		
Boat Lifts	6	1.9		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N4 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



### **Nancy Lake Critical Habitat Site N4**

Critical Habitat Site N4 is designated a Sensitive Area because of its Emergent and Floating Leaf Vegetation, Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat, and Bulrush Beds. It is 90.25 acres in size and encompasses the shallow bay west of the state owned island.

Prioritize this area for permanent land protection through land trusts or conservation easements.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur. It appears that boat traffic is sufficient to maintain navigational channels through vegetation.

Do not remove rush beds. Place piers outside of rushes. If that is not possible, extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past. Rush beds are important habitat features that also protect against shoreline erosion by absorbing wave energy.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Shorelines and buffers with lawn should be restored to comply with County Shoreland Zoning Ordinances.

Riprap should be removed. Riprap is not needed in this Slow-No-Wake area and the wave energy in this area is low. Low energy sites are typically not eligible/authorized for riprap permits. If shoreline erosion is a problem, overland runoff from rooftops, driveways, and lawns are the most likely causes.

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Carex sp.</i>	Sedges	Emergent	-
<i>Juncus brevicaudatus</i>	Narrow-panicle rush	Emergent	6
<i>Pontederia cordata</i>	Pickerelweed	Emergent	9
<i>Sagittaria graminea</i>	Grass-leaved arrowhead	Emergent	9
<i>Sagittaria latifolia</i>	Common arrowhead	Emergent	3
<i>Sagittaria sp.</i>	Arrowhead	Emergent	-
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Emergent	5
<i>Schoenoplectus tabernaemontani</i>	Softstem bulrush	Emergent	4
<i>Brasenia schreberi</i>	Watershield	Floating Leaf	7
<i>Nuphar variegata</i>	Spatterdock	Floating Leaf	6
<i>Nymphaea odorata</i>	White water lily	Floating Leaf	6
<i>Potamogeton natans</i>	Floating-leaf pondweed	Floating Leaf	5
<i>Utricularia geminiscapa</i>	Twin-stemmed bladderwort	Free Floating	9
<i>Utricularia gibba</i>	Creeping bladderwort	Free Floating	9
<i>Utricularia vulgaris</i>	Common bladderwort	Free Floating	7
<i>Callitriche palustris</i>	Common water starwort	Submergent	8
<i>Chara</i>	Muskgrasses	Submergent	7
<i>Eleocharis acicularis</i>	Needle spikerush	Submergent	5
<i>Elodea canadensis</i>	Common waterweed	Submergent	3
<i>Megalodonta beckii</i>	Water marigold	Submergent	8
<i>Najas flexilis</i>	Bushy pondweed	Submergent	6
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7
<i>Potamogeton praelongis</i>	White-stem pondweed	Submergent	8
<i>Potamogeton pusillus</i>	Small pondweed	Submergent	7
<i>Potamogeton robbinsii</i>	Robbins pondweed	Submergent	8
<i>Ranunculus aquatilis</i>	Stiff water crowfoot	Submergent	7
<i>Schoenoplectus subterminalis</i>	Water bulrush	Submergent	9
<i>Vallisneria americana</i>	Wild celery	Submergent	6

N4 FQI	34.12
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Table 10. Shoreline Assessment of N4

Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	17	6.7		
Accessory Structures	9	3.5		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	2	0.8		
Commercial Buildings	0	0		
Natural vegetation			11447	91.8
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			230	1.8
Established Lawn			787	6.3
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			12464	100
<b>Bank Zone</b>				
Natural Bank			12169	97.6
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			230	1.8
Pea Gravel Blanket			0	0
Established Lawn			66	0.5
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			12464	100
Boat Ramp	1	0.4		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	20	7.8		
Boat Lifts	5	2.0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N5 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



## Nancy Lake Critical Habitat Site N5

Critical Habitat Site N5 is designated a Sensitive Area because of its Emergent and Floating Leaf Vegetation, Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat, and Bulrush Beds. It is 8.27 acres in size and is located along the west shore of the lake.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur.

Do not remove rush beds. Place piers outside of rushes. If that is not possible, extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past. Rush beds are important habitat features that also protect against shoreline erosion by absorbing wave energy.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Pontederia cordata</i>	Pickerelweed	Emergent	9
<i>Brasenia schreberi</i>	Watershield	Floating Leaf	7
<i>Nuphar variegata</i>	Spatterdock	Floating Leaf	6
<i>Nymphaea odorata</i>	White water lily	Floating Leaf	6
<i>Potamogeton natans</i>	Floating-leaf pondweed	Floating Leaf	5
<i>Chara</i>	Muskgrasses	Submergent	7
<i>Elodea canadensis</i>	Common waterweed	Submergent	3
<i>Megalodonta beckii</i>	Water marigold	Submergent	8
<i>Myriophyllum tenellum</i>	Dwarf water-milfoil	Submergent	10
<i>Najas flexilis</i>	Bushy pondweed	Submergent	6
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7
<i>Potamogeton gramineus</i>	Variable pondweed	Submergent	7
<i>Potamogeton robbinsii</i>	Robbins pondweed	Submergent	8
<i>Vallisneria americana</i>	Wild celery	Submergent	6

N5 FQI	25.39
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Table 12. Shoreline Assessment of N5				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	10	33.9		
Accessory Structures	13	44.1		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	11	37.3		
Commercial Buildings	0	0		
Natural vegetation			935	60.0
Shrub Layer Removed			98	6.3
Shrub & Ground Cover Removed			33	2.1
Established Lawn			492	31.6
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			1558	100
<b>Bank Zone</b>				
Natural Bank			1361	87.4
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			33	2.1
Pea Gravel Blanket			0	0
Established Lawn			98	6.3
Artificial Beach			66	4.2
Seawalls			0	0
Total Shoreline			1558	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	13	44.1		
Boat Lifts	3	10.2		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		



# N6 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



## Nancy Lake Critical Habitat Site N6

Critical Habitat Site N6 is designated a Sensitive Area because of its Emergent and Floating Leaf Vegetation, Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat, and Bulrush Beds. It is 16.52 acres in size and is located along the north shore of the lake.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur.

Do not remove rush beds. Place piers outside of rushes. If that is not possible, extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past. Rush beds are important habitat features that also protect against shoreline erosion by absorbing wave energy.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Eleocharis palustris</i>	Creeping spikerush	Emergent	6
<i>Juncus palocarpus</i> f. <i>submersus</i>	Brown-fruited rush	Emergent	8
<i>Pontederia cordata</i>	Pickerelweed	Emergent	9
<i>Sagittaria</i> sp.	Arrowhead	Emergent	-
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Emergent	5
<i>Nymphaea odorata</i>	White water lily	Floating Leaf	6
<i>Polygonum amphibium</i>	Water smartweed	Floating Leaf	5
<i>Ceratophyllum demersum</i>	Coontail	Submergent	3
<i>Chara</i>	Muskgrasses	Submergent	7
<i>Eleocharis acicularis</i>	Needle spikerush	Submergent	5
<i>Elodea canadensis</i>	Common waterweed	Submergent	3
<i>Eriocaulon aquaticum</i>	Pipewort	Submergent	9
<i>Megalodonta beckii</i>	Water marigold	Submergent	8
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	Submergent	7
<i>Myriophyllum tenellum</i>	Dwarf water-milfoil	Submergent	10
<i>Najas flexilis</i>	Bushy pondweed	Submergent	6
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7
<i>Potamogeton gramineus</i>	Variable pondweed	Submergent	7
<i>Potamogeton illinoensis</i>	Illinois pondweed	Submergent	6
<i>Potamogeton pusillus</i>	Small pondweed	Submergent	7
<i>Potamogeton robbinsii</i>	Robbins pondweed	Submergent	8
<i>Potamogeton zosteriformis</i>	Flat-stem pondweed	Submergent	6
<i>Ranunculus aquatilis</i>	Stiff water crowfoot	Submergent	7
<i>Vallisneria americana</i>	Wild celery	Submergent	6

N6 FQI	31.49
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Table 14. Shoreline Assessment of N6				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	29	29.2		
Accessory Structures	25	25.2		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	1	1.0		
Accessory Structures	26	26.2		
Commercial Buildings	0	0		
Natural vegetation			4395	83.7
Shrub Layer Removed			115	2.2
Shrub & Ground Cover Removed			148	2.8
Established Lawn			590	11.2
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			5248	100
<b>Bank Zone</b>				
Natural Bank			4454	84.9
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			344	6.6
Pea Gravel Blanket			0	0
Established Lawn			131	2.5
Artificial Beach			318	6.0
Seawalls			0	0
Total Shoreline			5248	100
Boat Ramp	1	1.0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	28	28.2		
Boat Lifts	11	11.1		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N7 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



### Nancy Lake Critical Habitat Site N7

Critical Habitat Site N7 is designated a Sensitive Area because of its Bulrush Beds, Emergent Vegetation, and Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat. It is 2.49 acres in size and is located along the east shore of the lake.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur.

Do not remove rush beds. Place piers outside of rushes. If that is not possible, extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past. Rush beds are important habitat features that also protect against shoreline erosion by absorbing wave energy.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Eleocharis palustris</i>	Creeping spikerush	Emergent	6
<i>Sagittaria</i> sp.	Arrowhead	Emergent	-
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Emergent	5
<i>Chara</i>	Muskgrasses	Submergent	7
<i>Eleocharis acicularis</i>	Needle spikerush	Submergent	5
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	Submergent	-
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7
<i>Potamogeton gramineus</i>	Variable pondweed	Submergent	7

N7 FQI	15.11
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Table 16. Shoreline Assessment of N7

Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	8	45.2		
Accessory Structures	7	39.5		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	5	28.2		
Commercial Buildings	0	0		
Natural vegetation			738	78.9
Shrub Layer Removed			33	3.5
Shrub & Ground Cover Removed			33	3.5
Established Lawn			98	10.5
Pastureland			0	0
Row Crop			0	0
Beach			33	3.5
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			935	100
<b>Bank Zone</b>				
Natural Bank			869	92.9
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			66	7.1
Seawalls			0	0
Total Shoreline			935	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	6	33.9		
Boat Lifts	3	16.9		
Swims Rafts/ Trampolines	1	5.6		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N8 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



### **Nancy Lake Critical Habitat Site N8**

Critical Habitat Site N8 is designated a Public Rights Feature because of its Spawning Substrate and Woody Habitat. It is 2.50 acres in size and is located along the southeast shore of the lake. This area is one of the principle spawning areas for Walleyes and Suckers.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Upland disturbances should be carefully planned to prevent any erosion that would deposit sediments on the spawning substrates.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

<b>Transect</b>	<b># Big Logs</b>	<b># Small Logs</b>	<b>Transect Length (feet)</b>	<b>Transect Length (m)</b>	<b>Big Logs per Mile</b>	<b>Small Logs per Mile</b>
N8-1	1	0	65.6	20	80.5	0.0
N8-2	0	1	65.6	20	0.0	80.5
N8-3	0	0	65.6	20	0.0	0.0
N8-4	1	0	65.6	20	80.5	0.0
N8 Total	2	1	262.4	80	40.2	20.1



Table 18. N8 Spawning Substrate Sampling Transect Data

Transect Number	Quadrat Number	Band Start	Band End	Band Width (m)	Embeddedness	Percentages											
						Marl	Detritus	Clay	Silt	Sand	Fine Gravel	Coarse Gravel	Cobble / Rubble	Small Boulder	Large Boulder	Bedrock	
1	1	0	0.8	0.8	5									100			
1	2	0.8	3.5	2.7						80	15	5					
1	3	3.5	5.2	1.7	3					100							
1	4	5.2	15	9.8						100							
2	1	0	0.2	0.2	5					20	15	60	5				
2	2	0.2	3.5	3.3	1					30	65	5					
2	3	3.5	12.5	9						100							
3	1	0	4.8	4.8	3						10	70	20				
3	2	4.8	7.4	2.6	3					20	60	15	5				
3	3	7.4	15	7.6						100							
4	1	0	1.1	1.1	5						5	15	80				
4	2	1.1	4.8	3.7	4					20	10	50	20				
4	3	4.8	15	10.2						100							
5	1	0	2	2	5							100					
5	2	2	5.3	3.3	3					100							
5	3	5.3	14	8.7						100							
6	1	0	7	7	5		30							70			
6	2	7	11.5	4.5								100					
7	1	0	1	1	1						10	30	60				
7	2	1	7	6	5							100					
7	3	7	10.5	3.5						50	10	40					
8	1	0	1.2	1.2	5		30					10	60				
8	2	1.2	9.4	8.2	5							100					
9	1	0	0.5	0.5	1					10		20	70				
9	2	0.5	5.8	5.3	5					100							
9	3	5.8	7.7	1.9	2					100							
9	4	7.7	10	2.3													
10	1	0	8	8	3					100							
10	2	8	11	3						10		70	20				

Table 19. Shoreline Assessment of N8				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	4	23.0		
Accessory Structures	5	28.8		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	2	11.5		
Commercial Buildings	0	0		
Natural vegetation			853	92.9
Shrub Layer Removed			66	7.2
Shrub & Ground Cover Removed			0	0
Established Lawn			0	0
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			918	100
<b>Bank Zone</b>				
Natural Bank			853	92.9
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			33	3.6
Pea Gravel Blanket			0	0
Established Lawn			33	3.6
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			918	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	3	17.3		
Boat Lifts	2	11.5		
Swims Rafts/ Trampolines	2	11.5		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N9 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



**Nancy Lake Critical Habitat Site N9**

Critical Habitat Site N9 is designated a Public Rights Feature because of its Spawning Substrate. It is 1.26 acres in size and is located along the point on the south shore of north lobe of the lake. This area is one of the principle spawning areas for Walleyes and Suckers.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Upland disturbances should be carefully planned to prevent any erosion that would deposit sediments on the spawning substrates.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

Table 20. N9 Spawning Substrate Sampling Transect Data

Transect Number	Quadrat Number	Band Start	Band End	Band Width (m)	Embeddedness	Percentages										
						Marl	Detritus	Clay	Silt	Sand	Fine Gravel	Coarse Gravel	Cobble / Rubble	Small Boulder	Large Boulder	Bedrock
1	1	0	7	7	3					20	20	60				
1	2	7	10	3	5					40	60					
1	3	10	13.5	3.5						100						
2	1	0	7	7	3					10	40	50				
2	2	7	10	3	5					70	30					
2	3	10	12.5	2.5						100						
3	1	0	2.2	2.2	3					10	15	75				
3	2	2.2	6	3.8	4					10	70	20				
3	3	6	10	4	4					70	10	20				
3	4	10	13.3	3.3						100						
4	1	0	3.2	3.2	5					80	20					
4	2	3.2	6.8	3.6	3					15	60	25				
4	3	6.8	11	4.2	5				10	75	10	5				
5	1	0	1.2	1.2	3		25						75			
5	2	1.2	6.5	5.3	4					40	20	40				
5	3	6.5	9.7	3.2	3				20	50	10	20				
6	1	0	2.4	2.4	5					10	10	20	60			
6	2	2.4	4.7	2.3	2					60	10	10	20			
6	3	4.7	9.3	4.6	3					30	20	10	40			
6	4	9.3	11	1.7	1					75			25			
7	1	0	2.3	2.3	2		10				20	45	25			
7	2	2.3	5.4	3.1	5							10	80	10		
7	3	5.4	9	3.6	1					80			20			
8	1	0	1.3	1.3	2					90				10		
8	2	1.3	4.4	3.1	3					30	10	20	40			
8	3	4.4	10	5.6	2					80			20			
9	1	0	3	3	3					25	50	25				
9	2	3	12.5	9.5	2					70		10	20			
10	1	0	1	1	1					70	20		10			
10	2	1	4.8	3.8	3					10	20	60	10			
10	3	4.8	6.8	2	2					40	60					
10	4	6.8	13.5	6.7						100						

Table 21. Shoreline Assessment of N9				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	3	23.0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Natural vegetation			656	95.2
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			33	4.8
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			689	100
<b>Bank Zone</b>				
Natural Bank			689	100
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			689	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	0	0		
Boat Lifts	0	0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N10 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas

0 250 500 1,000 Feet



## Nancy Lake Critical Habitat Site N10

Critical Habitat Site N10 is designated a Sensitive Area because of its Bulrush Beds, Emergent and Floating Leaf Vegetation, and Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat. It is 4.67 acres in size and is located along the Southwest shore of the North lobe of the lake.

Prioritize this area for permanent land protection through land trusts or conservation easements.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur.

Do not remove rush beds. Place piers outside of rushes. If that is not possible, extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past. Rush beds are important habitat features that also protect against shoreline erosion by absorbing wave energy.

Leave fallen trees and stumps in the water for beneficial fish and wildlife habitat.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Eleocharis palustris</i>	Creeping spikerush	Emergent	6
<i>Juncus palocarpus</i> f. <i>submersus</i>	Brown-fruited rush	Emergent	8
<i>Pontederia cordata</i>	Pickerelweed	Emergent	9
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Emergent	5
<i>Polygonum amphibium</i>	Water smartweed	Floating Leaf	5
<i>Chara</i>	Muskgrasses	Submergent	7
<i>Eleocharis acicularis</i>	Needle spikerush	Submergent	5
<i>Elodea canadensis</i>	Common waterweed	Submergent	3
<i>Megalodonta beckii</i>	Water marigold	Submergent	8
<i>Myriophyllum sibiricum</i>	Northern water-milfoil	Submergent	7
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	Submergent	-
<i>Myriophyllum tenellum</i>	Dwarf water-milfoil	Submergent	10
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7
<i>Potamogeton gramineus</i>	Variable pondweed	Submergent	7
<i>Potamogeton robbinsii</i>	Robbins pondweed	Submergent	8
<i>Potamogeton zosteriformis</i>	Flat-stem pondweed	Submergent	6

N10 FQI	26.08
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Table 23. Shoreline Assessment of N10				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	4	11.5		
Accessory Structures	6	17.2		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	5	14.4		
Commercial Buildings	0	0		
Natural vegetation			1673	91.1
Shrub Layer Removed			33	1.8
Shrub & Ground Cover Removed			0	0
Established Lawn			131	7.1
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			1837	100
<b>Bank Zone</b>				
Natural Bank			1738	94.6
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			98	5.3
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			1837	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	3	8.6		
Boat Lifts	1	2.9		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N11 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



## Nancy Lake Critical Habitat Site N11

Critical Habitat Site N11 is designated a Sensitive Area because of its Emergent and Floating Leaf Vegetation, Extensive Riparian Wetland, and Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat. It is 25.87 acres in size and encompasses the wetland on the East side of the slow-no-wake channel.

This area has historically been home to nesting eagles. Efforts should be made to maintain large pines, oaks, and maples for nesting eagles and ospreys.

Prioritize this area for permanent land protection through land trusts or conservation easements.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur.

Do not remove rush beds. Place piers outside of rushes. If that is not possible, extend the piers beyond the rushes for boat mooring. Rush beds are important habitat features that also protect against shoreline erosion by absorbing wave energy.

Leave fallen trees and stumps in the water for beneficial fish and wildlife habitat.

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Asclepias incarnata</i>	Swamp milkweed	Emergent	5
<i>Eleocharis palustris</i>	Creeping spikerush	Emergent	6
<i>Pontederia cordata</i>	Pickernelweed	Emergent	9
<i>Sagittaria</i> sp.	Arrowhead	Emergent	-
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Emergent	5
<i>Sparganium angustifolium</i>	Narrow-leaved bur-reed	Emergent	9
<i>Typha latifolia</i>	Broad-leaved cattail	Emergent	1
<i>Brasenia schreberi</i>	Watershield	Floating Leaf	7
<i>Nuphar variegata</i>	Spatterdock	Floating Leaf	6
<i>Nymphaea odorata</i>	White water lily	Floating Leaf	6
<i>Ceratophyllum demersum</i>	Coontail	Submergent	3
<i>Elodea canadensis</i>	Common waterweed	Submergent	3
<i>Megalodonta beckii</i>	Water marigold	Submergent	8
<i>Myriophyllum sibiricum</i>	Northern water-milfoil	Submergent	7
<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	Submergent	-
<i>Myriophyllum tenellum</i>	Dwarf water-milfoil	Submergent	10
<i>Najas flexilis</i>	Bushy pondweed	Submergent	6
<i>Nitella</i>	Nitella	Submergent	7
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7
<i>Potamogeton gramineus</i>	Variable pondweed	Submergent	7
<i>Potamogeton illinoensis</i>	Illinois pondweed	Submergent	6
<i>Potamogeton robbinsii</i>	Robbins pondweed	Submergent	8
<i>Potamogeton zosteriformis</i>	Flat-stem pondweed	Submergent	6
<i>Schoenoplectus subterminalis</i>	Water bulrush	Submergent	9

N11 FQI	30.06
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Table 25. Shoreline Assessment of N11				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Natural vegetation			2050	100
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			0	0
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			2050	100
<b>Bank Zone</b>				
Natural Bank			2050	100
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			2050	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	0	0		
Boat Lifts	0	0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N12 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



## Nancy Lake Critical Habitat Site N12

Critical Habitat Site N12 is designated a Sensitive Area because of its Emergent and Floating Leaf Vegetation and Bulrush Beds. It is 4.77 acres in size and is located along the north shore of the Slow – No – Wake channel.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur.

Do not remove rush beds. Place piers outside of rushes. If that is not possible, extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past. Rush beds are important habitat features that also protect against shoreline erosion by absorbing wave energy.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

Riprap should be removed. Riprap is not needed in this Slow-No-Wake area and the wave energy in this area is low. Low energy sites are typically not eligible/authorized for riprap permits. If shoreline erosion is a problem, overland runoff from rooftops, driveways, and lawns are the most likely causes.

Scientific Name	Common Name	Plant Type	FQI Coefficient
Carex sp.	Sedges	Emergent	-
Eleocharis palustris	Creeping spikerush	Emergent	6
Juncus palocarpus	Brown-fruited rush	Emergent	8
Pontederia cordata	Pickerelweed	Emergent	9
Schoenoplectus acutus	Hardstem bulrush	Emergent	5
Typha latifolia	Broad-leaved cattail	Emergent	1
Nuphar variegata	Spatterdock	Floating Leaf	6
Nymphaea odorata	White water lily	Floating Leaf	6
Chara	Muskgrasses	Submergent	7
Eleocharis acicularis	Needle spikerush	Submergent	5
Isoetes sp.	Quillworts	Submergent	8
Myriophyllum tenellum	Dwarf water-milfoil	Submergent	10
Najas flexilis	Bushy pondweed	Submergent	6
Potamogeton amplifolius	Large-leaf pondweed	Submergent	7
Potamogeton gramineus	Variable pondweed	Submergent	7
Potamogeton richardsonii	Clasping-leaf pondweed	Submergent	5
Potamogeton robbinsii	Robbins pondweed	Submergent	8
Potamogeton zosteriformis	Flat-stem pondweed	Submergent	6
Vallisneria americana	Wild celery	Submergent	6

N12 FQI	27.34
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Table 27. Shoreline Assessment of N12

Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	12	27.6		
Accessory Structures	11	25.3		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	8	18.4		
Commercial Buildings	0	0		
Natural vegetation			1673	72.9
Shrub Layer Removed			66	2.9
Shrub & Ground Cover Removed			66	2.9
Established Lawn			492	21.4
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			2296	100
<b>Bank Zone</b>				
Natural Bank			2001	87.2
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			131	5.7
Pea Gravel Blanket			0	0
Established Lawn			66	2.9
Artificial Beach			98	4.3
Seawalls			0	0
Total Shoreline			2296	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	12	27.6		
Boat Lifts	6	13.8		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

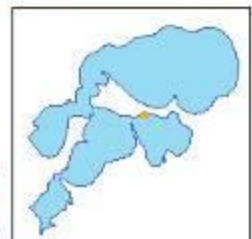

# N13 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas

0 50 100 200 Feet





### Nancy Lake Critical Habitat Site N13

Critical Habitat Site N13 is designated a Sensitive Area because of its Bulrush Beds, Emergent and Floating Leaf Vegetation and Submerged Aquatic Vegetation Important to Fish and Wildlife Habitat. It is 0.27 acres in size and is located along the north shore of Deep Lake.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur.

Do not remove rush beds. Place piers outside of rushes. If that is not possible, extend the piers beyond the rushes for boat mooring. Restore/replant rush beds that have been destroyed in the past. Rush beds are important habitat features that also protect against shoreline erosion by absorbing wave energy.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Pontederia cordata</i>	Pickerelweed	Emergent	9
<i>Sagittaria</i> sp	Arrowhead	Emergent	-
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Emergent	5
<i>Typha latifolia</i>	Broad-leaved cattail	Emergent	1
<i>Nymphaea odorata</i>	White water lily	Floating Leaf	6
<i>Myriophyllum sibiricum</i>	Northern water-milfoil	Submergent	7
<i>Najas flexilis</i>	Bushy pondweed	Submergent	6
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7
<i>Potamogeton gramineus</i>	Variable pondweed	Submergent	7
<i>Potamogeton robbinsii</i>	Robbins pondweed	Submergent	8
<i>Vallisneria americana</i>	Wild celery	Submergent	6


N13 FQI	19.61
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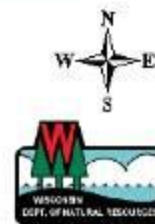
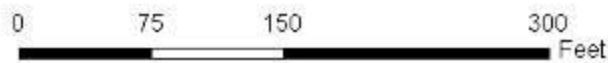
Table 29. Shoreline Assessment of N13				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Natural vegetation			82	71.3
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			33	28.7
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			115	100
<b>Bank Zone</b>				
Natural Bank			115	100
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			115	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	1	45.9		
Boat Lifts	0	0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N14 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



## Nancy Lake Critical Habitat Site N14

Critical Habitat Site N14 is designated a Sensitive Area because of its Emergent and Floating Leaf Vegetation. It is 0.33 acres in size and is located along the north shore of Deep Lake.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

No treatment or removal of native aquatic plants should occur.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

Riprap should be removed. Riprap is not needed as the wave energy in this area is low. Low energy sites are typically not eligible/authorized for riprap permits. If shoreline erosion is a problem, overland runoff from rooftops, driveways, and lawns are the most likely causes.

Scientific Name	Common Name	Plant Type	FQI Coefficient
<i>Sagittaria</i> sp	Arrowhead	Emergent	-
<i>Schoenoplectus acutus</i>	Hardstem bulrush	Emergent	5
<i>Typha latifolia</i>	Broad-leaved cattail	Emergent	1
<i>Nymphaea odorata</i>	White water lily	Floating Leaf	6
<i>Chara</i>	Muskgrasses	Submergent	7
<i>Elatine minima</i>	Waterwort	Submergent	9
<i>Eleocharis acicularis</i>	Needle spikerush	Submergent	5
<i>Isoetes</i> sp.	Quillworts	Submergent	8
<i>Juncus palocarpus</i> f. <i>submersus</i>	Brown-fruited rush	Submergent	8
<i>Myriophyllum tenellum</i>	Dwarf water-milfoil	Submergent	10
<i>Najas flexilis</i>	Bushy pondweed	Submergent	6
<i>Potamogeton amplifolius</i>	Large-leaf pondweed	Submergent	7
<i>Potamogeton gramineus</i>	Variable pondweed	Submergent	7
<i>Potamogeton robbinsii</i>	Robbins pondweed	Submergent	8
<i>Potamogeton zosteriformis</i>	Flat-stem pondweed	Submergent	6
<i>Ranunculus flammula</i>	Creeping spearwort	Submergent	9

N14 FQI	26.34
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Table 31. Shoreline Assessment of N14				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	0	0		
Accessory Structures	1	32.2		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	0	0		
Commercial Buildings	0	0		
Natural vegetation			66	40.2
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			98	59.8
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			164	100
<b>Bank Zone</b>				
Natural Bank			148	90.2
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			16	9.8
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			164	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	0	0		
Boat Lifts	0	0		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N15 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



### **Nancy Lake Critical Habitat Site N15**

Critical Habitat Site N15 is designated a Public Rights Feature because of its Spawning Substrate. It is 1.06 acres in size and is located along the north shore of Deep Lake.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Upland disturbances should be carefully planned to prevent any erosion that would deposit sediment on the spawning substrates.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

Riprap should be removed. Riprap is not needed as the wave energy in this area is low. Low energy sites are typically not eligible/authorized for riprap permits. If shoreline erosion is a problem, overland runoff from rooftops, driveways, and lawns are the most likely causes.

Table 32. N15 Spawning Substrate Sampling Transect Data

Transect Number	Quadrat Number	Band Start	Band End	Band Width (m)	Embeddedness	Percentages										
						Marl	Detritus	Clay	Silt	Sand	Fine Gravel	Coarse Gravel	Cobble / Rubble	Small Boulder	Large Boulder	Bedrock
1	1	0	3.2	3.2	3					20	30	50				
1	2	3.2	7	3.8	1					85	10	5				
2	1	0	1.4	1.4	3		10			50	20	20				
2	2	1.4	2	0.6	1					85	10	5				
2	3	2	2.7	0.7	4					15	60	25				
2	4	2.7	7	4.3	2					85	10	5				
3	1	0	3	3	4					20	30	40	10			
3	2	3	7	4	2					75		20	5			
4	1	0	0.5	0.5	5					5	15		80			
4	2	0.5	2.3	1.8	3					30	55	15				
4	3	2.3	7.2	4.9	2					85	5		10			
5	1	0	1.8	1.8	5						25	50	25			
5	2	1.8	7	5.2	2				20	60		20				
6	1	0	1.6	1.6	5						30	50	20			
6	2	1.6	3.9	2.3	2					60	5	20	15			
6	3	3.9	7.5	3.6					60	40						
7	1	0	2.4	2.4	5						40	20	40			
7	2	2.4	3.7	1.3	3					55	10	25	10			
7	3	3.7	7	3.3	1				40	50			10			
8	1	0	2.1	2.1	5						55	40	5			
8	2	2.1	2.7	0.6	2					70	10	20				
8	3	2.7	4.7	2	3					20	10	70				
8	4	4.7	8	3.3	1				40	50		10				
9	1	0	2	2	3					30	10	50	10			
9	2	2	10	8						100						
10	1	0	1.5	1.5	5					5	70	15	10			
10	2	1.5	13	11.5	1					90	10					



Table 33. Shoreline Assessment of N15				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	2	24.7		
Accessory Structures	4	49.5		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	4	49.5		
Commercial Buildings	0	0		
Natural vegetation			361	84.6
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			66	15.5
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			426	100
<b>Bank Zone</b>				
Natural Bank			295	69.2
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			66	15.5
Pea Gravel Blanket			0	0
Established Lawn			66	15.5
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			426	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	3	37.2		
Boat Lifts	3	37.2		
Swims Rafts/ Trampolines	1	12.4		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N16 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



### **Nancy Lake Critical Habitat Site N16**

Critical Habitat Site N16 is designated a Public Rights Feature because of its Spawning Substrate and Woody Habitat. It is 1.56 acres as is located along the north east shore of Deep Lake.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Upland disturbances should be carefully planned to prevent any erosion that would deposit sediment on the spawning substrates.

<b>Transect</b>	<b># Big Logs</b>	<b># Small Logs</b>	<b>Transect Length (feet)</b>	<b>Transect Length (m)</b>	<b>Big Logs per Mile</b>	<b>Small Logs per Mile</b>
N16-1	2	0	65.6	20	161.0	0.0
N16-2	0	0	65.6	20	0.0	0.0
N16-3	0	0	65.6	20	0.0	0.0
N16-4	0	0	65.6	20	0.0	0.0
N16 Total	2	0	262.4	80	40.2	0.0

Table 35. N16 Spawning Substrate Sampling Transect Data

Transect Number	Quadrat Number	Band Start	Band End	Band Width (m)	Embeddedness	Percentages										
						Marl	Detritus	Clay	Silt	Sand	Fine Gravel	Coarse Gravel	Cobble / Rubble	Small Boulder	Large Boulder	Bedrock
1	1	0	4.2	4.2	3					20	30	40	10			
1	2	4.2	8.5	4.3	2				20	70		5	5			
2	1	0	4.5	4.5	5						25	25	50			
2	2	4.5	6.5	2	2					80		10	10			
2	3	6.5	7.5	1					60	40						
3	1	0	5.8	5.8	5						20	50	30			
3	2	5.8	7.5	1.7					80	20						
4	1	0	4.6	4.6	5						10	65	25			
4	2	4.6	6.5	1.9	2				25	50		5	20			
5	1	0	1.5	1.5	2		10					70	20			
5	2	1.5	2.5	1	2					65	5	20	10			
5	3	2.5	4.2	1.7	4					10	5	15	70			
5	4	4.2	6.5	2.3					20	80						
6	1	0	3.4	3.4	3					10	10	70	10			
6	2	3.4	6	2.6	3					90	10					
7	1	0	4	4	5						15	80	5			
7	2	4	6.5	2.5					60	40						
8	1	0	2.6	2.6	4		10					70	20			
8	2	2.6	4.8	2.2	3					60	40					
8	3	4.8	9	4.2					40	60						
9	1	0	0.6	0.6	3		20			10		10	60			
9	2	0.6	4	3.4						100						
9	3	4	5	1	3					40	60					
9	4	5	8	3					40	60						
10	1	0	10	10	3					85		15				

Table 36. Shoreline Assessment of N16				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	5	28.8		
Accessory Structures	3	17.3		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	8	46.0		
Commercial Buildings	0	0		
Natural vegetation			804	87.6
Shrub Layer Removed			16	1.7
Shrub & Ground Cover Removed			66	7.2
Established Lawn			0	0
Pastureland			0	0
Row Crop			0	0
Beach			33	3.6
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			918	100
<b>Bank Zone</b>				
Natural Bank			852	92.8
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			0	0
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			66	7.2
Seawalls			0	0
Total Shoreline			918	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	5	28.8		
Boat Lifts	3	17.3		
Swims Rafts/ Trampolines	1	5.8		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

# N17 Critical Habitat Area

*Nancy Lake*



 Nancy Lake Critical Habitat Areas



### **Nancy Lake Critical Habitat Site N17**

Critical Habitat Site N1 is designated a Public Rights Feature because of its Spawning Substrate. It is 0.94 acres in size and is located along the south point of Deep Lake.

Buffers, overhanging vegetation, and all native aquatic plants should be left alone.

Leave fallen trees in the water for beneficial fish and wildlife habitat.

Upland disturbances should be carefully planned to prevent any erosion that would deposit sediment on the spawning substrates.

Shorelines and buffers with lawns should be restored to comply with County Shoreland Zoning Ordinances.

Riprap should be removed. Riprap is not needed as the wave energy in this area is low. Low energy sites are typically not eligible/authorized for riprap permits. If shoreline erosion is a problem, overland runoff from rooftops, driveways, and lawns are the most likely causes.

Table 37. N17 Spawning Substrate Sampling Transect Data

Transect Number	Quadrat Number	Band Start	Band End	Band Width (m)	Embeddedness	Percentages											
						Marl	Detritus	Clay	Silt	Sand	Fine Gravel	Coarse Gravel	Cobble / Rubble	Small Boulder	Large Boulder	Bedrock	
1	1	0	0.7	0.7	5									100			
1	2	0.7	11	10.3	2					70	30						
2	1	0	0.5	0.5	2					20				80			
2	2	0.5	11	10.5	2					70	10	20					
3	1	0	3	3	3					20	20	60					
3	2	3	9.5	6.5	3					60	30	10					
4	1	0	3	3	5					5	10	85					
4	2	3	4	1	3					50	10	40					
4	3	4	5	1	3					20	70	10					
4	4	5	9	4					40	60							
5	1	0	3.5	3.5	4					10	30	60					
5	2	3.5	8.5	5	3					80		10	10				
6	1	0	3.5	3.5	5						30	60	10				
6	2	3.5	5.5	2	3					65	5	20	10				
6	3	5.5	10	4.5	1				40	50		10					
7	1	0	1.5	1.5	4					30	35	10		25			
7	2	1.5	6	4.5	4					15	15	60	10				
7	3	6	11	5					50	50							
8	1	0	5	5	4					10	20	70					
8	2	5	15	10	1					85		15					
9	1	0	4.4	4.4	4					10	35	30	25				
9	2	4.4	15	10.6	3					85	15						
10	1	0	1	1						100							
10	2	1	5	4	2					20	30	40	10				
10	3	5	15	10					20	80							



Table 38. Shoreline Assessment of N17				
Feature	Number	Density (per mile)	Shoreline Length (feet)	% of Shoreline
<b>Setback Zone</b>				
Homes	1	14.6		
Accessory Structures	4	58.5		
Commercial Buildings	0	0		
<b>Riparian Zone</b>				
Homes	0	0		
Accessory Structures	1	14.6		
Commercial Buildings	0	0		
Natural vegetation			295	81.7
Shrub Layer Removed			0	0
Shrub & Ground Cover Removed			0	0
Established Lawn			66	18.3
Pastureland			0	0
Row Crop			0	0
Beach			0	0
Impervious Surface (road, parking lots, etc.)			0	0
Other			0	0
Not Visible			0	0
Total Shoreline			361	100
<b>Bank Zone</b>				
Natural Bank			312	86.4
Soft bioengineering			0	0
Hard bioengineering			0	0
Riprap			49	13.6
Pea Gravel Blanket			0	0
Established Lawn			0	0
Artificial Beach			0	0
Seawalls			0	0
Total Shoreline			361	100
Boat Ramp	0	0		
Stormwater Outflow	0	0		
<b>Littoral Zone</b>				
Piers	1	14.6		
Boat Lifts	1	14.6		
Swims Rafts/ Trampolines	0	0		
Boathouses	0	0		
Mooring Buoys	0	0		
Dredge channels	0	0		
Commercial Marinas	0	0		
Bridges	0	0		
Plant removal devices	0	0		
Recreational/Public Beaches	0	0		

Appendix 1. Personnel and dates of Critical Habitat Designation, Nancy Lake, Washburn County

Critical Habitat Designations occurred on 8/25/2008 by Larry Damman, Jim Cahow, Nancy Christel, and Alex Smith.

Shoreline management inventories occurred on 10/2/2008 by Alex Smith and Debbie Konkel.

Aquatic plant sampling occurred on a lake wide scale from 7/29/2008 – 8/5/2008 by Endangered Resources LLC. A follow-up boat survey of each Sensitive Area was performed by Alex Smith and Misty Rood on June 30, 2009 to look for additional plants in areas that were not sampled due to the lake wide scale.

The woody habitat and spawning substrate sampling was done by Alex Smith and Debbie Konkel on 9/24/2008.

## Appendix 2: Notice of Public Information Meeting for Proposed Critical Habitat Designation

The Department of Natural Resources has located areas that meet the criteria for Critical Habitat Designation on Nancy Lake in Washburn County and the Minong Flowage in Washburn and Douglas Counties. A public informational meeting has been scheduled to discuss the proposed Critical Habitat Areas.

The public informational meeting will be held Saturday, October 9<sup>th</sup>, from 9:00 am to 11:00 am at the Minong Town Hall, in Washburn County. The informational meeting will be an open house format that will allow time to talk with DNR staff, ask questions, and provide written comments regarding the designations.

Because the Critical Habitat Designations are in waters held in trust by the state for all citizens and may be adjacent to private lands, state law provides an opportunity for public input to the Department's decision.

The designation of Critical Habitat is of vital importance to water quality, hunting, fishing, and natural beauty of Wisconsin's lakes and streams. The Department has made a tentative determination that specific locations on Nancy Lake and the Minong Flowage contain:

- Fish and wildlife habitat, including specific sites necessary for breeding, nesting, nursery, and feeding.
- Physical features that ensure protection of water quality.
- Reaches of bank, shore, or bed that are predominately natural in appearance (not man-made or artificial) or that screen man-made or artificial features.
- Navigation thoroughfares or areas traditionally used for navigation during recreational boating, angling, hunting, or enjoyment of natural scenic beauty.
- Areas of aquatic vegetation offering critical or unique fish and wildlife habitat, including seasonal or lifestage requirements, or offering water quality or erosion control benefits to the body of water.

The purpose of identifying Critical Habitat Areas is to protect and/or restore their conservation values and thus promote healthy lakes and rivers. Special permit conditions may apply to landowners who wish to alter Critical Habitat Areas through activities such as dredging, installing or repairing riprap, grading, irrigation, building dams, or establishing culverts or large pier complexes. Furthermore, in Critical Habitat Areas, manual removal of native aquatic plants may require a permit, and the chemical treatment or mechanical removal of native aquatic plants is unlikely to be approved.

Draft reports, maps, and more information on Critical Habitat Designations are all available at <http://dnr.wi.gov/lakes/criticalhabitat/> or by contacting Alex Smith at (715) 635-4124.