

**Designation of Critical Habitat Areas
Menomin Lake, Dunn County**

**Wisconsin Department of Natural Resources
Eau Claire, WI**

2007

Critical Habitat Area Designation Menomin Lake, Dunn County

I. INTRODUCTION

Designations of Critical Habitat Areas within lakes provide a holistic approach to ecosystem assessment and the protection of those areas within a lake that are most important for preserving the very character and qualities of the lake. These sites are those sensitive and fragile areas that support the wildlife and fish habitat, provide the mechanisms that protect the water quality in the lake, harbor quality plant communities and preserve the places of serenity and aesthetic beauty for the enjoyment of lake residents and visitors.

Critical Habitat Areas include Sensitive Areas and Public Rights Features. Sensitive Areas ...”offer critical or unique fish and wildlife habitat, including seasonal or lifestage requirements, or offering water quality or erosion control benefits to the area” (Administrative code 107.05(3)(1)(1)). Wisconsin Department of Natural Resources is given the authority for the identification and protection of sensitive areas of the lake in this code. Public Rights Features are areas that fulfill the right of the public for navigation, quality and quantity of water, fishing, swimming or natural scenic beauty. Protecting these Critical Habitat Areas requires the protection of shoreline and in-lake habitat.

Protecting the terrestrial plant community on shore provides a buffer that absorbs nutrient runoff, prevents erosion, protects water quality, maintains water temperatures and provides important habitat. The habitat is important for species that require habitat on shore and in the water as well as those species that require a corridor in order to move along the shore (Figure 1).

Protecting the littoral zone and littoral zone plant communities is critical for fish, wildlife and the invertebrates that both feed upon (Figure 1).

The Critical Habitat Area designation will provide a framework for management decisions that impact the ecosystem of the lake.

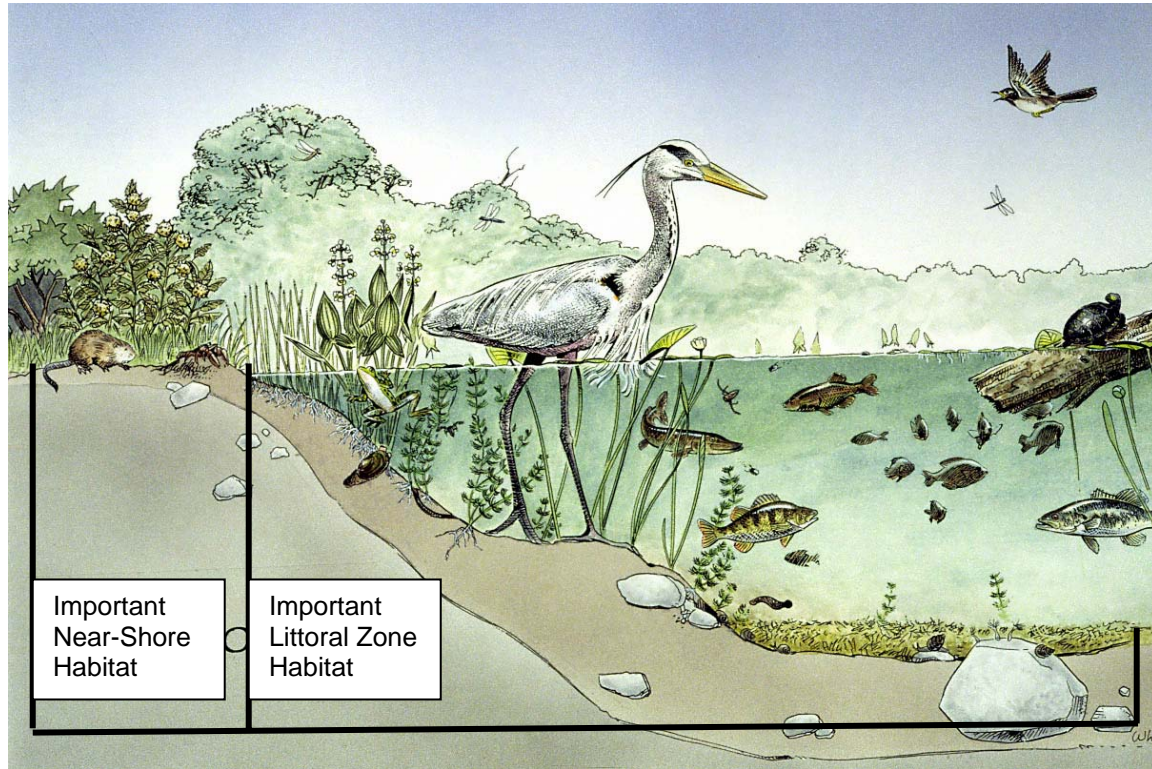


Figure 1. Location of important near-shore and littoral zone habitat.

A Critical Habitat Area Study was conducted June 19, 2007 on Menomin Lake, Dunn County. The study team included:
 Marty Engel, DNR Fish Biologist
 Deborah Konkel, DNR, Aquatic Plant Specialist
 Buzz Sorge, DNR Lakes Manager
 Jess Carstens, DNR Wildlife Biologist

Lake Menomin is a eutrophic/hypereutrophic lake with excessive planktonic algae throughout the littoral zone. The large agricultural watershed which Lake Menomin shares with Tainter Lake contributes most of the nutrients that feed the algae blooms (Konkel 1999).

Elodea canadensis (common waterweed) is the dominant species within the plant community; *Lemna minor* (small duckweed) is sub-dominant.

The aquatic plant community in Lake Menomin is below average for Wisconsin lakes and is characterized by average diversity. The Floristic Quality Index suggests that Lake Menomin has been subjected to more disturbance than average. It is likely that the aquatic plant community in Lake Menomin is limited by the dominance of high-density sand and rock sediments and very poor water clarity. Aquatic plant growth is restricted to portions of the littoral zone less than 7.5 feet deep.

II. THE CRITICAL HABITAT AREAS

The reasons for selection of each Critical Habitat Area are important, as this is what drives the selection process, their importance to the whole lake community. The reasons for selection are unique to each site (Figure 2). All Critical Habitat Areas were geo-referenced.

Attributes Common to All the Critical Habitat Areas

Water Quality

The vegetation at all of the sites provides important water quality protections as biological buffers that reduce the likelihood of exotic invasions and physical buffers that protect the shore against erosion.

Wildlife Habitat

Each Critical Habitat Area provides unique functions for wildlife habitat, but some functions apply to all sites. All sites support shoreline shrub and brush cover and provide habitat for whitetail deer, muskrat and songbirds.

Fish Habitat

The designation of Critical Habitat Areas helps to preserve important fish habitat in a lake. Each Critical Habitat Area provides unique attributes that have the potential to provide spawning areas, feeding areas, cover and/or nursery areas for various fish species.

Recommendation for the Entire Lake

Leave fallen trees in the water to provide large, woody debris habitat for fish and wildlife. This is especially important in Lake Menomin which supports limited amounts of submerged aquatic vegetation.

Critical Habitat Area Menomin 1A – Riverine Stretch Below Tainter Dam

This Critical Habitat Area includes approximately 2500 feet of the river just below the Tainter Lake Dam (Figure 2). This site was selected primarily for its value for fish, its natural scenic beauty and the near-shore terrestrial vegetation. The shoreline habitat is composed mostly of forest with some lawn (60%) (Figure 3).

The sediment is composed of sand and gravel. Fallen large woody debris is present at this site for fish and wildlife habitat. This site also has good potential for use as an educational opportunity, provides buffers from the sights and sounds of development and has good scenic beauty.

The Plant Community:

This site supports 6 species of aquatic plants.

Emergent vegetation (cattail, blue-joint grass, reed canary grass, marsh milkweed and burreed) protect the shoreline and provide important food sources, cover and fish spawning habitat.

The submergent aquatic plant community is composed of beds of curly-leaf pondweed. (Table 1).

Figure 3. Critical Habitat Area1A:

Table 1. Wildlife and Fish Uses of Aquatic Plants in Lake Menomin Critical Habiat Area 1A

Aquatic Plants	Fish	Water Fowl	Song and Shore Birds	Upland Game Birds	Muskrat	Beaver	Deer
<u>Submergent Plants</u>							
<i>Poptamogeton crispus</i>	F, C, S						
<u>Emergent Plants</u>							
<i>Asclepias incarnata</i>				Fibers for nests	Roots		
<i>Calamagrostis spp.</i>					F*		
<i>Sparganium eurycarpum</i>	I	F, C	F, C		F		F*
<i>Typha latifolia</i>	F, I	F, C	F, C		F*, C*	F	

F=Food, I= Shelters Invertebrates, a valuble food source C=Cover, S=Spawning

***=Valuable Resource in this category**

*Current knowledge as to plant use. Other plants may have uses that have not been determined.

After Fassett, N. C. 1957. A Manual of Aquatic Plants. University of Wisconsin Press. Madison, WI

Nichols, S. A. 1991. Attributes of Wisconsin Lake Plants. Wisconsin Geological and Natural History Survey. Info. Circ. #73

Wildlife Habitat

The emergent vegetation, shoreline shrubs and brush, snag and perch trees and fallen logs at this site provide important wildlife habitat. This site provides shelter, cover, nursery and feeding areas for:

- 1) Upland wildlife - whitetail deer
- 2) Furbearers - beavers, otters, muskrats and mink
- 3) Waterfowl – ducks and geese
- 4) Song birds
- 5) Raptors – eagles
- 6) Amphibians – frogs, toads and salamanders
- 7) Reptiles - turtles and snakes

Fish Habitat

This site is currently a fish refuge. The fragmented bedrock, boulders, gravel and large woody cover at this site provides important habitat for the fish community.

- 1) This site is a premier spawning and feeding area for walleye. It also provides protective cover for walleye.
- 2) This site provides feeding areas for northern pike and white bass
- 3) This site provides feeding areas and protective cover for small-mouth bass

Recommendations for Area 1A

Recommendations for the terrestrial shoreline buffer:

- 1) Maintain the current wildlife habitat.
- 2) Maintain snag trees along the shore.
- 3) Create bird perches.
- 4) Install nest boxes.
- 5) Maintain wildlife corridor at the shore.
- 6) Minimize removal of any shoreline vegetation. Allow removal of a maximum access corridor of 30 feet.
- 7) Use no lawn care products.
- 8) No bank grading.
- 9) Create vegetation buffer on bank and shore.

Recommendations for the aquatic habitat below the Ordinary High Water Mark

- 10) Maintain the aquatic vegetation (emergent, floating-leaf and submergent) in an undisturbed condition for wildlife habitat, fish cover. Permits are required for any vegetation removal.
- 11) Protect emergent vegetation.
- 12) Leave fallen trees and other woody debris in the water for habitat.
- 13) Maintain the current fish habitat and the fish refuge
- 14) No alteration of the littoral zone unless a DNR-approved project to improve fish habitat
 - a) No permit approval for pea gravel beds or sand blankets, except for DNR fishery or wildlife approved projects.
 - b) No dredging or lake bed removal or modifications.
 - c) No permit approval for rip-rap or retaining walls, use vegetative restoration if necessary.

- 15) Pier placement by permit only to minimize number of piers and their size and their disturbance; require light-penetrating pier material such as metal grating.
- 16) No additional boat ramp placement. Sufficient boat ramps occur on the lake.
- 17) No recreational floating devices in site.

Critical Habitat Area Menomin 1 – Upper Lake Wetland

This Critical Habitat Area encompasses 335-acres of wetlands, backwaters, sloughs and lack in the upper end of Lake Menomin (Figure 2). This site was selected due to its quality aquatic plant community, its natural scenic beauty, its value for wildlife habitat and its value for fishery habitat. The near-shore terrestrial vegetation, shoreline vegetation and littoral zone vegetation provide quality habitat. The scenic beauty is outstanding at this site. This site also has great potential for use as an educational opportunity and provides buffers from the sights and sounds of development. The sediment is rubble, gravel, sand and silt.

The site includes deep marsh wetlands and shallow marsh wetlands that support important shoreline habitat and shallow water habitat (Figure 4). The shoreline composed of mostly herbaceous wetland cover with shrub cover common and small areas of woody cover.

Large woody cover that is an important structural component of fish and wildlife habitat is common along parts of the shore.

The Plant Community:

The aquatic plant community at this site supports 23 species of aquatic plants to a maximum rooting depth of 6.5 feet.

Shoreline ferns, shrubs, grasses, sedges and herbs provide a protected shoreline corridor.

Emergent vegetation (arrowhead, cattails, bur-reed, water loosestrife and bul-rush) provide wildlife cover and food sources, protect the shoreline and provide important fish and wildlife habitat.

Floating leaf-species (white water lily, American lotus, lesser duckweed, large duckweed and watermeal) provide cover and food sources.

A diverse submergent plant community provides a diverse habitat and many habitat values (Table 2). Common waterweed is dominant; coontail is abundant; water stargrass is common; wild celery is present. The pondweed family is likely the most important producer of habitat and is represented here by flat-stem pondweed, small pondweed and the non-native curly-leaf pondweed.

Table 2. Wildlife and Fish Uses of Aquatic Plants in Menomin Lake Critical Habitat Area 1

Aquatic Plants	Fish	Water Fowl	Song and Shore Birds	Upland Game Birds	Muskrat	Beaver	Deer
<u>Submergent Plants</u>							
<i>Ceratophyllum demersum</i>	F, I*, C, S	F(Seeds*), I, C			F		
<i>Elodea canadensis</i>	C, F, I	F(Foliage) I					
<i>Potamogeton crispus</i>	F, C, S	F(Seeds, Tubers)					
<i>Potamogeton pusillus</i>	F, I, S*, C	F*(All)			F*	F	F
<i>Potamogeton zosteriformis</i>	F, I, S*, C	F*(Seeds)			F*	F	F
<i>Vallisneria americana</i>	F*, C, I, S	F*, I	F		F		
<i>Zosterella dubia</i>	F, C, S	F(Seeds)					
<u>Floating-leaf Plants</u>							
<i>Lemna minor</i>	F	F*, I	F	F	F	F	
<i>Nelumbo lutea</i>	F, C	F			F	F	
<i>Nymphaea odorata</i>	F, I, S, C	F(Seeds)	F		F	F	F
<i>Spirodela polyrhiza</i>	F	F		F			
<i>Wolffia columbiana</i>		F			F		
<u>Emergent Plants</u>							
<i>Asclepias incarnata</i>				Fibers for nests	Roots		

Aquatic Plants	Fish	Water Fowl	Song and Shore Birds	Upland Game Birds	Muskrat	Beaver	Deer
<i>Calamagrostis spp.</i>					F*		F*
<i>Decodon verticillatus</i>		F (seeds)			F, C		
<i>Sagittaria latifolia</i>		F, C	F(Seeds), C	F	F	F	
<i>Scirpus validus</i>	F, C, I	F (Seeds)*, C	F(Seeds, Tubers), C	F (Seeds)	F	F	F
<i>Sparganium americanum</i>		F (Seedf), C	F, C		F*		F*
<i>Typha latifolia</i>	I, C, S	F(Entire), C	F(Seeds), C, Nest	Nest	F* (Entire), C*, Lodge	F	

F=Food, I= Shelters Invertebrates, a valuable food source C=Cover, S=Spawning

***=Valuable Resource in this category**

*Current knowledge as to plant use. Other plants may have uses that have not been determined.

After Fassett, N. C. 1957. A Manual of Aquatic Plants. University of Wisconsin Press. Madison, WI

Nichols, S. A. 1991. Attributes of Wisconsin Lake Plants. Wisconsin Geological and Natural History Survey. Info. Circ. #73

Wildlife Habitat

This site is extremely unique with tremendous potential for wildlife habitat, both aquatic and terrestrial.

The emergent vegetation, floating-leaf vegetation, shoreline shrubs and brush, snag and perch trees and fallen logs at this site provide important wildlife habitat. This site provides:

Shelter, cover, denning/nesting and feeding areas for whitetail deer, beaver, otter, muskrat, mink, raccoon, red fox, ducks, geese, song birds, eagles, turkeys, herons, frogs, toads, salamanders, turtle and snakes.

Fish Habitat

Large woody cover, emergent vegetation, submerged vegetation, floating-leaf vegetation and over-hanging vegetation provide important fishery habitat. The cut off sloughs are critical wintering areas.

- 1) Feeding areas for walleye
- 2) Spring spawning, spring and summer nursery areas, feeding areas and protective cover for northern pike and white sucker
- 3) Spring and spawning sites, spring, summer and fall nursery areas, feeding areas and cover for large-mouth bass
- 4) Spring and summer spawning, year round nursery areas, feeding areas and protective cover for bluegill, pumpkinseed and crappie

Water Quality

The vegetation at this Critical Habitat Area provides important water quality protections.

- 1) Beds of emergents at the shore and aquatic vegetation provide a nutrient buffer by absorbing nutrients thus reducing algae growth.
- 2) The plants provide a physical buffer that protects the shoreline against wave erosion.
- 3) The aquatic vegetation provides a biological buffer that reduces the chance of invasion by exotic species.

Recommendations for Area 1

Recommendations for the terrestrial shoreline buffer:

- 1) Maintain the current wildlife habitat
- 2) Maintain wildlife corridor
- 3) Maintain snag and cavity trees for nesting
- 4) Leave fallen trees in water for habitat
- 5) Create bird perches
- 6) Install nest boxes
- 7) Maintain buffer of native vegetation to protect water quality and provide habitat
- 8) No use of lawn care products at the site.
- 9) No permits for rip-rap and retaining walls, bank protection should be through restoration of natural vegetation buffers.
- 10) No bank grading.

Recommendations for the aquatic habitat below the Ordinary High Water Mark

- 11) Minimize removal of aquatic vegetation. Maintain the aquatic vegetation in an undisturbed condition for wildlife habitat, fish cover and as a buffer for water quality protection. Permits required for any vegetation removal.
- 12) Maintain the current wildlife habitat
- 13) Protect emergent vegetation
- 14) Do not remove fallen trees along the shoreline. Leave in water for fish habitat
- 15) No alteration of littoral zone unless for DNR approved program to improve spawning habitat
- 16) Seasonal protection of spawning areas
- 17) No permit approval for pea gravel beds or sand blankets, except for DNR fishery or wildlife approved projects.
- 18) No dredging or lake bed removal or modifications.
- 19) Pier placement by permit only. Restrict dimensions and number; use light penetrating material.
- 20) No boat ramp placement; adequate access exists.
- 21) No recreational floating devices.

Critical Habitat Area Menomin 3 – Northeast Lakeshore

This Critical Habitat Area encompasses approximately 6200 feet of shoreline; about 75 acres on the northeast shore, extending from the Ordinary High Water Mark, out to the maximum rooting depth of 7.5-feet (Figure 2). This site was selected because of its aquatic plant community, terrestrial vegetation and natural scenic beauty (Figure 5). The sediment is a mixture of sand and silt. The shoreline at this Critical Habitat Area is largely wetland with wooded areas and a couple piers.

This site provides for rare species: eagles have nested in the vicinity. The site has potential for educational opportunity and provides an audible and visible buffer from the interstate highway.

The Plant Community:

This site supports 10 species of aquatic plants to a maximum rooting depth of 7.5 feet.

Emergent vegetation (cattails and bur-reed) provide wildlife cover and food sources, protect the shoreline and provide important fish and wildlife habitat.

Floating-leaf vegetation, white water lilies, dampen wave action and provide important fish habitat.

The submergent plant community provides many fish and wildlife benefits (Table 3). Common waterweed and wild celery are common and water stargrass occurs here also. The pondweed family is an important food source for fish and waterfowl and is represented at this site by sago pondweed and the non-native curly-leaf pondweed.

Table 3. Wildlife and Fish Uses of Aquatic Plants in Menomin Lake Critical Habitat Area 3

Aquatic Plants	Fish	Water Fowl	Song and Shore Birds	Upland Game Birds	Muskrat	Beaver	Deer
<u>Submergent Plants</u>							
<i>Elodea canadensis</i>	C, F, I	F(Foliage) I					
<i>Potamogeton crispus</i>	F, C, S	F(Seeds, Tubers)					
<i>Potamogeton pectinatus</i>	F, I, S*,C	F*			F*	F	F
<i>Vallisneria americana</i>	F*, C, I, S	F*, I	F		F		
<i>Zosterella dubia</i>	F, C, S	F(Seeds)					
<u>Floating-leaf Plants</u>							
<i>Lemna minor</i>	F	F*, I	F	F	F	F	
<i>Nymphaea odorata</i>	F,I, S, C	F(Seeds)	F		F	F	F
<i>Spirodela polyrhiza</i>	F	F		F			
<i>Wolffia columbiana</i>		F			F		
<u>Emergent Plants</u>							
<i>Sparganium americanum</i>		F (Seedf), C	F, C		F*		F*
<i>Typha latifolia</i>	I, C, S	F(Entire), C	F(Seeds), C, Nest	Nest	F* (Entire), C*, Lodge	F	

F=Food, I= Shelters Invertebrates, a valuable food source C=Cover, S=Spawning *=Valuable Resource in this category

*Current knowledge as to plant use. Other plants may have uses that have not been determined.

After Fassett, N. C. 1957. A Manual of Aquatic Plants. University of Wisconsin Press. Madison, WI

Nichols, S. A. 1991. Attributes of Wisconsin Lake Plants. Wisconsin Geological and Natural History Survey. Info. Circ. #73

Wildlife Habitat

The shoreline shrubs and brush, snag/perch trees and boulders and rocks at the rocky shoreline provide:

- 1) shelter and cover for whitetail deer and muskrat
- 2) shelter, cover, nesting and feeding areas for song birds and eagles
- 3) The site supports an eagle nest in the vicinity

Fish Habitat

This site provides spring spawning sites for small-mouth bass and bluegill. The wooded shoreline buffer could provide future fallen trees for important large woody debris habitat.

Recommendations for Site 3

Recommendations for the terrestrial shoreline buffer:

- 1) Maintain current wildlife habitat at the shore
- 2) Maintain snag trees for cavity nesting
- 3) Maintain shoreline buffers of natural vegetation for water quality protection, to prevent erosion and filter nutrients
- 4) No bank grading.
- 5) No rip-rap retaining walls, site has bank protection. If protection needed in the future, use biological methods to protect the bank

Recommendations for the aquatic habitat below the Ordinary High Water Mark

- 6) Maintain the native aquatic vegetation (emergent, floating-leaf and submergent) in an undisturbed condition for wildlife habitat, fish cover and as a buffer for water quality protection. Permits required for any vegetation removal.
- 7) Protect emergent vegetation
- 8) No alteration of the littoral zone except for spawning habitat improvement
- 9) Do not remove fallen trees from the water, leave in to provide fish habitat
- 10) No approval for pea gravel beds or sand blankets, except for DNR fishery or wildlife approved projects.
- 11) No dredging or lake bed removal or modifications.
- 12) Pier placement by permit only. Restrict dimensions and number; use light penetrating material.
- 13) No boat ramp placement.
- 14) No recreational floating devices.

Critical Habitat Area Menomin 4 – Island

This Critical Habitat Area includes about 3700 feet of shoreline (including the island shoreline, taking in about 18-acres of shallow water and the island in the northwest portion of the main body of Lake Menomin (Figure 2). This site was selected due to its natural scenic beauty and value for fishery habitat. The near-shore terrestrial vegetation and littoral zone vegetation provide quality habitat. The scenic beauty is very good at this site. This site also has great potential for use as an educational opportunity and the island provides buffers from the sights and sounds of development and boat traffic (Figure 6) . The sediment is gravel and sand.

The shoreline composed of mostly wooded cover with areas of native grassy cover.

Large woody cover that is an important structural component of fish and wildlife habitat is present along the shore.

The Plant Community:

The aquatic plant community at this site supports 13 species of aquatic plants to a maximum rooting depth of 3.5 feet.

Emergent vegetation (cattails, water loosestrife and bul-rush) provide wildlife cover and food sources, protect the shoreline and provide important fish and wildlife habitat.

Floating leaf-species (white water lily, lesser duckweed, large duckweed and watermeal) provide cover and food sources.

A diverse submergent plant community provides a diverse habitat and many habitat values (Table 4). Common waterweed, coontail, water stargrass and wild celery are present to common. The pondweed family is likely the most important producer of habitat and is represented here by small pondweed and the non-native curly-leaf pondweed.

Table 4. Wildlife and Fish Uses of Aquatic Plants in Menomin Lake Critical Habitat Area 4

Aquatic Plants	Fish	Water Fowl	Song and Shore Birds	Upland Game Birds	Muskrat	Beaver	Deer
<u>Submergent Plants</u>							
<i>Ceratophyllum demersum</i>	F,I*, C, S	F(Seeds*), I, C			F		
<i>Elodea canadensis</i>	C, F, I	F(Foliage) I					
<i>Potamogeton crispus</i>	F, C, S	F(Seeds, Tubers)					
<i>Potamogeton pusillus</i>	F, I, S*,C	F*(All)			F*	F	F
<i>Vallisneria americana</i>	F*, C, I, S	F*, I	F		F		
<i>Zosterella dubia</i>	F, C, S	F(Seeds)					
<u>Floating-leaf Plants</u>							
<i>Lemna minor</i>	F	F*, I	F	F	F	F	
<i>Nymphaea odorata</i>	F,I, S, C	F(Seeds)	F		F	F	F
<i>Spirodela polyrhiza</i>	F	F		F			
<i>Wolffia columbiana</i>		F			F		
<u>Emergent Plants</u>							
<i>Decodon verticillatus</i>		F (seeds)			F, C		
<i>Scirpus validus</i>	F, C, I	F (Seeds)*, C	F(Seeds, Tubers), C	F (Seeds)	F	F	F
<i>Typha latifolia</i>	I, C, S	F(Entire), C	F(Seeds), C, Nest	Nest	F* (Entire), C*, Lodge	F	

Wildlife Habitat

This site is unique with wildlife habitat, both aquatic and terrestrial. The island provides a secluded spot, protected from the main body of the lake. The emergent vegetation, floating-leaf vegetation, shoreline shrubs and brush and fallen logs at this site provide important wildlife habitat. This site provides for whitetail deer, muskrat, ducks, geese, song birds, frogs, toads, salamanders and turtles.

Fish Habitat

Gamefish have been found to concentrate in this area during spring and fall. Large woody cover and emergent vegetation provide important fishery habitat. This site provides

- 1) Spring spawning, spring, summer and fall nursery areas and feeding areas for large-mouth bass and bluegill
- 2) Spring spawning and feeding areas for crappie

Recommendations for Area 4

Recommendations for the terrestrial shoreline buffer:

- 1) Maintain the current wildlife habitat
- 2) Maintain buffer of native vegetation to maintain the wildlife corridor
- 3) Maintain snag and cavity trees for nesting
- 4) Install nest boxes
- 5) Leave fallen trees in water for habitat
- 6) No rip-rap or retaining walls, bank protection is not needed and if needed sometime should be through restoration of natural vegetation buffers.
- 7) No bank grading.

Recommendations for the aquatic habitat below the Ordinary High Water Mark

- 8) Minimize removal of aquatic vegetation. Maintain the aquatic vegetation in an undisturbed condition for wildlife habitat, fish cover and as a buffer for water quality protection. Permits required for any vegetation removal.
- 9) Maintain the current wildlife habitat
- 10) Protect emergent vegetation
- 11) Designation of slow-no-wake in the channel behind the island
- 12) Do not remove fallen trees along the shoreline. Leave in water for fish habitat
- 13) No alteration of littoral zone unless for DNR approved program to improve spawning habitat
- 14) Seasonal protection of spawning areas
- 15) No permit approval for pea gravel beds or sand blankets, except for DNR fishery or wildlife approved projects.
- 16) No dredging or lake bed removal or modifications.
- 17) No pier placement behind the island.
- 18) No boat ramp placement; adequate access exists.
- 19) No recreational floating devices.

Critical Habitat Area Menomin 5 – Cemetery Island

This Critical Habitat Area 6200 feet of shoreline, 23 acres, behind the island on the west shore of Lake Menomin (Figure 2). This site was selected due to its value for fishery habitat. The near-shore terrestrial vegetation and littoral zone vegetation provide quality habitat. This site provides a buffer from the boat traffic on the main body of the lake. The sediment is sand and silt.

The shoreline composed of mostly wooded cover with some herbaceous cover and areas of development (Figure 7).

The Plant Community:

The aquatic plant community at this site supports 7 species of aquatic plants to a maximum rooting depth of 5 feet.

Floating leaf-species (lesser duckweed, large duckweed and watermeal) provide food sources.

A diverse submergent plant community provides a diverse habitat (Table 5). Common waterweed is abundant; coontail and wild celery are present. The pondweed family is likely the most important producer of habitat and is represented here by the non-native curly-leaf pondweed.

Table 5. Wildlife and Fish Uses of Aquatic Plants in Menomin Lake Critical Habitat Area 5

Aquatic Plants	Fish	Water Fowl	Song and Shore Birds	Upland Game Birds	Muskrat	Beaver	Deer
<u>Submergent Plants</u>							
<i>Ceratophyllum demersum</i>	F, I*, C, S	F(Seeds*), I, C			F		
<i>Elodea canadensis</i>	C, F, I	F(Foliage) I					
<i>Potamogeton crispus</i>	F, C, S	F(Seeds, Tubers)					
<i>Vallisneria americana</i>	F*, C, I, S	F*, I	F		F		
<u>Floating-leaf Plants</u>							
<i>Lemna minor</i>	F	F*, I	F	F	F	F	
<i>Spirodela polyrhiza</i>	F	F		F			
<i>Wolffia columbiana</i>		F			F		

F=Food, I= Shelters Invertebrates, a valuable food source C=Cover, S=Spawning

***=Valuable Resource in this category**

*Current knowledge as to plant use. Other plants may have uses that have not been determined.

After Fassett, N. C. 1957. A Manual of Aquatic Plants. University of Wisconsin Press. Madison, WI

Nichols, S. A. 1991. Attributes of Wisconsin Lake Plants. Wisconsin Geological and Natural History Survey. Info. Circ. #73

Wildlife Habitat

The floating-leaf vegetation, shoreline shrubs and brush, large woody cover and snag and perch trees at this site provide important wildlife habitat. This site provides for whitetail deer, muskrat, raccoons, ducks, geese, song birds, frogs, toads and turtles.

Fish Habitat

Large woody cover, emergent vegetation, submergent vegetation, floating-leaf vegetation and overhanging vegetation provide important fishery habitat. This site provides

- 1) Feeding areas and protective cover for walleye
- 2) Spring spawning, spring, summer and fall nursery areas, feeding areas and protective cover for northern pike
- 3) Spring spawning, year-round nursery areas, feeding areas and protective cover for large-mouth bass, bluegill, pumpkinseed and crappie

Recommendations for Area 5

Recommendations for the terrestrial shoreline buffer:

- 1) Maintain the current wildlife habitat
- 2) Maintain buffer of native vegetation to maintain the wildlife corridor
- 3) Maintain snag and cavity trees for nesting
- 4) Create bird perches
- 5) Install nest boxes
- 4) Leave fallen trees in water for habitat
- 5) No rip-rap or retaining walls, bank protection is not needed and if needed sometime should be through restoration of natural vegetation buffers.
- 6) No bank grading.

Recommendations for the aquatic habitat below the Ordinary High Water Mark

- 7) Minimize removal of aquatic vegetation. Maintain the aquatic vegetation in an undisturbed condition for wildlife habitat, fish cover and as a buffer for water quality protection. Permits required for any vegetation removal.
- 8) Limit plant removal to navigation channels only
- 9) Maintain the current fish and wildlife habitat
- 10) Designation of slow-no-wake in the channel behind the island
- 11) Do not remove fallen trees along the shoreline. Leave in water for fish habitat
- 12) No alteration of littoral zone unless for DNR approved program to improve spawning habitat
- 13) Seasonal protection of spawning areas
- 14) No permit approval for pea gravel beds or sand blankets, except for DNR fishery or wildlife approved projects.
- 15) No dredging or lake bed removal or modifications.
- 16) Pier placement by permit only, use only light penetrating material and restrict piers to minimum size and number.
- 17) No boat ramp placement; adequate access exists.
- 18) No recreational floating devices.