CRITICAL HABITAT DESIGNATION
GOOSE LAKE
ADAMS COUNTY, WI

DECEMBER, 2006

Submitted by Reesa Evans
Adams County Land & Water Conservation Department

Wisconsin Department of Natural Resources

GOOSE LAKE IN BRIEF :

(Brief by Neil Trombly, WIDNR)

Lake Area of Record : 81 acres (Wisconsin Lakes Book); 84.4 acres (WPA Lake Survey May 16, 1941) (Extensive adjacent marshlands make water surface area highly variable. The adams_92_99 Digital Ortho Photo shows approximately 99 acres of open water surface.)

Lake Type : Seepage
Lake Surface Elevation of Record : 915 feet. (1979 survey, USGS Topo Map online)
Lake Volume : Highly variable : 435 acre ft. (Trombly, using May 16, 1941 bathymetry.)
Maximum Depth : 18 feet (Wisconsin Lakes Book) **22 feet** (WPA Lake Survey May 16, 1941)
Mean Depth : 5.17 feet (Trombly, using WPA Lake Survey bathymetry of May 16, 1941.)
Mean Depth cited in this report : 7 feet (Needs reference)
Miles of Shoreline : 2.8 miles (WPA Lake Survey May 16, 1941)
Surface Watershed : 394.9 acres* (Trombly, 2010 using USGS Topo Map, Map is appended)
Surface Watershed to Lake Ratio : 4.875 : 1*
Ground Watershed : 1,255 acres (estimated using ArcMap and a georectified image from Adams County Lake Classification Report)

Maximum Rooting Depth : 11 ft. (Konkel & Evans 2006 aquatic plant survey)
Number of Aquatic Plant Species in 2006 Aquatic Plant Survey : 42 (39 native, 3 exotic invasive)
Littoral Area : Over 80% : Highly Variable with fluctuating lake levels

* The surface area of a lake collects precipitation rather than runoff and is therefore not included in the area of its own surface watershed. However, wetlands, ponds and lakes within the watershed are included because all of these 'shed' their runoff into the lake. By way of example, the Wisconsin portion of the Lake Michigan surface watershed does not include Lake Michigan (which would be impossible to justify) but does include Lake Winnebago. For Goose Lake, the surface watershed polygon is 475.9 acres including the lake, less the 81 acres of lake surface leaves 394.9 acres of surface whatershed draining into the lake.

CRITICAL HABITAT DESIGNATION
Goose Lake, Adams County, 2006

I. INTRODUCTION

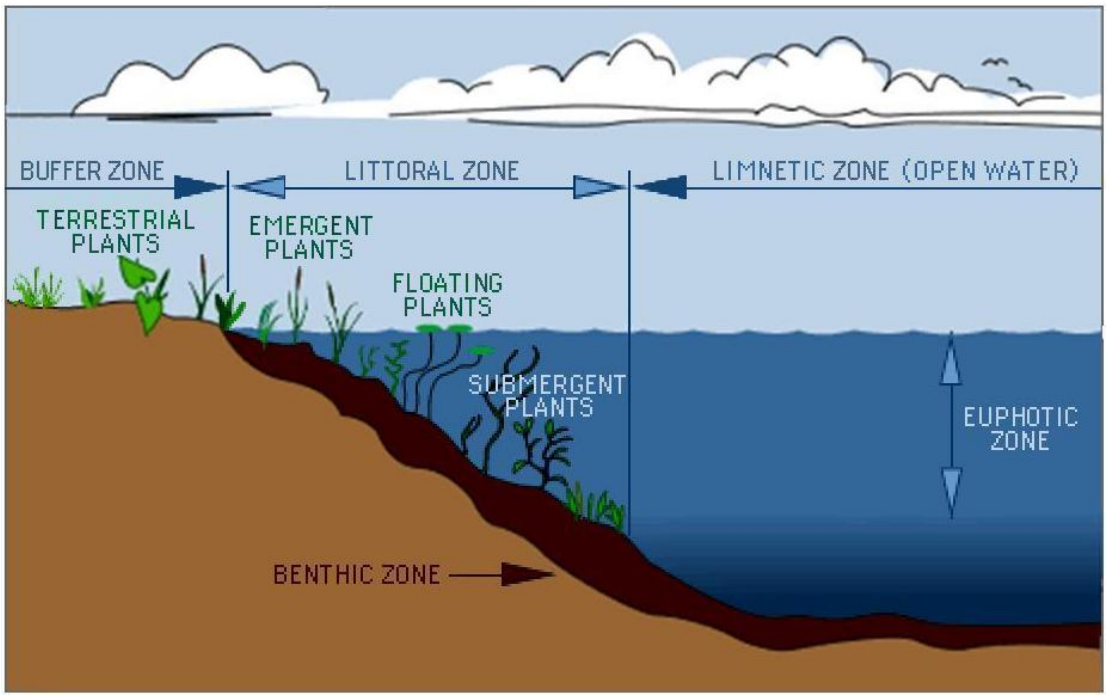
Designation of critical habitat areas within lakes provides a holistic approach for assessing the ecosystem and for protecting those areas in and near a lake that are important for preserving the qualities of the lake. Wisconsin Rule 107.05(3)(i)(I) defines "sensitive areas" as: "areas of aquatic vegetation identified by the department as offering critical or unique fish & wildlife habitat or offering water quality or erosion control benefits to the body of water. Thus, these sites are essential to support the wildlife and fish communities. They also provide mechanisms for protecting water quality within the lake, often containing high quality plant beds. Finally, sensitive areas often provide the peace, serenity and beauty that draw many people to lakes in the first place.

Protection of critical habitat areas must include protecting the terrestrial shore area 'buffer zone' plant community of native vegetation that absorbs or filters nutrient & stormwater runoff, prevents shore erosion, maintains water temperature and provides important native habitat. Buffer zones can serve not only as habitats themselves, but may also provide corridors for species moving along the shore.

Besides protecting the landward buffer zone shore areas, preserving the littoral (shallow water) zone and its plant communities not only provides essential habitat for fish, wildlife, and the invertebrates that feed on them, but also provides further erosion protection and water quality protection by dampening wave action.

Critical habitat area designations provide information that can be used in developing a management plan for the lake that protects the lake's ecosystem by identifying areas in need of special protection. These areas usually contain several types of aquatic plants: emergent; floating-leaf; rooted floating-leaf; and submergent.

Note: Reesa Evans is credited for all photographs in this report.



Field work for designation of critical habitat areas was done August 14, 2001, on Goose Lake, Adams County. The Critical Habitat Designation field team included :

Scot Ironside, DNR Fish Biologist
Terence Kafka, DNR Water Regulation
Jim Keir, DNR Wildlife Biologist
Rhonda Kenyon, DNR Water Regulation & Zoning Specialist
Deborah Konkel, DNR, Aquatic Plant Specialist
Buzz Sorge, DNR Lake Management Planner

A follow-up field review was done in summer 2006 by Deb Konkel of the WDNR and Reesa Evans, Adams County Land & Water Conservation Department. Areas were identified visually, with GPS readings and digital photos providing additional information.

Goose Lake is a mesotrophic/oliogotrophic seepage lake with good to very good water quality and clarity. It has 81 surface acres, with a maximum depth of 18 feet and an average depth of 7 feet. As in the case in all seepage lakes, the water level on Goose Lake fluctuates naturally with the underground water table. The southwest basin of the lake provides the deepest water habitat. The north and west basins are deep marshes. An island partially separates the west basin and a peninsula partly separates the north basin. Most of the on-lake residences are along the east shore.

II. CRITICAL HABITAT AREA CRITERIA

The critical habitat areas on Goose Lake were selected because of their importance for fish and wildlife habitat, importance for protecting water quality, importance of the natural buffer of terrestrial vegetation, and importance of protecting the aquatic plant communities they support. Each of these sites needs to be preserved in its current natural state and should not be further developed. All of the sites have potential to be used for educational purposes.

Common Attributes of All the Critical Habitat Areas

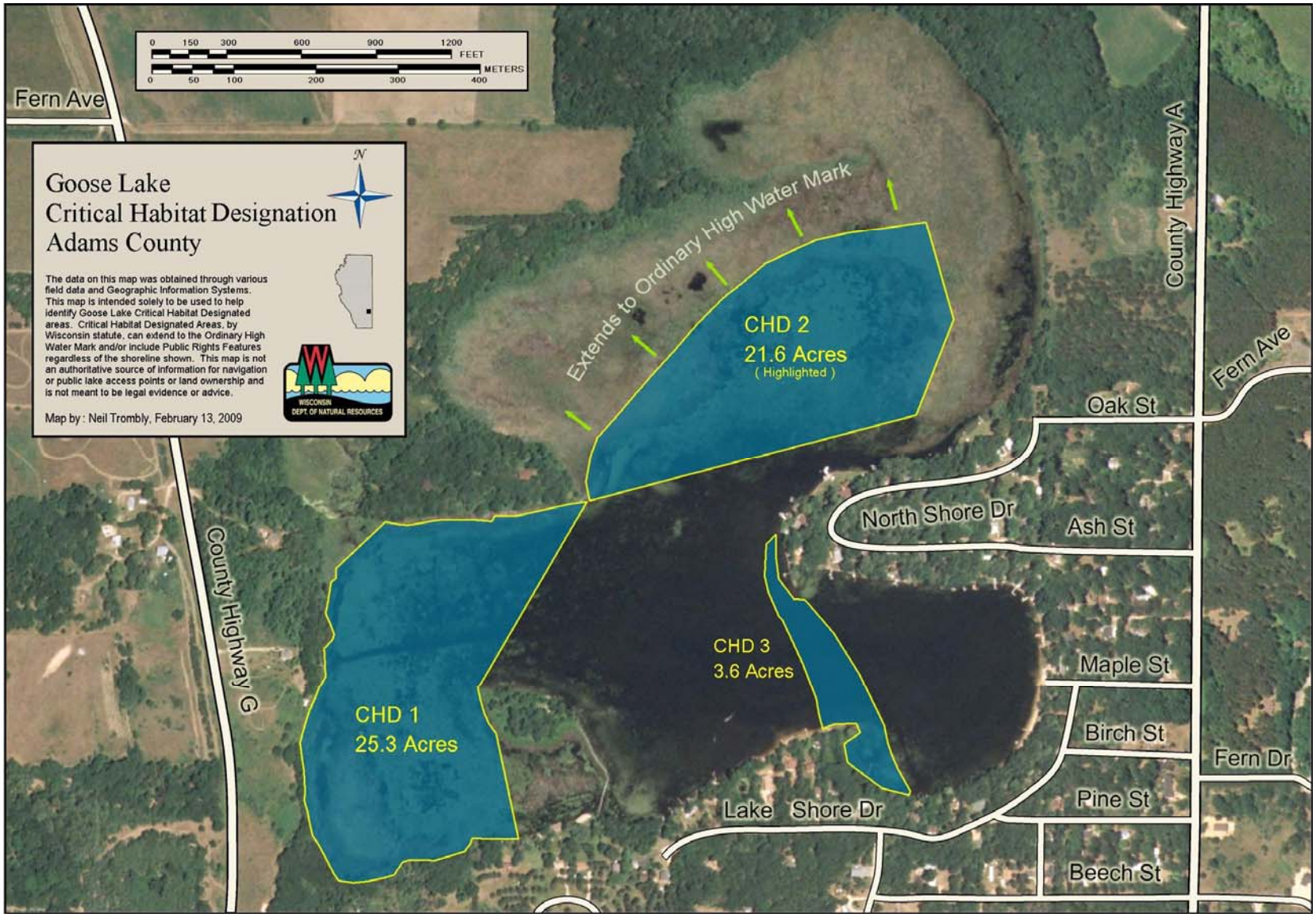
Water Quality: The vegetation at these sites (near shore and in the water) provide a nutrient buffer that reduces algal growth. Its service as a biological buffer reduces the opportunities for invasions by exotics. The physical buffer the vegetation gives protection against shore erosion and plant fragmentation, as well as stabilizes sediment, thus reducing nutrient recycling and likelihood of algal blooms. Many of these plant areas also provide microhabitat for fish and wildlife, as well as provide conditions that encourage higher biodiversity at the site. In the instance of a seepage lake like Goose Lake, these areas may help protect the quality of the water entering the lake from groundwater seepage or springs.

Fish Habitat: All of these sensitive areas provide important fish habitat and are the most essential areas in the lake for a healthy fish community. These areas provide space for spawning, nursery sites, feeding sites, and protective cover from predator fish. Eliminating even one of these sites would reduce the amount of fish habitat available, resulting in a reduction of the size and diversity of the fish community that Goose Lake can support.

Wildlife Habitat: Shoreline, emergent and floating-leaf vegetation are primary habitat for many kinds of wildlife. Shore and emergent vegetation are especially important as nesting and brood-rearing areas. This vegetation also provides cover during migrations and provides travel corridors throughout the year. Floating leaf vegetation also provides cover. Much of this vegetation is also used by various fish and other wildlife for food.

A map of the designated sensitive areas on Goose Lake is seen on the next page.

Critical Habitat Areas--Goose Lake



Critical Habitat Area GL1—West Basin

This basin averages 5' in depth and contains near-shore habitat, shoreline habitat and shallow water habitat. The basin provides visual and sound buffers and an area of outstanding beauty for lake residents and visitors. The shoreline of this basin in mostly undeveloped, although some lots have been occupied since the original 2001 site visit. Most of the shore is wooded or wetland. Woody material is present in the shallow zone for habitat. The wetlands contain wet meadows, shrubs, evergreen wetlands and deep marsh wetlands growing marsh fern, tag alder, willow, dogwood and other.

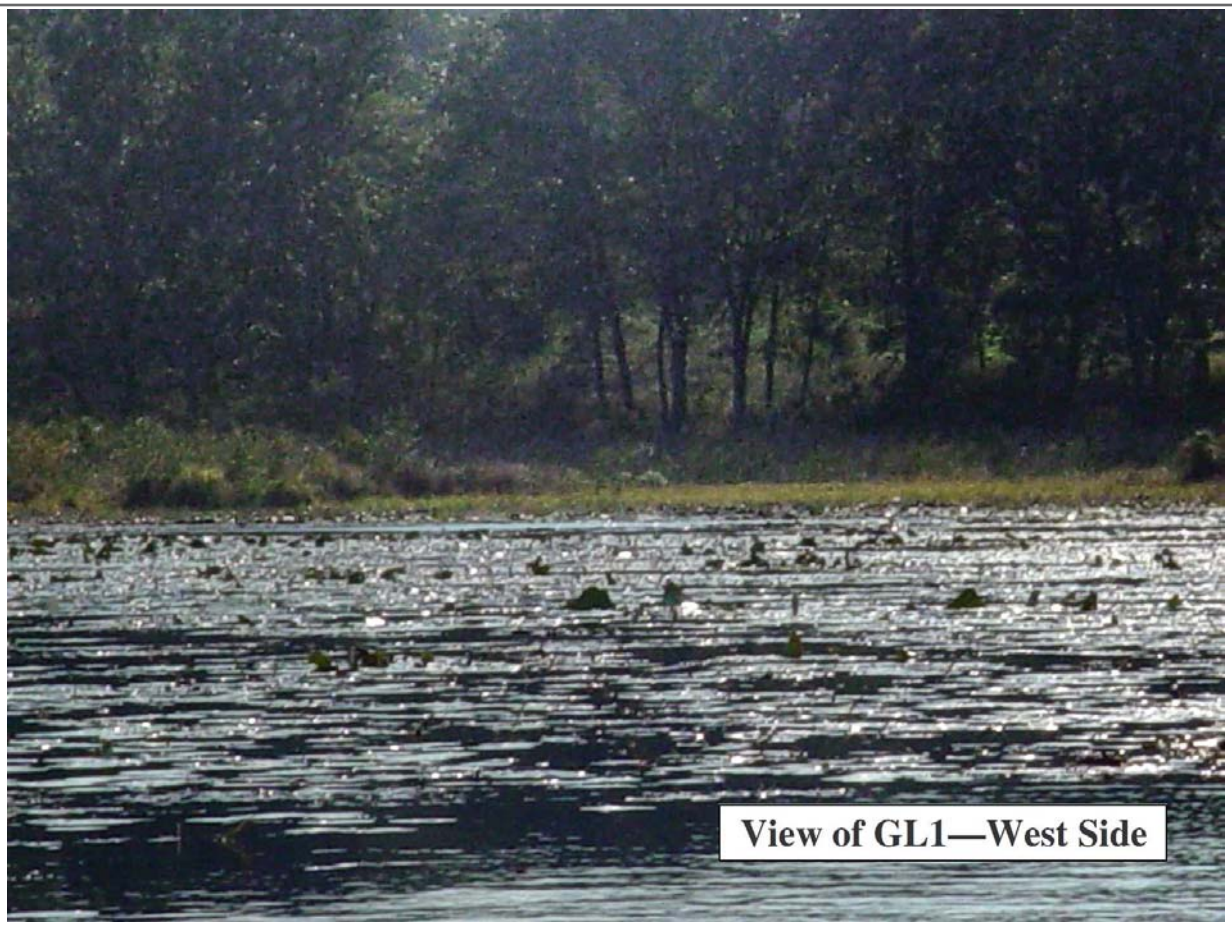
The aquatic plant community in this area consists of emergents, floating-leaf rooted plants and submergent plants. Emergent plants include *Cyperaceae spp.* (sedges), *Scirpus spp.* (bulrush), *Calamagrostis canadensis* (blue-joint grass), *Eleocharis spp.* (spikerush), and *Sparganium americanum* (burreed). Emergent species protect the shore from erosion and provide wildlife cover and areas for fish spawning. Floating-leaf rooted plants found were *Brasenia schreberi* (Watershield), *Nuphar variegata* (Yellow Pond Lily or Spatterdock), and *Nymphaea odorata* (White Water Lily), Floating-leaf plants provide cover for fish and invertebrates, as well as assist in damping waves. Submergent species present were *Utricularia spp.* (Bladderwort), *Myriophyllum sibericum* (Northern milfoil), *Myriophyllum spicatum* (Eurasian Watermilfoil), *Potamogeton richardsonii* (Clasping-leaf pondweed), and *Potamogeton zosteriformis* (Flat-Stem Pondweed). Submergent species provide many fish and wildlife benefits (see table 1). *Lythrum salicaria* (Purple Loosestrife) was also present.

Aquatic species found here in 2006 included *Asclepias incarnata* (Swamp Milkweed), *Brasenia schreberi* (Watershield), *Carex hystericina* (Bottlebrush Sedge), *Myriophyllum spicatum* (Eurasian Watermilfoil), *Najas guadalupensis* (Southern Naiad), *Nuphar variegata* (Variegated Yellow Pond Lily or Spatterdock), *Nymphaea odorata* (White Water Lily), *Phalaris arundinacea* (Reed Canarygrass), *Potamogeton illinoensis* (Illinois pondweed), *Potamogeton zosteriformis* (Flat-Stem Pondweed), *Scirpus subterminalis* (Water Bulrush), *Scirpus tabernaemontani* (Soft-Stem Bulrush), *Typha spp..* (cattails), and 4 types of *Utricularia spp..* (Bladderwort).

Table 1: Aquatic Plant Benefits

GL1	Fish	Water Fowl	Shore Birds	Upland Birds	Muskrat	Beaver	Deer
Brasenia schreberi	I,C,S	F,I,C					
Carex spp		F	F,I				
Eleocharis spp	F,I,C,S	F,I,C	F,C	F,C	F	F	
Juncus spp	F,I,C,S	F,I,C	F,C				
Myriophyllum spp	F,I,C,S	F,I,	F		F		
Najas spp	F,I,C	F	F	F	F		
Nuphar variegata	F,I,C,S	F	F		F	F	F
Nymphaea odoratoa	F,I,C,S	F	F		F	F	
Potamogeton spp	F,I,C,S	F,I	F		F	F	F
Scirpus spp	F,I,C	F,C	F,C,N	F	F	F	F
Utricularia spp	F,I,C,S						

F = Food; I = Shelters Invertebrates; C = Cover; S = Spawning; N = Nesting



View of GL1—West Side

Maintaining the integrity of this area is important to protect the water quality of Goose Lake. The submerged and floating-leaf vegetation take up nutrients into their tissues that would otherwise be available for algae growth or overly-dense plant growth. The emergent vegetation on the west shore filters water that runs off the steep west shore. The submergent vegetation is protecting the lake bottom from resuspension of the fertile muck and peat sediments by boat traffic and wind action, thus maintaining clarity.

The fallen woody debris along the shore and mosaic of submerged vegetation and floating-leaf vegetation with an open area provides a diversity of habitat and feeding opportunities for the fish community. This basin provides spawning, nursery, feeding and cover for northern pike, large-mouth bass, perch, panfish, suckers and bullheads. The variety of emergent vegetation, floating-leaf vegetation, shrubs and snag trees provide cover and feeding areas for upland wildlife; shelter, cover, nursery and feeding areas for beaver, otter, muskrat & mink; cover, nesting & feeding for raptors, ducks, songbirds and geese; cover, feeding & nesting for amphibians and reptiles. The healthy aquatic plant community may be preventing the dominance of Eurasian Watermilfoil.

RECOMMENDATIONS FOR AREA GL1

(1) Maintain current habitat for fish and wildlife.
(2) Do not remove fallen trees along the shoreline.
(3) No alteration of littoral zone unless to improve spawning habitat.
(4) Seasonal protection of spawning habitat.
(5) Maintain snag/cavity trees for nesting.
(6) Install nest boxes.
(7) Maintain or increase wildlife buffer zone corridor.
(8) Make area no-wake zone.
(9) Protect emergent vegetation and floating leaf vegetation.
(10) No aquatic plant and shore plant removal.
(11) Use forestry best management practices on shore.
(12) No use of lawn products.
(13) No bank grading or grading of adjacent land.
(14) No bank grading or grading of adjacent land.
(15) No pier placement, boat landings, development or other shoreline disturbance in the shore area of the wetland corridor.
(16) No pier construction or other activity except by permit using a case-by-case evaluation.
(17) No installation of pea gravel or sand blankets.
(18) No bank restoration unless the erosion index scores moderate or high.
(19) If the erosion index does score moderate or high, bank restoration only using biologs or similar bioengineering, with no use of riprap or retaining walls.
(20) Placement of swimming rafts or other recreational floating devices only by permit.
(21) Maintain buffer of shoreline vegetation.
(22) Maintain aquatic vegetation buffer in undisturbed condition for wildlife habitat, fish use and water quality protection.
(23) Post Eurasian Watermilfoil signs at the boat landing.
(24) Monitor the EWM and take actions if it starts to dominate the aquatic plant community using spot-treatment chemicals only, specific for exotic species.
(25) Treat the purple loosestrife using spot-treatment chemicals only, specific for exotic species, or biological controls.

Critical Habitat Area GL2—North Basin

This area averages 6.5' in depth and contains near shore habitat, shoreline habitat and shallow water habitat. The basin provides visual and sound buffers and an area of outstanding beauty for lake residents and visitors. The shoreline of this basin in mostly undeveloped, although some lots have been occupied since the original 2001 site visit. Most of the shore is wooded or wetland. Woody material is present in the shallow zone for habitat. The wetlands contain wet meadows, shrubs wetlands, tamarack bogs, and deep marsh wetlands.

The plant community in this area consists of emergents, floating-leaf plants and submergents. Emergents include: *Cyperaceae spp.* (sedges), dogwood, *Schoenoplectus subterminalis* (water bulrush), marsh fern, tag alder, tamarack, *Typha spp.* (cattail), and *Sparganium americanum* (burreed). Emergent vegetation protects shores from erosion and provides fish & invertebrate cover, as well as fish spawning areas. Floating leaf vegetation present were *Brasenia schreberi* (watershield), *Polygonum amphibium* (water smartweed), *Nuphar variegata* (yellow pond lily), and *Nymphaea odorata* (white water lily). Such vegetation dampens wave action to protect shores and also provides cover for fish and invertebrates.

Submergent species found in 2001 included *Utricularia minor* (small bladderwort), *Myriophyllum spicatum* (Eurasian Watermilfoil), *Najas flexilis* (bushy pondweed), *Potomogeton natans* (floating-leaf pondweed), *Potamogeton richardsonii* (Clasping-leaf pondweed), and *Potamogeton zosteriformis* (Flat-Stem Pondweed). These species provide many fish and wildlife benefits (see Table 2). Filamentous algae were also present.

In 2006, a species of special concern, *Eleocharis robbinsii* (Robbin's Spikerush), was also found in this area. Several other high-quality aquatic species, including *Cephhalanthus occidentalis* (Buttonbush), *Cladium marisicoides* (Twig Rush), *Lysmachia quadriflor* (4-Flower Yellow Loosestrife) and *Sarracenia purpurea* (Purple Pitcher Plant)—were also found in this area. Other aquatic species found in 2006 included *Brasenia schreberi* (Watershield), *Carex comosa* (Bottlebrush Sedge), *Carex crawfordii* (Crawford's Sedge), *Myriophyllum spicatum* (Eurasian Watermilfoil), *Najas guadalupensis* (Southern Naiad), *Nuphar variegata* (Variegated Yellow Pond Lily), *Nymphaea odorata* (White Water Lily), *Phalaris*

arundinacea (Reed Canarygrass), *Polygonum amphibium* (water smartweed), *Potamogeton illinoensis* (Illinois pondweed), *Potentilla palustris,* (Marsh Cinquefoil), *Scirpus subterminalis* (Water Bulrush), *Scirpus tabernaemontani* (Soft-Stem Bulrush), Marsh Fern, *Typha spp..* (cattails), and 4 types of *Utricularia spp..* (Bladderwort).

Table 2: Aquatic Plant Benefits

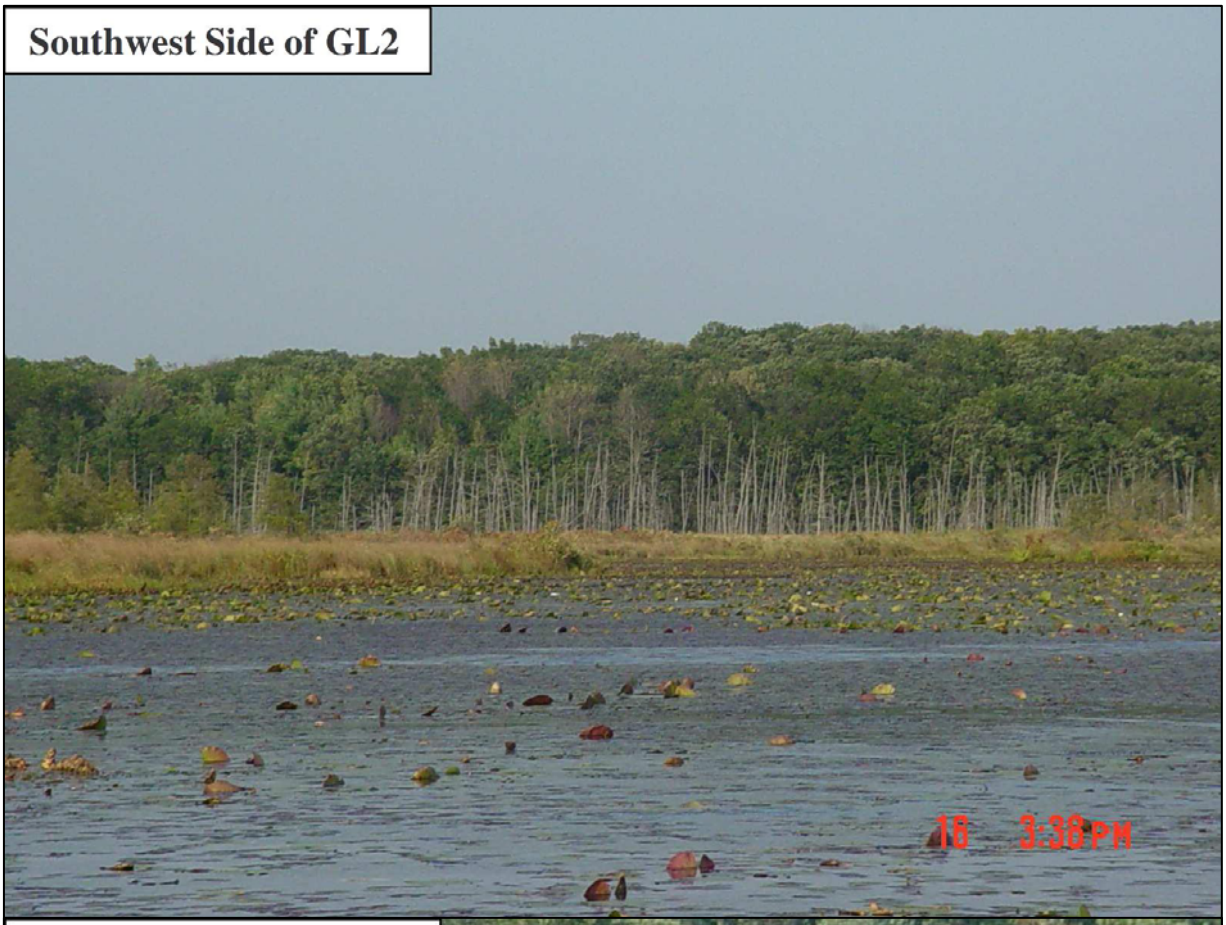
GL2	Fish	Water Fowl	Shore Birds	Upland Birds	Muskrat	Beaver	Deer
Brasenia schreberi	I,C,S	F,I,C					
Carex spp		F	F,I				
Ceratophyllum demersum	F,I,C,S	F,I,C			F		
Chara	F,S	F,I,C					
Eleocharis spp	F,I,C,S	F,I,C	F,C	F,C	F	F	
Juncus spp	F,I,C,S	F,I,C	F,C				
Myriophyllum spp	F,I,C,S	F,I,	F		F		
Najas spp	F,I,C	F	F	F	F		
Nuphar variegata	F,I,C,S	F	F		F	F	F
Nymphaea odoratoa	F,I,C,S	F	F		F	F	
Phalaris arundinacea		C					
Polygonum amphibium	C,I	F,I	F,I	F,I	F		F
Potamogeton spp	F,I,C,S	F,I	F		F	F	F
Potentilla palustris	C,I	F,I	F,I				
Sagittaria spp	C,I	F,I,C	F,I,C	F,I,C	F	F	
Scirpus spp	F,I,C	F,C	F,C,N	F	F	F	F
Typha spp	I,C,S	F	F,C,N		F,C,N	F	
Utricularia spp	F,I,C,S						

F = Food; I = Shelters Invertebrates; C = Cover; S = Spawning; N = Nesting

Looking to GL2 from GL1 area

Close-Up of West Side of GL2

Southwest Side of GL2



Northwest Area of GL2

Maintaining the integrity of this area is important to protect the water quality of Goose Lake. The submerged and floating-leaf vegetation take up nutrients into their tissues that would otherwise be available for algae growth or overly-dense plant growth. The emergent vegetation on the west shore filters water that runs off the steep west shore. The submergent vegetation is protecting the lake bottom from resuspension of the fertile muck and peat sediments by boat traffic and wind action, thus maintaining clarity.

The emergent vegetation and mosaic of submerged vegetation and floating leaf vegetation with an open area provides a diversity of habitat and feeding opportunities for the fish community. This basin provides spawning, nursery, feeding and cover for northern pike, large-mouth bass, perch, panfish, suckers and bullheads. The variety of emergent vegetation, floating-leaf vegetation, shrubs and snag trees provide cover and feeding areas for upland wildlife; shelter, cover, nursery and feeding areas for beaver, otter, muskrat & mink; cover, nesting & feeding for raptors, ducks, songbirds and geese; cover, feeding & nesting for amphibians and reptiles. The healthy aquatic plant community may be preventing the dominance of Eurasian Watermilfoil.

RECOMMENDATIONS FOR GL2

(1) Maintain current habitat for fish and wildlife.
(2) Do not remove fallen trees along the shoreline.
(3) No alteration of littoral zone unless to improve spawning habitat.
(4) Seasonal protection of spawning habitat.
(5) Maintain snag/cavity trees for nesting/
(6) Install nest boxes.
(7) Maintain or increase wildlife corridor.
(8) Make no-wake zone.
(9) Protect emergent vegetation, especially those with high Coefficients of Conservatism.
(10) No aquatic plant and shore plant removal. Leave as much vegetation as possible to protect water quality and habitat.
(11) Use forestry best management practices on nearby terrestrial areas.
(12) If possible, limit development of this area for housing or similar recreational use to preserve the wetlands.
(13) No use of lawn products on nearby land.
(14) No bank grading or grading of adjacent land.
(15) No pier placement, boat landings, development or other shoreline disturbance in the shore area of the wetland corridor.
(16) No pier construction or other activity except by permit using a case-by-case evaluation.
(17) No installation of pea gravel or sand blankets.
(18) No bank restoration unless the erosion index scores moderate or high.
(19) If the erosion index does score moderate or high, bank restoration only using biologs or similar bioengineering, with no use of riprap or retaining walls.
(20) No placement of swimming rafts or other recreational floating devices.
(21) Maintain buffer of shoreline vegetation.
(22) Maintain aquatic vegetation buffer in undisturbed condition for wildlife habitat, fish use and water quality protection.
(23) Post Eurasian Watermilfoil signs at the boat landing.
(24) Monitor the EWM and take actions if it starts to dominate the aquatic plant community using spot-treatment chemicals only, specific for exotic species.

Critical Habitat Area GL3

This area is being added after a field review in 2006 by WDNR and Adams County Land & Water Conservation Department staff. It serves as a nutrient buffer zone, as well as a physical and biological buffer. Although there are houses in this area, most of them are set back substantially from the ordinary high water mark, up the slopes. There are dense beds of plants that provide micro-habitat and sediment stabilization. The area contains near shore habitat, shoreline habitat and shallow water habitat.

The area comprises about 1000' of shoreline with an average water depth of 4'. It is located to the west and south of the public boat ramp on Goose Lake. Sediments found include marl, peat, sand and silt, or mixtures thereof. Vegetation just landward of shore includes mostly native forbs and shrubs, with a small area of traditional lawn and some presence of woody cover.

Northern pike is sometimes found in the area, as well as largemouth bass, suckers and an assortment of panfish. Wildlife including songbirds, geese, amphibians and reptiles are known in Area GL3.

An emergent species of special concern, *Eleocharis robbinsii* (Robbins spikerush), was abundant in this area. Other emergent species found in 2006 included Marsh Fern, *Saggitaria spp.* (Arrowhead), and *Scipus americanus* (3-Square Bulrush). Emergent species like these help prevent shore erosion and provide cover for fish and wildlife and fish spawning. Floating-leaf vegetation was also found in this area*: Nuphar variegata* (Variegated Yellow Water Lily), *Nymphaea odorata* (White Water Lily), *Brasenia schreberi* (Watershield), and *Polygonum amphibium* (Water Smartweed). Floating-leaf vegetation dampens wave action and provides cover for fish, invertebrates and wildlife.

Submergent vegetation was also present at GL3. Submergent vegetation provides many fish and wildlife benefits (see Table 3). Submergents included *Elodea spp.* (Waterweed), *Myriophyllum spicatum* (Eurasian Watermilfoil), *Myriophyllum sibiricum* (Northern Milfoil), *Najas guadalupensis* (Southern Naiad), *Najas flexilis* (Bushy Pondweed), *Potomogeton pectinatus* (Sago Pondweed), *Potamogeton praelongus* (White-Stem Pondweed), *Potamogeton richardsonii* (Clasping-Leaf Pondweed), *P. illinoensis* (Illinois Pondweed), and 2 types of *Ultricularia spp.* (bladderwort).

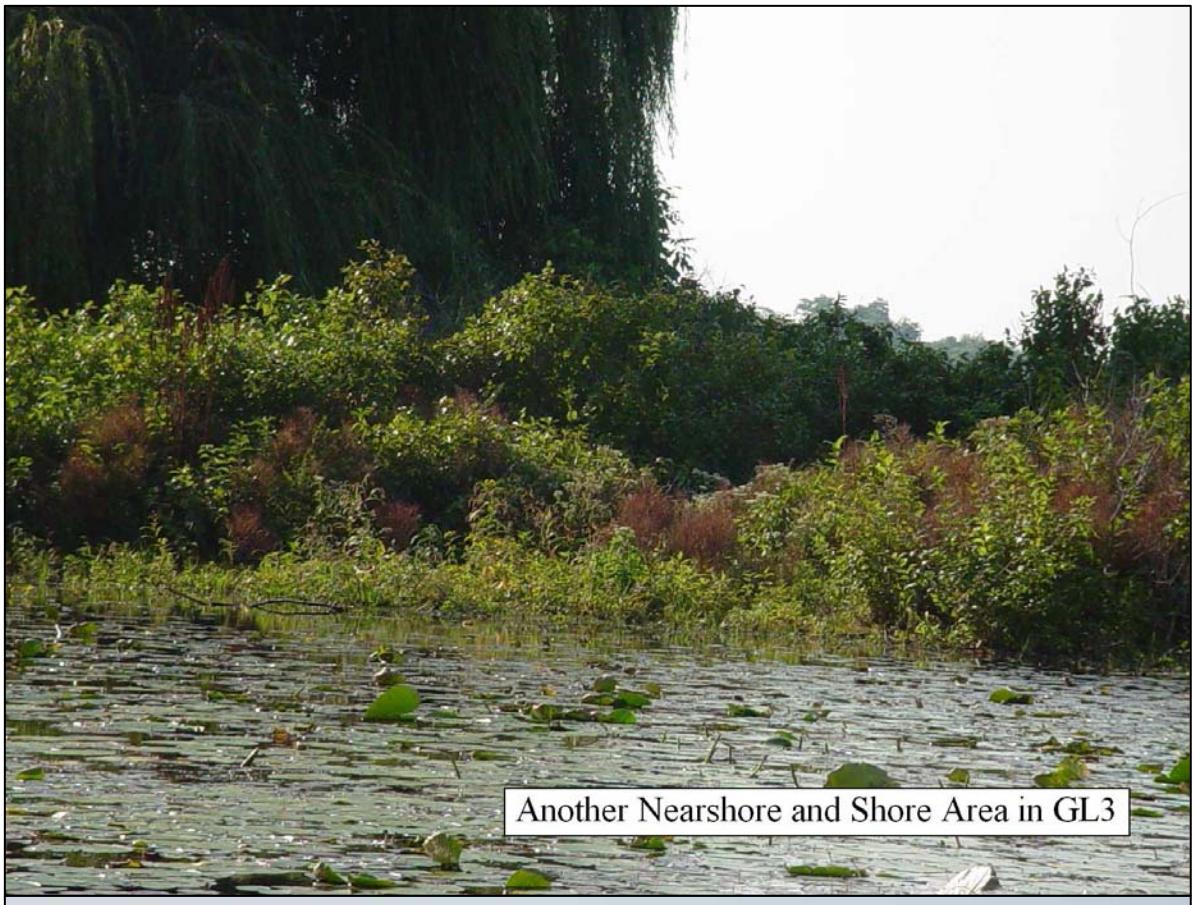
Table 3: Aquatic Plant Benefits

GL3	Fish	Water Fowl	Shore Birds	Upland Birds	Muskrat	Beaver	Deer
Brasenia schreberi	I,C,S	F,I,C					
Carex spp		F	F,I				
Chara	F,S	F,I,C					
Eleocharis spp	F,I,C,S	F,I,C	F,C	F,C	F	F	
Juncus spp	F,I,C,S	F,I,C	F,C				
Myriophyllum spp	F,I,C,S	F,I,	F		F		
Najas spp	F,I,C	F	F	F	F		
Nuphar variegata	F,I,C,S	F	F		F	F	F
Nymphaea odoratoa	F,I,C,S	F	F		F	F	
Polygonum amphibium	C,I	F,I	F,I	F,I	F		F
Potamogeton spp	F,I,C,S	F,I	F		F	F	F
Potentilla palustris	C,I	F,I	F,I				
Sagittaria spp	C,I	F,I,C	F,I,C	F,I,C	F	F	
Scirpus spp	F,I,C	F,C	F,C,N	F	F	F	F
Typha spp	I,C,S	F	F,C,N		F,C,N	F	
Utricularia spp	F,I,C,S						

F = Food; I = Shelters Invertebrates; C = Cover; S = Spawning; N = Nesting

Photo of GL3 and House Setback

Closeup of Nearshore Emergents and Shrubs



Another Nearshore and Shore Area in GL3

Point Area in GL3

RECOMMENDATIONS FOR GL3

(1) Maintain current habitat for fish and wildlife.
(2) Do not remove fallen trees along the shoreline or from the water.
(3) No alteration of littoral zone unless to improve spawning habitat.
(4) Seasonal protection of spawning habitat.
(5) Maintain snag/cavity trees for nesting.
(6) Install nest boxes.
(7) Maintain or increase wildlife corridor.
(8) Make no-wake zone.
(9) Protect emergent vegetation, especially those with high Coefficients of Conservatism.
(10) Minimize aquatic plant and shore plant removal to maximum 30' wide viewing/access corridor. Leave as much vegetation as possible to protect water quality and habitat.
(11) Use forestry best management practices on shore.
(12) If possible, limit development of this area for housing or similar recreational use while maintaining setbacks and current buffers.
(13) No use of lawn products on shore.
(14) No bank grading or grading of adjacent land.
(15) No pier placement, boat landings, development or other shoreline disturbance in the shore area of the wetland corridor.
(16) No pier construction or other activity except by permit using a case-by-case evaluation.
(17) No installation of pea gravel or sand blankets.
(18) No bank restoration unless the erosion index scores moderate or high. Include stormwater runoff management in all shoreline protection designs.
(19) If the erosion index does score moderate or high, bank restoration only using biologs or similar bioengineering, with no use of riprap or retaining walls.
(20) Placement of swimming rafts or other recreational floating devices only by permit.
(21) Maintain buffer of shoreline vegetation.
(22) Maintain aquatic vegetation buffer in undisturbed condition for wildlife habitat, fish use and water quality protection.
(23) Post Eurasian Watermilfoil signs at the boat landing.
(24) Monitor the EWM and take actions if it starts to dominate the aquatic plant community using spot-treatment chemicals only, specific for exotic species.

Goose Lake, Adams County
Surface Watershed Polygon
Including Lake Area

This map is intended solely to help identify the size and location of the Goose Lake surface watershed. This map is based solely on interpretation of USGS topographic lines. It is not an authoritative source of legal information or advice.

Map by Neil Trombly, December, 2010