



Water Bureau
Aquatic Nuisance Control and Remedial Action Unit
Field Report

Aquatic Plant Survey

Loon Lake – Iosco County

Survey Date and Time: 9/1/2005
Survey Personnel: Lisa Huberty
Conditions: sunny, breezy
Transparency: 13 feet, olive in color

Submergent plant species observed:

| Common Name | Scientific Name | Cumulative Cover |
|-----------------------|-------------------------------------|-------------------------|
| Chara | <i>Chara spp.</i> | 13.51 |
| Wild Celery | <i>Vallisneria americana</i> | 3.19 |
| Large-leaf pondweed | <i>Potamogeton amplifolius</i> | 1.95 |
| Northern watermilfoil | <i>Myriophyllum sibiricum</i> | 1.12 |
| Naiad | <i>Najas spp.</i> | 0.79 |
| Coontail | <i>Ceratophyllum demersum</i> | 0.67 |
| Flat-stem pondweed | <i>Potamogeton zosteriformis</i> | 0.51 |
| Illinois pondweed | <i>Potamogeton illinoensis</i> | 0.33 |
| Thin-leaf pondweed | <i>Potamogeton spp. (thin-leaf)</i> | 0.26 |
| Elodea | <i>Elodea canadensis</i> | 0.12 |
| Arrowhead | <i>Sagittaria spp. (submergent)</i> | 0.09 |
| White-stem pondweed | <i>Potamogeton praelongus</i> | 0.07 |
| Sago pondweed | <i>Stuckenia pectinata</i> | 0.07 |
| Water stargrass | <i>Zosterella dubia</i> | 0.05 |

Emergent plant species observed:

| Common Name | Scientific Name | Cumulative Cover |
|--------------------|------------------------------|-------------------------|
| Bulrush | <i>Scirpus spp.</i> | 3.28 |
| Pickeralweed | <i>Pontederia cordata</i> | 1.26 |
| Cattail | <i>Typha spp.</i> | 1.00 |
| White waterlily | <i>Nymphaea spp.</i> | 0.95 |
| Purple loosestrife | <i>Lythrum salicaria</i> | 0.49 |
| Yellow waterlily | <i>Nuphar spp.</i> | 0.16 |
| Star duckweed | <i>Lemna trisulca</i> | 0.09 |
| Swamp loosestrife | <i>Decodon verticillatus</i> | 0.07 |

Methods

The survey was performed according to DEQ "Procedures for Aquatic Plant Surveys." This involved dividing the lake into 43 AVAS' (Aquatic Vegetation Assessment Sites) and using a combination of visual observations and weighted plant rake collections throughout the littoral zone.

In general, plant densities observed during aquatic vegetation surveys may be influenced by several factors, including the perception of the surveyor, the level of survey effort, the clarity of the water, and the seasonal timing of the survey. More species are likely to be observed in late summer than in the spring because most native species do not exhibit much growth early in the year. Plant densities are also influenced by on-going lake management activities, including those that are regulated (e.g., chemical treatments, lake draw-down, shoreline modification, benthic barriers) as well as unregulated activities (e.g., mechanical harvesting, some forms of biological control).

Background

Loon Lake covers a surface area of 417 acres and has a maximum depth of approximately 110 feet. It has a designated trout stream as inlet and outlet. Approximately 75 percent of the shoreline is developed with high density residential parcels. There are also a few undeveloped and wetland pockets dispersed around the shoreline. A camp(s) owns a significant amount of property along the northern shoreline. The public access site is located on the easternmost lobe of the lake (west off M-65). The lake has a history of permits for treatment of algae and submerged plants, including Eurasian watermilfoil.

Results

At the time of this survey, a total of 14 submerged aquatic plant species were found across 43 AVAS'. The dominant submerged plant species observed in Loon Lake were Chara (a macroalgae; CC = 13.51) and wild celery (CC = 3.19). These species were observed in 42 and 38 AVAS', respectively, usually at "sparse" (2-20% coverage per AVAS) and "found" (< 2 % coverage per AVAS) density levels.

Another group of five species was found in most of the AVAS', but these species were usually observed at the "found" (< 2% coverage per AVAS) density level. This group includes large leaf pondweed (CC = 1.95), northern watermilfoil (CC = 1.12), naiad (CC = 0.79), coontail (CC = 0.67), and flat-stem pondweed (CC = 0.51).

The remaining seven submerged plant species were found in 5 – 33 percent of the AVAS' and always at the lowest ("found") density levels (CC values = 0.05 - 0.33). This group includes Illinois pondweed, thin-leaf pondweed, Elodea, arrowhead, white -stem pondweed, sago pondweed, and water stargrass.

A total of 8 emergent aquatic plant species were observed along the shoreline of Loon Lake. The most widespread and abundant emergent plant species was bulrush (CC = 3.28), which was observed in 77 percent of the AVAS', usually at the "found" density level and sometimes at the "sparse" density level.

Another group of 4 emergent plant species was found in 33 – 49 percent of the AVAS', but usually at "found" density levels. This group included pickerel weed (CC = 1.26), cattail (CC = 1.00), white waterlily (CC = 0.95), and purple loosestrife (CC = 0.49).

The remaining 3 emergent plant species were observed in few AVAS' and only at the "found" density level. These species included yellow waterlily (CC = 0.16), star duckweed (CC = 0.09), and swamp loosestrife (CC = 0.07).

Discussion

At the time of this survey, Loon Lake had a moderately species-rich aquatic plant community (14 submersed plant species and 8 emergent plant species) with a variety of types of plant architecture. Inland lakes with a high number of species and adequate densities of aquatic plants, combined with significant portions of natural shoreline and undeveloped watershed, offer considerable value to fish and wildlife resources. A diverse aquatic plant community offers structural complexity, which provides variable habitat for aquatic invertebrates and good cover and foraging opportunities for fish. Adequate coverage by native aquatic plants may prevent the establishment or increase in abundance of invasive non-native species.

At present, the dominant plant species in Loon Lake are native to Michigan and provide considerable ecological value to the lake. Dense stands of Chara, a macroalgae, benefit water quality by stabilizing the sediments from movement and suspension. Algae and invertebrates found in and on Chara beds provide food for aquatic organisms. The complex architecture of this macroalgae provides cover from predators. In addition, Chara is directly consumed by waterfowl. The second dominant species, wild celery, is an excellent food source for waterfowl and provides shade, shelter and feeding opportunities for fish.

All of the other submergent plant species observed at Loon Lake are native to Michigan. These submergent plant species offer water quality benefits, architectural habitat complexity for invertebrates and fish, and food resources to waterfowl and other wildlife.

The native emergent species also offer habitat value and additional shoreline protection. Except for purple loosestrife, all of the emergent plant species observed in Loon Lake are native to Michigan. Purple loosestrife was found in 49 percent of the sites always at the lowest density level (= "found"). This species offers little wildlife value. Mechanical, chemical, and biological control methods are available for management of this species.

The aquatic plant community should be monitored periodically to document and measure any changes in species composition. Vegetation survey results may be important to develop future management options for exotic species control, and if necessary, native plant control. Native plants should be targeted only in areas where they are interfering with recreational activities, such as along the shoreline swimming areas and around docks or fishing piers. Wide scale removal of native plants may only serve to open larger sections of lake bottom to non-native invasive species, such as EWM.

Standard Aquatic Vegetation Summary Sheet

waterbody: LOON LAKE
e.w.m. distribution:

county: IOSCO
surveyors: Lisa Huberty, Eric Bacon, DEQ

survey date: 9/1/2005 # of a.v.a.s.'s: 43

| plant species | # of a.v.a.s. per density category | | | | density calculations | | | | sum of previous four columns | cumulative cover (column 9 / # of a.v.a.s.'s) |
|-------------------------------------|------------------------------------|----|---|---|----------------------|--------|--------|--------|------------------------------|---|
| | a | b | c | d | a x 1 | b x 10 | c x 40 | d x 80 | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| <i>Chara spp.</i> | 11 | 25 | 4 | 2 | 11 | 250 | 160 | 160 | 581 | 13.51 |
| <i>Vallisneria americana</i> | 27 | 11 | 0 | 0 | 27 | 110 | 0 | 0 | 137 | 3.19 |
| <i>Potamogeton amplifolius</i> | 14 | 3 | 1 | 0 | 14 | 30 | 40 | 0 | 84 | 1.95 |
| <i>Myriophyllum sibiricum</i> | 28 | 2 | 0 | 0 | 28 | 20 | 0 | 0 | 48 | 1.12 |
| <i>Najas spp.</i> | 34 | 0 | 0 | 0 | 34 | 0 | 0 | 0 | 34 | 0.79 |
| <i>Ceratophyllum demersum</i> | 19 | 1 | 0 | 0 | 19 | 10 | 0 | 0 | 29 | 0.67 |
| <i>Potamogeton zosteriformis</i> | 22 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 22 | 0.51 |
| <i>Potamogeton illinoensis</i> | 14 | 0 | 0 | 0 | 14 | 0 | 0 | 0 | 14 | 0.33 |
| <i>Potamogeton spp. (thin-leaf)</i> | 11 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 11 | 0.26 |
| <i>Elodea canadensis</i> | 5 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 | 0.12 |
| <i>Sagittaria spp. (submergent)</i> | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0.09 |
| <i>Potamogeton praelongus</i> | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0.07 |
| <i>Stuckenia pectinata</i> | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0.07 |
| <i>Zosterella dubia</i> | 2 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 | 0.05 |
| <i>Scirpus spp.</i> | 21 | 12 | 0 | 0 | 21 | 120 | 0 | 0 | 141 | 3.28 |
| <i>Pontederia cordata</i> | 14 | 4 | 0 | 0 | 14 | 40 | 0 | 0 | 54 | 1.26 |
| <i>Typha spp.</i> | 13 | 3 | 0 | 0 | 13 | 30 | 0 | 0 | 43 | 1.00 |
| <i>Nymphaea spp.</i> | 11 | 3 | 0 | 0 | 11 | 30 | 0 | 0 | 41 | 0.95 |
| <i>Lythrum salicaria</i> | 21 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 21 | 0.49 |
| <i>Nuphar spp.</i> | 7 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 7 | 0.16 |
| <i>Lemna trisulca</i> | 4 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 | 0.09 |
| <i>Decodon verticillatus</i> | 3 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 3 | 0.07 |

a.v.a.s. - aquatic vegetation assessment site

e.w.m. - eurasian watermilfoil (*Myriophyllum spicatum*)

LAKE NAME- loon

COUNTY- losco

SURVEY DATE: 9/1/05

Standard Aquatic Vegetation Summary Sheet

SURVEY BY:

Huberty / Bacon

| Code No | Plant Name | Total number of AVAS's for each Density Category | | | | Calculations | | | | Sum of Previous Four Columns | Total Number of AVAS's | Quotient of Column 9 divided by Column 10 | Code No | Plant Name |
|---------|------------------------|--|----|---|---|----------------|-----------------|-----------------|-----------------|------------------------------|------------------------|---|---------|------------------------|
| | | A | B | C | D | Category A x 1 | Category B x 10 | Category C x 40 | Category D x 80 | | | | | |
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | | | | | |
| 1 | Eurasian milfoil | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 1 | Eurasian milfoil |
| 2 | Curly leaf pondweed | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 2 | Curly leaf pondweed |
| 3 | Chara | 11 | 25 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 3 | Chara |
| 4 | Thinleaf pondweed | 11 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 4 | Thinleaf pondweed |
| 5 | Flatstem pondweed | 22 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 5 | Flatstem pondweed |
| 6 | Robbins pondweed | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 6 | Robbins pondweed |
| 7 | Variable pondweed | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 7 | Variable pondweed |
| 8 | Whitestem pondweed | 3 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 8 | Whitestem pondweed |
| 9 | Richardsons pondweed | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 9 | Richardsons pondweed |
| 10 | Illinois pondweed | 14 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 10 | Illinois pondweed |
| 11 | Large leaf pondweed | 14 | 3 | 1 | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 11 | Large leaf pondweed |
| 12 | American pondweed | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 12 | American pondweed |
| 13 | Floating leaf pondweed | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 13 | Floating leaf pondweed |
| 14 | Water stargrass | 2 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 14 | Water stargrass |
| 15 | Wild Celery | 17 | 11 | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 15 | Wild Celery |
| 16 | Sagittaria | 4 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 16 | Sagittaria |
| 17 | Northern milfoil | 28 | 2 | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 17 | Northern milfoil |
| 18 | M. verticillatum | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 18 | M. verticillatum |
| 19 | M. heterophyllum | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 19 | M. heterophyllum |
| 20 | Coontail | 19 | 1 | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 20 | Coontail |
| 21 | Elodea | 5 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 21 | Elodea |
| 22 | Utricularia spp. | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 22 | Utricularia spp. |
| 23 | Bladderwort-mini | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 23 | Bladderwort-mini |
| 24 | Buttercup | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 24 | Buttercup |
| 25 | Najas spp. | 34 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 25 | Najas spp. |
| 26 | Brittle naiad | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 26 | Brittle naiad |
| 27 | Sago pondweed | 3 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 27 | Sago pondweed |
| 28 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 28 | |
| 29 | | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 29 | |
| 30 | Nymphaea | 11 | 3 | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 30 | Nymphaea |
| 31 | Nuphar | 7 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 31 | Nuphar |
| 32 | Brasenia | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 32 | Brasenia |
| 33 | Lemna minor | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 33 | Lemna minor |
| 34 | Spirodella | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 34 | Spirodella |
| 35 | Watermeal | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 35 | Watermeal |
| 36 | Arrowhead | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 36 | Arrowhead |
| 37 | Pickerelweed | 14 | 4 | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 37 | Pickerelweed |
| 38 | Arrow Arum | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 38 | Arrow Arum |
| 39 | Cattails | 13 | 3 | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 39 | Cattails |
| 40 | Bulrushes | 21 | 12 | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 40 | Bulrushes |
| 41 | Iris | | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 41 | Iris |
| 42 | Swamp Loosestrife | 3 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 42 | Swamp Loosestrife |
| 43 | Purple Loosestrife | 21 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 43 | Purple Loosestrife |
| 44 | Lemna trisulca | 4 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 44 | Lemna trisulca |
| 45 | Crows foot? | 1 | | | | 0 | 0 | 0 | 0 | 0 | 0 | ##### | 45 | Crows foot? |

| Standard Aquatic Vegetation Assessment Site Species Density Sheet | | | | | | | | | | | | | | | | | | | |
|---|---------------------------|---|-----------------------|-------|-------|-------|-------|-------|-------|----------|---------------------------|---|--------|--------|-----------------------|--------|--------|--------|--------|
| Code No. | Plant Name | Aquatic Vegetation Assessment Site Number | | | | | | | | Code No. | Plant Name | Aquatic Vegetation Assessment Site Number | | | | | | | |
| | | NO. 1 | NO. 2 | NO. 3 | NO. 4 | NO. 5 | NO. 6 | NO. 7 | NO. 8 | | | NO. 9 | NO. 10 | NO. 11 | NO. 12 | NO. 13 | NO. 14 | NO. 15 | NO. 16 |
| | | 1 | Eurasian watermilfoil | | | | | | | | | | | 1 | Eurasian watermilfoil | | | | |
| 2 | Curly leaf pondweed | | | | | | | | | 2 | Curly leaf pondweed | | | | | | | | |
| 3 | Chara | B | B | A | A | B | B | C | D | 3 | Chara | C | B | B | C | B | B | B | |
| 4 | Thin leaf pondweed | | | | | | | | | 4 | Thin leaf pondweed | A | | | A | | | | |
| 5 | Flat stem pondweed | | A | A | A | A | | | | 5 | Flat stem pondweed | | | | | | A | | |
| 6 | Robbins pondweed | | | | | | | | | 6 | Robbins pondweed | | | | | | | | |
| 7 | Variable pondweed | | | | | | | | | 7 | Variable pondweed | | | | | | | | |
| 8 | White stem pondweed | | | | | A | | | | 8 | White stem pondweed | | | | | | | | |
| 9 | Richardsons pondweed | | | | | | | | | 9 | Richardsons pondweed | | | | | | | | |
| 10 | Illinois pondweed | A | | | | | | | | 10 | Illinois pondweed | A | A | | | A | | A | |
| 11 | Large leaf pondweed | A | A | A | A | | | A | | 11 | Large leaf pondweed | | | | A | | | A | |
| 12 | American pondweed | | | | | | | | | 12 | American pondweed | | | | | | | | |
| 13 | Floating leaf pondweed | | | | | | | | | 13 | Floating leaf pondweed | | | | | | | | |
| 14 | Water stargrass | | | | | | | | | 14 | Water stargrass | | | | | | | | |
| 15 | Wild Celery | B | A | B | | B | | A | A | 15 | Wild Celery | A | A | | A | A | A | A | |
| 16 | Arrowhead (submergent) | | | | | | | | | 16 | Arrowhead (submergent) | | | | | | | | |
| 17 | Native milfoil | A | A | A | B | B | A | A | | 17 | Native milfoil | A | A | | | A | | A | |
| 18 | Whorled watermilfoil | | | | | | | | | 18 | Whorled watermilfoil | | | | | | | | |
| 19 | Various leaf watermilfoil | | | | | | | | | 19 | Various leaf watermilfoil | | | | | | | | |
| 20 | Coontail | | | A | A | A | A | A | | 20 | Coontail | A | | | A | | | | |
| 21 | Elodea | | | | | | | | | 21 | Elodea | | | | | | | | |
| 22 | Bladderwort | | | | | | | | | 22 | Bladderwort | | | | | | | | |
| 23 | Bladderwort (mini) | | | | | | | | | 23 | Bladderwort (mini) | | | | | | | | |
| 24 | Buttercup | | | | | | | | | 24 | Buttercup | | | | | | | | |
| 25 | Najas spp. | A | A | | A | A | A | A | A | 25 | Najas spp. | A | | | | A | A | A | |
| 26 | Brittle naiad | | | | | | | | | 26 | Brittle naiad | | | | | | | | |
| 27 | Sago pondweed | | | | | | | | | 27 | Sago pondweed | | | | | | | | |
| 28 | | | | | | | | | | 28 | | | | | | | | | |
| 29 | | | | | | | | | | 29 | | | | | | | | | |
| 30 | White waterlily | | | | | | | A | B | 30 | White waterlily | A | B | | A | | A | A | |
| 31 | Yellow waterlily | | | | | | A | A | | 31 | Yellow waterlily | A | A | | | | | | |
| 32 | Watershield | | | | | | | | | 32 | Watershield | | | | | | | | |
| 33 | Small duckweed | | | | | | | | | 33 | Small duckweed | | | | | | | | |
| 34 | Great duckweed | | | | | | | | | 34 | Great duckweed | | | | | | | | |
| 35 | Watermeal | | | | | | | | | 35 | Watermeal | | | | | | | | |
| 36 | Arrowhead | | | | | | | | | 36 | Arrowhead | | | | | | | | |
| 37 | Pickerelweed | | | | | | A | A | A | 37 | Pickerelweed | A | A | | A | A | A | B | |
| 38 | Arrow arum | | | | | | | | | 38 | Arrow arum | | | | | | | | |
| 39 | Cattail | | | | | | A | A | B | 39 | Cattail | A | A | | | | | | |
| 40 | Bulrush | | | | | | B | A | | 40 | Bulrush | B | B | | A | A | A | B | |
| 41 | Iris | | | | | | | | | 41 | Iris | | | | | | | | |
| 42 | Swamp Loosestrife | | | | | | | | | 42 | Swamp Loosestrife | | | | | | | | |
| 43 | Purple Loosestrife | A | | | | | A | A | A | 43 | Purple Loosestrife | | A | | | A | | A | |
| 44 | Lemna trisulca | | | | | | | A | | 44 | | A | | | A | | | | |
| 45 | | | | | | | | | | 45 | | | | | | | | | |

| Standard Aquatic Vegetation Assessment Site Species Density Sheet | | | | | | | | | | | | | | | | | | | |
|---|---------------------------|---|-----|-----|-----|-----|-----|-----|-----|----------|---------------------------|---|-----|-----|-----|-----|-----|-----|-----|
| Code No. | Plant Name | Aquatic Vegetation Assessment Site Number | | | | | | | | Code No. | Plant Name | Aquatic Vegetation Assessment Site Number | | | | | | | |
| | | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. | | | NO. | NO. | NO. | NO. | NO. | NO. | NO. | NO. |
| | | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | | | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 |
| 1 | Eurasian watermilfoil | | | | | | | | | 1 | Eurasian watermilfoil | | | | | | | | |
| 2 | Curly leaf pondweed | | | | | | | | | 2 | Curly leaf pondweed | | | | | | | | |
| 3 | Chara | A | D | B | A | B | A | A | A | 3 | Chara | A | A | A | A | B | B | B | |
| 4 | Thin leaf pondweed | | A | | | | A | A | A | 4 | Thin leaf pondweed | | | | A | | | | |
| 5 | Flat stem pondweed | | A | | | | A | A | A | 5 | Flat stem pondweed | A | | A | A | | | A | |
| 6 | Robbins pondweed | | | | | | | | | 6 | Robbins pondweed | | | | | | | | |
| 7 | Variable pondweed | | | | | | | | | 7 | Variable pondweed | | | | | | | | |
| 8 | White stem pondweed | | | | | | | | | 8 | White stem pondweed | | | A | A | | | | |
| 9 | Richardsons pondweed | | | | | | | | | 9 | Richardsons pondweed | | | | | | | | |
| 10 | Illinois pondweed | A | | A | A | A | A | | | 10 | Illinois pondweed | | | A | | | A | | |
| 11 | Large leaf pondweed | C | B | | | | A | | | 11 | Large leaf pondweed | | | | | B | | | |
| 12 | American pondweed | | | | | | | | | 12 | American pondweed | | | | | | | | |
| 13 | Floating leaf pondweed | | | | | | | | | 13 | Floating leaf pondweed | | | | | | | | |
| 14 | Water stargrass | A | | | | | A | | | 14 | Water stargrass | | | | | | | | |
| 15 | Wild Celery | | B | A | | A | A | A | A | 15 | Wild Celery | A | A | A | B | B | A | A | |
| 16 | Arrowhead (submergent) | A | A | | | | | | | 16 | Arrowhead (submergent) | | | | | | | | |
| 17 | Native milfoil | | A | | | A | A | | A | 17 | Native milfoil | A | | A | A | | | A | |
| 18 | Whorled watermilfoil | | | | | | | | | 18 | Whorled watermilfoil | | | | | | | | |
| 19 | Various leaf watermilfoil | | | | | | | | | 19 | Various leaf watermilfoil | | | | | | | | |
| 20 | Coontail | | | A | | A | | | | 20 | Coontail | | | | A | A | A | A | |
| 21 | Elodea | | | | | | | | | 21 | Elodea | | | A | | | | | |
| 22 | Bladderwort | | | | | | | | | 22 | Bladderwort | | | | | | | | |
| 23 | Bladderwort (mini) | | | | | | | | | 23 | Bladderwort (mini) | | | | | | | | |
| 24 | Buttercup | | | | | | | | | 24 | Buttercup | | | | | | | | |
| 25 | Najas spp. | A | A | A | | A | | A | A | 25 | Najas spp. | | A | A | A | | A | A | A |
| 26 | Brittle naiad | | | | | | | | | 26 | Brittle naiad | | | | | | | | |
| 27 | Sago pondweed | | A | | | | A | | | 27 | Sago pondweed | | | | | | | | |
| 28 | | | | | | | | | | 28 | | | | | | | | | |
| 29 | | | | | | | | | | 29 | | | | | | | | | |
| 30 | White waterlily | A | B | A | | | | | | 30 | White waterlily | | | | A | | | | |
| 31 | Yellow waterlily | | | A | | | | | | 31 | Yellow waterlily | | | | | | | | |
| 32 | Watershield | | | | | | | | | 32 | Watershield | | | | | | | | |
| 33 | Small duckweed | | | | | | | | | 33 | Small duckweed | | | | | | | | |
| 34 | Great duckweed | | | | | | | | | 34 | Great duckweed | | | | | | | | |
| 35 | Watermeal | | | | | | | | | 35 | Watermeal | | | | | | | | |
| 36 | Arrowhead | | | | | | | | | 36 | Arrowhead | | | | | | | | |
| 37 | Pickeralweed | A | B | B | | | | | | 37 | Pickeralweed | | | | A | B | | | |
| 38 | Arrow arum | | | | | | | | | 38 | Arrow arum | | | | | | | | |
| 39 | Cattail | A | B | A | | | | A | | 39 | Cattail | | | | A | A | | | |
| 40 | Bulrush | A | B | B | A | A | A | | A | 40 | Bulrush | A | A | A | B | B | B | A | A |
| 41 | Iris | | | | | | | | | 41 | Iris | | | | | | | | |
| 42 | Swamp Loosestrife | A | A | | | | | | | 42 | Swamp Loosestrife | | | | | | | | |
| 43 | Purple Loosestrife | | A | A | | | A | | A | 43 | Purple Loosestrife | A | A | A | A | A | A | | |
| 44 | <i>Lemna trisulca</i> | A | | | | | | | | 44 | | | | | | | | | |
| 45 | | | | | | | A | | | 45 | | | | | | | | | |

| Standard Aquatic Vegetation Assessment Site Species Density Sheet | | | | | | | | | | | | | | | | | | | |
|---|---------------------------|---|--------|--------|--------|--------|--------|--------|--------|----------|---------------------------|---|--------|--------|--------|--------|--------|--------|--------|
| Code No. | Plant Name | Aquatic Vegetation Assessment Site Number | | | | | | | | Code No. | Plant Name | Aquatic Vegetation Assessment Site Number | | | | | | | |
| | | NO. 33 | NO. 34 | NO. 35 | NO. 36 | NO. 37 | NO. 38 | NO. 39 | NO. 40 | | | NO. 41 | NO. 42 | NO. 43 | NO. 44 | NO. 45 | NO. 46 | NO. 47 | NO. 48 |
| 1 | Eurasian watermilfoil | | | | | | | | | 1 | Eurasian watermilfoil | | | | | | | | |
| 2 | Curly leaf pondweed | | | | | | | | | 2 | Curly leaf pondweed | | | | | | | | |
| 3 | Chara | B | B | B | C | B | B | B | | 3 | Chara | B | | B | | | | | |
| 4 | Thin leaf pondweed | | | | | | A | A | | 4 | Thin leaf pondweed | | A | A | | | | | |
| 5 | Flat stem pondweed | | A | A | A | | A | A | | 5 | Flat stem pondweed | A | A | A | | | | | |
| 6 | Robbins pondweed | | | | | | | | | 6 | Robbins pondweed | | | | | | | | |
| 7 | Variable pondweed | | | | | | | | | 7 | Variable pondweed | | | | | | | | |
| 8 | White stem pondweed | | | | | | | | | 8 | White stem pondweed | | | | | | | | |
| 9 | Richardsons pondweed | | | | | | | | | 9 | Richardsons pondweed | | | | | | | | |
| 10 | Illinois pondweed | | | | | A | | A | | 10 | Illinois pondweed | | | | | | | | |
| 11 | Large leaf pondweed | | A | | B | A | A | | A | 11 | Large leaf pondweed | | A | A | | | | | |
| 12 | American pondweed | | | | | | | | | 12 | American pondweed | | | | | | | | |
| 13 | Floating leaf pondweed | | | | | | | | | 13 | Floating leaf pondweed | | | | | | | | |
| 14 | Water stargrass | | | | | | | | | 14 | Water stargrass | | | | | | | | |
| 15 | Wild Celery | A | A | A | B | A | B | A | B | 15 | Wild Celery | B | B | B | | | | | |
| 16 | Arrowhead (submergent) | | | | | | | A | A | 16 | Arrowhead (submergent) | | | | | | | | |
| 17 | Native milfoil | A | A | A | A | A | A | A | A | 17 | Native milfoil | A | A | A | | | | | |
| 18 | Whorled watermilfoil | | | | | | | | | 18 | Whorled watermilfoil | | | | | | | | |
| 19 | Various leaf watermilfoil | | | | | | | | | 19 | Various leaf watermilfoil | | | | | | | | |
| 20 | Coontail | A | A | A | B | | | A | | 20 | Coontail | A | A | | | | | | |
| 21 | Elodea | | | | | A | A | | A | 21 | Elodea | A | | | | | | | |
| 22 | Bladderwort | | | | | | | | | 22 | Bladderwort | | | | | | | | |
| 23 | Bladderwort (mini) | | | | | | | | | 23 | Bladderwort (mini) | | | | | | | | |
| 24 | Buttercup | | | | | | | | | 24 | Buttercup | | | | | | | | |
| 25 | Najas spp. | A | A | A | | A | A | A | A | 25 | Najas spp. | A | A | A | | | | | |
| 26 | Brittle naiad | | | | | | | | | 26 | Brittle naiad | | | | | | | | |
| 27 | Sago pondweed | | | | | | A | | | 27 | Sago pondweed | | | | | | | | |
| 28 | | | | | | | | | | 28 | | | | | | | | | |
| 29 | | | | | | | | | | 29 | | | | | | | | | |
| 30 | White waterlily | | A | A | A | | | | | 30 | White waterlily | | | | | | | | |
| 31 | Yellow waterlily | | | | | A | A | | | 31 | Yellow waterlily | | | | | | | | |
| 32 | Watershield | | | | | | | | | 32 | Watershield | | | | | | | | |
| 33 | Small duckweed | | | | | | | | | 33 | Small duckweed | | | | | | | | |
| 34 | Great duckweed | | | | | | | | | 34 | Great duckweed | | | | | | | | |
| 35 | Watermeal | | | | | | | | | 35 | Watermeal | | | | | | | | |
| 36 | Arrowhead | | | | | | | | | 36 | Arrowhead | | | | | | | | |
| 37 | Pickeralweed | | A | | | A | A | | | 37 | Pickeralweed | | | | | | | | |
| 38 | Arrow arum | | | | | | | | | 38 | Arrow arum | | | | | | | | |
| 39 | Cattail | | A | | | A | B | | | 39 | Cattail | | | | | | | | |
| 40 | Bulrush | A | A | B | | A | B | A | A | 40 | Bulrush | A | | A | | | | | |
| 41 | Iris | | | | | | | | | 41 | Iris | | | | | | | | |
| 42 | Swamp Loosestrife | | A | | | | | | | 42 | Swamp Loosestrife | | | | | | | | |
| 43 | Purple Loosestrife | | | A | | A | A | | | 43 | Purple Loosestrife | | | | | | | | |
| 44 | | | | | | | | | | 44 | | | | | | | | | |
| 45 | | | | | | | | | | 45 | | | | | | | | | |