

**Spider Chain of Lakes
Macrophyte Survey and
Management Recommendations**

*Prepared for
Spider Chain of Lakes Improvement Association*

March 2001

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Executive Summary

The Spider Chain of Lakes in Sawyer County, Wisconsin, is valued by riparian owners, area residents, Sawyer County, and the WDNR for its fisheries and for recreational use. During 2000 the Spider Chain of Lakes Improvement Association initiated a project to complete a macrophyte survey of the five lakes within the Spider Chain of Lakes. Project objectives include: (1) establish baseline information and (2) identify any issues of concern such as the presence of exotic (i.e., not native to this area) species. The survey results may be used to detect changes in subsequent years.

A macrophyte survey of the Spider Chain of Lakes was completed during July 6 through July 13, 2000. The survey evaluated plant coverage, density, and species composition. The results indicated the macrophyte community within the Spider Chain of Lakes was comprised of a diverse assemblage of species occurring in light to moderate density. The results of the macrophyte survey are indicative of a healthy, clean lakes' system.

Specific conclusions of the study are as follows. A total of 25 species representing four types of macrophytes (submersed, floating-leaf, emergent, and the alga *Chara*) were found in the Spider Chain of Lakes. Submersed plants were dominant. The total macrophyte coverage of the Spider Chain of Lakes was 780 acres (i.e., 47 percent of the lakes' surface area). Macrophyte species were relatively evenly distributed throughout the lake system. Consequently, individual species noted a low to moderate frequency of occurrence ranging from 0.5 to 53 percent. Individual species noted light densities, while overall macrophyte densities ranged from light (Clear, Spider north, and Spider south) to moderate (Fawn and North). The lakes noted a highly diverse macrophyte community. On a diversity scale of 0 to 1, the five individual lakes noted diversities ranging from 0.88 to 0.93. North Lake noted the highest diversity and Clear Lake noted the lowest diversity.

The Spider Chain of Lakes macrophyte community was comprised of native species with the exception of a single siting of *Potamogeton crispus* (curly-leaf pondweed). Curly-leaf pondweed is an exotic or non-native species. Only one plant stem was found and the stem was removed. Hence, curly-leaf pondweed is not considered problematic.

Homeowners on and close to the Spider Chain of Lakes were surveyed to determine lake use, plant management, water quality, and demographics information. A total of 150 surveys were mailed and 85 responses were received (i.e., 57% return rate). Survey responses were consistent with macrophyte survey results. More than half of the respondents indicated the Spider Chain of Lakes

excessive aquatic plant problems and about 20% of respondents didn't know. Ninety percent of respondents indicated the water quality of the Spider Chain of Lakes was excellent or good. Sixty percent of respondents indicated the lakes' water quality has not changed since they bought property on the Spider Chain of Lakes and 16 percent had no opinion. Finally, areas cited where improvements were needed included a more aggressive strategy to protect against Eurasian water milfoil and the need for testing for chemical pollutants.

Management recommendations for the Spider Chain of Lakes include: (1) preservation of current macrophyte communities (i.e., native species and light to moderate density) and (2) prevent the introduction of exotic (i.e., non-native) species.

Preservation of the lakes' current clean water quality is recommended to insure preservation of the lakes' current macrophyte community. Water quality degradation is often accompanied by the addition of nutrient rich sediments, which in turn result in heavy plant growth. Heavy plant growth generally results in reduced diversity and the dominance by a few problematic species. Heavy plant growth concurrently interferes with recreational activities and negatively impacts the lakes' fisheries.

Completion of a lake water quality management plan is recommended to concurrently preserve the lakes' clean water quality and the lakes' macrophyte community. Plan completion involves several steps, including:

- Collection of data (i.e., lake and tributary water quality, precipitation, lake level, watershed land use, and recreational user expectations/desires).
- Preparation of hydrologic and phosphorus budgets for existing watershed land use conditions.
- Preparation of a comprehensive lake management plan.

Implementation of a plan to prevent the introduction of exotic species and to minimize harm from inadvertent exotic species introduction is recommended. The plan involves an educational component and vigilance by lake residents. Recommended plan components include:

- Posting signs at boat launches reminding lake-users to remove aquatic plants from boat trailers before entering and leaving the lakes to prevent the introduction of unwanted species.
- Displaying information concerning exotic species and a reminder to remove plants from boat trailers on bulletin boards at boat launches. Brochures could be placed in a dispenser located near the boat launch.
- Printing educational articles in the lake association's newsletter.
- Inviting County or WDNR staff to provide educational presentations at lake association meetings

- Encouraging all residents to be vigilant in watching for the appearance of any new plant species in the areas of the lake used by them. Provide residents with the name and phone number of a person to contact if a possible new species is sited. If a possible new species is sited, the lake association could obtain assistance from the WDNR, Barron County, or hire a professional to identify the potential new species and determine whether it is an exotic species.
- Removing or treating areas of exotic species growth if inadvertent introduction occurs.

Spider Chain of Lakes Macrophyte Survey

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1.0 Introduction

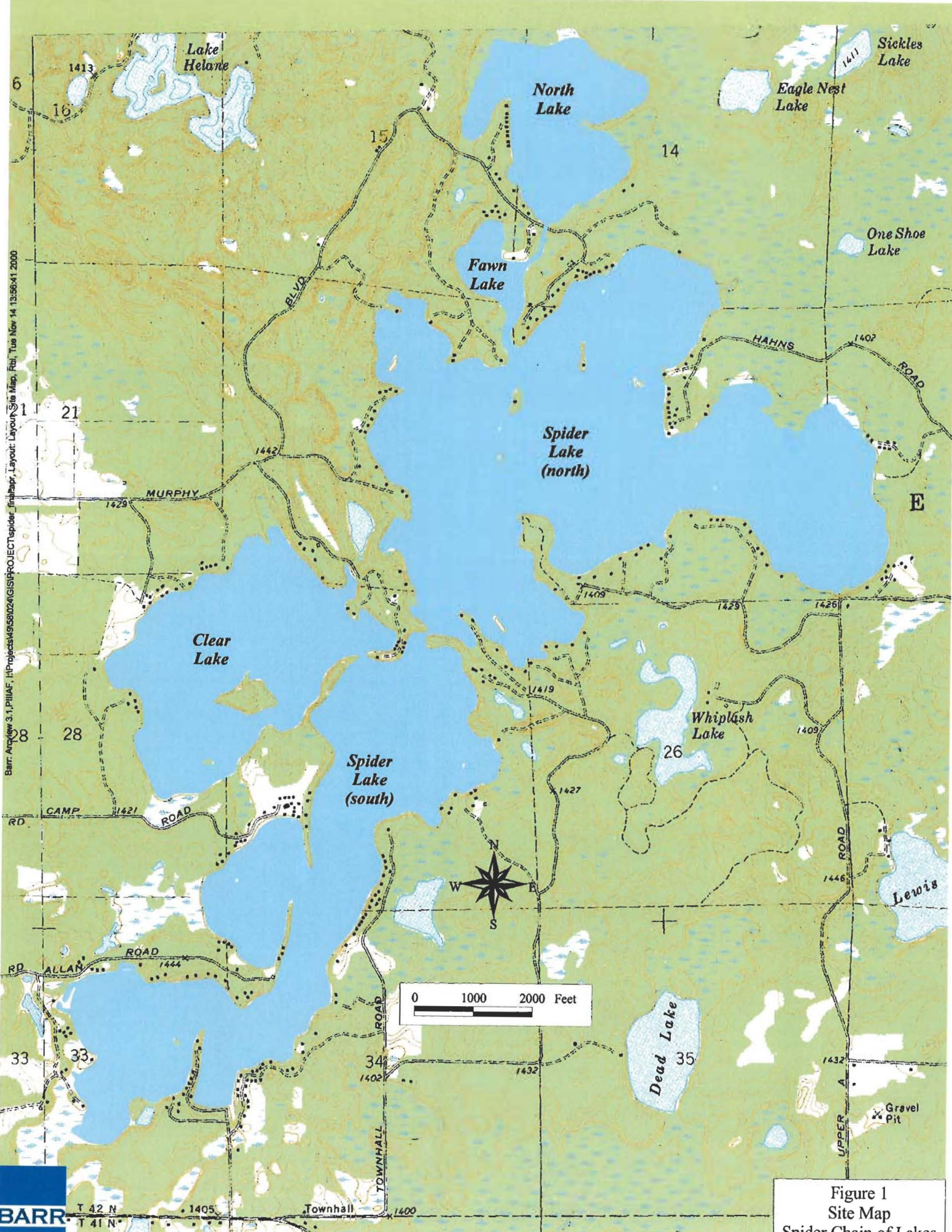
The Spider Chain of Lakes in Sawyer County, Wisconsin notes a surface area of 1,659 acres. The Spider Chain of Lakes is comprised of 5 lakes:

- North Lake—138 acres
- Clear Lake—258 acres
- Fawn Lake—29 acres
- Spider Lake (south)—471 acres
- Spider Lake (north)—763 acres

The lakes are valued by lakeshore property owners, area residents, Sawyer County, and the Wisconsin Department of Natural Resources (WDNR) for their fisheries and for recreational uses (see Figure 1). In recent years, residents believe a loss of macrophytes (i.e., aquatic plants) has occurred in some bay areas. Because a macrophyte survey of the lakes has not been completed previously, the Spider Chain of Lakes Improvement Association initiated a project to complete a macrophyte survey of the entire chain of lakes. The goal of the survey was to provide baseline information and identify any issues of concern such as the presence of exotic (i.e., not native to this area) species. The survey results may be used to detect changes in subsequent years.

A macrophyte survey of the Spider Chain of Lakes was completed during 2000. This report presents the survey results, conclusions, and recommendations for the lakes. The report discusses:

- Overview of macrophyte growth in lakes
- The methodology of the 2000 Spider Chain of Lakes aquatic plant survey and membership survey
- Results and discussion of the 2000 Spider Chain of Lakes aquatic plant survey and membership survey
- Conclusions and recommendations



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Figure 1
Site Map
Spider Chain of Lakes

2.0 Overview of Macrophyte Growth in Lakes

The basis of the following text on macrophyte growth in lakes is Minnesota Department of Natural Resources (MDNR) *A Guide to Aquatic Plants Identification and Management* (1994).

2.1 Location of Aquatic Plant Growth Within Lakes and Impoundments

Within a lake, pond, or impoundment, aquatic plants grow in the area known as the littoral zone—the shallow transition zone between dry land and the open water area of the lake. The littoral zone extends from the shore to a depth of about 15 feet, depending on water clarity. The littoral zone is highly productive. The shallow water, abundant light, and nutrient-rich sediment provide ideal conditions for plant growth. Aquatic plants, in turn, provide food and habitat for many animals such as fish, frogs, birds, muskrats, turtles, insects, and snails. Protecting the littoral zone is important for the health of a lake's fish and other animal populations.

The width of the littoral zone often varies within a lake and among lakes. In places where the slope of the lake bottom is steep, the littoral area may be narrow, extending several feet from the shoreline. In contrast, if the lake is shallow and the bottom slopes gradually, the littoral area may extend hundreds of feet into the lake or may even cover it entirely. Impoundments frequently note extensive littoral areas in the upper portion due to sedimentation and shallow depths. In contrast, the lower portions of impoundments may have little littoral area.

Cloudy or stained water, which limits light penetration, may restrict plant growth. In lakes where water clarity is low all summer, aquatic plants will not grow throughout the littoral zone, but will be restricted to the shallow areas near shore.

Other physical factors also influence the distribution of plants within a lake or pond. For example, aquatic plants generally thrive in shallow, calm water protected from heavy wind, wave, or ice action. However, if the littoral area is exposed to the frequent pounding of waves, plants may be scarce. In a windy location, the bottom may be sand, gravel, or large boulders—none of which provides a good place for plants to take root. In areas where a stream or river enters a lake, plant growth can be variable. Nutrients carried by the stream may enrich the sediments and promote plant growth; or, suspended sediments may cloud the water and inhibit growth.

2.1.1 Categories of Aquatic Plants

Aquatic plants are grouped into four major categories:

- Algae have no true roots, stems, or leaves and range in size from tiny, one-celled organisms to large, multi-celled plant-like organisms, such as *Chara*. Plankton algae, which consist of free-floating microscopic plants, grow throughout both the littoral zone and the well-lit surface waters of an entire lake. Other forms of algae, including *Chara* and some stringy filamentous types (such as *Cladophora*), are common only in the littoral area.
- Submersed plants have stems and leaves that grow entirely underwater, although some may also have floating leaves. Flowers and seeds on short stems that extend above the water may also be present. Submerged plants grow from near shore to the deepest part of the littoral zone and display a wide range of plant shapes. Depending on the species, they may form a low-growing “meadow” near the lake bottom, grow with lots of open space between plant stems, or form dense stands or surface mats.
- Floating-leaf plants are often rooted in the lake bottom, but their leaves and flowers float on the water surface. Water lilies are a well-known example. Floating leaf plants typically grow in protected areas where there is little wave action.
- Emergent plants are rooted in the lake bottom, but their leaves and stems extend out of the water. Cattails, bulrushes, and other emergent plants typically grow in wetlands and along the shore, where the water is less than 4 feet deep.

2.1.2 Value of Aquatic Plants

Aquatic plants are a natural part of most lake communities and provide many benefits to fish, wildlife, and people. In lakes, life depends—directly or indirectly—on water plants. They are the primary producers in the aquatic food chain, converting the basic chemical nutrients in the water and soil into plant matter, which becomes food for all other aquatic life. Aquatic plants serve many important functions, including:

- ***Provide fish food***—More food for fish is produced in areas of aquatic vegetation than in areas where there are no plants. Insect larvae, snails, and freshwater shrimp thrive in plant beds. Sunfish eat aquatic plants besides aquatic insects and crustaceans.
- ***Offer fish shelter***—Plants provide shelter for young fish. Because bass, sunfish, and yellow perch usually nest in areas where vegetation is growing, certain areas of lakes are protected and posted by the DNR as fish spawning areas during spring and early summer. Northern pike use aquatic plants, too, by spawning in marshy and flooded areas in early spring.

- ***Improve water quality***—Certain water plants, such as rushes, can actually absorb and break down polluting chemicals.
- ***Protect shorelines and lake bottoms***—Aquatic plants, especially rushes and cattails, dampen the force of waves and help prevent shoreline erosion. Submerged aquatic plants also weaken wave action and help stabilize bottom sediment.
- ***Provide food and shelter for waterfowl***—Many submerged plants produce seeds and tubers (roots), which are eaten by waterfowl. Bulrushes, sago pondweed, and wild rice are especially important duck foods. Submerged plants also provide habitat to many insect species and other invertebrates that are, in turn, important foods for brooding hens and migrating waterfowl.
- ***Improve aesthetics***—The visual appeal of a lakeshore often includes aquatic plants, which are a natural, critical part of a lake community. Plants such as water lilies, arrowhead, and pickerelweed have flowers or leaves that many people enjoy.
- ***Provide economic value***—As a natural component of lakes, aquatic plants support the economic value of all lake activities. Wisconsin has a huge tourism industry centered on lakes and the recreation they support. Residents and tourists spend large sums of money each year to hunt, fish, camp, and watch wildlife on and around the state's lakes.

3.1 Aquatic Plant Survey

An aquatic plant (macrophyte) survey of the Spider Chain of Lakes was completed during July 6 through July 13, 2000. The survey was completed by Barr Engineering Co. with assistance from Spider Chain of Lakes Improvement Association volunteers.

The methodology used was based upon Jessen and Lound (1962). The survey was completed according to methods outlined in *Wisconsin's Department of Natural Resources Long-Term Trend Lake Monitoring Methods*, (Bureau of Water Resources Management, July 1987) as modified by Deppe and Lathrop (1992). This methodology enables the plant specialist an opportunity to determine the presence, frequency, and density of different plant species. The following outlines the methodology followed in the study.

- A total of 67 transects were selected for the survey (See Figure 2), 10 transects in North Lake, 4 transects in Fawn Lake, 24 transects in Spider Lake (north), 6 transects in Clear Lake, and 23 transects in Spider Lake (south). Transects extended from shore to the maximum depth of plant growth.
- Transects were broken down into the following depth categories:
 - 0 to 1.5 feet
 - 1.5 to 5.0 feet
 - 5 to 10 feet (or to the maximum rooting depth)

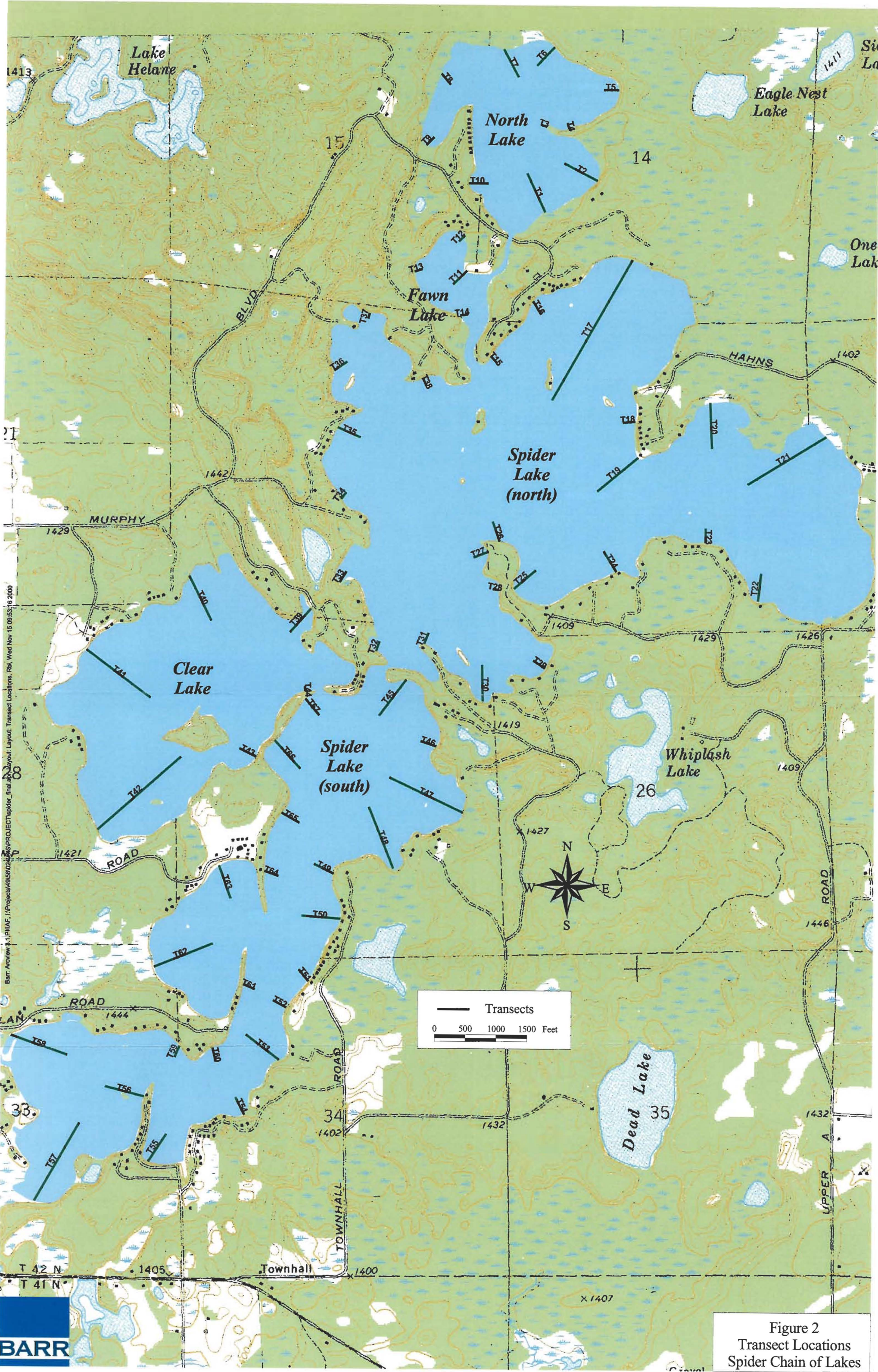


Figure 2
Transect Locations
Spider Chain of Lakes

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- Four rake samples were taken at each depth zone to determine the presence and abundance of species. The sample point at each depth zone consisted of a 6-foot-diameter circle divided into four quadrants. A tethered garden rake with an extended handle (16 feet) was used to collect a sample from each quadrant.
- Collection of samples, identification of species, and determination of density ratings for each species occurred at all sampling points. The rake coverage technique was used to assign density ratings (Deppe and Lathrop 1992) in accordance with the following criteria:

Rake Coverage (% of Rake Head) Covered by a Species	Density Rating
81-100	5
61-80	4
41-60	3
21-40	2
1-20	1
0	0

- A Global Positioning System (GPS) unit was used in the field to note latitude and longitude readings of each sampling point for future reference.
- Sediment type was determined at each sampling point.
- Maximum rooting depths were observed at all transects.

3.2 Membership Survey

Spider Chain of Lakes residents and property owners were surveyed during the fall of 2000. A total of 150 surveys were mailed. Survey questions are presented in Appendix E.

4.0 Results and Discussion

4.1 Macrophyte Survey Results

4.1.1 Macrophyte Types

Results of the 2000 Spider Chain of Lakes surveys indicate the lake contained a diverse assemblage of macrophyte (aquatic plant) species representing the four macrophyte types—submersed plants, floating-leaf plants, emergent plants, and the alga *Chara*. Of the four types, submersed plants dominated the macrophyte community. Survey results are summarized in Table 1 and Figure 3.

Table 1 Macrophyte Type Distribution

Macrophyte Type	Acres (% of Total Lake Area)					Total
	North Lake	Clear Lake	Fawn Lake	Spider Lake (south)	Spider Lake (north)	
Submersed Aquatic Macrophytes	62.5 (45)	159.0 (62)	14.3 (50)	264.1 (56)	277.5 (36)	777.4 (47)
<i>Chara</i> (alga)	19.4 (14)	36.1 (14)	12.5 (43)	99.9 (21)	229.0 (30)	396.9 (24)
Floating Aquatic Macrophytes	24.8 (18)	4.7 (2)	7.7 (27)	17.2 (4)	57.9 (8)	112.3 (7)
Emergent Aquatic Macrophytes	8.0 (6)	11.9 (5)	1.0 (3)	32.6 (7)	84.5 (11)	138.0 (8)
Total Lake Area (acres)	138.3	257.5	28.8	471.0	763.1	1658.7

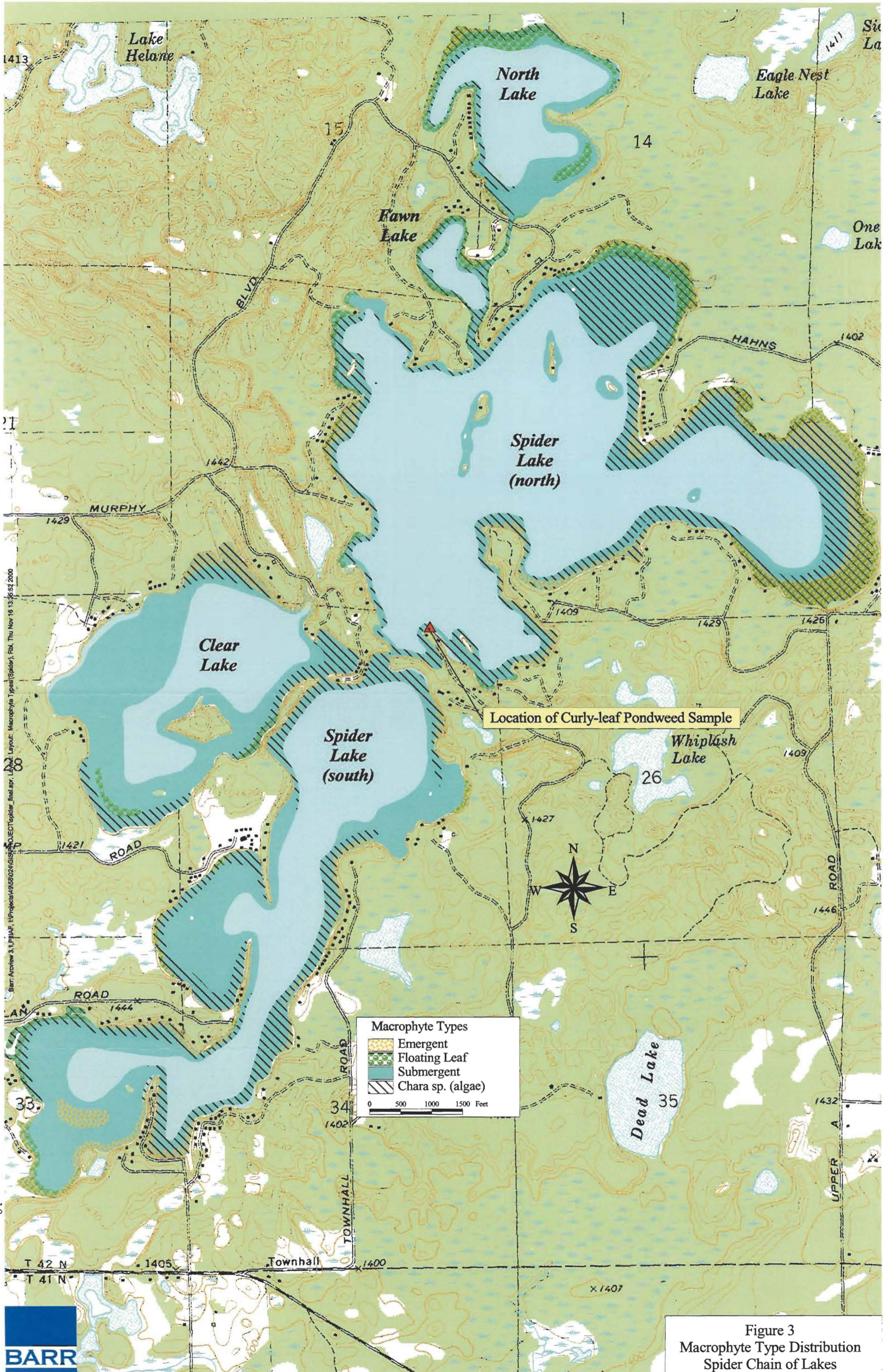


Figure 3
 Macrophyte Type Distribution
 Spider Chain of Lakes

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4.1.2 Number of Species

The large number of species noted in the Spider Chain of Lakes during 2000 is indicative of a stable and healthy macrophyte community. Specifically, a total of 25 species were found. Further evidence of a diverse plant community was indicated by the number of species found in each transect (See Table 2, Figures 4 through 7, and Appendix A).

Table 2 Summary of Average Number of Species Per Transect

Lake	Average Number of Species per Transect
North Lake	12
Fawn Lake	13
Spider Lake (north)	10
Clear Lake	5
Spider Lake (south)	7
Spider Chain of Lakes Average	9

The presence of several species in each transect:

- Provides a diverse habitat for fish and invertebrates (i.e., food for fish) and encourages a more diverse fish and invertebrate community;
- Protects fisheries' habitat from destruction by a disease. Should a species-specific disease occur, only one species would be impacted and all of the other species would be unharmed. Consequently, the lake's fisheries habitat would be protected.

4.1.3 Frequently Occurring Species

A balanced growth of a diverse assemblage of species comprised the Spider Chain of Lakes macrophyte community. In a balanced lake system, a large number of species are distributed throughout the system. Consequently, each species notes a frequency of occurrence ranging from low to moderate. Conversely, within an unbalanced lake system, a few species dominate the community as evidenced by a high frequency of occurrence.

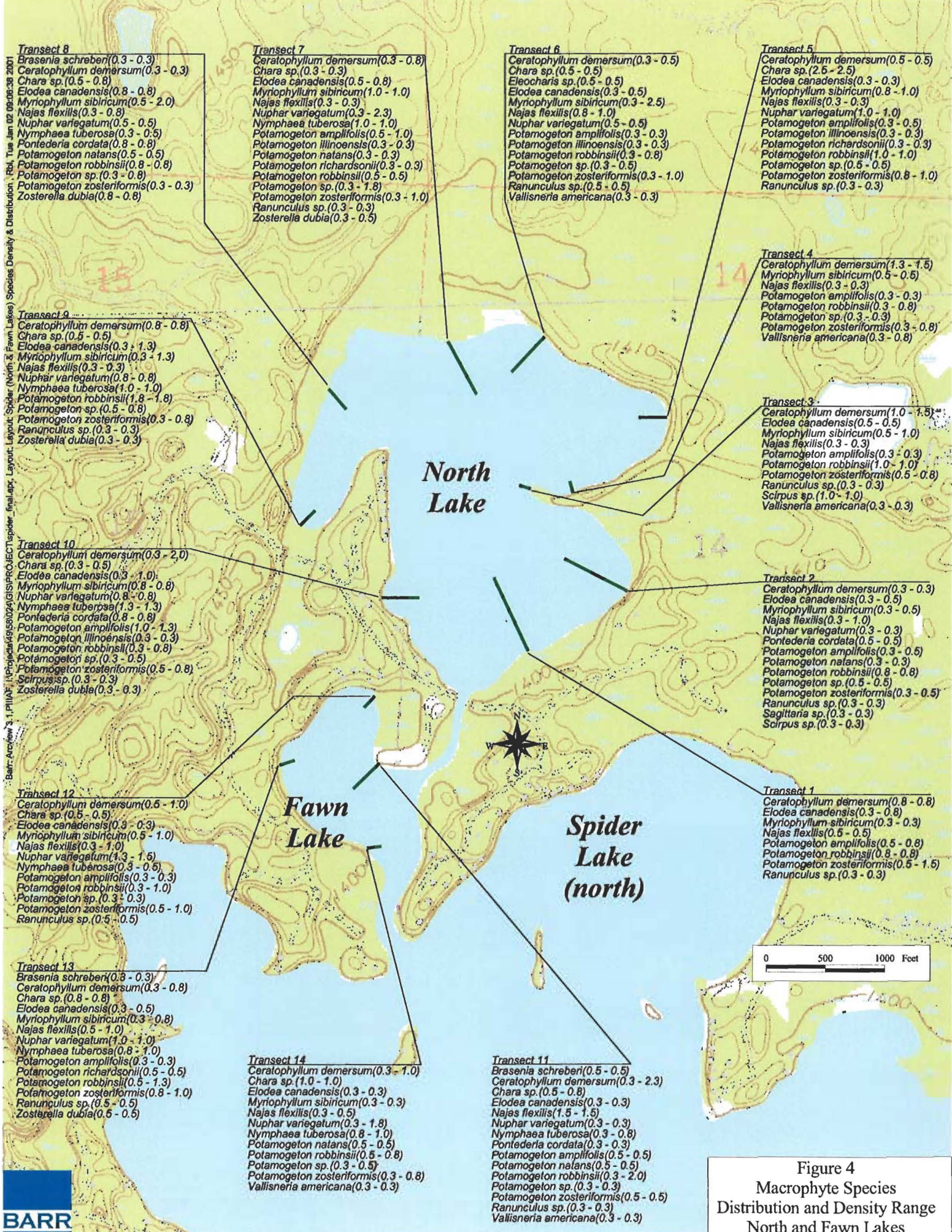


Figure 4
 Macrophyte Species
 Distribution and Density Range
 North and Fawn Lakes

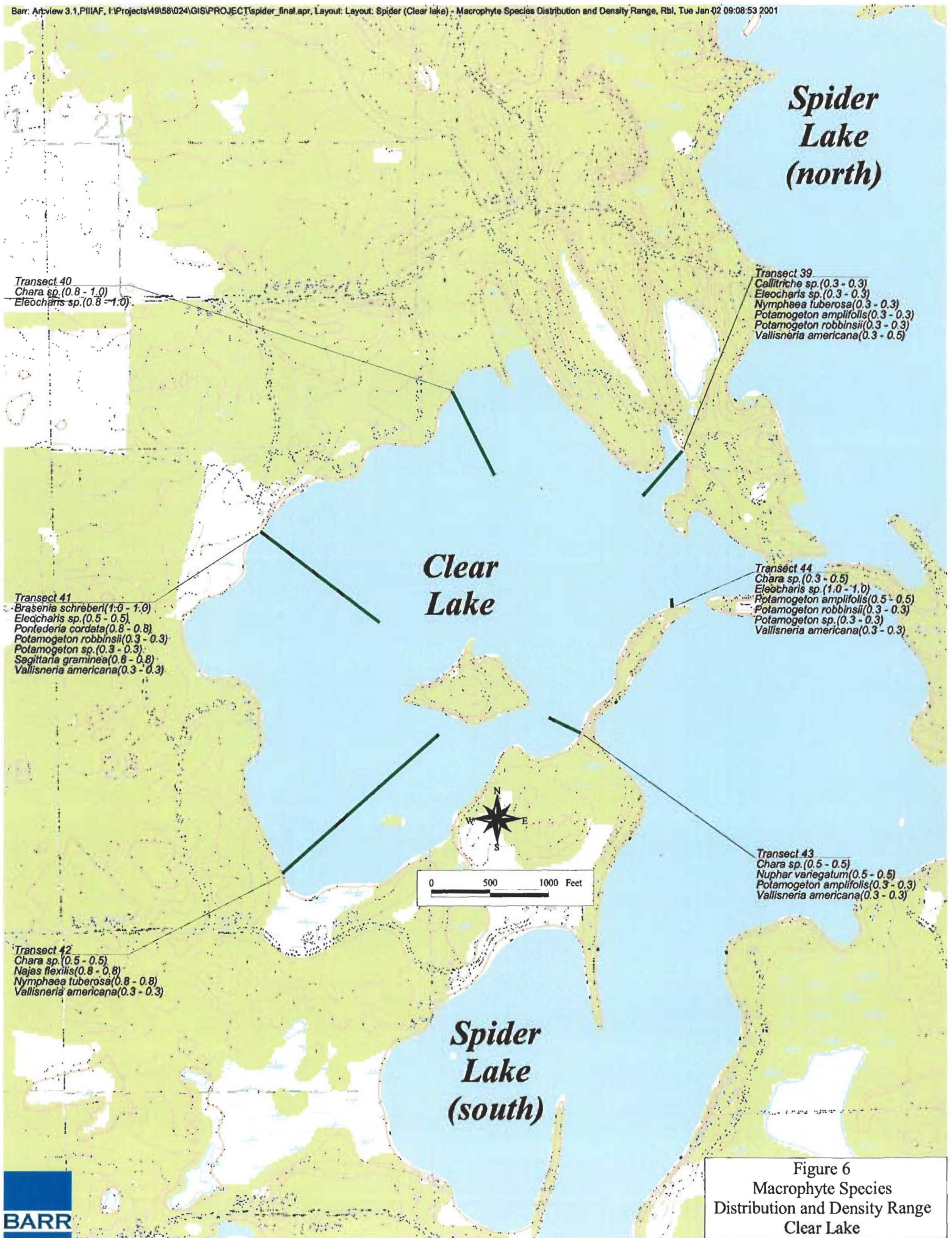


Figure 6
Macrophyte Species
Distribution and Density Range
Clear Lake

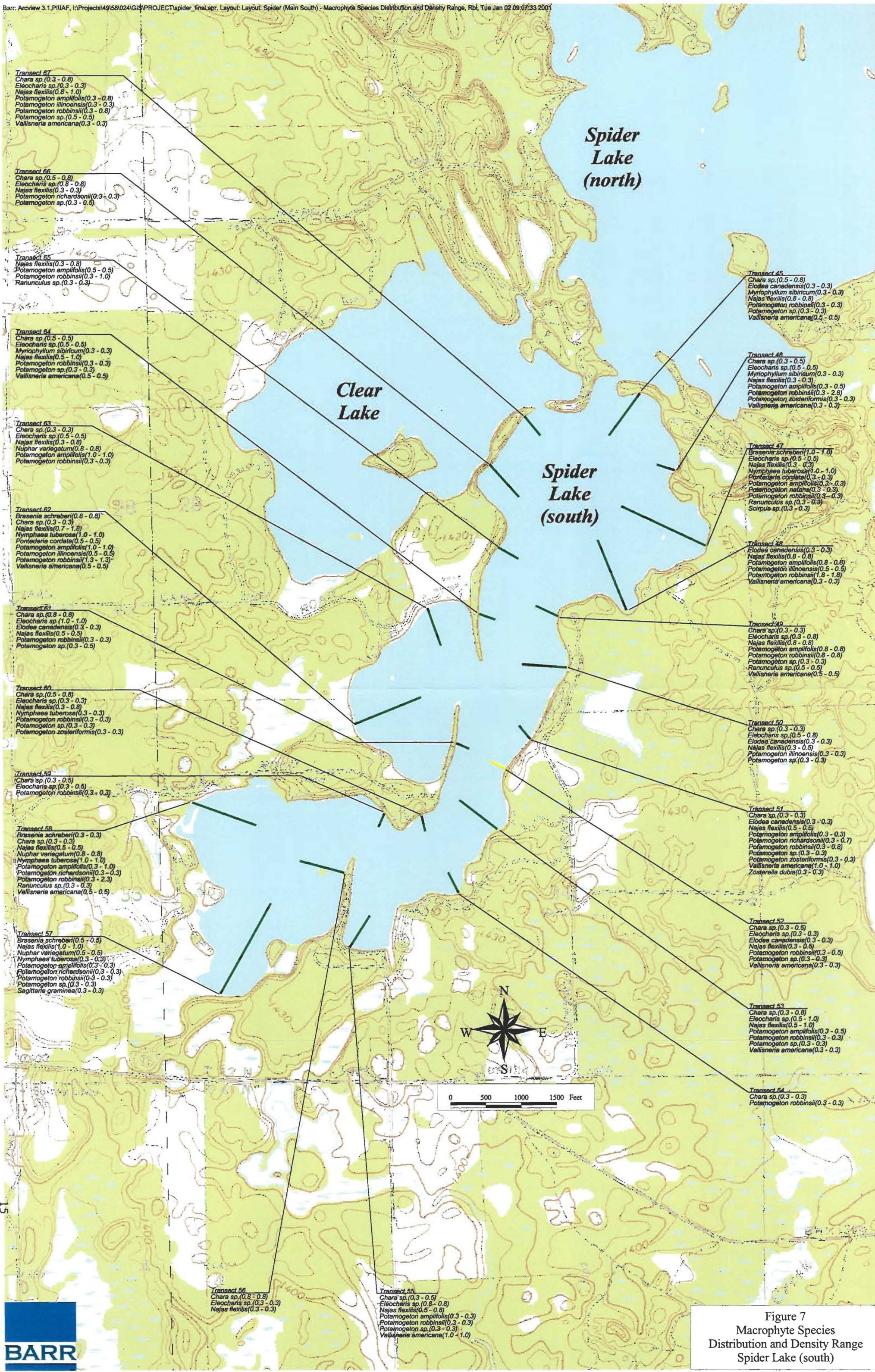


Figure 7
Macrophyte Species
Distribution and Density Range
Spider Lake (south)

One measure of a balanced growth is a low to moderate frequency of occurrence of the lakes' species measured as the percentage of sample locations containing each species. Macrophyte species in the Spider Chain of Lakes noted a low to moderate frequency of occurrence, ranging from 0.5 percent to 53 percent. Approximately two-thirds of the lakes' species noted a frequency of occurrence of less than 30 percent; the remaining one third of the lakes' species noted a frequency of occurrence ranging from 30 to 53 percent.

The most frequently occurring species in the Spider Chain of Lakes were *Chara* (Muskgrass) and *Najas flexilis* (Bushy Naid) occurring at 53 percent of sample points. Other frequently occurring species in the Spider Chain of Lakes were (See Figure 8).

- *Potamogeton robbinsii* (Robbins' Pondweed) occurring at 49% of sample points
- *Potamogeton sp.* (Narrow-leaved Pondweed) occurring at 42% of sample points

4.1.4 Macrophyte Density

Results of the Spider Chain of Lakes macrophyte survey indicate, on average, the occurrence of a light macrophyte growth. Specifically, an overall average macrophyte density of 1 was noted on a density scale of 0 to 5 (See Methods Section—0 denotes no macrophytes and 5 denotes maximum density). A light macrophyte growth is associated with clean lakes (i.e., lakes with low to moderate nutrient levels). Conversely, a dense macrophyte growth is characteristic of nutrient rich or eutrophic lake systems.

A summary of average macrophyte density for individual lakes is found in Table 3. Fawn and North lakes noted, on average, a moderate macrophyte density, while Clear, Spider Lake (south), and Spider Lake (north) noted, on average, a light macrophyte density.

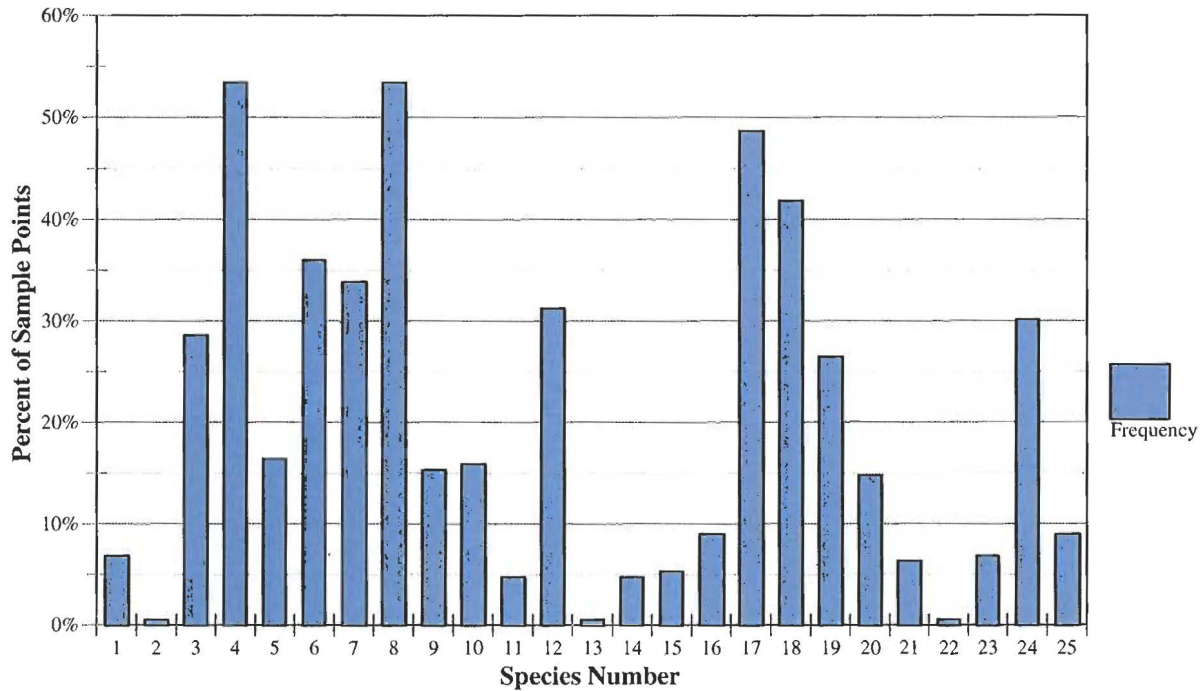
Table 3 Spider Chain of Lakes Macrophyte Density Summary

Lake	Average Density
North Lake	2 (40% of rake head)
Fawn Lake	3 (60% of rake head)
Clear Lake	1 (20% of rake head)
Spider Lake (south)	1 (20% of rake head)
Spider Lake (north)	1 (20% of rake head)
Spider Chain of Lakes	1 (20% of rake head)

The macrophyte densities of individual lakes within the Spider Chain of Lakes are presented in Figure 9.

Figure 8

Spider Chain of Lakes Macrophyte Survey
 Frequency of Occurrence (Percent of Sample
 Points)



Species Number	Scientific Name	Common Name	Frequency (pct. of samples)
1	<i>Brasenia schreberi</i>	Watershield	6.9%
2	<i>Callitriche sp.</i>	Water-starwort	0.5%
3	<i>Ceratophyllum demersum</i>	Coontail	28.6%
4	<i>Chara spp.</i>	Muskgrass	53.4%
5	<i>Eleocharis spp.</i>	Spike Rush	16.4%
6	<i>Elodea canadensis</i>	Canada Waterweed	36.0%
7	<i>Myriophyllum sibiricum</i>	Northern Water-milfoil	33.9%
8	<i>Najas flexilis</i>	Bushy Naid	53.4%
9	<i>Nuphar variegatum</i>	Yellow Water-lily	15.3%
10	<i>Nymphaea tuberosa</i>	White Water-lily	15.9%
11	<i>Pontederia cordata</i>	Pickerelweed	4.8%
12	<i>Potamogeton amplifolius</i>	Large-leaved Pondweed	31.2%
13	<i>Potamogeton crispus</i>	Curly-leaved Pondweed	0.5%
14	<i>Potamogeton illinoensis</i>	Illinois Pondweed	4.8%
15	<i>Potamogeton natans</i>	Floating-leaved Pondweed	5.3%
16	<i>Potamogeton richardsonii</i>	Clasping-leaved Pondweed	9.0%
17	<i>Potamogeton robbinsii</i>	Robbins' Pondweed	48.7%
18	<i>Potamogeton sp.</i>	Narrow-leaved Pondweed	41.8%
19	<i>Potamogeton zosteriformis</i>	Flat-stemmed Pondweed	26.5%
20	<i>Ranunculus spp.</i>	White Water Buttercup	14.8%
21	<i>Sagittaria graminea</i>	Slender Arrowhead	6.3%
22	<i>Sagittaria sp.</i>	Arrowhead	0.5%
23	<i>Scirpus sp.</i>	Bulrush	6.9%
24	<i>Vallisneria americana</i>	Wild Celery	30.2%
25	<i>Zosterella dubia</i>	Mud Plaintain	9.0%

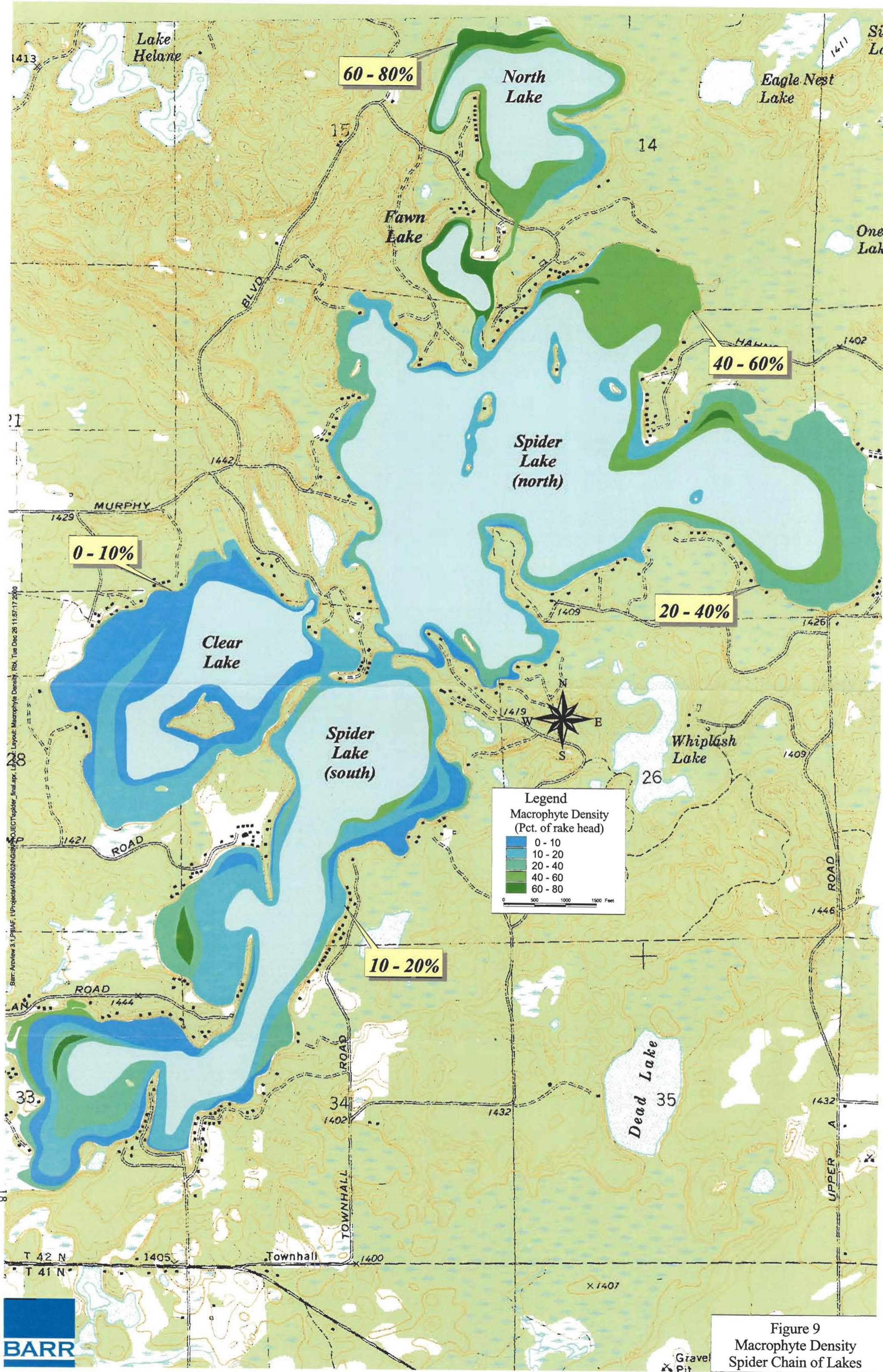


Figure 9
 Macrophyte Density
 Spider Chain of Lakes

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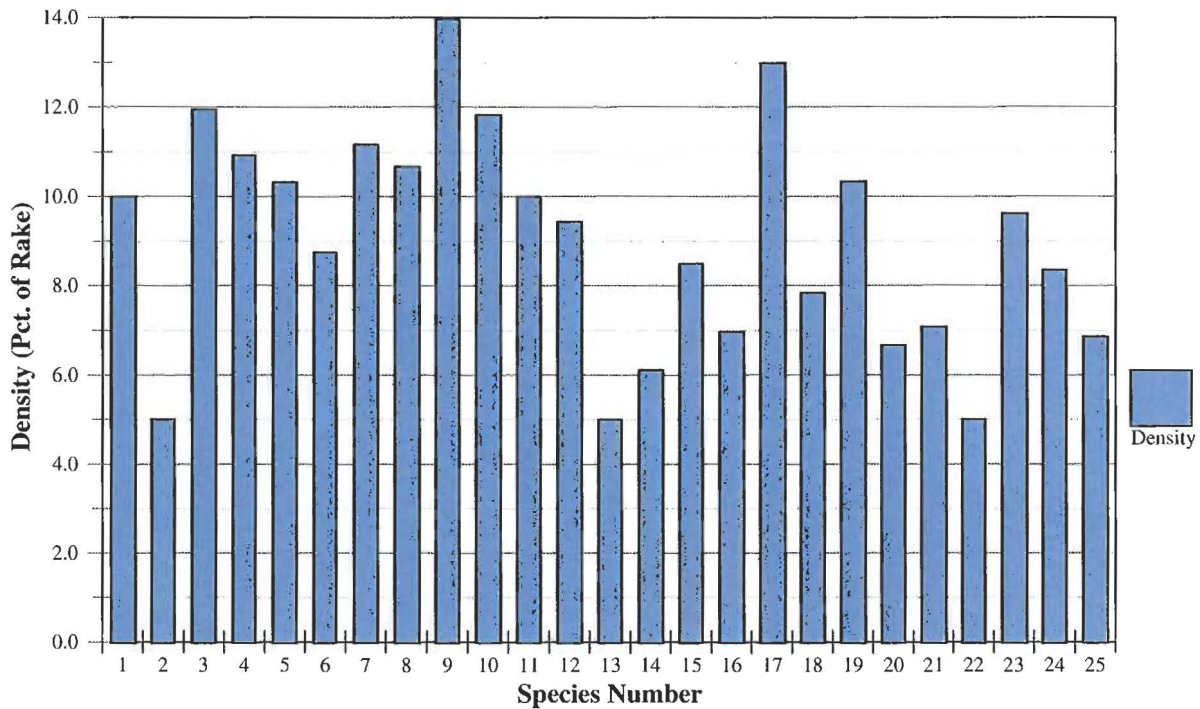
Clear Lake noted the lightest macrophyte densities, ranging from 0 to 20 percent rake head coverage. Spider Lake (south) and Spider Lake (north) noted the second and third lightest macrophyte densities, respectively. Although both lakes noted a density range of 0 to 80 percent rake head coverage, Spider Lake (south) noted more areas with less than 20 percent rake head coverage than Spider Lake (north). Fawn Lake noted the heaviest macrophyte density. Most macrophyte growth areas in Fawn Lake noted densities of 60 to 80 percent rake head coverage, while a few areas noted densities of 40 to 60 percent rake head coverage. North Lake noted macrophyte densities ranging from 10 to 80 percent rake head coverage.

Individual species in the Spider Chain of Lakes occurred in a light density during 2000 (See Figure 10). All species noted a density of less than 1, based upon a rake coverage ranging from 5 to 14 percent of rake head (See Methods Section for a discussion of density ratings determined from percent rake head coverage). The two species noting the highest density were:

- *Nuphar variegatum* (Yellow Water-lily) noted a density of 0.7, a rake coverage of 14 percent of rake head
- *Potamogeton robbinsii* (Robbins' Pondweed) noted a density of 0.6, a rake coverage of 13 percent of rake head

Figure 10

Spider Chain of Lakes Macrophyte Survey
Average Density (Per Sample Point)
2000



Species Number	Scientific Name	Common Name	Average Density	Percent of Rake Head
1	<i>Brasenia schreberi</i>	Watershield	0.50	10.0
2	<i>Callitriche sp.</i>	Water-starwort	0.25	5.0
3	<i>Ceratophyllum demersum</i>	Coontail	0.60	11.9
4	<i>Chara spp.</i>	Muskgrass	0.55	10.9
5	<i>Eleocharis spp.</i>	Spike Rush	0.52	10.3
6	<i>Elodea canadensis</i>	Canada Waterweed	0.44	8.8
7	<i>Myriophyllum sibiricum</i>	Northern Water-milfoil	0.56	11.2
8	<i>Najas flexilis</i>	Bushy Naid	0.53	10.7
9	<i>Nuphar variegatum</i>	Yellow Water-lily	0.70	14.0
10	<i>Nymphaea tuberosa</i>	White Water-lily	0.59	11.8
11	<i>Pontederia cordata</i>	Pickerelweed	0.50	10.0
12	<i>Potamogeton amplifolius</i>	Large-leaved Pondweed	0.47	9.4
13	<i>Potamogeton crispus</i>	Curly-leaved Pondweed	0.25	5.0
14	<i>Potamogeton illinoensis</i>	Illinois Pondweed	0.31	6.1
15	<i>Potamogeton natans</i>	Floating-leaved Pondweed	0.43	8.5
16	<i>Potamogeton richardsonii</i>	Clasping-leaved Pondweed	0.35	7.0
17	<i>Potamogeton robbinsii</i>	Robbins' Pondweed	0.65	13.0
18	<i>Potamogeton sp.</i>	Narrow-leaved Pondweed	0.39	7.8
19	<i>Potamogeton zosteriformis</i>	Flat-stemmed Pondweed	0.52	10.3
20	<i>Ranunculus spp.</i>	White Water Buttercup	0.33	6.7
21	<i>Sagittaria graminea</i>	Slender Arrowhead	0.35	7.1
22	<i>Sagittaria sp.</i>	Arrowhead	0.25	5.0
23	<i>Scirpus sp.</i>	Bulrush	0.48	9.6
24	<i>Vallisneria americana</i>	Wild Celery	0.42	8.4
25	<i>Zosterella dubia</i>	Mud Plaintain	0.34	6.9

4.1.5 Macrophyte Diversity

The data indicate the occurrence of a healthy, balanced growth by the lakes' diverse assemblage of species rather than predominance by a few species.

Macrophyte diversity was calculated for the five individual lakes within the Spider Chain of Lakes (i.e., Clear Lake, Fawn Lake, North Lake, Spider Lake north, and Spider Lake south) using a modification of Simpson's Index (1949):

$$1 - \sum (rf/100)^2$$

Where:

rf = the relative frequency of each species. Frequencies were calculated as the number of sampling points where a species occurred divided by the total number of sampling points at depths less than or equal to the maximum depth of plant growth. Frequencies were relativized to 100% to describe community structure (i.e., rf). Frequencies and relative frequencies are presented in Appendix B.

The data indicate a highly diverse plant community was found in the five lakes. On a scale of 0 to 1, with 0 indicating no plant diversity and 1 indicating the highest plant diversity, the five lakes noted diversities ranging from 0.88 to 0.93. North Lake noted the highest diversity and Clear Lake noted the lowest diversity. The diversities measured in the Spider Chain of Lakes are near the high end of the range of diversities noted for 55 Wisconsin lakes (See Table 4).

Table 4 Diversities of Some Wisconsin Plant Communities (from Nichols 1997 and Barr 1998)—Samples Collected by WDNR Unless Otherwise Indicated

Lake Name	Diversity (Late Summer)	Lake Name	Diversity (Late Summer)
Amnicon Lake	0.95	White Ash Lake, North***	0.88
Church Pine Lake	0.93*	Dowling Lake	0.87
Decorah Lake	0.93	Chute Pond	0.86
Half Moon Lake	0.93	Enterprise Lake	0.86
North Lake*	0.93	Okauchee Lake	0.86
Beaver Dam Lake (West)	0.92**	Pearl Lake	0.86
Balsam Lake	0.92*	Bear Lake	0.85
Fawn Lake*	0.92	Big Butternut Lake	0.84
Muskellunge Lake	0.92	Beaver Dam Lake (East)	0.81**
Round (Wind) Lake*	0.92	Long Lake T32N	0.81
Spider Lake (north)*	0.92	Twin Lake, South	0.81
Apple River Flowage	0.91	Helen Lake	0.80
Ashippun Lake	0.91	McCann Lake	0.80
Big Blake Lake (Blake)	0.91*	Cary Pond	0.79
Cedar Lake	0.91	Island Lake	0.78
Little Elkhart Lake	0.91	Leota Lake	0.78
Pine Lake	0.91	Little Arbor Vitae Lake	0.78
Post Lake	0.91	Mid Lake (Nawaii)	0.78
Morris Lake (Mt. Morris)	0.91	Half Moon Lake T47N	0.77
White Ash Lake***	0.91	Clear Lake	0.74
Pike Lake	0.90	Chain Lake	0.74
Mud Hen Lake	0.90	Twin Lake North	0.73
Spider Lake (south)*	0.90	Rib Lake	0.71
Big Round Lake	0.89	Oconomowoc Lake, Upper	0.70
Pigeon Lake	0.89	Silver Lake (Anderson)	0.69
Big Hills Lake (Hills)	0.88	Tichigan Lake	0.69
Clear Lake (Sawyer County)*	0.88	George Lake	0.58
Como Lake	0.88		

*Sampled by Barr Engineering Company

**Sampled by Beaver Dam Lake volunteers trained by Barr Engineering Company

***Sampled by White Ash Lake volunteers trained by Barr Engineering Company

4.1.6 Percent Open Area

The cumulative effect of the lake's diverse macrophyte community was assessed from the proportion of open area in the littoral zone (i.e., Percent Open Area). The percent open area was estimated from the number of sampling points containing no vegetation divided by the total number of sampling points at a depth less than or equal to the maximum depth of plant growth. Maximum depth of plant growth is the deepest water depth at which plant growth was found. The maximum depth of plant growth in the Spider Chain of Lakes was, on average, 19 feet (See Appendix C). The Spider Chain of Lakes noted a 21% open area (See Table 5).

Table 5 Summary of Average Maximum Rooting Depth and Percent Open Area

Lake	Average Maximum Rooting Depth (ft.)	Percent Open Area
North Lake	16.0	3
Fawn Lake	15.0	0
Spider Lake (north)	18.9	16
Clear Lake	20.5	42
Spider Lake (south)	20.3	31
Spider Chain of Lakes	18.6	21

4.1.7 Total Acreage Covered by Macrophytes

The cumulative effect of the large number of species in the lake was further evaluated by estimating the total acreage covered by macrophytes during 2000. The total macrophyte coverage of the Spider Chain of Lakes was 780 acres (i.e., 47 percent of the lakes' surface area). Macrophyte coverage of the five individual lakes was:

- North Lake—62 acres or 45 percent of the lake's surface area
- Clear Lake—159 acres or 62 percent of the lake's surface area
- Fawn Lake—14 acres or 50 percent of the lake's surface area
- Spider Lake (south)—265 acres or 56 percent of the lake's surface area
- Spider Lake (north)—279 acres or 37 percent of the lake's surface area

4.1.8 Functions and Values of Macrophytes

The Spider Chain of Lakes macrophyte communities (See Appendix D) perform a number of valuable functions. These include:

- Habitat for fish, insects, and small aquatic invertebrates
- Food for waterfowl, fish, and wildlife
- Oxygen producers
- Provide spawning areas for fish in early spring
- Helps stabilize marshy borders of the lake; helps protect shorelines from wave erosion
- Provides nesting sites for waterfowl and marsh birds

Functions of individual species found in the Spider Chain of Lakes are presented in Table 6.

Table 6 Functions of Aquatic Plant Species Found in the Spider Chain of Lakes

Scientific Name (Common Name)	Plant Type	Plant Functions
<i>Brasenia Schreberi</i> (Water Shield)	Floating	The seeds, leaves, stems, and buds of watershield are consumed by a wide variety of waterfowl. The floating leaves also offer shade and shelter for fish and invertebrates.
<i>Callitriche sp.</i> (Water Starworts)	Submersed	The stems and fruit of water starwort are grazed by a variety of ducks including black duck, bufflehead, canvasback, gadwall, mallard, redhead and wood duck. Clusters of stems offer shelter and foraging opportunities for fish.
<i>Ceratophyllum demersum</i> (Coontail)	Submersed	Many waterfowl species eat the shoots; it provides cover for young bluegills, perch, largemouth bass, and northern pike; supports insects that fish and ducklings eat.
<i>Chara spp.</i> (Muskgrass)	Submersed	Muskgrass is a favorite waterfowl food. Algae and invertebrates found on muskgrass provide additional grazing. It is also considered valuable fish habitat. Beds of muskgrass offer cover and are excellent producers of food, especially for largemouth bass and smallmouth bass.
<i>Eleocharis spp.</i> (Spike Rush)	Emergent	Spike Rush provides food for a wide variety of waterfowl as well as muskrats. Submersed beds offer habitat and shelter for invertebrates and small fish.

Scientific Name (Common Name)	Plant Type	Plant Functions
<i>Elodea canadensis</i> (Canada Waterweed)	Submersed	Provides habitat for many small aquatic animals, which fish and wildlife eat.
<i>Myriophyllum sibiricum</i> (formerly <i>exalbescens</i>) (Northern Milfoil)	Submersed	Provides cover for fish and invertebrates; supports insects and other small animals eaten by fish; waterfowl occasionally eat the fruit and foliage.
<i>Najas flexilis</i> . (Spiny Naiad, Bushy Pondweed)	Submersed	Bushy Pondweed is one of the most important plants for waterfowl. Stems, leaves and seeds are all consumed by a wide variety of ducks including black duck, bufflehead, canvasback, gadwall, mallard, pintail, redhead, ringnecked duck, scaup, shoveler, blue-winged teal, green-winged teal, wigeon and wood duck. It is also important to a variety of marsh birds as well as muskrats.
<i>Nuphar variegatum</i> (Yellow Water Lily)	Floating	Yellow water lily anchors the shallow water community and provides food for many residents. It provides seeds for waterfowl including mallard, pintail, ringneck and scaup. The leaves, stems and flowers are grazed by deer. Muskrat, beaver and even porcupine have been reported to eat the rhizomes. The leaves offer shade and shelter for fish as well as habitat for invertebrates.
<i>Nymphaea tuberosa</i> (White Water Lily)	Floating	White water lily provides seeds for waterfowl. Rhizomes are eaten by deer, muskrat, beaver, moose and porcupine. The leaves offer shade and shelter for fish.
<i>Pontederia cordata</i> (Pickerelweed)	Emergent	The flowering stalk of pickerelweed is a haven for many insects—some seeking nectar and others a spot to rest. The seeds are consumed by waterfowl as well as muskrats. Networks of rhizomes and leaves also offer shade and shelter for fish. Beds of pickerelweed can be important shoreline stabilizers and help dampen wave action.
<i>Potamogeton amplifolius</i> (Large-leaf Pondweed, Bass Weed, Musky Weed)	Submersed	The broad leaves of <i>Potamogeton amplifolius</i> offer shade, shelter and foraging opportunities for fish. Abundant production of large nutlets makes this a valuable waterfowl food.
<i>Potamogeton crispus</i> (Curly-leaf Pondweed)	Submersed	Provides some cover for fish, several waterfowl species feed on the seeds; diving ducks often eat the winter buds.

Scientific Name (Common Name) <i>Potamogeton Illinoensis</i> (Illinois Pondweed)	Plant Type Submersed	Plant Functions The fruit produced by Illinois pondweed can be a locally important food source for a variety of ducks and geese. The plant may also be grazed by muskrat, deer, beaver, and moose. This pondweed offers excellent shade and cover for fish and good surface area for invertebrates.
<i>Potamogeton natans</i> (Floating-leaf Pondweed)	Submersed	The fruit of floating-leaf pondweed is held on the stalk until late in the growing season. This provides valuable grazing opportunities for ducks and geese including scaup and blue-winged teal. Portions of this pondweed may also be consumed by muskrat, beaver, deer, and moose. Floating-leaf pondweed is considered good fish habitat because it provides shade and foraging opportunities.
<i>Potamogeton Richardsonii</i> (Clasping-leaf Pondweed)	Submersed	The fruit produced by clasping-leaf pondweed can be a locally important food source for a variety of ducks and geese including black duck, canvasback, redhead, ring-necked duck, and green-winged teal. The plant may also be grazed by muskrat, deer, beaver, and moose. The leaves and stem are colonized by invertebrates and offer foraging opportunities and cover for fish.
<i>Potamogeton robbinsii</i> (Robbin's Pondweed)	Submersed	Robbin's pondweed provides habitat for invertebrates that are grazed by waterfowl. It also offers good cover and foraging opportunities for fish, particularly northern pike.
<i>Potamogeton zosteriformis</i> (Flat-stem Pondweed),	Submersed	Flat-stem pondweed can be a locally important food source for a variety of geese and ducks including redhead and green-winged teal. The plant may also be grazed by muskrat, deer, beaver, and moose. Flat-stem pondweed provides a food source and cover for fish and invertebrates.
<i>Ranunculus spp.</i> (Water Crowfoot or Buttercup)	Submersed	As flowers give way to fruit, the water crowfoot bed becomes a choice spot for dabbling ducks. Both fruit and foliage of water crowfoot are consumed by a variety of waterfowl. When it is growing in shallow zones, it is sometimes consumed by upland game birds including ruffed grouse. Stems and leaves of water crowfoot provide valuable invertebrate habitat.

Scientific Name (Common Name)	Plant Type	Plant Functions
<i>Sagittaria graminea</i> (Grass-leaved Arrowhead, Slender Arrowhead)	Emergent	Grass-leaved arrowhead has high wildlife value. Waterfowl graze on the rhizomes and the seeds are consumed by a wide variety of ducks, geese, marsh birds and shore birds. Muskrats, beavers and porcupines eat both leaves and rhizomes. Arrowhead beds offer shade and shelter for young fish.
<i>Scirpus sp.</i> (Bulrush)	Emergent	Bulrush offers habitat for invertebrates and shelter for young fish, especially northern pike. The nutlets are consumed by a wide variety of waterfowl, marsh birds (including bitterns, herons, rails) and upland birds. Stems and rhizomes are eaten by geese and muskrats. Bulrushes also provide nesting material and cover for waterfowl, marsh birds, and muskrats.
<i>Vallisneria americana</i> (Wild Celery)	Submersed	Wild celery is a premiere source of food for waterfowl. All portions of the plant are consumed including foliage, rhizomes, tubers, and fruit. Wild celery beds become a prime destination for thousands of canvasback ducks every fall. Wild celery is also important to marsh birds and shore birds including rail, plover, sand piper, and snipe. Muskrats are also known to graze on it. Beds of wild celery are considered good fish habitat providing shade, shelter, and feeding opportunities.
<i>Zosterella dubia</i> (Water Star Grass)	Submersed	Water star grass can be a locally important source of food for geese and ducks including northern pintail, blue-winged teal and wood duck. It also offers good cover and foraging opportunities for fish.

*Plant functions are from: Borman, S. et al. 1997. *Through the Looking Glass...A Field Guide to Aquatic Plants* and Minnesota Department of Natural Resources. 1997. *A Guide to Aquatic Plants—Identification and Management*.

4.1.9 Exotic Species

Macrophytes in the Spider Chain of Lakes consisted almost exclusively of native species (i.e., species historically present in this region). In 2000, one exotic (i.e., not native) species occurred in the lakes, *Potamogeton crispus* (curly-leaf pondweed). Exotic or non-native species are undesirable because their natural control mechanisms are not introduced with the species. Consequently, exotic species may exhibit rapid unchecked growth patterns and may displace native species. Only 1 plant

stem of an exotic species (i.e., curly-leaf pondweed) was found in the entire lake system and it was removed. Hence, curly-leaf pondweed is not considered problematic at this time. The location of the curly-leaf siting in Spider Lake (north) is noted on Figure 3.

Because curly-leaf pondweed is problematic in many Wisconsin lakes, a brief discussion of its history and common problems follows. The purpose of the discussion is to provide information for the Spider Chain of Lakes Improvement Association. It is hoped that the information will help the organization to educate its members to be vigilant in watching for this species and in preventing problems within its lake system.

Curly-leaf pondweed is an exotic perennial, rooted, submersed aquatic vascular plant which was first noted in Minnesota about 1910 (Moyle and Hotchkiss 1945). Native to Eurasia, Africa, and Australia, this species has been found in most of the United States since 1950, and is currently found in most parts of the world (Catling and Dobson, 1985).

Curly-leaf pondweed is detrimental to lakes for three reasons:

1. It tends to crowd out native aquatic macrophyte (i.e., aquatic plant) species.
2. Dense colonies of the weed may interfere with recreational activities on the lake.
3. After curly-leaf pondweed dies out in early July, it may sink to the lake bottom and decay. When dense colonies of the weed decay, oxygen depletion and release of phosphorus may occur.

4.2 Membership Survey Results

Homeowners on and close to the Spider Chain of Lakes were surveyed to determine:

- Lake use
- Plant Management
- Water Quality
- Demographics

A total of 150 surveys were mailed and 85 responses were received (i.e., 57% return rate). Survey results are summarized in Appendix E.

4.2.1 Responses to Lake Use Questions

1. *Why did you buy property on a lake?*

The majority of respondents purchased lake property to appreciate the peace and tranquility. Other top reasons cited included fishing, observing wildlife, and enjoying the view. Entertaining friends, swimming, and motorized boating were also mentioned a number of times.

2. *How often do you engage in each of the following on the Spider Chain of Lakes?*

Respondents were given 15 lake use activities from which to choose. Swimming, fishing, scenic viewing, hiking/walking were cited most often by respondents. These activities were performed frequently or whenever possible; whereas most other activities were on an occasional basis. Over 80 percent indicated they never use jet skis and in excess of 60 percent do not engage in sailing, snowmobiling, ice fishing, and cross country skiing.

3. *What is your satisfaction level while participating in recreational activities on Spider Chain of Lakes?*

Ninety percent of the respondents indicated that their experiences were usually pleasurable, including over 60 percent who felt their experiences were always pleasurable.

4. *How would you rate the condition of the Spider Chain of Lakes as a whole for the following activities.*

Most indicated that the lake is good to excellent for swimming, canoeing, row/paddleboating, power boating/water skiing, cross country skiing, scenic viewing, hiking/walking and pontooning. Many felt the lake was only fair to good for fishing.

5 & 6. *When at your property on Spider Chain of Lakes, how do you feel about the number of people using the lake?*

Ninety percent of the respondents indicated that the lake is not crowded on the weekdays. On weekends, 68 percent indicated that the lake was not crowded while 27 percent believe that the lake is crowded.

7. *Have you discontinued any lake activities that you enjoyed in the past?*

Most respondents have not changed their activities. Of the 20 percent that have, health factors were listed as the primary reason.

8. *Are you aware of the boating regulations on the Spider Chain of Lakes?*

Ninety-eight percent were aware that the hours for water/jet skiing and high speed vehicles are 11:00 a.m. to 3:00 p.m.

9. *Do you feel the laws are strict enough, not strict enough, or too strict?*

Sixth-eight percent believe the laws are strict enough and 17 percent believe they are not strict enough. Only 5 percent of the respondents believed they are too strict.

10. *Are the present boating laws adequately enforced?*

Only 30 percent indicated that the boating laws are adequately enforced, whereas 50 percent feel that the enforcement is not adequate.

11. *Who should be charged with the enforcement of the present boating laws?*

Twenty percent of the respondents felt that everyone on the lake should be involved with enforcing the boating laws or at least warning violators. Twenty percent felt the sheriff was the best enforcement agency and 15 percent felt the DNR should be responsible. A number of respondents felt the resort owners should be more active in informing guests of the regulations on Spider Chain of Lakes.

12. *Should changes be made to the boating laws?*

Thirty-nine percent felt changes should be made while 44 percent felt no change was necessary. Suggestions on possible changes to the current boating regulations was the most active area for the entire survey, indicating a very high level of interest in these regulations. Suggested changes to the boating laws include 24 percent who felt jet skis should be banned, other suggestions ranged from making Spider Chain of Lakes a totally quiet lake, enforcing the speed regulations for fishing boats, as well as jet skis. Some want to expand the hours for water skiing/jet skis. Others want to raise the boat speed limits to 20 mph (nobody runs at 10 mph). It was also suggested that special regulations should be considered for North Lake.

13. *Do you fish the Spider Chain of Lakes?*

Over 70 percent of the respondents indicated that they fish the Spider Chain of Lakes.

14. *If you do not fish on the Spider Chain of Lakes, did you in the past?*

Of those who answered no to question 13, less than 10 fished the Spider Chain of Lakes in the past. The primary reason cited for not fishing any more was that the fishing is not as good as it once was.

15. *How do you rate the present fishing quality of the Spider Chain of Lakes?*

Very poor	4%
Poor	16%
Fair	42%
Good	28%
Excellent	10%

16. Which of the following fish do you think has increased, decreased, or remained the same in number since you started fishing on the Spider Chain of Lakes.

A significant number of respondents expressed some uncertainty if various fish had decreased or increased. However, 50 percent feel that walleyes have decreased, 48 percent feel muskies have stayed the same, and 51 percent felt that largemouth bass had stayed the same or increased. In addition, 65 percent felt that panfish had decreased or stayed the same, as well as 55 percent who felt smallmouth bass had also decreased or stayed the same.

17. Which of the following best describes your opinion of public access to the Spider Chain of Lakes, adequate or inadequate?

Ninety-three percent believe there is adequate public access to the Spider Chain of Lakes.

18. Should the existing channels between the lakes be expanded or be improved?

Twenty-four percent of the respondents feel the existing channels should be expanded or improved, while 76 percent feel no improvements were necessary. Those who feel some improvements are necessary believe the channels, especially the access to Clear Lake, should be deeper, but not wider. Many who favor no change to the channels want them left alone so we can limit larger boats on the lakes.

4.2.2 Responses to Plant Management Questions

19. Do you feel the Spider Chain of Lakes has excessive aquatic plant problems?

Yes.....	8%	(1999)
.....	12%	(2000)
No.....	55%	(1999)
.....	53%	(2000)
Occasionally.....	15%	(1999)
.....	15%	(2000)
Don't Know	22%	(1999)
.....	20%	(2000)

20. Do you use fertilizer on your Spider Chain of Lakes property?

An overwhelming majority (88 percent) do not use fertilizer on their property.

21. Do you use phosphate free fertilizer?

All those who indicated they use fertilizer on their property in #21 also indicated they use phosphate free fertilizer.

4.2.3 Responses to Water Quality Questions

22. *How do you rate the existing water quality of the Spider Chain of Lakes?*

Forty-seven percent rated the Spider Chain of Lakes water quality excellent, 43 percent as good, 7 as fair, 0 percent as poor, and 3 percent didn't know.

23. *Have you noticed any change in water quality since you bought property on the Spider Chain of Lakes?*

Sixty percent of the respondents indicated that the water quality has not changed since they bought property on the Spider Chain of Lakes, 9 percent felt the quality had deteriorated, 5 percent felt it has improved, and 10 percent indicated it was variable and 16 percent had no opinion.

24. *Please describe any changes in lake water quality that may have affected your use of Spider Chain of Lakes.*

No specific comments were voiced in response to this question.

25. *What are the three most important criterion for you for judging the quality of the Spider Chain of Lakes?*

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>Total</u>
Clarity of Lake	23	13	6	42
Remoteness/Solitude	9	18	8	35
Clean Environment	10	9	12	31
Scenic Surroundings	10	9	11	30
Proximity of Nature	6	7	13	30
Quality of Fisheries	8	15	4	27
Condition for Swimming	6	4	9	19
Friendliness	1	1	7	9
Other	0	0	2	2

26. *Which of the following do you believe are the three most significant causes of the problems on the lake?*

Most respondents believe the number of water/jet skiers is the number one cause of problems on the Spider Chain of Lakes. Number two is excessive sediment deposits on the lake bottom, number three is development around the lake, followed by runoff from lawn fertilizers, excessive boat speed, and gasoline/oil from motor boats.

27. *To what extent do you think the water quality affects the value of your property?*

Eighty percent of the respondents believe the value of their property is much or very much affected by the water quality. Another 12 percent felt the value was somewhat affected by the quality of the water.

28. *Are you familiar with local land/zoning regulations?*

Eighty percent of the respondents are familiar with local land and zoning regulations.

29. *If you answered yes to question 28, do you feel the regulations are adequate to protect the water quality of the Spider Chain of Lakes?*

Seventy-two percent feel that the regulations are adequate and 12 percent feel they are inadequate.

30. *Do you feel the land/zoning regulations are adequately enforced?*

Fifty-six percent of the respondents believe the regulations are adequately enforced, 24 percent think they are not adequately enforced, and 20 percent expressed no opinion.

One respondent felt strongly that the county should take over the zoning as they would be more impartial and fair. "As a committee they are much more knowledgeable about the laws and would administer the enforcement in a way that would keep the township out of court. In that way all property owners, whether they are friends of a board member or, heaven forbid, just a regular person, could be assured of having a fair decision made according to the law."

31. *What do you feel are the three most valuable resources in the Spider Chain of Lakes area?*

	1 st	2 nd	3 rd
Natural Beauty	47	8	13
Fisheries Resource	15	11	10
Wildlife	7	19	16
Trees	0	17	17
Recreation	2	7	14

32. *What describes your opinion of the lake level?*

Seventy-two percent of the respondents believe the lake level is just right or from their experience nothing has changed. Thirteen percent believe the lake level to be too low and 6 percent believe it to be too high.

33. *If you indicated a problem with the lake level, to what do you attribute the problem?*

Written comments ranged from the statement that the lake level in 2000 was just right to suggestions the dam be removed because it is creating wider, shallower lake with current lake levels or the high level of the lake in 2000 is causing undue shoreline erosion.

34. *Are you aware of the Spider Lake Improvement Association?*

Ninety-one percent of the respondents are aware of the SCLIA.

35. *Have you attended an association meeting within the last 12 months?*

Only forty-two percent of the respondents have attended an association meeting within the past 12 months.

36. *What changes would encourage you to attend association meetings?*

It was also suggested the SCLIA make all homeowners feel welcome with current up-to-date mailing and to make it clear that the association is there to protect everyone's enjoyment of the lake whether it be fishing, skiing, jet skiing, sailing, etc.

37. *Were you aware the association and other volunteers will construct and install fish cribs in Spider Chain of Lakes this summer?*

Eight-two percent of the respondents were aware of the efforts to install fish cribs in Spider Chain of Lakes last summer.

38. *Did you assist in some way with the project or other association projects?*

Less than half, 42 percent of the respondents had assisted with the fish crib construction and/or other association projects.

39. *What additional association activities would you to like see the SCLIA undertake?*

Activities mentioned included: (1) the improvement of the picnic areas; (2) the formulation of a loon watch group with the Sig Olson Institute; (3) sponsorship of a program for the free inspection of boats by the DNR to promote increased safety; (4) a more active role in the regulation of ATV's; and (5) a more active fish stocking program.

40. *What can the SCLIA do to improve its communications with its members/non-members?*

Suggestions in that area included the use of local merchants to promote the association and the placing of bulletin boards in the Spider Chain of Lakes area (i.e., Dow's Corner) to publicize association activities.

41. *If you hare not a member of the association, under what conditions would join?*

No responses were given to this question.

4.2.4 Responses to Demographic Questions

42. *On Spider Chain of Lakes, do you own, rent, etc.?*

Forty-four percent of the respondents own a permanent home on Spider Chain of Lakes, 48 percent own a seasonal home, 5 percent rent, 2 percent own land, and only 1 percent own business property.

43. *If you did not live year round at the Spider Chain of Lakes, when do you spend time at the Spider Chain of Lakes?*

The large majority of people who do not live year round at the Spider Chain of Lakes spend the spring, summer and fall at Spider Chain of Lakes. A small number spend time during the winter at the Spider Chain of Lakes.

44. *How long have you owned your property at the Spider Chain of Lakes?*

The average respondent has owned their property on Spider Chain of Lakes for almost 18 years. Twenty-seven owners have held property for 10 years or less, while 12 owners have owned property for more than 25 years.

45. *How many adults (18 or over) live in your household?*

An average of 2.25 adults live in households on the Spider Chain of Lakes. The most adults in any one household was 8, while three households had 4 adults and six had 3 adults.

46. *Are there any other comments or concerns regarding the Spider Chain of Lakes that you would like to mention?*

A number of respondents voiced favorable comments about the great job the SCLIA is doing. Lakeshore restoration projects also received praise.

Finally, a number of areas were cited where improvements were needed. They include the need for monitoring septic systems, the need for a more aggressive strategy to protect against Eurasian milfoil, the need for increased duck habitat, the need for testing for chemical pollutants, the need for more buoys, the need to post signs for boaters to watch for loons, and the need to have a telephone number to report violations on the lake.

5.0 Conclusions and Recommendations

The macrophyte community within the Spider Chain of Lakes was comprised of a diverse assemblage of species occurring in light to moderate density. The results of the macrophyte survey are indicative of a healthy, clean (i.e., low in nutrients and clear water) lakes' system. Specific conclusions from the study are:

- Of the four types of macrophytes found in the Spider Chain of Lakes, (submersed, floating-leaf, emergent, and the alga *Chara sp.*), submersed plants were dominant.
- A total of 25 species were found in the Spider Chain of Lakes.
- On average, 9 species were found per Spider Chain of Lakes transect. A range of 5 to 13 species per transect were noted in individual lakes.
- Macrophyte species were relatively evenly distributed throughout the lake system. Consequently, individual species noted a low to moderate frequency of occurrence ranging from 0.5 to 53 percent.
- On average, the Spider Chain of Lakes noted a light macrophyte density (i.e., a density of 1). Individual lakes observed macrophyte densities ranging from 1 to 3. All individual species noted macrophyte densities less than 1. Individual species with highest densities were *Nuphar variegatum* (average density of 0.7) and *Potamogeton robbinsii* (average density of 0.6).
- The Spider Chain of Lakes noted a highly diverse macrophyte community. On a diversity scale of 0 to 1, the five individual lakes noted diversities ranging from 0.88 to 0.93. The diversities are near the high end of a range of diversities measured in 55 Wisconsin lakes (i.e. range of 0.58 to 0.95). North Lake noted the highest diversity and Clear Lake noted the lowest diversity.
- The Spider Chain of Lakes noted a macrophyte coverage of 780 acres or 47 percent of the lakes' surface area. Macrophyte coverage of individual lakes ranged from 37 percent (Spider Lake north) to 62 percent (Clear Lake).
- The Spider Chain of Lakes littoral region noted 21 percent open area and 79 percent macrophyte coverage (i.e., approximately 21 percent of the macrophyte sample points contained no vegetation).
- The lakes' macrophytes perform a number of functions including habitat, food, shoreline protection, nesting areas for waterfowl, and spawning areas for fish.
- The Spider Chain of Lakes macrophyte community was comprised of native species with the exception of a single siting of *Potamogeton crispus* (curly-leaf pondweed). Curly-leaf pondweed is an exotic or non-native species. Only one plant stem was found and the stem was removed. Hence, curly-leaf pondweed is not considered problematic.

5.1 Management Recommendations

Management recommendations for the Spider Chain of Lakes include (1) preservation of current macrophyte communities (i.e., native species and light to moderate density) and (2) Prevent the introduction of exotic (i.e., non-native) species or minimize harm from inadvertent introduction.

5.1.1 Preserve Current Macrophyte Communities

The combined effects of lake morphology and relatively low nutrient input from the lakes' watersheds have resulted in healthy and diverse macrophyte communities in the lakes. The lakes' macrophyte communities support the lakes' beneficial uses.

Beneficial uses of lakes must be compatible with their capacity to sustain those uses, both human and natural. A single water body often supports many different beneficial uses. Aquatic plant growth may support or impair the beneficial uses of a lake. The management challenge involves identifying the lakes' beneficial uses, and realistically managing for these uses.

The Spider Chain of Lakes is used for a variety of recreational activities including swimming, fishing, scenic viewing, hiking/walking, and other recreational activities. In addition to human uses, the lake provides habitat for fish, waterfowl, and other animals. The current macrophyte community provides optimum habitat conditions for the lakes' fisheries, waterfowl, and other animals. Concurrently, the lakes' macrophyte community supports the lakes' beneficial uses .

The current Spider Chain of Lakes macrophyte community is considered ideal and preservation of the current macrophyte community is recommended. The lakes' ideal macrophyte community is indicative of an overall clean lake system. Preservation of the lakes' current clean water quality is recommended to insure preservation of the lakes' current macrophyte community. Water quality degradation is often accompanied by undesirable changes in a lake's macrophyte community. Nutrient additions to lakes are generally accompanied by the addition of nutrient rich sediments, which in turn result in heavy plant growth. Heavy plant growth generally results in reduced diversity and the dominance by a few problematic species. Heavy plant growth concurrently interferes with recreational activities and negatively impacts the lakes' fisheries. Therefore, preservation of the lakes' clean water quality is recommended to preserve the lakes' current macrophyte communities and preserve the lakes' beneficial uses.

Completion of a lake water quality management plan is recommended to concurrently preserve the lakes' clean water quality and the lakes' current macrophyte community. Plan completion involves several steps, including:

- Collection of data (i.e., lake and tributary water quality, precipitation, lake level, watershed land use, and recreational user expectations/desires).
- Preparation of hydrologic and phosphorus budgets for existing watershed land use conditions.
- Preparation of a comprehensive lake management plan.

5.1.2 Prevent Introduction or Minimize Harm from Exotic Species

Exotic or non-native species are generally introduced to lakes by people or waterfowl. Introduction by boat trailers containing plant fragments from other lakes is believed to be the most frequent mechanism for introducing exotic plants to a lake or lake system. The following plan is recommended to prevent the introduction of exotic species to the Spider Chain of Lakes or minimize harm should an inadvertent introduction occur. The plan involves an education component and vigilance by lake residents.

- Posting signs at boat launches reminding lake-users to remove aquatic plants from boat trailers before entering and leaving the lakes to prevent the introduction of unwanted species.
- Information concerning exotic species and a reminder to remove plants from boat trailers could be displayed on bulletin boards at the boat launches. The bulletin boards could be used to encourage boaters to pick up a free brochure describing exotic species, the potential dangers of exotic species, and the importance of vegetation removal to prevent exotic species introduction. Brochures could be placed in a dispenser located near the boat launch.
- Print educational articles in the lake association's newsletter. Articles could describe and show pictures of exotic species, the potential dangers of exotic species, and recommendations to prevent the introduction of exotic species (e.g., remove vegetation from boat trailers, never introduce an aquatic species to a lake).
- Invite County or WDNR staff to provide educational presentations at lake association meetings. The presentations could provide information about exotic species, methods of exotic species introduction, problems caused by introduction of exotic species, and ways to prevent exotic species introduction. In addition, training to identify exotic species could be provided by County or WDNR staff.
- Encourage all residents to be vigilant in watching for the appearance of any new plant species in the areas of the lake used by them. Provide residents with the name and phone number of a person to contact if a possible new species is sighted. If a possible new species is sighted, the lake association could obtain assistance from the WDNR, Barron County, or hire a professional to identify the potential new species and determine whether it is an exotic species (i.e., mail the species to a professional for identification)

- If a professional determines that an exotic species has been introduced to the lake (i.e., professional identification of plant species described previously), physically remove all exotic plants if possible or treat the area of growth with an appropriate herbicide. A WDNR chemical treatment permit must be obtained prior to treatment with a herbicide. The area containing an exotic species should be periodically checked after removal or chemical treatment to determine whether any regrowth has occurred. If regrowth occurs, continued removal or treatment is recommended to eradicate exotic species growth, if possible.

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Appendix A

***2000 Spider Chain of Lakes
Number of Species in Each Transect***

Spider Chain of Lakes--Number of Species Per Transect

Lake	Transect Number	Number of Species
North	1	8
	2	14
	3	10
	4	8
	5	13
	6	14
	7	16
	8	14
	9	12
	10	14
	Average Number of Species for North Lake T Transect	
Fawn	11	15
	12	12
	13	13
	14	12
	Average Number of Species for Fawn Lake Transect	
Spider Lake (north)	15	8
	16	12
	17	17
	18	11
	19	12
	20	17
	21	15
	22	14
	23	11
	24	8
	25	12
	26	10
	27	6
	28	4
	29	11
	30	12
	31	9

Lake	Transect Number	Number of Species
Spider Lake (north)	32	6
	33	6
	34	11
	35	11
	36	11
	37	11
	38	6
	Average Number of Species for Spider Lake (north)	10
Clear Lake	39	5
	40	2
	41	7
	42	4
	43	4
	44	6
	Average Number of Species for Clear Lake	5
Spider Lake (south)	45	7
	46	8
	47	10
	48	6
	49	8
	50	6
	51	10
	52	7
	53	7
	54	2
	55	7
	56	3
	57	9
	58	10
	59	3
60	7	
61	6	
62	9	

Lake	Transect Number	Number of Species
Spider Lake (south)	63	6
	64	7
	65	4
	66	5
	67	8
	Average Number of Species for Spider Lake (south)	7

Appendix B

***2000 Spider Chain of Lakes
Macrophyte Relative Frequency/Diversity Data***

2000 Spider Chain of Lakes Macrophyte Frequency of Occurrence, Relative Frequency, and Diversity

Lake: Clear Lake

Species Name	Frequency of Occurrence	rf	rf/100	(rf/100)^2
<i>Brasenia schreberi</i>	6	2.87	0.029	0.00082
<i>Callitriche sp.</i>	6	2.87	0.029	0.00082
<i>Ceratophyllum demersum</i>	0	0.00	0.000	0.00000
<i>Chara sp.</i>	33	15.79	0.158	0.02493
<i>Eleocharis spp.</i>	28	13.40	0.134	0.01795
<i>Elodea canadensis</i>	0	0.00	0.000	0.00000
<i>Myriophyllum sibiricum</i>	0	0.00	0.000	0.00000
<i>Najas flexilis</i>	6	2.87	0.029	0.00082
<i>Nuphar variegatum</i>	6	2.87	0.029	0.00082
<i>Nymphaea tuberosa</i>	11	5.26	0.053	0.00277
<i>Pontederia cordata</i>	6	2.87	0.029	0.00082
<i>Potamogeton amplifolis</i>	17	8.13	0.081	0.00662
<i>Potamogeton crispus</i>	0	0.00	0.000	0.00000
<i>Potamogeton illinoensis</i>	0	0.00	0.000	0.00000
<i>Potamogeton natans</i>	0	0.00	0.000	0.00000
<i>Potamogeton richardsonii</i>	0	0.00	0.000	0.00000
<i>Potamogeton robbinsii</i>	28	13.40	0.134	0.01795
<i>Potamogeton sp.</i>	17	8.13	0.081	0.00662
<i>Potamogeton zosteriformis</i>	0	0.00	0.000	0.00000
<i>Ranunculus spp.</i>	0	0.00	0.000	0.00000
<i>Sagittaria graminea</i>	6	2.87	0.029	0.00082
<i>Sagittaria sp.</i>	0	0.00	0.000	0.00000
<i>Scirpus sp.</i>	0	0.00	0.000	0.00000
<i>Vallisneria americana</i>	39	18.66	0.187	0.03482
<i>Zosterella dubia</i>	0	0.00	0.000	0.00000
TOTAL	209	100.00	1.000	0.11660
Diversity = 1 - sum of (rf/100)^2			Diversity	0.88340

2000 Spider Chain of Lakes Macrophyte Frequency of Occurrence, Relative Frequency, and Diversity

Lake: Spider Lake (north)

Species Name	Frequency of Occurrence	rf	rf/100	(rf/100)^2	
<i>Brasenia schreberi</i>		7	1.38	0.014	0.00019
<i>Callitriche sp.</i>		0	0.00	0.000	0.00000
<i>Ceratophyllum demersum</i>		32	6.32	0.063	0.00400
<i>Chara sp.</i>		69	13.64	0.136	0.01860
<i>Eleocharis spp.</i>		7	1.38	0.014	0.00019
<i>Elodea canadensis</i>		43	8.50	0.085	0.00722
<i>Myriophyllum sibiricum</i>		46	9.09	0.091	0.00826
<i>Najas flexilis</i>		53	10.47	0.105	0.01097
<i>Nuphar variegatum</i>		15	2.96	0.030	0.00088
<i>Nymphaea tuberosa</i>		13	2.57	0.026	0.00066
<i>Pontederia cordata</i>		3	0.59	0.006	0.00004
<i>Potamogeton amplifolius</i>		3	0.59	0.006	0.00004
<i>Potamogeton crispus</i>		1	0.20	0.002	0.00000
<i>Potamogeton illinoensis</i>		1	0.20	0.002	0.00000
<i>Potamogeton natans</i>		6	1.19	0.012	0.00014
<i>Potamogeton richardsonii</i>		11	2.17	0.022	0.00047
<i>Potamogeton robbinsii</i>		40	7.91	0.079	0.00625
<i>Potamogeton sp.</i>		49	9.68	0.097	0.00938
<i>Potamogeton zosteriformis</i>		24	4.74	0.047	0.00225
<i>Ranunculus spp.</i>		17	3.36	0.034	0.00113
<i>Sagittaria graminea</i>		13	2.57	0.026	0.00066
<i>Sagittaria sp.</i>		0	0.00	0.000	0.00000
<i>Scirpus sp.</i>		0	0.00	0.000	0.00000
<i>Vallisneria americana</i>		40	7.91	0.079	0.00625
<i>Zosterella dubia</i>		13	2.57	0.026	0.00066
TOTAL		506	100.00	1.000	0.07824
			Diversity = 1 - sum of (rf/100)^2	Diversity	0.92176

2000 Spider Chain of Lakes Macrophyte Frequency of Occurrence, Relative Frequency, and Diversity

Lake: Fawn Lake

Species Name	Frequency of Occurrence	rf	rf/100	(rf/100)^2
<i>Brasenia schreberi</i>	17	2.25	0.022	0.00050
<i>Callitriche sp.</i>	0	0.00	0.000	0.00000
<i>Ceratophyllum demersum</i>	100	13.21	0.132	0.01745
<i>Chara sp.</i>	50	6.61	0.066	0.00436
<i>Eleocharis spp.</i>	0	0.00	0.000	0.00000
<i>Elodea canadensis</i>	92	12.15	0.122	0.01477
<i>Myriophyllum sibiricum</i>	58	7.66	0.077	0.00587
<i>Najas flexilis</i>	58	7.66	0.077	0.00587
<i>Nuphar variegatum</i>	50	6.61	0.066	0.00436
<i>Nymphaea tuberosa</i>	67	8.85	0.089	0.00783
<i>Pontederia cordata</i>	8	1.06	0.011	0.00011
<i>Potamogeton amplifolis</i>	33	4.36	0.044	0.00190
<i>Potamogeton crispus</i>	0	0.00	0.000	0.00000
<i>Potamogeton illinoensis</i>	0	0.00	0.000	0.00000
<i>Potamogeton natans</i>	17	2.25	0.022	0.00050
<i>Potamogeton richardsonii</i>	8	1.06	0.011	0.00011
<i>Potamogeton robbinsii</i>	75	9.91	0.099	0.00982
<i>Potamogeton sp.</i>	50	6.61	0.066	0.00436
<i>Potamogeton zosteriformis</i>	0	0.00	0.000	0.00000
<i>Ranunculus spp.</i>	33	4.36	0.044	0.00190
<i>Sagittaria graminea</i>	0	0.00	0.000	0.00000
<i>Sagittaria sp.</i>	0	0.00	0.000	0.00000
<i>Scirpus sp.</i>	0	0.00	0.000	0.00000
<i>Vallisneria americana</i>	33	4.36	0.044	0.00190
<i>Zosterella dubia</i>	8	1.06	0.011	0.00011
TOTAL	757	100.00	1.000	0.08174
Diversity = 1 - sum of (rf/100)^2			Diversity	0.91826

2000 Spider Chain of Lakes Macrophyte Frequency of Occurrence, Relative Frequency, and Diversity

Lake: North Lake

Species Name	Frequency of Occurrence	rf	rf/100	(rf/100)^2
<i>Brasenia schreberi</i>		3	0.46	0.0005
<i>Callitriche sp.</i>		0	0.00	0.0000
<i>Ceratophyllum demersum</i>		63	9.60	0.0922
<i>Chara sp.</i>		27	4.12	0.0169
<i>Eleocharis spp.</i>		3	0.46	0.0002
<i>Elodea canadensis</i>		60	9.15	0.0837
<i>Myriophyllum sibiricum</i>		70	10.67	0.1139
<i>Najas flexilis</i>		53	8.08	0.0653
<i>Nuphar variegatum</i>		27	4.12	0.0169
<i>Nymphaea tuberosa</i>		17	2.59	0.0067
<i>Pontederia cordata</i>		10	1.52	0.0023
<i>Potamogeton amplifolis</i>		47	7.16	0.0513
<i>Potamogeton crispus</i>		0	0.00	0.0000
<i>Potamogeton illinoensis</i>		13	1.98	0.0039
<i>Potamogeton natans</i>		10	1.52	0.0023
<i>Potamogeton richardsonii</i>		7	1.07	0.0011
<i>Potamogeton robbinsii</i>		53	8.08	0.0653
<i>Potamogeton sp.</i>		50	7.62	0.0581
<i>Potamogeton zosteriformis</i>		70	10.67	0.1139
<i>Ranunculus spp.</i>		27	4.12	0.0169
<i>Sagittaria graminea</i>		0	0.00	0.0000
<i>Sagittaria sp.</i>		3	0.46	0.0002
<i>Scirpus sp.</i>		10	1.52	0.0023
<i>Vallisneria americana</i>		13	1.98	0.0039
<i>Zosterella dubia</i>		20	3.05	0.0093
TOTAL		656	100.00	1.0000
			Diversity = 1 - sum of (rf/100)^2	Diversity 0.92730

2000 Spider Chain of Lakes Macrophyte Frequency of Occurrence, Relative Frequency, and Diversity

Lake: Spider Lake (south)

Species Name	Frequency of Occurrence	rf	rf/100	(rf/100)^2
<i>Brasenia schreberi</i>	6	1.86	0.019	0.00035
<i>Callitriche sp.</i>	0	0.00	0.000	0.00000
<i>Ceratophyllum demersum</i>	0	0.00	0.000	0.00000
<i>Chara sp.</i>	45	13.98	0.140	0.01953
<i>Eleocharis spp.</i>	29	9.01	0.090	0.00811
<i>Elodea canadensis</i>	12	3.73	0.037	0.00139
<i>Myriophyllum sibiricum</i>	4	1.24	0.012	0.00015
<i>Najas flexilis</i>	57	17.70	0.177	0.03134
<i>Nuphar variegatum</i>	4	1.24	0.012	0.00015
<i>Nymphaea tuberosa</i>	9	2.80	0.028	0.00078
<i>Pontederia cordata</i>	3	0.93	0.009	0.00009
<i>Potamogeton amplifolius</i>	26	8.07	0.081	0.00652
<i>Potamogeton crispus</i>	0	0.00	0.000	0.00000
<i>Potamogeton illinoensis</i>	6	1.86	0.019	0.00035
<i>Potamogeton natans</i>	1	0.31	0.003	0.00001
<i>Potamogeton richardsonii</i>	9	2.80	0.028	0.00078
<i>Potamogeton robbinsii</i>	48	14.91	0.149	0.02222
<i>Potamogeton sp.</i>	29	9.01	0.090	0.00811
<i>Potamogeton zosteriformis</i>	4	1.24	0.012	0.00015
<i>Ranunculus spp.</i>	6	1.86	0.019	0.00035
<i>Sagittaria graminea</i>	3	0.93	0.009	0.00009
<i>Sagittaria sp.</i>	0	0.00	0.000	0.00000
<i>Scirpus sp.</i>	1	0.31	0.003	0.00001
<i>Vallisneria americana</i>	19	5.90	0.059	0.00348
<i>Zosterella dubia</i>	1	0.31	0.003	0.00001
TOTAL	322	100.00	1.000	0.10397
Diversity = 1 - sum of (rf/100)^2			Diversity	0.89603

Appendix C

***2000 Spider Chain of Lakes
Maximum Rooting Depth Data***

Spider Chain of Lakes--Maximum Rooting Depth Data

Lake	Transect Number	Maximum Rooting Depth (ft.)
North	1	18.5
	2	17.0
	3	16.5
	4	16.5
	5	15.5
	6	13.0
	7	17.0
	8	15.0
	9	15.0
	10	15.5
	Average Maximum Rooting Depth for North Lake T Transect	16.0
Fawn	11	16.0
	12	15.0
	13	15.0
	14	13.0
	Average Maximum Rooting Depth for Fawn Lake Transect	15.0
Spider Lake (north)	15	18.5
	16	18.0
	17	18.0
	18	17.5
	19	19.5
	20	18.0
	21	17.5
	22	None*
	23	18.5
	24	19.0
	25	18.5
	26	19.0
	27	19.0
	28	19.5
	29	19.5
	30	19.0
31	19.5	

Lake	Transect Number	Maximum Rooting Depth (ft.)
Spider Lake (north)	32	20.0
	33	None*
	34	19.5
	35	19.5
	36	20.0
	37	20.0
	38	18.5
	Average Maximum Rooting Depth for Spider Lake (North)	18.9
Clear Lake	39	20.0
	40	21.0
	41	None*
	42	None*
	43	None*
	44	None*
	Average Maximum Rooting Depth for Clear Lake	20.5
Spider Lake (south)	45	19.0
	46	21.0
	47	20.0
	48	21.0
	49	21.0
	50	20.0
	51	20.0
	52	21.0
	53	17.5
	54	17.5
	55	20.0
	56	None*
	57	None*
	58	None*
	59	None*
60	21.5	
61	22.0	
62	None*	

Lake	Transect Number	Maximum Rooting Depth (ft.)
Spider Lake (south)	63	None*
	64	21.5
	65	20.0
	66	21.0
	67	21.0
	Average Maximum Rooting Depth in Spider Lake (South)	20.3

*None indicates plant growth continued across the lake and, consequently, there was no transition point between plant growth and no plant growth. Hence, there was no maximum rooting depth.

Appendix D

***2000 Spider Chain of Lakes
Macrophyte Survey Data***

Spider Chain of Lakes

July 6-13, 2000

Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
North Lk.	1	A	2.5	Muck	TOTAL	Total Density @ Station	1	1	1	2	1.25	
North Lk.	1	A	2.5	Muck	ELCA7	Elodea canadensis	1	1	0	0	0.50	1
North Lk.	1	A	2.5	Muck	PORO	Potamogeton robbinsii	1	1	0	1	0.75	1
North Lk.	1	A	2.5	Muck	POAM5	Potamogeton amplifolis	1	0	1	1	0.75	1
North Lk.	1	A	2.5	Muck	MYSI	Myriophyllum sibiricum	0	0	0	1	0.25	1
North Lk.	1	A	2.5	Muck	RA SP.	Ranunculus spp.	0	0	0	1	0.25	1
North Lk.	1	B	4.0	Muck	TOTAL	Total Density @ Station	2	2	1	1	1.50	
North Lk.	1	B	4.0	Muck	ELCA7	Elodea canadensis	1	1	1	0	0.75	1
North Lk.	1	B	4.0	Muck	PORO	Potamogeton robbinsii	1	0	1	1	0.75	1
North Lk.	1	B	4.0	Muck	POZO	Potamogeton zosteriformis	1	1	0	0	0.50	1
North Lk.	1	B	4.0	Muck	POAM5	Potamogeton amplifolis	0	1	1	0	0.50	1
North Lk.	1	C	8.0	Muck	TOTAL	Total Density @ Station	2	1	3	3	2.25	
North Lk.	1	C	8.0	Muck	POZO	Potamogeton zosteriformis	2	0	2	2	1.50	1
North Lk.	1	C	8.0	Muck	NAFL	Najas flexilis	1	1	0	0	0.50	1
North Lk.	1	C	8.0	Muck	CEDE4	Ceratophyllum demersum	1	0	1	1	0.75	1
North Lk.	1	C	8.0	Muck	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
North Lk.	2	A	2.0	Muck & Logs	TOTAL	Total Density @ Station	1	1	1	1	1.00	
North Lk.	2	A	2.0	Muck & Logs	PONA4	Potamogeton natans	1	0	0	0	0.25	1
North Lk.	2	A	2.0	Muck & Logs	PORO	Potamogeton robbinsii	1	1	1	0	0.75	1
North Lk.	2	A	2.0	Muck & Logs	ELCA7	Elodea canadensis	1	0	0	1	0.50	1
North Lk.	2	A	2.0	Muck & Logs	POCO	Pontederia cordata	1	1	0	0	0.50	3
North Lk.	2	A	2.0	Muck & Logs	RA SP.	Ranunculus spp.	1	0	0	0	0.25	1
North Lk.	2	A	2.0	Muck & Logs	POZO	Potamogeton zosteriformis	0	1	1	0	0.50	1
North Lk.	2	A	2.0	Muck & Logs	SC SP.	Scirpus sp.	0	1	0	0	0.25	3
North Lk.	2	A	2.0	Muck & Logs	SA SP.	Sagittaria sp.	0	1	0	0	0.25	1
North Lk.	2	A	2.0	Muck & Logs	CEDE4	Ceratophyllum demersum	0	0	1	0	0.25	1
North Lk.	2	A	2.0	Muck & Logs	NAFL	Najas flexilis	0	0	0	1	0.25	1
North Lk.	2	A	2.0	Muck & Logs	MYSI	Myriophyllum sibiricum	0	0	0	1	0.25	1
North Lk.	2	B	2.0	Muck	TOTAL	Total Density @ Station	1	1	0	1	0.75	
North Lk.	2	B	2.0	Muck	PORO	Potamogeton robbinsii	1	1	0	1	0.75	1
North Lk.	2	B	2.0	Muck	MYSI	Myriophyllum sibiricum	1	0	0	0	0.25	1
North Lk.	2	B	2.0	Muck	NAFL	Najas flexilis	1	0	0	0	0.25	1
North Lk.	2	B	2.0	Muck	POAM5	Potamogeton amplifolis	0	1	0	1	0.50	1
North Lk.	2	C	5.5	Muck	TOTAL	Total Density @ Station	2	2	2	1	1.75	
North Lk.	2	C	5.5	Muck	ELCA7	Elodea canadensis	1	0	0	0	0.25	1

Spider Chain of Lakes

July 6-13, 2000

Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
North Lk.	2	C	5.5	Muck	PORO	Potamogeton robbinsii	1	1	0	1	0.75	1
North Lk.	2	C	5.5	Muck	MYSI	Myriophyllum sibiricum	1	1	0	0	0.50	1
North Lk.	2	C	5.5	Muck	POZO	Potamogeton zosteriformis	1	0	0	0	0.25	1
North Lk.	2	C	5.5	Muck	PO SP.	Potamogeton SP.	1	0	1	0	0.50	1
North Lk.	2	C	5.5	Muck	NAFL	Najas flexilis	1	1	1	1	1.00	1
North Lk.	2	C	5.5	Muck	POAM5	Potamogeton amplifolis	1	0	0	0	0.25	1
North Lk.	2	C	5.5	Muck	NUVA	Nuphar variegatum	0	0	1	0	0.25	2
North Lk.	3	A	1.5	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
North Lk.	3	A	1.5	Sand	SC SP.	Scirpus sp.	1	1	1	1	1.00	3
North Lk.	3	B	4.0	Sand/Muck	TOTAL	Total Density @ Station	2	3	3	3	2.75	
North Lk.	3	B	4.0	Sand/Muck	PORO	Potamogeton robbinsii	1	0	1	2	1.00	1
North Lk.	3	B	4.0	Sand/Muck	ELCA7	Elodea canadensis	1	1	0	0	0.50	1
North Lk.	3	B	4.0	Sand/Muck	MYSI	Myriophyllum sibiricum	1	0	1	0	0.50	1
North Lk.	3	B	4.0	Sand/Muck	CEDE4	Ceratophyllum demersum	1	2	1	0	1.00	1
North Lk.	3	B	4.0	Sand/Muck	POZO	Potamogeton zosteriformis	0	1	1	1	0.75	1
North Lk.	3	B	4.0	Sand/Muck	VAAM3	Vallisneria Americana	0	0	1	0	0.25	1
North Lk.	3	B	4.0	Sand/Muck	RA SP.	Ranunculus spp.	0	0	0	1	0.25	1
North Lk.	3	C	7.5	Muck	TOTAL	Total Density @ Station	2	2	1	2	1.75	
North Lk.	3	C	7.5	Muck	CEDE4	Ceratophyllum demersum	2	2	1	1	1.50	1
North Lk.	3	C	7.5	Muck	MYSI	Myriophyllum sibiricum	1	1	1	1	1.00	1
North Lk.	3	C	7.5	Muck	POZO	Potamogeton zosteriformis	1	0	0	1	0.50	1
North Lk.	3	C	7.5	Muck	POAM5	Potamogeton amplifolis	0	0	1	0	0.25	1
North Lk.	3	C	7.5	Muck	NAFL	Najas flexilis	0	0	0	1	0.25	1
North Lk.	4	A	2.5	Rock/Boulder	TOTAL	Total Density @ Station	0	0	0	1	0.25	
North Lk.	4	A	2.5	Rock/Boulder	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
North Lk.	4	B	5.0	Mud	TOTAL	Total Density @ Station	3	1	1	2	1.75	
North Lk.	4	B	5.0	Mud	CEDE4	Ceratophyllum demersum	2	1	1	1	1.25	1
North Lk.	4	B	5.0	Mud	VAAM3	Vallisneria Americana	1	1	1	0	0.75	1
North Lk.	4	B	5.0	Mud	POZO	Potamogeton zosteriformis	1	1	1	0	0.75	1
North Lk.	4	B	5.0	Mud	MYSI	Myriophyllum sibiricum	1	0	0	1	0.50	1
North Lk.	4	B	5.0	Mud	NAFL	Najas flexilis	0	0	1	0	0.25	1
North Lk.	4	B	5.0	Mud	POAM5	Potamogeton amplifolis	0	0	0	1	0.25	1
North Lk.	4	B	5.0	Mud	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
North Lk.	4	B	5.0	Mud	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
North Lk.	4	C	7.5	Mud	TOTAL	Total Density @ Station	2	2	2	3	2.25	

Spider Chain of Lakes

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
North Lk.	4	C	7.5	Mud	POAM5	Potamogeton amplifolis	1	0	0	0	0.25	1
North Lk.	4	C	7.5	Mud	CEDE4	Ceratophyllum demersum	1	2	1	2	1.50	1
North Lk.	4	C	7.5	Mud	PORO	Potamogeton robbinsii	1	1	0	1	0.75	1
North Lk.	4	C	7.5	Mud	POZO	Potamogeton zosteriformis	0	0	1	0	0.25	1
North Lk.	4	C	7.5	Mud	NAFL	Najas flexilis	0	0	0	1	0.25	1
North Lk.	5	A	1.5	Leaf Debris/Sticks	TOTAL	Total Density @ Station	4	2	2	4	3.00	
North Lk.	5	A	1.5	Leaf Debris/Sticks	CH SP.	Chara spp.	4	1	1	4	2.50	4
North Lk.	5	A	1.5	Leaf Debris/Sticks	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
North Lk.	5	A	1.5	Leaf Debris/Sticks	POAM5	Potamogeton amplifolis	0	1	1	0	0.50	1
North Lk.	5	A	1.5	Leaf Debris/Sticks	POIL	Potamogeton Illinoensis	0	0	0	1	0.25	1
North Lk.	5	B	3.0	Mud	TOTAL	Total Density @ Station	3	2	2	2	2.25	
North Lk.	5	B	3.0	Mud	POZO	Potamogeton zosteriformis	2	0	1	1	1.00	1
North Lk.	5	B	3.0	Mud	PO SP.	Potamogeton SP.	1	0	0	1	0.50	1
North Lk.	5	B	3.0	Mud	PORO	Potamogeton robbinsii	1	1	1	1	1.00	1
North Lk.	5	B	3.0	Mud	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
North Lk.	5	B	3.0	Mud	NUVA	Nuphar variegatum	1	1	1	1	1.00	2
North Lk.	5	B	3.0	Mud	PORI2	Potamogeton richardsonii	0	1	0	0	0.25	1
North Lk.	5	B	3.0	Mud	RA SP.	Ranunculus spp.	0	1	0	0	0.25	1
North Lk.	5	B	3.0	Mud	POAM5	Potamogeton amplifolis	0	1	0	0	0.25	1
North Lk.	5	B	3.0	Mud	MYSI	Myriophyllum sibiricum	0	1	1	1	0.75	1
North Lk.	5	B	3.0	Mud	NAFL	Najas flexilis	0	0	1	0	0.25	1
North Lk.	5	C	7.0	Mud	TOTAL	Total Density @ Station	1	2	2	2	1.75	
North Lk.	5	C	7.0	Mud	CEDE4	Ceratophyllum demersum	1	1	0	0	0.50	1
North Lk.	5	C	7.0	Mud	POZO	Potamogeton zosteriformis	1	1	1	0	0.75	1
North Lk.	5	C	7.0	Mud	MYSI	Myriophyllum sibiricum	0	1	1	2	1.00	1
North Lk.	5	C	7.0	Mud	PO SP.	Potamogeton SP.	0	1	0	1	0.50	1
North Lk.	5	C	7.0	Mud	NAFL	Najas flexilis	0	0	1	0	0.25	1
North Lk.	6	A	1.5	Mud/Sand	TOTAL	Total Density @ Station	3	2	2	3	2.50	
North Lk.	6	A	1.5	Mud/Sand	POIL	Potamogeton Illinoensis	1	0	0	0	0.25	1
North Lk.	6	A	1.5	Mud/Sand	CH SP.	Chara spp.	1	0	0	1	0.50	4
North Lk.	6	A	1.5	Mud/Sand	ELCA7	Elodea canadensis	1	0	1	0	0.50	1
North Lk.	6	A	1.5	Mud/Sand	PO SP.	Potamogeton SP.	1	1	0	0	0.50	1
North Lk.	6	A	1.5	Mud/Sand	NAFL	Najas flexilis	1	1	0	1	0.75	1
North Lk.	6	A	1.5	Mud/Sand	VAAM3	Vallisneria Americana	1	0	0	0	0.25	1
North Lk.	6	A	1.5	Mud/Sand	EL SP.	Eleocharis spp.	0	1	1	0	0.50	3

Spider Chain of Lakes

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
North Lk.	6	A	1.5	Mud/Sand	MYSI	Myriophyllum sibiricum	0	0	1	0	0.25	1
North Lk.	6	A	1.5	Mud/Sand	POZO	Potamogeton zosteriformis	0	0	1	1	0.50	1
North Lk.	6	A	1.5	Mud/Sand	RA SP.	Ranunculus spp.	0	0	1	1	0.50	1
North Lk.	6	A	1.5	Mud/Sand	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
North Lk.	6	A	1.5	Mud/Sand	CEDE4	Ceratophyllum demersum	0	0	0	1	0.25	1
North Lk.	6	B	3.5	Mud	TOTAL	Total Density @ Station	1	2	2	2	1.75	
North Lk.	6	B	3.5	Mud	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
North Lk.	6	B	3.5	Mud	RA SP.	Ranunculus spp.	1	1	0	0	0.50	1
North Lk.	6	B	3.5	Mud	NAFL	Najas flexilis	1	1	1	1	1.00	1
North Lk.	6	B	3.5	Mud	PORO	Potamogeton robbinsii	1	1	0	1	0.75	1
North Lk.	6	B	3.5	Mud	POAM5	Potamogeton amplifolis	1	0	0	0	0.25	1
North Lk.	6	B	3.5	Mud	NUVA	Nuphar variegatum	0	1	1	0	0.50	2
North Lk.	6	B	3.5	Mud	POZO	Potamogeton zosteriformis	0	0	1	0	0.25	1
North Lk.	6	B	3.5	Mud	MYSI	Myriophyllum sibiricum	0	0	1	0	0.25	1
North Lk.	6	B	3.5	Mud	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
North Lk.	6	C	6.5	Mud	TOTAL	Total Density @ Station	2	3	3	3	2.75	
North Lk.	6	C	6.5	Mud	MYSI	Myriophyllum sibiricum	2	3	3	2	2.50	1
North Lk.	6	C	6.5	Mud	POZO	Potamogeton zosteriformis	1	1	1	1	1.00	1
North Lk.	6	C	6.5	Mud	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
North Lk.	6	C	6.5	Mud	CEDE4	Ceratophyllum demersum	0	0	1	1	0.50	1
North Lk.	7	A	1.5	Mud	TOTAL	Total Density @ Station	2	5	3	3	3.25	
North Lk.	7	A	1.5	Mud	NYTU	Nymphaea tuberosa	1	1	1	1	1.00	2
North Lk.	7	A	1.5	Mud	PO SP.	Potamogeton SP.	1	3	1	2	1.75	1
North Lk.	7	A	1.5	Mud	CH SP.	Chara spp.	1	0	0	0	0.25	4
North Lk.	7	A	1.5	Mud	ELCA7	Elodea canadensis	1	1	1	0	0.75	1
North Lk.	7	A	1.5	Mud	CEDE4	Ceratophyllum demersum	0	1	0	1	0.50	1
North Lk.	7	A	1.5	Mud	ZODU	Zosterella dubia	0	1	0	0	0.25	1
North Lk.	7	A	1.5	Mud	NAFL	Najas flexilis	0	0	1	0	0.25	1
North Lk.	7	A	1.5	Mud	PONA4	Potamogeton natans	0	0	0	1	0.25	1
North Lk.	7	B	3.5	Mud	TOTAL	Total Density @ Station	3	3	3	4	3.25	
North Lk.	7	B	3.5	Mud	NUVA	Nuphar variegatum	2	2	2	3	2.25	2
North Lk.	7	B	3.5	Mud	POAM5	Potamogeton amplifolis	1	0	0	1	0.50	1
North Lk.	7	B	3.5	Mud	MYSI	Myriophyllum sibiricum	1	1	1	1	1.00	1
North Lk.	7	B	3.5	Mud	POZO	Potamogeton zosteriformis	1	0	0	0	0.25	1
North Lk.	7	B	3.5	Mud	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1

Spider Chain of Lakes

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
North Lk.	7	B	3.5	Mud	CEDE4	Ceratophyllum demersum	0	0	1	0	0.25	1
North Lk.	7	B	3.5	Mud	PORI2	Potamogeton richardsonii	0	0	0	1	0.25	1
North Lk.	7	C	5.5	Mud	TOTAL	Total Density @ Station	1	3	3	3	2.50	
North Lk.	7	C	5.5	Mud	POZO	Potamogeton zosteriformis	1	2	0	1	1.00	1
North Lk.	7	C	5.5	Mud	POIL	Potamogeton Illinoisensis	1	0	0	0	0.25	1
North Lk.	7	C	5.5	Mud	POAM5	Potamogeton amplifolis	0	1	2	1	1.00	1
North Lk.	7	C	5.5	Mud	RA SP.	Ranunculus spp.	0	1	0	0	0.25	1
North Lk.	7	C	5.5	Mud	CEDE4	Ceratophyllum demersum	0	1	1	1	0.75	1
North Lk.	7	C	5.5	Mud	NUVA	Nuphar variegatum	0	1	0	0	0.25	2
North Lk.	7	C	5.5	Mud	PORO	Potamogeton robbinsii	0	1	0	1	0.50	1
North Lk.	7	C	5.5	Mud	ELCA7	Elodea canadensis	0	0	1	1	0.50	1
North Lk.	7	C	5.5	Mud	ZODU	Zosterella dubia	0	0	1	1	0.50	1
North Lk.	8	A	2.5	Mud	TOTAL	Total Density @ Station	2	4	3	3	3.00	
North Lk.	8	A	2.5	Mud	CH SP.	Chara spp.	1	0	1	0	0.50	4
North Lk.	8	A	2.5	Mud	NAFL	Najas flexilis	1	1	1	0	0.75	1
North Lk.	8	A	2.5	Mud	NUVA	Nuphar variegatum	1	0	0	1	0.50	2
North Lk.	8	A	2.5	Mud	NYTU	Nymphaea tuberosa	1	0	0	0	0.25	2
North Lk.	8	A	2.5	Mud	ELCA7	Elodea canadensis	1	1	0	1	0.75	1
North Lk.	8	A	2.5	Mud	ZODU	Zosterella dubia	1	1	0	1	0.75	1
North Lk.	8	A	2.5	Mud	POCO	Pontederia cordata	0	2	1	0	0.75	3
North Lk.	8	A	2.5	Mud	MYSI	Myriophyllum sibiricum	0	1	0	1	0.50	1
North Lk.	8	A	2.5	Mud	PONA4	Potamogeton natans	0	0	1	1	0.50	1
North Lk.	8	A	2.5	Mud	CEDE4	Ceratophyllum demersum	0	0	1	0	0.25	1
North Lk.	8	A	2.5	Mud	BRSC	Brasenia Schreberi	0	0	1	0	0.25	2
North Lk.	8	B	5.5	Detritus/Mud	TOTAL	Total Density @ Station	3	2	3	5	3.25	
North Lk.	8	B	5.5	Detritus/Mud	NYTU	Nymphaea tuberosa	1	0	0	1	0.50	2
North Lk.	8	B	5.5	Detritus/Mud	MYSI	Myriophyllum sibiricum	2	1	2	3	2.00	1
North Lk.	8	B	5.5	Detritus/Mud	PORO	Potamogeton robbinsii	1	0	1	1	0.75	1
North Lk.	8	B	5.5	Detritus/Mud	PO SP.	Potamogeton SP.	0	1	1	1	0.75	1
North Lk.	8	B	5.5	Detritus/Mud	NAFL	Najas flexilis	0	1	0	0	0.25	1
North Lk.	8	B	5.5	Detritus/Mud	CEDE4	Ceratophyllum demersum	0	0	0	1	0.25	1
North Lk.	8	C	9.4	Mud	TOTAL	Total Density @ Station	2	2	1	1	1.50	
North Lk.	8	C	9.4	Mud	MYSI	Myriophyllum sibiricum	2	0	0	0	0.50	1
North Lk.	8	C	9.4	Mud	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
North Lk.	8	C	9.4	Mud	POZO	Potamogeton zosteriformis	0	1	0	0	0.25	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
North Lk.	8	C	9.4	Mud	CH SP.	Chara spp.	0	1	1	1	0.75	4
North Lk.	8	C	9.4	Mud	CEDE4	Ceratophyllum demersum	0	1	0	0	0.25	1
North Lk.	9	A	1.5	Mud/Detritus	TOTAL	Total Density @ Station	3	4	4	5	4.00	
North Lk.	9	A	1.5	Mud/Detritus	PORO	Potamogeton robbinsii	2	2	1	2	1.75	1
North Lk.	9	A	1.5	Mud/Detritus	PO SP.	Potamogeton SP.	1	1	1	0	0.75	1
North Lk.	9	A	1.5	Mud/Detritus	CEDE4	Ceratophyllum demersum	1	1	1	0	0.75	1
North Lk.	9	A	1.5	Mud/Detritus	ELCA7	Elodea canadensis	0	1	2	2	1.25	1
North Lk.	9	A	1.5	Mud/Detritus	RA SP.	Ranunculus spp.	0	1	0	0	0.25	1
North Lk.	9	A	1.5	Mud/Detritus	NUVA	Nuphar variegatum	0	1	1	1	0.75	2
North Lk.	9	A	1.5	Mud/Detritus	ZODU	Zosterella dubia	0	0	1	0	0.25	1
North Lk.	9	A	1.5	Mud/Detritus	NAFL	Najas flexilis	0	0	1	0	0.25	1
North Lk.	9	A	1.5	Mud/Detritus	MYSI	Myriophyllum sibiricum	0	0	0	1	0.25	1
North Lk.	9	B	4.5	Mud/Detritus	TOTAL	Total Density @ Station	2	2	2	1	1.75	
North Lk.	9	B	4.5	Mud/Detritus	NYTU	Nymphaea tuberosa	1	1	1	1	1.00	2
North Lk.	9	B	4.5	Mud/Detritus	NAFL	Najas flexilis	1	0	0	0	0.25	1
North Lk.	9	B	4.5	Mud/Detritus	POZO	Potamogeton zosteriformis	1	0	1	1	0.75	1
North Lk.	9	B	4.5	Mud/Detritus	PO SP.	Potamogeton SP.	1	1	0	0	0.50	1
North Lk.	9	B	4.5	Mud/Detritus	MYSI	Myriophyllum sibiricum	0	0	2	1	0.75	1
North Lk.	9	C	9.0	Mud	TOTAL	Total Density @ Station	1	1	2	2	1.50	
North Lk.	9	C	9.0	Mud	MYSI	Myriophyllum sibiricum	1	0	2	2	1.25	1
North Lk.	9	C	9.0	Mud	CH SP.	Chara spp.	1	1	0	0	0.50	4
North Lk.	9	C	9.0	Mud	CEDE4	Ceratophyllum demersum	0	1	1	1	0.75	1
North Lk.	9	C	9.0	Mud	ELCA7	Elodea canadensis	0	0	1	0	0.25	1
North Lk.	9	C	9.0	Mud	ZODU	Zosterella dubia	0	0	1	0	0.25	1
North Lk.	9	C	9.0	Mud	POZO	Potamogeton zosteriformis	0	0	0	1	0.25	1
North Lk.	10	A	2.0	Mud	TOTAL	Total Density @ Station	4	4	4	4	4.00	
North Lk.	10	A	2.0	Mud	NYTU	Nymphaea tuberosa	2	1	1	1	1.25	2
North Lk.	10	A	2.0	Mud	CH SP.	Chara spp.	1	1	0	0	0.50	4
North Lk.	10	A	2.0	Mud	ELCA7	Elodea canadensis	1	1	1	1	1.00	1
North Lk.	10	A	2.0	Mud	ZODU	Zosterella dubia	1	0	0	0	0.25	1
North Lk.	10	A	2.0	Mud	POCO	Pontederia cordata	0	2	1	0	0.75	3
North Lk.	10	A	2.0	Mud	NUVA	Nuphar variegatum	0	1	1	1	0.75	2
North Lk.	10	A	2.0	Mud	POIL	Potamogeton Illinoisensis	0	1	0	0	0.25	1
North Lk.	10	A	2.0	Mud	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
North Lk.	10	A	2.0	Mud	MYSI	Myriophyllum sibiricum	0	1	1	1	0.75	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
North Lk.	10	A	2.0	Mud	SC SP.	Scirpus sp.	0	0	1	0	0.25	3
North Lk.	10	A	2.0	Mud	POZO	Potamogeton zosteriformis	0	0	1	1	0.50	1
North Lk.	10	A	2.0	Mud	CEDE4	Ceratophyllum demersum	0	0	0	1	0.25	1
North Lk.	10	B	3.5	Mud	TOTAL	Total Density @ Station	3	2	2	4	2.75	
North Lk.	10	B	3.5	Mud	POAM5	Potamogeton amplifolis	2	1	1	1	1.25	1
North Lk.	10	B	3.5	Mud	POZO	Potamogeton zosteriformis	1	0	0	2	0.75	1
North Lk.	10	B	3.5	Mud	ELCA7	Elodea canadensis	1	1	0	1	0.75	1
North Lk.	10	B	3.5	Mud	PORO	Potamogeton robbinsii	0	1	2	0	0.75	1
North Lk.	10	C	6.0	Mud	TOTAL	Total Density @ Station	2	4	3	3	3.00	
North Lk.	10	C	6.0	Mud	POAM5	Potamogeton amplifolis	1	2	1	0	1.00	1
North Lk.	10	C	6.0	Mud	CEDE4	Ceratophyllum demersum	2	3	3	0	2.00	1
North Lk.	10	C	6.0	Mud	POZO	Potamogeton zosteriformis	1	1	1	0	0.75	1
North Lk.	10	C	6.0	Mud	PO SP.	Potamogeton SP.	1	1	0	0	0.50	1
North Lk.	10	C	6.0	Mud	MYSI	Myriophyllum sibiricum	0	0	0	3	0.75	1
North Lk.	10	C	6.0	Mud	CH SP.	Chara spp.	0	0	0	1	0.25	4
North Lk.	10	C	6.0	Mud	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
North Lk.	10	C	6.0	Mud	ELCA7	Elodea canadensis	0	0	0	1	0.25	1
Fawn Lk.	11	A	2.0	Mud	TOTAL	Total Density @ Station	4	3	3	3	3.25	
Fawn Lk.	11	A	2.0	Mud	NYTU	Nymphaea tuberosa	2	0	0	1	0.75	2
Fawn Lk.	11	A	2.0	Mud	NAFL	Najas flexilis	2	2	1	1	1.50	1
Fawn Lk.	11	A	2.0	Mud	VAAM3	Vallisneria Americana	1	0	0	0	0.25	1
Fawn Lk.	11	A	2.0	Mud	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
Fawn Lk.	11	A	2.0	Mud	POCO	Pontederia cordata	1	0	0	0	0.25	3
Fawn Lk.	11	A	2.0	Mud	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Fawn Lk.	11	A	2.0	Mud	CEDE4	Ceratophyllum demersum	0	1	0	0	0.25	1
Fawn Lk.	11	A	2.0	Mud	NUVA	Nuphar variegatum	0	0	1	0	0.25	2
Fawn Lk.	11	A	2.0	Mud	BRSC	Brasenia Schreberi	0	0	1	1	0.50	2
Fawn Lk.	11	A	2.0	Mud	PONA4	Potamogeton natans	0	0	1	1	0.50	1
Fawn Lk.	11	A	2.0	Mud	CH SP.	Chara spp.	0	0	1	1	0.50	4
Fawn Lk.	11	A	2.0	Mud	POAM5	Potamogeton amplifolis	0	0	1	1	0.50	1
Fawn Lk.	11	B	3.5	Mud	TOTAL	Total Density @ Station	2	4	4	3	3.25	
Fawn Lk.	11	B	3.5	Mud	PORO	Potamogeton robbinsii	1	2	3	2	2.00	1
Fawn Lk.	11	B	3.5	Mud	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
Fawn Lk.	11	B	3.5	Mud	POAM5	Potamogeton amplifolis	1	1	0	0	0.50	1
Fawn Lk.	11	B	3.5	Mud	CEDE4	Ceratophyllum demersum	1	2	1	1	1.25	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Fawn Lk.	11	B	3.5	Mud	VAAM3	Vallisneria Americana	0	0	1		0.33	1
Fawn Lk.	11	B	3.5	Mud	NYTU	Nymphaea tuberosa	0	0	0	1	0.25	2
Fawn Lk.	11	C	9.5	Mud	TOTAL	Total Density @ Station	2	3	4	4	3.25	
Fawn Lk.	11	C	9.5	Mud	CEDE4	Ceratophyllum demersum	2	0	3	4	2.25	1
Fawn Lk.	11	C	9.5	Mud	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
Fawn Lk.	11	C	9.5	Mud	CH SP.	Chara spp.	0	3	0	0	0.75	4
Fawn Lk.	11	C	9.5	Mud	POZO	Potamogeton zosteriformis	0	1	1	0	0.50	1
Fawn Lk.	11	C	9.5	Mud	RA SP.	Ranunculus spp.	0	0	1	0	0.25	1
Fawn Lk.	11	C	9.5	Mud	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
Fawn Lk.	12	A	1.5	Muck	TOTAL	Total Density @ Station	3	2	2	3	2.50	
Fawn Lk.	12	A	1.5	Muck	NUVA	Nuphar variegatum	2	1	1	2	1.50	2
Fawn Lk.	12	A	1.5	Muck	MYSI	Myriophyllum sibiricum	1	0	0	1	0.50	1
Fawn Lk.	12	A	1.5	Muck	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
Fawn Lk.	12	A	1.5	Muck	CH SP.	Chara spp.	1	1	0	0	0.50	4
Fawn Lk.	12	A	1.5	Muck	NAFL	Najas flexilis	1	1	1	1	1.00	1
Fawn Lk.	12	A	1.5	Muck	POZO	Potamogeton zosteriformis	1	0	1	0	0.50	1
Fawn Lk.	12	A	1.5	Muck	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Fawn Lk.	12	A	1.5	Muck	CEDE4	Ceratophyllum demersum	0	1	1	0	0.50	1
Fawn Lk.	12	A	1.5	Muck	NYTU	Nymphaea tuberosa	0	0	1	1	0.50	2
Fawn Lk.	12	A	1.5	Muck	PORO	Potamogeton robbinsii	0	0	1	0	0.25	1
Fawn Lk.	12	B	4.0	Muck	TOTAL	Total Density @ Station	4	4	3	2	3.25	
Fawn Lk.	12	B	4.0	Muck	POZO	Potamogeton zosteriformis	1	1	1	1	1.00	1
Fawn Lk.	12	B	4.0	Muck	MYSI	Myriophyllum sibiricum	1	1	1	1	1.00	1
Fawn Lk.	12	B	4.0	Muck	CEDE4	Ceratophyllum demersum	1	0	1	1	0.75	1
Fawn Lk.	12	B	4.0	Muck	PORO	Potamogeton robbinsii	1	1	0	1	0.75	1
Fawn Lk.	12	B	4.0	Muck	NUVA	Nuphar variegatum	1	2	2	0	1.25	2
Fawn Lk.	12	B	4.0	Muck	POAM5	Potamogeton amplifolis	0	1	0	0	0.25	1
Fawn Lk.	12	B	4.0	Muck	RA SP.	Ranunculus spp.	0	1	1	0	0.50	1
Fawn Lk.	12	B	4.0	Muck	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
Fawn Lk.	12	B	4.0	Muck	NYTU	Nymphaea tuberosa	0	0	1	0	0.25	2
Fawn Lk.	12	B	4.0	Muck	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Fawn Lk.	12	C	7.0	Muck	TOTAL	Total Density @ Station	2	2	2	1	1.75	
Fawn Lk.	12	C	7.0	Muck	POZO	Potamogeton zosteriformis	1	1	1	0	0.75	1
Fawn Lk.	12	C	7.0	Muck	CEDE4	Ceratophyllum demersum	1	1	1	1	1.00	1
Fawn Lk.	12	C	7.0	Muck	MYSI	Myriophyllum sibiricum	1	1	0	0	0.50	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Fawn Lk.	12	C	7.0	Muck	PORO	Potamogeton robbinsii	1	1	1	1	1.00	1
Fawn Lk.	12	C	7.0	Muck	ELCA7	Elodea canadensis	0	0	1	0	0.25	1
Fawn Lk.	12	C	7.0	Muck	NAFL	Najas flexilis	0	0	0	1	0.25	1
Fawn Lk.	13	A	2.5	Mud	TOTAL	Total Density @ Station	3	4	5	4	4.00	
Fawn Lk.	13	A	2.5	Mud	POZO	Potamogeton zosteriformis	1	1	1	0	0.75	1
Fawn Lk.	13	A	2.5	Mud	ELCA7	Elodea canadensis	1	1	0	0	0.50	1
Fawn Lk.	13	A	2.5	Mud	CH SP.	Chara spp.	1	1	0	1	0.75	4
Fawn Lk.	13	A	2.5	Mud	CEDE4	Ceratophyllum demersum	1	1	0	1	0.75	1
Fawn Lk.	13	A	2.5	Mud	NAFL	Najas flexilis	1	1	2	0	1.00	1
Fawn Lk.	13	A	2.5	Mud	NUVA	Nuphar variegatum	0	1	1	2	1.00	2
Fawn Lk.	13	A	2.5	Mud	ZODU	Zosterella dubia	0	1	0	1	0.50	1
Fawn Lk.	13	A	2.5	Mud	NYTU	Nymphaea tuberosa	1	1	1	1	1.00	2
Fawn Lk.	13	A	2.5	Mud	PORI2	Potamogeton richardsonii	0	0	1	1	0.50	1
Fawn Lk.	13	A	2.5	Mud	BRSC	Brasenia Schreberi	0	0	0	1	0.25	2
Fawn Lk.	13	B	4.5	Muck	TOTAL	Total Density @ Station	3	3	3	4	3.25	
Fawn Lk.	13	B	4.5	Muck	POZO	Potamogeton zosteriformis	2	1	0	0	0.75	1
Fawn Lk.	13	B	4.5	Muck	MYSI	Myriophyllum sibiricum	1	0	0	0	0.25	1
Fawn Lk.	13	B	4.5	Muck	PORO	Potamogeton robbinsii	1	0	1	3	1.25	1
Fawn Lk.	13	B	4.5	Muck	NYTU	Nymphaea tuberosa	0	1	1	1	0.75	2
Fawn Lk.	13	B	4.5	Muck	MYSI	Myriophyllum sibiricum	0	1	1	0	0.50	1
Fawn Lk.	13	B	4.5	Muck	NAFL	Najas flexilis	0	1	1	0	0.50	1
Fawn Lk.	13	B	4.5	Muck	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
Fawn Lk.	13	B	4.5	Muck	RA SP.	Ranunculus spp.	0	0	1	1	0.50	1
Fawn Lk.	13	B	4.5	Muck	POAM5	Potamogeton amplifolis	0	0	0	1	0.25	1
Fawn Lk.	13	B	4.5	Muck	CEDE4	Ceratophyllum demersum	0	0	0	1	0.25	1
Fawn Lk.	13	C	6.0	Mud	TOTAL	Total Density @ Station	2	4	4	3	3.25	
Fawn Lk.	13	C	6.0	Mud	MYSI	Myriophyllum sibiricum	1	1	0	1	0.75	1
Fawn Lk.	13	C	6.0	Mud	CH SP.	Chara spp.	1	0	0	2	0.75	4
Fawn Lk.	13	C	6.0	Mud	POZO	Potamogeton zosteriformis	1	1	1	1	1.00	1
Fawn Lk.	13	C	6.0	Mud	PORO	Potamogeton robbinsii	0	1	1	0	0.50	1
Fawn Lk.	13	C	6.0	Mud	CEDE4	Ceratophyllum demersum	0	1	1	1	0.75	1
Fawn Lk.	13	C	6.0	Mud	RA SP.	Ranunculus spp.	0	0	1	1	0.50	1
Fawn Lk.	13	C	6.0	Mud	ELCA7	Elodea canadensis	0	0	1	0	0.25	1
Fawn Lk.	14	A	2.0	Muck	TOTAL	Total Density @ Station	4	4	3	4	3.75	
Fawn Lk.	14	A	2.0	Muck	NYTU	Nymphaea tuberosa	1	1	0	1	0.75	2

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Fawn Lk.	14	A	2.0	Muck	NUVA	Nuphar variegatum	2	2	1	2	1.75	2
Fawn Lk.	14	A	2.0	Muck	CH SP.	Chara spp.	1	0	2	1	1.00	4
Fawn Lk.	14	A	2.0	Muck	PONA4	Potamogeton natans	1	0	1	0	0.50	1
Fawn Lk.	14	A	2.0	Muck	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
Fawn Lk.	14	A	2.0	Muck	CEDE4	Ceratophyllum demersum	0	1	0	0	0.25	1
Fawn Lk.	14	A	2.0	Muck	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Fawn Lk.	14	A	2.0	Muck	VAAM3	Vallisneria Americana	0	0	1	0	0.25	1
Fawn Lk.	14	A	2.0	Muck	NAFL	Najas flexilis	0	0	1	1	0.50	1
Fawn Lk.	14	B	4.0	Muck	TOTAL	Total Density @ Station	2	2	2	2	2.00	
Fawn Lk.	14	B	4.0	Muck	NYTU	Nymphaea tuberosa	1	1	1	1	1.00	2
Fawn Lk.	14	B	4.0	Muck	NUVA	Nuphar variegatum	1	0	0	0	0.25	2
Fawn Lk.	14	B	4.0	Muck	PO SP.	Potamogeton SP.	1	1	0	0	0.50	1
Fawn Lk.	14	B	4.0	Muck	CEDE4	Ceratophyllum demersum	1	0	1	1	0.75	1
Fawn Lk.	14	B	4.0	Muck	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
Fawn Lk.	14	B	4.0	Muck	PORO	Potamogeton robbinsii	0	1	1	0	0.50	1
Fawn Lk.	14	B	4.0	Muck	POZO	Potamogeton zosteriformis	0	1	0	0	0.25	1
Fawn Lk.	14	B	4.0	Muck	NAFL	Najas flexilis	0	0	0	1	0.25	1
Fawn Lk.	14	B	4.0	Muck	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Fawn Lk.	14	C	8.0	Muck	TOTAL	Total Density @ Station	3	2	3	1	2.25	
Fawn Lk.	14	C	8.0	Muck	CEDE4	Ceratophyllum demersum	1	1	1	1	1.00	1
Fawn Lk.	14	C	8.0	Muck	PORO	Potamogeton robbinsii	1	1	1	0	0.75	1
Fawn Lk.	14	C	8.0	Muck	MYSI	Myriophyllum sibiricum	1	0	0	0	0.25	1
Fawn Lk.	14	C	8.0	Muck	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Fawn Lk.	14	C	8.0	Muck	POZO	Potamogeton zosteriformis	0	1	1	1	0.75	1
Big Spider	15	A	2.0	Rock/Sand	TOTAL	Total Density @ Station	1	0	0	0	0.25	
Big Spider	15	A	2.0	Rock/Sand	CEDE4	Ceratophyllum demersum	1	0	0	0	0.25	1
Big Spider	15	A	2.0	Rock/Sand	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Big Spider	15	B	5.0	Sand/Rock	TOTAL	Total Density @ Station	1	1	0	1	0.75	
Big Spider	15	B	5.0	Sand/Rock	CH SP.	Chara spp.	1	1	0	1	0.75	4
Big Spider	15	B	5.0	Sand/Rock	MYSI	Myriophyllum sibiricum	0	0	0	1	0.25	1
Big Spider	15	B	5.0	Sand/Rock	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Big Spider	15	C	8.0	Sand	TOTAL	Total Density @ Station	2	1	1	2	1.50	
Big Spider	15	C	8.0	Sand	NAFL	Najas flexilis	1	0	0	0	0.25	1
Big Spider	15	C	8.0	Sand	VAAM3	Vallisneria Americana	1	0	0	0	0.25	1
Big Spider	15	C	8.0	Sand	POAM5	Potamogeton amplifolis	1	0	0	1	0.50	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	15	C	8.0	Sand	CH SP.	Chara spp.	0	1	1	0	0.50	4
Big Spider	15	C	8.0	Sand	PO SP.	Potamogeton SP.	0	0	1	0	0.25	1
Big Spider	15	C	8.0	Sand	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
Big Spider	16	A	1.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	16	A	1.0	Sand	PO SP.	Potamogeton SP.	1	1	0	0	0.50	1
Big Spider	16	A	1.0	Sand	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
Big Spider	16	A	1.0	Sand	CEDE4	Ceratophyllum demersum	0	0	1	0	0.25	1
Big Spider	16	A	1.0	Sand	NAFL	Najas flexilis	0	0	0	1	0.25	1
Big Spider	16	B	4.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	16	B	4.0	Sand	ELCA7	Elodea canadensis	1	0	0	1	0.50	1
Big Spider	16	B	4.0	Sand	RA SP.	Ranunculus spp.	1	1	0	0	0.50	1
Big Spider	16	B	4.0	Sand	PORO	Potamogeton robbinsii	1	1	0	1	0.75	1
Big Spider	16	B	4.0	Sand	MYSI	Myriophyllum sibiricum	1	1	0	0	0.50	1
Big Spider	16	B	4.0	Sand	VAAM3	Vallisneria Americana	1	0	0	0	0.25	1
Big Spider	16	B	4.0	Sand	CH SP.	Chara spp.	1	1	0	1	0.75	4
Big Spider	16	B	4.0	Sand	PORI2	Potamogeton richardsonii	0	1	1	1	0.75	1
Big Spider	16	B	4.0	Sand	NYTU	Nymphaea tuberosa	0	1	0	0	0.25	2
Big Spider	16	B	4.0	Sand	PO SP.	Potamogeton SP.	0	0	1	1	0.50	1
Big Spider	16	B	4.0	Sand	CEDE4	Ceratophyllum demersum	0	0	1	0	0.25	1
Big Spider	16	B	4.0	Sand	NAFL	Najas flexilis	0	0	1	0	0.25	1
Big Spider	16	C	9.0	Sand	TOTAL	Total Density @ Station	3	4	3	3	3.25	
Big Spider	16	C	9.0	Sand	PORO	Potamogeton robbinsii	2	4	2	2	2.50	1
Big Spider	16	C	9.0	Sand	CEDE4	Ceratophyllum demersum	1	0	1	0	0.50	1
Big Spider	16	C	9.0	Sand	MYSI	Myriophyllum sibiricum	0	0	1	1	0.50	1
Big Spider	16	C	9.0	Sand	POZO	Potamogeton zosteriformis	0	0	1	0	0.25	1
Big Spider	17	A	2.5	Muck	TOTAL	Total Density @ Station	3	2	5	2	3.00	
Big Spider	17	A	2.5	Muck	NYTU	Nymphaea tuberosa	1	1	1	1	1.00	2
Big Spider	17	A	2.5	Muck	NUVA	Nuphar variegatum	1	0	0	0	0.25	2
Big Spider	17	A	2.5	Muck	MYSI	Myriophyllum sibiricum	1	0	1	0	0.50	1
Big Spider	17	A	2.5	Muck	CH SP.	Chara spp.	1	0	0	0	0.25	4
Big Spider	17	A	2.5	Muck	ZODU	Zosterella dubia	1	1	1	0	0.75	1
Big Spider	17	A	2.5	Muck	VAAM3	Vallisneria Americana	1	0	0	0	0.25	1
Big Spider	17	A	2.5	Muck	NAFL	Najas flexilis	0	1	0	0	0.25	1
Big Spider	17	A	2.5	Muck	POZO	Potamogeton zosteriformis	0	1	0	0	0.25	1
Big Spider	17	A	2.5	Muck	ELCA7	Elodea canadensis	0	1	1	0	0.50	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	17	A	2.5	Muck	POCO	Pontederia cordata	0	1	1	0	0.50	3
Big Spider	17	A	2.5	Muck	PONA4	Potamogeton natans	0	0	1	0	0.25	1
Big Spider	17	A	2.5	Muck	PORO	Potamogeton robbinsii	0	0	2	1	0.75	1
Big Spider	17	A	2.5	Muck	POAM5	Potamogeton amplifolis	0	0	1	0	0.25	1
Big Spider	17	A	2.5	Muck	RA SP.	Ranunculus spp.	0	0	1	0	0.25	1
Big Spider	17	A	2.5	Muck	PORI2	Potamogeton richardsonii	0	0	0	1	0.25	1
Big Spider	17	B	4.0	Muck	TOTAL	Total Density @ Station	2	3	2	2	2.25	
Big Spider	17	B	4.0	Muck	ELCA7	Eloдея canadensis	1	1	1	1	1.00	1
Big Spider	17	B	4.0	Muck	NAFL	Najas flexilis	1	0	0	1	0.50	1
Big Spider	17	B	4.0	Muck	PONA4	Potamogeton natans	1	0	0	1	0.50	1
Big Spider	17	B	4.0	Muck	NUVA	Nuphar variegatum	0	1	1	1	0.75	2
Big Spider	17	B	4.0	Muck	NYTU	Nymphaea tuberosa	0	1	0	0	0.25	2
Big Spider	17	B	4.0	Muck	PORO	Potamogeton robbinsii	0	1	1	1	0.75	1
Big Spider	17	B	4.0	Muck	MYSI	Myriophyllum sibiricum	0	1	1	0	0.50	1
Big Spider	17	B	4.0	Muck	POAM5	Potamogeton amplifolis	0	1	0	0	0.25	1
Big Spider	17	B	4.0	Muck	NYTU	Nymphaea tuberosa	0	0	0	1	0.25	2
Big Spider	17	B	4.0	Muck	RA SP.	Ranunculus spp.	0	0	0	1	0.25	1
Big Spider	17	C	6.0	Muck	TOTAL	Total Density @ Station	2	2	3	4	2.75	
Big Spider	17	C	6.0	Muck	CH SP.	Chara spp.	2	0	0	0	0.50	4
Big Spider	17	C	6.0	Muck	VAAM3	Vallisneria Americana	1	1	0	0	0.50	1
Big Spider	17	C	6.0	Muck	NAFL	Najas flexilis	0	1	0	0	0.25	1
Big Spider	17	C	6.0	Muck	CEDE4	Ceratophyllum demersum	0	1	0	0	0.25	1
Big Spider	17	C	6.0	Muck	POZO	Potamogeton zosteriformis	0	1	1	1	0.75	1
Big Spider	17	C	6.0	Muck	MYSI	Myriophyllum sibiricum	0	1	1	0	0.50	1
Big Spider	17	C	6.0	Muck	POAM5	Potamogeton amplifolis	0	0	1	0	0.25	1
Big Spider	17	C	6.0	Muck	RA SP.	Ranunculus spp.	0	0	1	0	0.25	1
Big Spider	17	C	6.0	Muck	PORO	Potamogeton robbinsii	0	0	1	3	1.00	1
Big Spider	17	C	6.0	Muck	PORI2	Potamogeton richardsonii	0	0	1	1	0.50	1
Big Spider	17	C	6.0	Muck	PO SP.	Potamogeton SP.	0	1	1	0	0.50	1
Big Spider	18	A	2.5	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	18	A	2.5	Sand	CH SP.	Chara spp.	1	1	1	0	0.75	4
Big Spider	18	A	2.5	Sand	SAGR	Sagittaria graminea	0	0	1	0	0.25	3
Big Spider	18	A	2.5	Sand	EL SP.	Eleocharis spp.	0	0	0	1	0.25	3
Big Spider	18	B	4.0	Sand	TOTAL	Total Density @ Station	0	1	1	1	0.75	
Big Spider	18	B	4.0	Sand	NAFL	Najas flexilis	0	1	1	0	0.50	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	18	B	4.0	Sand	CH SP.	Chara spp.	0	0	0	1	0.25	4
Big Spider	18	B	4.0	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Big Spider	18	C	8.5	Mud	TOTAL	Total Density @ Station	4	3	2	2	2.75	
Big Spider	18	C	8.5	Mud	CH SP.	Chara spp.	4	3	2	0	2.25	4
Big Spider	18	C	8.5	Mud	ELCA7	Elodea canadensis	0	1	0	1	0.50	1
Big Spider	18	C	8.5	Mud	PORI2	Potamogeton richardsonii	0	0	1	0	0.25	1
Big Spider	18	C	8.5	Mud	POZO	Potamogeton zosteriformis	0	0	1	0	0.25	1
Big Spider	18	C	8.5	Mud	CEDE4	Ceratophyllum demersum	0	0	0	2	0.50	1
Big Spider	18	C	8.5	Mud	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
Big Spider	18	C	8.5	Mud	MYSI	Myriophyllum sibiricum	0	0	0	1	0.25	1
Big Spider	19	A	2.0	Sand/Rock	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	19	A	2.0	Sand/Rock	SC SP.	Scirpus sp.	1	1	0	1	0.75	3
Big Spider	19	A	2.0	Sand/Rock	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
Big Spider	19	A	2.0	Sand/Rock	MYSI	Myriophyllum sibiricum	0	1	0	0	0.25	1
Big Spider	19	A	2.0	Sand/Rock	CH SP.	Chara spp.	0	1	0	1	0.50	4
Big Spider	19	A	2.0	Sand/Rock	SAGR	Sagittaria graminea	0	1	1	1	0.75	3
Big Spider	19	B	3.5	Sand/Rock	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	19	B	3.5	Sand/Rock	CH SP.	Chara spp.	1	1	1	1	1.00	4
Big Spider	19	B	3.5	Sand/Rock	SAGR	Sagittaria graminea	0	0	1	0	0.25	3
Big Spider	19	C	7.0	Mud	TOTAL	Total Density @ Station	1	3	3	3	2.50	
Big Spider	19	C	7.0	Mud	POAM5	Potamogeton amplifolis	1	0	0	1	0.50	1
Big Spider	19	C	7.0	Mud	NAFL	Najas flexilis	1	0	0	0	0.25	1
Big Spider	19	C	7.0	Mud	PORO	Potamogeton robbinsii	1	1	1	1	1.00	1
Big Spider	19	C	7.0	Mud	POZO	Potamogeton zosteriformis	1	0	0	0	0.25	1
Big Spider	19	C	7.0	Mud	MYSI	Myriophyllum sibiricum	0	2	2	2	1.50	1
Big Spider	19	C	7.0	Mud	ELCA7	Elodea canadensis	0	1	0	1	0.50	1
Big Spider	19	C	7.0	Mud	PORI2	Potamogeton richardsonii	0	1	0	0	0.25	1
Big Spider	19	C	7.0	Mud	VAAM3	Vallisneria Americana	0	1	0	0	0.25	1
Big Spider	19	C	7.0	Mud	CEDE4	Ceratophyllum demersum	0	0	1	1	0.50	1
Big Spider	19	C	7.0	Mud	CH SP.	Chara spp.	0	0	1	0	0.25	4
Big Spider	20	A	2.0	Muck	TOTAL	Total Density @ Station	3	2	1	2	2.00	
Big Spider	20	A	2.0	Muck	NYTU	Nymphaea tuberosa	1	1	0	1	0.75	2
Big Spider	20	A	2.0	Muck	SAGR	Sagittaria graminea	1	0	0	0	0.25	3
Big Spider	20	A	2.0	Muck	NAFL	Najas flexilis	1	0	0	0	0.25	1
Big Spider	20	A	2.0	Muck	CH SP.	Chara spp.	1	0	0	1	0.50	4

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	20	A	2.0	Muck	BRSC	Brasenia Schreberi	0	1	0	0	0.25	2
Big Spider	20	A	2.0	Muck	CEDE4	Ceratophyllum demersum	0	1	1	0	0.50	1
Big Spider	20	A	2.0	Muck	ELCA7	Elodea canadensis	0	1	1	1	0.75	1
Big Spider	20	A	2.0	Muck	ZODU	Zosterella dubia	0	0	1	0	0.25	1
Big Spider	20	A	2.0	Muck	POCO	Pontederia cordata	0	0	0	1	0.25	3
Big Spider	20	A	2.0	Muck	NYTU	Nymphaea tuberosa	0	0	0	1	0.25	2
Big Spider	20	A	2.0	Muck	POZO	Potamogeton zosteriformis	0	0	0	1	0.25	1
Big Spider	20	B	4.0	Muck	TOTAL	Total Density @ Station	2	2	1	2	1.75	
Big Spider	20	B	4.0	Muck	PONA4	Potamogeton natans	1	1	1	1	1.00	1
Big Spider	20	B	4.0	Muck	VAAM3	Vallisneria Americana	1	1	0	0	0.50	1
Big Spider	20	B	4.0	Muck	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Big Spider	20	B	4.0	Muck	NAFL	Najas flexilis	1	1	1	0	0.75	1
Big Spider	20	B	4.0	Muck	SAGR	Sagittaria graminea	0	1	0	0	0.25	3
Big Spider	20	B	4.0	Muck	MYSI	Myriophyllum sibiricum	0	1	0	0	0.25	1
Big Spider	20	B	4.0	Muck	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Big Spider	20	B	4.0	Muck	CEDE4	Ceratophyllum demersum	0	0	1	0	0.25	1
Big Spider	20	B	4.0	Muck	RA SP.	Ranunculus spp.	0	0	1	0	0.25	1
Big Spider	20	B	4.0	Muck	ELCA7	Elodea canadensis	0	0	0	1	0.25	1
Big Spider	20	C	6.0	Mud	TOTAL	Total Density @ Station	4	3	4	5	4.00	
Big Spider	20	C	6.0	Mud	PORO	Potamogeton robbinsii	3	1	2	3	2.25	1
Big Spider	20	C	6.0	Mud	ELCA7	Elodea canadensis	1	1	0	0	0.50	1
Big Spider	20	C	6.0	Mud	CEDE4	Ceratophyllum demersum	1	0	0	1	0.50	1
Big Spider	20	C	6.0	Mud	POZO	Potamogeton zosteriformis	0	1	1	0	0.50	1
Big Spider	20	C	6.0	Mud	CH SP.	Chara spp.	0	1	0	1	0.50	4
Big Spider	20	C	6.0	Mud	POAM5	Potamogeton amplifolis	0	1	1	1	0.75	1
Big Spider	20	C	6.0	Mud	MYSI	Myriophyllum sibiricum	0	0	1	0	0.25	1
Big Spider	20	C	6.0	Mud	VAAM3	Vallisneria Americana	0	0	1	1	0.50	1
Big Spider	20	C	6.0	Mud	NAFL	Najas flexilis	0	0	0	1	0.25	1
Big Spider	21	A	3.0	Muck	TOTAL	Total Density @ Station	2	2	1	1	1.50	
Big Spider	21	A	3.0	Muck	NUVA	Nuphar variegatum	1	2	0	0	0.75	2
Big Spider	21	A	3.0	Muck	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
Big Spider	21	A	3.0	Muck	PONA4	Potamogeton natans	1	0	0	0	0.25	1
Big Spider	21	A	3.0	Muck	RA SP.	Ranunculus spp.	1	1	1	0	0.75	1
Big Spider	21	A	3.0	Muck	VAAM3	Vallisneria Americana	1	0	1	1	0.75	1
Big Spider	21	A	3.0	Muck	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	21	A	3.0	Muck	MYSI	Myriophyllum sibiricum	0	1	0	1	0.50	1
Big Spider	21	B	5.0	Muck	TOTAL	Total Density @ Station	1	1	0	1	0.75	
Big Spider	21	B	5.0	Muck	RA SP.	Ranunculus spp.	1	0	0	0	0.25	1
Big Spider	21	B	5.0	Muck	NAFL	Najas flexilis	1	0	0	1	0.50	1
Big Spider	21	B	5.0	Muck	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Big Spider	21	B	5.0	Muck	POAM5	Potamogeton amplifolis	0	1	0	1	0.50	1
Big Spider	21	B	5.0	Muck	CEDE4	Ceratophyllum demersum	0	1	0	1	0.50	1
Big Spider	21	B	5.0	Muck	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Big Spider	21	C	6.0	Rock	TOTAL	Total Density @ Station	1	1	2	1	1.25	
Big Spider	21	C	6.0	Rock	SC SP.	Scirpus sp.	1	0	0	0	0.25	3
Big Spider	21	C	6.0	Rock	NAFL	Najas flexilis	0	1	1	1	0.75	1
Big Spider	21	C	6.0	Rock	CH SP.	Chara spp.	0	1	0	1	0.50	4
Big Spider	21	C	6.0	Rock	POIL	Potamogeton Illinoensis	0	1	0	0	0.25	1
Big Spider	21	C	6.0	Rock	POAM5	Potamogeton amplifolis	0	0	1	0	0.25	1
Big Spider	21	C	6.0	Rock	POZO	Potamogeton zosteriformis	0	0	1	0	0.25	1
Big Spider	21	C	6.0	Rock	ELCA7	Elodea canadensis	0	0	0	1	0.25	1
Big Spider	22	A	2.0	Sand	TOTAL	Total Density @ Station	2	1	1	2	1.50	
Big Spider	22	A	2.0	Sand	BRSC	Brasenia Schreberi	1	1	0	1	0.75	2
Big Spider	22	A	2.0	Sand	NYTU	Nymphaea tuberosa	1	0	0	1	0.50	2
Big Spider	22	A	2.0	Sand	VAAM3	Vallisneria Americana	1	1	0	1	0.75	1
Big Spider	22	A	2.0	Sand	RA SP.	Ranunculus spp.	0	1	0	0	0.25	1
Big Spider	22	A	2.0	Sand	CH SP.	Chara spp.	0	1	0	1	0.50	4
Big Spider	22	A	2.0	Sand	ELCA7	Elodea canadensis	0	1	0	1	0.50	1
Big Spider	22	A	2.0	Sand	NAFL	Najas flexilis	0	0	1	0	0.25	1
Big Spider	22	A	2.0	Sand	MYSI	Myriophyllum sibiricum	0	0	1	0	0.25	1
Big Spider	22	B	4.5	Muck	TOTAL	Total Density @ Station	1	2	1	1	1.25	
Big Spider	22	B	4.5	Muck	BRSC	Brasenia Schreberi	1	1	0	0	0.50	2
Big Spider	22	B	4.5	Muck	NYTU	Nymphaea tuberosa	0	1	0	0	0.25	2
Big Spider	22	B	4.5	Muck	POAM5	Potamogeton amplifolis	0	1	0	1	0.50	1
Big Spider	22	B	4.5	Muck	CH SP.	Chara spp.	0	1	0	1	0.50	4
Big Spider	22	B	4.5	Muck	SAGR	Sagittaria graminea	0	0	1	0	0.25	3
Big Spider	22	B	4.5	Muck	PORO	Potamogeton robbinsii	0	0	1	0	0.25	1
Big Spider	22	B	4.5	Muck	ELCA7	Elodea canadensis	0	0	1	0	0.25	1
Big Spider	22	B	4.5	Muck	NAFL	Najas flexilis	0	0	0	1	0.25	1
Big Spider	22	B	4.5	Muck	CEDE4	Ceratophyllum demersum	0	0	0	1	0.25	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	22	C	9.5	Mud	TOTAL	Total Density @ Station	3	4	2	3	3.00	
Big Spider	22	C	9.5	Mud	PO SP.	Potamogeton SP.	2	3	1	1	1.75	1
Big Spider	22	C	9.5	Mud	ELCA7	Elodea canadensis	1	1	1	1	1.00	1
Big Spider	22	C	9.5	Mud	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Big Spider	22	C	9.5	Mud	MYSI	Myriophyllum sibiricum	1	1	0	1	0.75	1
Big Spider	22	C	9.5	Mud	POZO	Potamogeton zosteriformis	0	1	1	0	0.50	1
Big Spider	22	C	9.5	Mud	CEDE4	Ceratophyllum demersum	0	0	1	1	0.50	1
Big Spider	22	C	9.5	Mud	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Big Spider	23	A	3.5	Sand	TOTAL	Total Density @ Station	2	2	1	1	1.50	
Big Spider	23	A	3.5	Sand	CH SP.	Chara spp.	1	1	0	0	0.50	4
Big Spider	23	A	3.5	Sand	VAAM3	Vallisneria Americana	1	1	1	0	0.75	1
Big Spider	23	A	3.5	Sand	ELCA7	Elodea canadensis	1	1	0	1	0.75	1
Big Spider	23	A	3.5	Sand	NAFL	Najas flexilis	0	1	1	1	0.75	1
Big Spider	23	A	3.5	Sand	NUVA	Nuphar variegatum	0	0	0	1	0.25	2
Big Spider	23	A	3.5	Sand	POAM5	Potamogeton amplifolis	0	0	0	1	0.25	1
Big Spider	23	B	8.0	Sand	TOTAL	Total Density @ Station	2	1	2	2	1.75	
Big Spider	23	B	8.0	Sand	PORO	Potamogeton robbinsii	2	1	0	1	1.00	1
Big Spider	23	B	8.0	Sand	VAAM3	Vallisneria Americana	1	0	1	1	0.75	1
Big Spider	23	B	8.0	Sand	ELCA7	Elodea canadensis	1	0	1	1	0.75	1
Big Spider	23	B	8.0	Sand	MYSI	Myriophyllum sibiricum	1	1	0	0	0.50	1
Big Spider	23	B	8.0	Sand	NAFL	Najas flexilis	1	1	1	0	0.75	1
Big Spider	23	B	8.0	Sand	CEDE4	Ceratophyllum demersum	0	0	1	0	0.25	1
Big Spider	23	B	8.0	Sand	CH SP.	Chara spp.	0	0	0	1	0.25	4
Big Spider	23	C	9.0	Mud	TOTAL	Total Density @ Station	3	2	3	3	2.75	
Big Spider	23	C	9.0	Mud	PORO	Potamogeton robbinsii	2	1	2	2	1.75	1
Big Spider	23	C	9.0	Mud	POZO	Potamogeton zosteriformis	1	0	0	0	0.25	1
Big Spider	23	C	9.0	Mud	CEDE4	Ceratophyllum demersum	0	1	0	1	0.50	1
Big Spider	23	C	9.0	Mud	PO SP.	Potamogeton SP.	0	1	1	1	0.75	1
Big Spider	23	C	9.0	Mud	MYSI	Myriophyllum sibiricum	0	1	1	1	0.75	1
Big Spider	23	C	9.0	Mud	CH SP.	Chara spp.	0	0	1	0	0.25	1
Big Spider	23	C	9.0	Mud	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Big Spider	24	A	3.0	Rock	TOTAL	Total Density @ Station	1	1	1	0	0.75	
Big Spider	24	A	3.0	Rock	PO SP.	Potamogeton SP.	1	0	1	0	0.50	1
Big Spider	24	A	3.0	Rock	SC SP.	Scirpus sp.	0	1	1	0	0.50	3
Big Spider	24	B	3.5	Rock	TOTAL	Total Density @ Station	1	0	1	1	0.75	

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	24	B	3.5	Rock	PO SP.	Potamogeton SP.	1	0	1	1	0.75	1
Big Spider	24	B	3.5	Rock	CH SP.	Chara spp.	0	0	1	0	0.25	4
Big Spider	24	C	9.0	Sand	TOTAL	Total Density @ Station	2	2	2	2	2.00	
Big Spider	24	C	9.0	Sand	PORI2	Potamogeton richardsonii	1	0	0	1	0.50	1
Big Spider	24	C	9.0	Sand	CH SP.	Chara spp.	1	1	1	0	0.75	4
Big Spider	24	C	9.0	Sand	CEDE4	Ceratophyllum demersum	1	1	0	1	0.75	1
Big Spider	24	C	9.0	Sand	POAM5	Potamogeton amplifolis	0	1	0	1	0.50	1
Big Spider	24	C	9.0	Sand	PORO	Potamogeton robbinsii	0	1	1	1	0.75	1
Big Spider	24	C	9.0	Sand	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Big Spider	25	A	2.5	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	25	A	2.5	Sand	NYTU	Nymphaea tuberosa	1	0	0	0	0.25	2
Big Spider	25	A	2.5	Sand	VAAM3	Vallisneria Americana	1	1	1	1	1.00	1
Big Spider	25	A	2.5	Sand	ZODU	Zosterella dubia	0	1	0	0	0.25	1
Big Spider	25	B	3.5	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	25	B	3.5	Sand	VAAM3	Vallisneria Americana	1	1	1		1.00	1
Big Spider	25	B	3.5	Sand	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
Big Spider	25	B	3.5	Sand	CH SP.	Chara spp.	0	1	0	0	0.25	4
Big Spider	25	B	3.5	Sand	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Big Spider	25	B	3.5	Sand	POAM5	Potamogeton amplifolis	0	0	0	1	0.25	1
Big Spider	25	C	7.0	Mud	TOTAL	Total Density @ Station	2	1	1	2	1.50	
Big Spider	25	C	7.0	Mud	CEDE4	Ceratophyllum demersum	1	0	0	0	0.25	1
Big Spider	25	C	7.0	Mud	NAFL	Najas flexilis	1	0	1	1	0.75	1
Big Spider	25	C	7.0	Mud	PORO	Potamogeton robbinsii	1	0	0	1	0.50	1
Big Spider	25	C	7.0	Mud	MYSI	Myriophyllum sibiricum	1	0	0	0	0.25	1
Big Spider	25	C	7.0	Mud	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Big Spider	25	C	7.0	Mud	SAGR	Sagittaria graminea	0	0	1	0	0.25	3
Big Spider	25	C	7.0	Mud	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Big Spider	26	A	2.5	Sand/Rock	TOTAL	Total Density @ Station	1	1	0	0	0.50	
Big Spider	26	A	2.5	Sand/Rock	PO SP.	Potamogeton SP.	1	1	0	0	0.50	1
Big Spider	26	A	2.5	Sand/Rock	CH SP.	Chara spp.	0	1	0	0	0.25	4
Big Spider	26	A	2.5	Sand/Rock	SC SP.	Scirpus sp.	0	1	0	0	0.25	3
Big Spider	26	B	3.2	Sand/Rock	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	26	B	3.2	Sand/Rock	CH SP.	Chara spp.	1	1	1	1	1.00	4
Big Spider	26	B	3.2	Sand/Rock	PO SP.	Potamogeton SP.	1	0	1	0	0.50	1
Big Spider	26	B	3.2	Sand/Rock	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	26	B	3.2	Sand/Rock	ELCA7	Elodea canadensis	0	0	0	1	0.25	1
Big Spider	26	C	7.0	Sand	TOTAL	Total Density @ Station	2	2	2	2	2.00	
Big Spider	26	C	7.0	Sand	MYSI	Myriophyllum sibiricum	1	1	0	1	0.75	1
Big Spider	26	C	7.0	Sand	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Big Spider	26	C	7.0	Sand	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Big Spider	26	C	7.0	Sand	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
Big Spider	26	C	7.0	Sand	CH SP.	Chara spp.	1	1	1	1	1.00	4
Big Spider	26	C	7.0	Sand	CEDE4	Ceratophyllum demersum	0	1	1	1	0.75	1
Big Spider	26	C	7.0	Sand	POAM5	Potamogeton amplifolis	0	1	1	1	0.75	1
Big Spider	26	C	7.0	Sand	NAFL	Najas flexilis	0	0	1	0	0.25	1
Big Spider	27	A	2.0	Sand	TOTAL	Total Density @ Station	1	1	0	0	0.50	
Big Spider	27	A	2.0	Sand	EL SP.	Eleocharis spp.	1	1	0	0	0.50	3
Big Spider	27	A	2.0	Sand	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Big Spider	27	B	3.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	27	B	3.0	Sand	NAFL	Najas flexilis	1	1	1	1	1.00	1
Big Spider	27	B	3.0	Sand	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Big Spider	27	C	11.5	Sand	TOTAL	Total Density @ Station	1	1	1	2	1.25	
Big Spider	27	C	11.5	Sand	CH SP.	Chara spp.	1	0	0	0	0.25	4
Big Spider	27	C	11.5	Sand	NAFL	Najas flexilis	0	1	1	2	1.00	1
Big Spider	27	C	11.5	Sand	VAAM3	Vallisneria Americana	0	1	1	1	0.75	1
Big Spider	27	C	11.5	Sand	MYSI	Myriophyllum sibiricum	0	1	1	1	0.75	1
Big Spider	28	A	3.0	Sand	TOTAL	Total Density @ Station	1	1	0	0	0.50	
Big Spider	28	A	3.0	Sand	NAFL	Najas flexilis	1	0	0	0	0.25	1
Big Spider	28	A	3.0	Sand	CH SP.	Chara spp.	1	0	0	0	0.25	4
Big Spider	28	A	3.0	Sand	SC SP.	Scirpus sp.	0	1	0	0	0.25	3
Big Spider	28	B	4.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	28	B	4.0	Sand	NAFL	Najas flexilis	1	1	1	0	0.75	1
Big Spider	28	B	4.0	Sand	SC SP.	Scirpus sp.	0	1	0	0	0.25	3
Big Spider	28	B	4.0	Sand	CH SP.	Chara spp.	0	0	1	0	0.25	4
Big Spider	28	C	7.5	Sand	TOTAL	Total Density @ Station	1	1	0	1	0.75	
Big Spider	28	C	7.5	Sand	MYSI	Myriophyllum sibiricum	1	0	0	1	0.50	1
Big Spider	28	C	7.5	Sand	CH SP.	Chara spp.	0	1	0	0	0.25	4
Big Spider	29	A	3.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	29	A	3.0	Sand	NAFL	Najas flexilis	1	0	1	1	0.75	1
Big Spider	29	A	3.0	Sand	EL SP.	Eleocharis spp.	1	0	0	0	0.25	3

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	29	A	3.0	Sand	CH SP.	Chara spp.	0	1	1	1	0.75	4
Big Spider	29	A	3.0	Sand	ZODU	Zosterella dubia	0	0	0	1	0.25	1
Big Spider	29	B	4.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	29	B	4.0	Sand	NAFL	Najas flexilis	1	0	0	1	0.50	1
Big Spider	29	B	4.0	Sand	POAM5	Potamogeton amplifolis	1	0	1	0	0.50	1
Big Spider	29	B	4.0	Sand	EL SP.	Eleocharis spp.	0	1	0	0	0.25	3
Big Spider	29	B	4.0	Sand	ZODU	Zosterella dubia	0	1	0	0	0.25	1
Big Spider	29	B	4.0	Sand	PO SP.	Potamogeton SP.	0	1	1	0	0.50	1
Big Spider	29	B	4.0	Sand	CH SP.	Chara spp.	0	0	1	1	0.50	4
Big Spider	29	C	8.0	Mud	TOTAL	Total Density @ Station	1	2	2	1	1.50	
Big Spider	29	C	8.0	Mud	PORO	Potamogeton robbinsii	1	1	1	1	1.00	1
Big Spider	29	C	8.0	Mud	ELCA7	Elodea canadensis	1	1	0	1	0.75	1
Big Spider	29	C	8.0	Mud	RA SP.	Ranunculus spp.	1	0	0	0	0.25	1
Big Spider	29	C	8.0	Mud	POAM5	Potamogeton amplifolis	0	0	1	0	0.25	1
Big Spider	29	C	8.0	Mud	CH SP.	Chara spp.	0	0	1	0	0.25	4
Big Spider	29	C	8.0	Mud	MYSI	Myriophyllum sibiricum	0	0	1	0	0.25	1
Big Spider	29	C	8.0	Mud	POZO	Potamogeton zosteriformis	0	0	0	1	0.25	1
Big Spider	30	A	2.5	Sand	TOTAL	Total Density @ Station	0	0	1	1	0.50	
Big Spider	30	A	2.5	Sand	CEDE4	Ceratophyllum demersum	0	0	1	0	0.25	1
Big Spider	30	A	2.5	Sand	ELCA7	Elodea canadensis	0	0	1	0	0.25	1
Big Spider	30	A	2.5	Sand	NUVA	Nuphar variegatum	0	0	0	1	0.25	2
Big Spider	30	B	4.5	Sand/Mud	TOTAL	Total Density @ Station	1	2	2	1	1.50	
Big Spider	30	B	4.5	Sand/Mud	PORO	Potamogeton robbinsii	1	1	1	0	0.75	1
Big Spider	30	B	4.5	Sand/Mud	NUVA	Nuphar variegatum	0	1	1	0	0.50	2
Big Spider	30	B	4.5	Sand/Mud	MYSI	Myriophyllum sibiricum	0	1	0	0	0.25	1
Big Spider	30	B	4.5	Sand/Mud	CH SP.	Chara spp.	0	1	0	1	0.50	4
Big Spider	30	B	4.5	Sand/Mud	CEDE4	Ceratophyllum demersum	0	1	0	0	0.25	1
Big Spider	30	C	6.0	Mud	TOTAL	Total Density @ Station	2	3	2	1	2.00	
Big Spider	30	C	6.0	Mud	MYSI	Myriophyllum sibiricum	1	1	1	0	0.75	1
Big Spider	30	C	6.0	Mud	POAM5	Potamogeton amplifolis	1	0	1	1	0.75	1
Big Spider	30	C	6.0	Mud	POZO	Potamogeton zosteriformis	1	1	0	0	0.50	1
Big Spider	30	C	6.0	Mud	ELCA7	Elodea canadensis	1	1	1	1	1.00	1
Big Spider	30	C	6.0	Mud	PO SP.	Potamogeton SP.	1	2	0	0	0.75	1
Big Spider	30	C	6.0	Mud	PORO	Potamogeton robbinsii	1	0	0	1	0.50	1
Big Spider	30	C	6.0	Mud	CH SP.	Chara spp.	1	0	0	0	0.25	4

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	30	C	6.0	Mud	NAFL	Najas flexilis	0	1	0	0	0.25	1
Big Spider	30	C	6.0	Mud	CEDE4	Ceratophyllum demersum	0	1	1	0	0.50	1
Big Spider	30	C	6.0	Mud	POAM5	Potamogeton amplifolis	0	1	0	0	0.25	1
Big Spider	30	C	6.0	Mud	ZODU	Zosterella dubia	0	0	1	0	0.25	1
Big Spider	30	C	6.0	Mud	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Big Spider	31	A	2.5	Rock/Boulder	TOTAL	Total Density @ Station	0	0	0	1	0.25	
Big Spider	31	A	2.5	Rock/Boulder	CH SP.	Chara spp.	0	0	0	1	0.25	4
Big Spider	31	B	4.0	Rock/Sand	TOTAL	Total Density @ Station	0	1	0	0	0.25	
Big Spider	31	B	4.0	Rock/Sand	CH SP.	Chara spp.	0	1	0	0	0.25	4
Big Spider	31	C	7.5	Rock/Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	31	C	7.5	Rock/Sand	CH SP.	Chara spp.	1	1	0		0.67	4
Big Spider	31	C	7.5	Rock/Sand	MYSI	Myriophyllum sibiricum	1	0	1	1	0.75	1
Big Spider	31	C	7.5	Rock/Sand	PORO	Potamogeton robbinsii	0	1	1		0.67	1
Big Spider	31	C	7.5	Rock/Sand	RA SP.	Ranunculus spp.	0	0	1		0.33	1
Big Spider	31	C	7.5	Rock/Sand	ZODU	Zosterella dubia	0	0	1		0.33	1
Big Spider	31	C	7.5	Rock/Sand	PO SP.	Potamogeton SP.	0	0	1	1	0.50	1
Big Spider	31	C	7.5	Rock/Sand	NAFL	Najas flexilis	0	0	0	1	0.25	1
Big Spider	31	C	7.5	Rock/Sand	POCR3	Potamogeton crispus	0	0	0	1	0.25	1
Big Spider	31	C	7.5	Rock/Sand	ELCA7	Elodea canadensis	0	0	0	1	0.25	1
Big Spider	32	A	2.5	Rock/Sand	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Big Spider	32	B	3.5	Rock/Sand	TOTAL	Total Density @ Station	1	1	0	0	0.50	
Big Spider	32	B	3.5	Rock/Sand	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Big Spider	32	B	3.5	Rock/Sand	NAFL	Najas flexilis	0	1	0	0	0.25	1
Big Spider	32	C	9.5	Rock/Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	32	C	9.5	Rock/Sand	CH SP.	Chara spp.	1	1	1	1	1.00	4
Big Spider	32	C	9.5	Rock/Sand	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
Big Spider	32	C	9.5	Rock/Sand	PORI2	Potamogeton richardsonii	0	0	1	0	0.25	1
Big Spider	32	C	9.5	Rock/Sand	MYSI	Myriophyllum sibiricum	0	0	1	0	0.25	1
Big Spider	33	A	3.0	Sand/Mud	TOTAL	Total Density @ Station	0	0	1	0	0.25	
Big Spider	33	A	3.0	Sand/Mud	NUVA	Nuphar variegatum	0	0	1	0	0.25	2
Big Spider	33	B	4.0	Mud	TOTAL	Total Density @ Station	1	0	1	0	0.50	
Big Spider	33	B	4.0	Mud	NUVA	Nuphar variegatum	1	0	0	0	0.25	2
Big Spider	33	B	4.0	Mud	MYSI	Myriophyllum sibiricum	0	0	1	0	0.25	1
Big Spider	33	C	8.5	Mud	TOTAL	Total Density @ Station	1	1	2	2	1.50	
Big Spider	33	C	8.5	Mud	PORO	Potamogeton robbinsii	1	1	1	1	1.00	1

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Big Spider	33	C	8.5	Mud	MYSI	Myriophyllum sibiricum	0	0	1	1	0.50	1
Big Spider	33	C	8.5	Mud	POAM5	Potamogeton amplifolis	0	0	1	0	0.25	1
Big Spider	33	C	8.5	Mud	VAAM3	Vallisneria Americana	0	0	1	0	0.25	1
Big Spider	33	C	8.5	Mud	CH SP.	Chara spp.	0	0	0	1	0.25	4
Big Spider	34	A	2.5	Sand	TOTAL	Total Density @ Station	0	1	1	1	0.75	
Big Spider	34	A	2.5	Sand	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
Big Spider	34	A	2.5	Sand	PO SP.	Potamogeton SP.	0	1	1	0	0.50	1
Big Spider	34	A	2.5	Sand	NAFL	Najas flexilis	0	1	0	1	0.50	1
Big Spider	34	A	2.5	Sand	CEDE4	Ceratophyllum demersum	0	0	1	0	0.25	1
Big Spider	34	A	2.5	Sand	SAGR	Sagittaria graminea	0	0	1	0	0.25	3
Big Spider	34	B	4.0	Sand	TOTAL	Total Density @ Station	1	1	2	1	1.25	
Big Spider	34	B	4.0	Sand	POAM5	Potamogeton amplifolis	1	0	0	0	0.25	1
Big Spider	34	B	4.0	Sand	NAFL	Najas flexilis	1	1	0	1	0.75	1
Big Spider	34	B	4.0	Sand	SAGR	Sagittaria graminea	1	0	1	0	0.50	3
Big Spider	34	B	4.0	Sand	ELCA7	Elodea canadensis	1	1	0	1	0.75	1
Big Spider	34	B	4.0	Sand	NUVA	Nuphar variegatum	0	0	1	1	0.50	2
Big Spider	34	B	4.0	Sand	CH SP.	Chara spp.	0	0	1	1	0.50	4
Big Spider	34	B	4.0	Sand	POZO	Potamogeton zosteriformis	0	0	1	0	0.25	1
Big Spider	34	B	4.0	Sand	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Big Spider	34	C	7.5	Sand	TOTAL	Total Density @ Station	0	0	1	1	0.50	
Big Spider	34	C	7.5	Sand	NAFL	Najas flexilis	0	0	1	1	0.50	1
Big Spider	34	C	7.5	Sand	CH SP.	Chara spp.	0	0	1	0	0.25	4
Big Spider	34	C	7.5	Sand	PORI2	Potamogeton richardsonii	0	0	0	1	0.25	1
Big Spider	34	C	7.5	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Big Spider	35	A	2.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	35	A	2.0	Sand	NUVA	Nuphar variegatum	1	1	1	1	1.00	2
Big Spider	35	A	2.0	Sand	CH SP.	Chara spp.	1	1	0	1	0.75	4
Big Spider	35	A	2.0	Sand	SC SP.	Scirpus sp.	1	1	1	1	1.00	3
Big Spider	35	A	2.0	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Big Spider	35	B	2.5	Sand/Rock	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Big Spider	35	B	2.5	Sand/Rock	CH SP.	Chara spp.	1	1	0	1	0.75	4
Big Spider	35	B	2.5	Sand/Rock	SC SP.	Scirpus sp.	1	1	1	1	1.00	3
Big Spider	35	B	10.0	Mud/Sand	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Big Spider	35	C	10.0	Mud/Sand	TOTAL	Total Density @ Station	3	2	1	1	1.75	
Big Spider	35	C	10.0	Mud/Sand	CH SP.	Chara spp.	2	1	1	1	1.25	4

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Big Spider	35	C	10.0	Mud/Sand	ELCA7	Elodea canadensis	1	1	0	0	0.50	1
Big Spider	35	C	10.0	Mud/Sand	POZO	Potamogeton zosteriformis	1	0	0	0	0.25	1
Big Spider	35	C	10.0	Mud/Sand	PO SP.	Potamogeton SP.	1	1	1	1	1.00	1
Big Spider	35	C	10.0	Mud/Sand	PORO	Potamogeton robbinsii	0	1	0	0	0.25	1
Big Spider	35	C	10.0	Mud/Sand	CEDE4	Ceratophyllum demersum	0	1	0	0	0.25	1
Big Spider	35	C	10.0	Mud/Sand	SC SP.	Scirpus sp.	0	0	1	0	0.25	3
Big Spider	35	C	10.0	Mud/Sand	RA SP.	Ranunculus spp.	0	0	1	0	0.25	1
Big Spider	35	C	10.0	Mud/Sand	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Big Spider	35	C	10.0	Mud/Sand	MYSI	Myriophyllum sibiricum	0	0	0	1	0.25	1
Big Spider	36	A	1.5	Mud/Sand	TOTAL	Total Density @ Station	2	2	1	1	1.50	
Big Spider	36	A	1.5	Mud/Sand	NUVA	Nuphar variegatum	1	1	1	0	0.75	2
Big Spider	36	A	1.5	Mud/Sand	NAFL	Najas flexilis	1	0	0	1	0.50	1
Big Spider	36	A	1.5	Mud/Sand	VAAM3	Vallisneria Americana	1	0	1	1	0.75	1
Big Spider	36	A	1.5	Mud/Sand	CH SP.	Chara spp.	1	1	1	1	1.00	4
Big Spider	36	A	1.5	Mud/Sand	MYSI	Myriophyllum sibiricum	1	0	0	0	0.25	1
Big Spider	36	A	1.5	Mud/Sand	VAAM3	Vallisneria Americana	0	1	0	0	0.25	1
Big Spider	36	A	1.5	Mud/Sand	BRSC	Brasenia Schreberi	0	1	0	0	0.25	2
Big Spider	36	A	1.5	Mud/Sand	PO SP.	Potamogeton SP.	0	1	0	1	0.50	1
Big Spider	36	B	4.0	Mud	TOTAL	Total Density @ Station	1	2	1	1	1.25	
Big Spider	36	B	4.0	Mud	NAFL	Najas flexilis	1	0	0	1	0.50	1
Big Spider	36	B	4.0	Mud	ZODU	Zosterella dubia	1	0	0	0	0.25	1
Big Spider	36	B	4.0	Mud	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Big Spider	36	B	4.0	Mud	MYSI	Myriophyllum sibiricum	1	1	0	0	0.50	1
Big Spider	36	B	4.0	Mud	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Big Spider	36	B	4.0	Mud	CH SP.	Chara spp.	1	1	1	0	0.75	4
Big Spider	36	B	4.0	Mud	VAAM3	Vallisneria Americana	0	1	1	1	0.75	1
Big Spider	36	B	4.0	Mud	BRSC	Brasenia Schreberi	0	0	1	0	0.25	2
Big Spider	36	C	9.0	Mud	TOTAL	Total Density @ Station	2	2	2	1	1.75	
Big Spider	36	C	9.0	Mud	PORO	Potamogeton robbinsii	1	1	1	1	1.00	1
Big Spider	36	C	9.0	Mud	VAAM3	Vallisneria Americana	1	0	0	1	0.50	1
Big Spider	36	C	9.0	Mud	ELCA7	Elodea canadensis	1	1	1	1	1.00	1
Big Spider	36	C	9.0	Mud	MYSI	Myriophyllum sibiricum	0	1	1	0	0.50	1
Big Spider	36	C	9.0	Mud	POZO	Potamogeton zosteriformis	0	1	1	0	0.50	1
Big Spider	36	C	9.0	Mud	CH SP.	Chara spp.	0	1	1	0	0.50	4
Big Spider	36	C	9.0	Mud	NAFL	Najas flexilis	0	1	0	1	0.50	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Big Spider	36	C	9.0	Mud	PO SP.	Potamogeton SP.	0	0	1	0	0.25	1
Big Spider	37	A	3.0	Rock/Sand	TOTAL	Total Density @ Station	0	1	0	0	0.25	
Big Spider	37	A	3.0	Rock/Sand	CH SP.	Chara spp.	0	1			0.50	4
Big Spider	37	A	3.0	Rock/Sand	EL SP.	Eleocharis spp.	0	1			0.50	3
Big Spider	37	B	4.0	Sand	TOTAL	Total Density @ Station	1	1	0	1	0.75	
Big Spider	37	B	4.0	Sand	PORO	Potamogeton robbinsii	1	0	0		0.33	1
Big Spider	37	B	4.0	Sand	POAM5	Potamogeton amplifolis	1	0	0		0.33	1
Big Spider	37	B	4.0	Sand	POZO	Potamogeton zosteriformis	0	1	0		0.33	1
Big Spider	37	B	4.0	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Big Spider	37	B	4.0	Sand	CH SP.	Chara spp.	0	0	0	1	0.25	4
Big Spider	37	C	8.5	Sand	TOTAL	Total Density @ Station	1	1	0	2	1.00	
Big Spider	37	C	8.5	Sand	NAFL	Najas flexilis	1	0	0	0	0.25	1
Big Spider	37	C	8.5	Sand	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Big Spider	37	C	8.5	Sand	VAAM3	Vallisneria Americana	0	1	0	0	0.25	1
Big Spider	37	C	8.5	Sand	ZODU	Zosterella dubia	0	1	0	0	0.25	1
Big Spider	37	C	8.5	Sand	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
Big Spider	37	C	8.5	Sand	NAFL	Najas flexilis	0	0	0	1	0.25	1
Big Spider	37	C	8.5	Sand	MYSI	Myriophyllum sibiricum	0	0	0	1	0.25	1
Big Spider	37	C	8.5	Sand	POZO	Potamogeton zosteriformis	0	0	0	1	0.25	1
Big Spider	37	C	8.5	Sand	ELCA7	Elodea canadensis	0	0	0	1	0.25	1
Big Spider	37	C	8.5	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Big Spider	38	A	3.0	Rock/Sand	TOTAL	Total Density @ Station	1	0	0	1	0.50	
Big Spider	38	A	3.0	Rock/Sand	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Big Spider	38	A	3.0	Rock/Sand	NAFL	Najas flexilis	0	0	0	1	0.25	1
Big Spider	38	B	4.5	Rock/Sand	TOTAL	Total Density @ Station	0	1	0	0	0.25	
Big Spider	38	B	4.5	Rock/Sand	NAFL	Najas flexilis	0	1	0	0	0.25	1
Big Spider	38	C	7.5	Rock/Sand	TOTAL	Total Density @ Station	1	0	1	1	0.75	
Big Spider	38	C	7.5	Rock/Sand	MYSI	Myriophyllum sibiricum	1	0	1	0	0.50	1
Big Spider	38	C	7.5	Rock/Sand	CH SP.	Chara spp.	1	0	1	1	0.75	4
Big Spider	38	C	7.5	Rock/Sand	RA SP.	Ranunculus spp.	0	0	1	0	0.25	1
Big Spider	38	C	7.5	Rock/Sand	ELCA7	Elodea canadensis	0	0	1	1	0.50	1
Clear Lk.	39	A	3.5	Leaves/Logs	TOTAL	Total Density @ Station	1	1	0	1	0.75	
Clear Lk.	39	A	3.5	Leaves/Logs	NYTU	Nymphaea tuberosa	1	0	0	0	0.25	2
Clear Lk.	39	A	3.5	Leaves/Logs	PORO	Potamogeton robbinsii	0	1	0	0	0.25	1
Clear Lk.	39	A	3.5	Leaves/Logs	POAM5	Potamogeton amplifolis	0	1	0	0	0.25	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Clear Lk.	39	A	3.5	Leaves/Logs	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Clear Lk.	39	A	3.5	Leaves/Logs	SPECIES	Callitriche sp.	0	0	0	1	0.25	1
Clear Lk.	39	B	4.5	Leaves/Logs	TOTAL	Total Density @ Station	1	1	0	1	0.75	
Clear Lk.	39	B	4.5	Leaves/Logs	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Clear Lk.	39	B	4.5	Leaves/Logs	VAAM3	Vallisneria Americana	0	1	0	1	0.50	1
Clear Lk.	39	C	6.5	Leaves/Logs	TOTAL	Total Density @ Station	0	0	0	1	0.25	
Clear Lk.	39	C	6.5	Leaves/Logs	EL SP.	Eleocharis spp.	0	0	0	1	0.25	3
Clear Lk.	40	A	2.5	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Clear Lk.	40	A	2.5	Sand	CH SP.	Chara spp.	1	1	1	1	1.00	4
Clear Lk.	40	A	2.5	Sand	EL SP.	Eleocharis spp.	1	1	1	1	1.00	3
Clear Lk.	40	B	3.5	Sand	TOTAL	Total Density @ Station	1	1	1	2	1.25	
Clear Lk.	40	B	3.5	Sand	EL SP.	Eleocharis spp.	1	1	0	1	0.75	3
Clear Lk.	40	B	3.5	Sand	CH SP.	Chara spp.	1	1	1	0	0.75	4
Clear Lk.	40	C	7.5	Detritus	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Clear Lk.	41	A	2.2	Mud/Sand	TOTAL	Total Density @ Station	1	3	2	2	2.00	
Clear Lk.	41	A	2.2	Mud/Sand	BRSC	Brasenia Schreberi	1	1	1	1	1.00	2
Clear Lk.	41	A	2.2	Mud/Sand	POCO	Pontederia cordata	1	0	1	1	0.75	3
Clear Lk.	41	A	2.2	Mud/Sand	VAAM3	Vallisneria Americana	1	0	0	0	0.25	1
Clear Lk.	41	A	2.2	Mud/Sand	SAGR	Sagittaria graminea	0	2	0	1	0.75	3
Clear Lk.	41	A	2.2	Mud/Sand	EL SP.	Eleocharis spp.	0	1	1	0	0.50	3
Clear Lk.	41	A	2.2	Mud/Sand	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Clear Lk.	41	A	2.2	Mud/Sand	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
Clear Lk.	41	B	4.0	Sand	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Clear Lk.	41	C	6.0	Sand	TOTAL	Total Density @ Station	0	1	1	0	0.50	
Clear Lk.	41	C	6.0	Sand	VAAM3	Vallisneria Americana	0	1	0	0	0.25	1
Clear Lk.	41	C	6.0	Sand	PO SP.	Potamogeton SP.	0	0	1	0	0.25	1
Clear Lk.	42	A	2.5	Sand	TOTAL	Total Density @ Station	0	1	1	1	0.75	
Clear Lk.	42	A	2.5	Sand	VAAM3	Vallisneria Americana	0	1	0	0	0.25	1
Clear Lk.	42	A	2.5	Sand	CH SP.	Chara spp.	0	0	1	1	0.50	4
Clear Lk.	42	B	3.0	Detritus	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Clear Lk.	42	B	3.0	Detritus	NAFL	Najas flexilis	1	1	1	0	0.75	1
Clear Lk.	42	B	3.0	Detritus	NYTU	Nymphaea tuberosa	1	0	1	1	0.75	2
Clear Lk.	42	C	4.5	Detritus	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Clear Lk.	43	A	3.5	Muck	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Clear Lk.	43	A	3.5	Muck	CH SP.	Chara spp.	1	1	0	0	0.50	4

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Clear Lk.	43	A	3.5	Muck	NUVA	Nuphar variegatum	0	0	1	1	0.50	2
Clear Lk.	43	B	4.0	Detritus	TOTAL	Total Density @ Station	0	1	0	0	0.25	
Clear Lk.	43	B	4.0	Detritus	VAAM3	Vallisneria Americana	0	1	0	0	0.25	1
Clear Lk.	43	C	5.0	Detritus	TOTAL	Total Density @ Station	1	0	0	0	0.25	
Clear Lk.	43	C	5.0	Detritus	POAM5	Potamogeton amplifolis	1	0	0	0	0.25	1
Clear Lk.	44	A	4.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Clear Lk.	44	A	4.0	Sand	EL SP.	Eleocharis spp.	1	1	1	1	1.00	3
Clear Lk.	44	A	4.0	Sand	CH SP.	Chara spp.	0	0	1	1	0.50	4
Clear Lk.	44	A	4.0	Sand	VAAM3	Vallisneria Americana	0	0	1	0	0.25	1
Clear Lk.	44	A	4.0	Sand	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
Clear Lk.	44	B	6.0	Sand	TOTAL	Total Density @ Station	1	0	0	1	0.50	
Clear Lk.	44	B	6.0	Sand	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Clear Lk.	44	B	6.0	Sand	CH SP.	Chara spp.	0	0	0	1	0.25	4
Clear Lk.	44	C	10.0	Sand/Detritus	TOTAL	Total Density @ Station	1	1	0	0	0.50	
Clear Lk.	44	C	10.0	Sand/Detritus	POAM5	Potamogeton amplifolis	1	1	0	0	0.50	1
Clear Lk.	44	C	10.0	Sand/Detritus	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Little Spider	45	A	2.0	Sand	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Little Spider	45	B	5.5	Muck	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	45	B	5.5	Muck	NAFL	Najas flexilis	1	0	1	1	0.75	1
Little Spider	45	B	5.5	Muck	VAAM3	Vallisneria Americana	0	1	1	0	0.50	1
Little Spider	45	B	5.5	Muck	PORO	Potamogeton robbinsii	0	0	1	0	0.25	1
Little Spider	45	B	5.5	Muck	CH SP.	Chara spp.	0	0	1	1	0.50	4
Little Spider	45	C	7.5	Sand/Detritus	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	45	C	7.5	Sand/Detritus	CH SP.	Chara spp.	1	1	0	1	0.75	4
Little Spider	45	C	7.5	Sand/Detritus	NAFL	Najas flexilis	1	1	0	1	0.75	1
Little Spider	45	C	7.5	Sand/Detritus	MYSI	Myriophyllum sibiricum	0	1	0	0	0.25	1
Little Spider	45	C	7.5	Sand/Detritus	PORO	Potamogeton robbinsii	0	0	1	0	0.25	1
Little Spider	45	C	7.5	Sand/Detritus	PO SP.	Potamogeton SP.	0	0	1	0	0.25	1
Little Spider	45	C	7.5	Sand/Detritus	ELCA7	Elodea canadensis	0	0	0	1	0.25	1
Little Spider	46	A	3.0	Sand/Muck	TOTAL	Total Density @ Station	1	0	1	1	0.75	
Little Spider	46	A	3.0	Sand/Muck	VAAM3	Vallisneria Americana	1	0	0	0	0.25	1
Little Spider	46	A	3.0	Sand/Muck	POAM5	Potamogeton amplifolis	1	0	0	0	0.25	1
Little Spider	46	A	3.0	Sand/Muck	PORO	Potamogeton robbinsii	1	0	0	1	0.50	1
Little Spider	46	A	3.0	Sand/Muck	EL SP.	Eleocharis spp.	0	0	1	1	0.50	3
Little Spider	46	A	3.0	Sand/Muck	CH SP.	Chara spp.	0	0	0	1	0.25	4

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Little Spider	46	B	6.5	Detritus	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	46	B	6.5	Detritus	CH SP.	Chara spp.	1	0	1	0	0.50	4
Little Spider	46	B	6.5	Detritus	NAFL	Najas flexilis	1	0	0	0	0.25	1
Little Spider	46	B	6.5	Detritus	MYSI	Myriophyllum sibiricum	0	1	0	0	0.25	1
Little Spider	46	B	6.5	Detritus	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
Little Spider	46	C	9.0	Muck	TOTAL	Total Density @ Station	3	3	2	4	3.00	
Little Spider	46	C	9.0	Muck	PORO	Potamogeton robbinsii	2	3	2	4	2.75	1
Little Spider	46	C	9.0	Muck	POAM5	Potamogeton amplifolis	1	0	1	0	0.50	1
Little Spider	46	C	9.0	Muck	POZO	Potamogeton zosteriformis	1	0	0	0	0.25	1
Little Spider	46	C	9.0	Muck	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Little Spider	47	A	3.0	Muck	TOTAL	Total Density @ Station	2	2	2	2	2.00	
Little Spider	47	A	3.0	Muck	NYTU	Nymphaea tuberosa	1	1	1	1	1.00	2
Little Spider	47	A	3.0	Muck	BRSC	Brasenia Schreberi	1	1	1	1	1.00	2
Little Spider	47	A	3.0	Muck	EL SP.	Eleocharis spp.	0	1	0	1	0.50	3
Little Spider	47	A	3.0	Muck	PORO	Potamogeton robbinsii	0	1	0	0	0.25	1
Little Spider	47	A	3.0	Muck	POCO	Pontederia cordata	0	0	1	0	0.25	3
Little Spider	47	A	3.0	Muck	RA SP.	Ranunculus spp.	0	0	1	0	0.25	1
Little Spider	47	A	3.0	Muck	SC SP.	Scirpus sp.	0	0	0	1	0.25	3
Little Spider	47	A	3.0	Muck	POAM5	Potamogeton amplifolis	0	0	0	1	0.25	1
Little Spider	47	B	3.5	Muck	TOTAL	Total Density @ Station	0	0	0	1	0.25	
Little Spider	47	B	3.5	Muck	PONA4	Potamogeton natans	0	0	0	1	0.25	1
Little Spider	47	C	7.5	Muck	TOTAL	Total Density @ Station	0	1	0	0	0.25	
Little Spider	47	C	7.5	Muck	NAFL	Najas flexilis	0	1	0	0	0.25	1
Little Spider	48	A	3.0	Muck	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Little Spider	48	B	4.0	Muck	TOTAL	Total Density @ Station	0	1	0	0	0.25	
Little Spider	48	B	4.0	Muck	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
Little Spider	48	C	6.0	Muck	TOTAL	Total Density @ Station	4	3	3	2	3.00	
Little Spider	48	C	6.0	Muck	POAM5	Potamogeton amplifolis	1	1	1	0	0.75	1
Little Spider	48	C	6.0	Muck	PORO	Potamogeton robbinsii	2	2	2	1	1.75	1
Little Spider	48	C	6.0	Muck	NAFL	Najas flexilis	1	0	1	1	0.75	1
Little Spider	48	C	6.0	Muck	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
Little Spider	48	C	6.0	Muck	POIL	Potamogeton Illinoensis	0	0	1	1	0.50	1
Little Spider	48	C	6.0	Muck	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Little Spider	49	A	2.5	Sand	TOTAL	Total Density @ Station	1	0	1	1	0.75	
Little Spider	49	A	2.5	Sand	EL SP.	Eleocharis spp.	1	0	1	1	0.75	3

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Little Spider	49	B	4.0	Sand	TOTAL	Total Density @ Station	1	0	0	0	0.25	
Little Spider	49	B	4.0	Sand	EL SP.	Eleocharis spp.	1	0	0	0	0.25	3
Little Spider	49	C	8.0	Muck	TOTAL	Total Density @ Station	2	1	1	2	1.50	
Little Spider	49	C	8.0	Muck	NAFL	Najas flexilis	1	1	0	1	0.75	1
Little Spider	49	C	8.0	Muck	VAAM3	Vallisneria Americana	1	0	0	1	0.50	1
Little Spider	49	C	8.0	Muck	POAM5	Potamogeton amplifolis	1	1	1	0	0.75	1
Little Spider	49	C	8.0	Muck	RA SP.	Ranunculus spp.	1	0	1	0	0.50	1
Little Spider	49	C	8.0	Muck	PORO	Potamogeton robbinsii	0	1	1	1	0.75	1
Little Spider	49	C	8.0	Muck	CH SP.	Chara spp.	0	1	0	0	0.25	4
Little Spider	49	C	8.0	Muck	PO SP.	Potamogeton SP.	0	0	1	0	0.25	1
Little Spider	50	A	3.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	50	A	3.0	Sand	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
Little Spider	50	A	3.0	Sand	EL SP.	Eleocharis spp.	0	1	1	0	0.50	3
Little Spider	50	A	3.0	Sand	NAFL	Najas flexilis	0	0	1	1	0.50	1
Little Spider	50	B	4.0	Sand	TOTAL	Total Density @ Station	1	0	1	1	0.75	
Little Spider	50	B	4.0	Sand	EL SP.	Eleocharis spp.	1	0	1	1	0.75	3
Little Spider	50	B	4.0	Sand	NAFL	Najas flexilis	0	0	0	1	0.25	1
Little Spider	50	C	7.5	Sand	TOTAL	Total Density @ Station	1	1	0	1	0.75	
Little Spider	50	C	7.5	Sand	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Little Spider	50	C	7.5	Sand	CH SP.	Chara spp.	0	1	0	0	0.25	4
Little Spider	50	C	7.5	Sand	POIL	Potamogeton Illinoensis	0	0	0	1	0.25	1
Little Spider	51	A	2.5	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	51	A	2.5	Sand	PORI2	Potamogeton richardsonii	1	1	0		0.67	1
Little Spider	51	A	2.5	Sand	NAFL	Najas flexilis	0	0	1	1	0.50	1
Little Spider	51	A	2.5	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Little Spider	51	A	2.5	Sand	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
Little Spider	51	A	2.5	Sand	POZO	Potamogeton zosteriformis	0	0	0	1	0.25	1
Little Spider	51	B	4.5	Mud	TOTAL	Total Density @ Station	2	1	2	2	1.75	
Little Spider	51	B	4.5	Mud	VAAM3	Vallisneria Americana	2	0	1	1	1.00	1
Little Spider	51	B	4.5	Mud	PORO	Potamogeton robbinsii	1	1	0	0	0.50	1
Little Spider	51	B	4.5	Mud	ELCA7	Elodea canadensis	1	0	0	0	0.25	1
Little Spider	51	B	4.5	Mud	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Little Spider	51	B	4.5	Mud	CH SP.	Chara spp.	0	0	1	0	0.25	4
Little Spider	51	B	4.5	Mud	PORO	Potamogeton robbinsii	0	0	1	1	0.50	1
Little Spider	51	B	4.5	Mud	PORI2	Potamogeton richardsonii	0	0	1	0	0.25	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Little Spider	51	B	4.5	Mud	POAM5	Potamogeton amplifolius	0	0	1	0	0.25	1
Little Spider	51	B	4.5	Mud	NAFL	Najas flexilis	0	0	1	1	0.50	1
Little Spider	51	B	4.5	Mud	ZODU	Zosterella dubia	0	0	1	0	0.25	1
Little Spider	51	C	8.0	Sand	TOTAL	Total Density @ Station	2	2	1	1	1.50	
Little Spider	51	C	8.0	Sand	PORO	Potamogeton robbinsii	1	2	0	0	0.75	1
Little Spider	51	C	8.0	Sand	ELCA7	Elodea canadensis	0	1	0	0	0.25	1
Little Spider	51	C	8.0	Sand	PORI2	Potamogeton richardsonii	0	1	0	0	0.25	1
Little Spider	51	C	8.0	Sand	NAFL	Najas flexilis	0	1	1	0	0.50	1
Little Spider	51	C	8.0	Sand	PO SP.	Potamogeton SP.	0	0	1	0	0.25	1
Little Spider	51	C	8.0	Sand	CH SP.	Chara spp.	0	0	0	1	0.25	4
Little Spider	52	A	4.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	52	A	4.0	Sand	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Little Spider	52	A	4.0	Sand	NAFL	Najas flexilis	0	1	0	0	0.25	1
Little Spider	52	A	4.0	Sand	VAAM3	Vallisneria Americana	0	0	1	0	0.25	1
Little Spider	52	A	4.0	Sand	ELCA7	Elodea canadensis	0	0	0	1	0.25	1
Little Spider	52	B	5.5	Sand	TOTAL	Total Density @ Station	1	1	0	1	0.75	
Little Spider	52	B	5.5	Sand	PORO	Potamogeton robbinsii	1	1	0	0	0.50	1
Little Spider	52	B	5.5	Sand	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Little Spider	52	B	5.5	Sand	CH SP.	Chara spp.	0	0	0	1	0.25	4
Little Spider	52	C	9.0	Sand	TOTAL	Total Density @ Station	1	1	1	0	0.75	
Little Spider	52	C	9.0	Sand	NAFL	Najas flexilis	1	1	0	0	0.50	1
Little Spider	52	C	9.0	Sand	CH SP.	Chara spp.	0	1	1	0	0.50	4
Little Spider	52	C	9.0	Sand	EL SP.	Eleocharis spp.	0	0	1	0	0.25	3
Little Spider	53	A	2.0	Sand	TOTAL	Total Density @ Station	2	1	1	1	1.25	
Little Spider	53	A	2.0	Sand	EL SP.	Eleocharis spp.	2	1	1	0	1.00	3
Little Spider	53	A	2.0	Sand	CH SP.	Chara spp.	1	1	0	1	0.75	4
Little Spider	53	A	2.0	Sand	NAFL	Najas flexilis	0	0	1	1	0.50	1
Little Spider	53	A	2.0	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Little Spider	53	B	5.5	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	53	B	5.5	Sand	NAFL	Najas flexilis	1	1	1	1	1.00	1
Little Spider	53	B	5.5	Sand	POAM5	Potamogeton amplifolius	1	1	0	0	0.50	1
Little Spider	53	B	5.5	Sand	EL SP.	Eleocharis spp.	1	0	1	0	0.50	3
Little Spider	53	B	5.5	Sand	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Little Spider	53	B	5.5	Sand	VAAM3	Vallisneria Americana	0	1	0	0	0.25	1
Little Spider	53	B	5.5	Sand	CH SP.	Chara spp.	0	0	1	0	0.25	4

Spider Chain of Lakes

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Little Spider	53	C	7.5	Sand	TOTAL	Total Density @ Station	0	1	2	1	1.00	
Little Spider	53	C	7.5	Sand	NAFL	Najas flexilis	0	1	1	1	0.75	1
Little Spider	53	C	7.5	Sand	PORO	Potamogeton robbinsii	0	1	0	0	0.25	1
Little Spider	53	C	7.5	Sand	POAM5	Potamogeton amplifolis	0	1	0	0	0.25	1
Little Spider	53	C	7.5	Sand	CH SP.	Chara spp.	0	0	1	1	0.50	4
Little Spider	53	C	7.5	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Little Spider	54	A	2.0	Sand	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Little Spider	54	B	4.0	Sand	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Little Spider	54	C	8.0	Sand	TOTAL	Total Density @ Station	0	1	0	0	0.25	
Little Spider	54	C	8.0	Sand	CH SP.	Chara spp.	0	1	0	0	0.25	4
Little Spider	54	C	8.0	Sand	PORO	Potamogeton robbinsii	0	1	0	0	0.25	1
Little Spider	55	A	2.5	Sand	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Little Spider	55	B	5.0	Sand/Mud	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	55	B	5.0	Sand/Mud	VAAM3	Vallisneria Americana	1	1	1	1	1.00	1
Little Spider	55	B	5.0	Sand/Mud	CH SP.	Chara spp.	1	0	0	1	0.50	4
Little Spider	55	B	5.0	Sand/Mud	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Little Spider	55	B	5.0	Sand/Mud	EL SP.	Eleocharis spp.	1	0	1	1	0.75	3
Little Spider	55	B	5.0	Sand/Mud	PORO	Potamogeton robbinsii	0	1	0	0	0.25	1
Little Spider	55	B	5.0	Sand/Mud	POAM5	Potamogeton amplifolis	0	1	0	0	0.25	1
Little Spider	55	B	5.0	Sand/Mud	NAFL	Najas flexilis	0	1	1	0	0.50	1
Little Spider	55	C	7.0	Muck	TOTAL	Total Density @ Station	1	0	1	1	0.75	
Little Spider	55	C	7.0	Muck	CH SP.	Chara spp.	1	0	0	0	0.25	4
Little Spider	55	C	7.0	Muck	NAFL	Najas flexilis	1	0	1	1	0.75	1
Little Spider	56	A	2.5	Sand	TOTAL	Total Density @ Station	0	1	1	0	0.50	
Little Spider	56	A	2.5	Sand	EL SP.	Eleocharis spp.	0	1	0	0	0.25	3
Little Spider	56	A	2.5	Sand	NAFL	Najas flexilis	0	0	1	0	0.25	1
Little Spider	56	B	4.0	Sand	TOTAL	Total Density @ Station	1	0	1	1	0.75	
Little Spider	56	B	4.0	Sand	CH SP.	Chara spp.	1	0	1	1	0.75	4
Little Spider	56	C	6.5	Sand	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Little Spider	57	A	2.5	Muck/Sand	TOTAL	Total Density @ Station	2	2	2	1	1.75	
Little Spider	57	A	2.5	Muck/Sand	SAGR	Sagittaria graminea	1	0	0	0	0.25	3
Little Spider	57	A	2.5	Muck/Sand	NAFL	Najas flexilis	1	1	1	1	1.00	1
Little Spider	57	A	2.5	Muck/Sand	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Little Spider	57	A	2.5	Muck/Sand	NYTU	Nymphaea tuberosa	0	1	0	0	0.25	2
Little Spider	57	A	2.5	Muck/Sand	NUVA	Nuphar variegatum	0	0	1	1	0.50	2

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Little Spider	57	A	2.5	Muck/Sand	BRSC	Brasenia Schreberi	0	0	1	1	0.50	2
Little Spider	57	A	2.5	Muck/Sand	PORI2	Potamogeton richardsonii	0	0	1	0	0.25	1
Little Spider	57	B	4.0	Muck	TOTAL	Total Density @ Station	1	0	0	0	0.25	
Little Spider	57	B	4.0	Muck	NYTU	Nymphaea tuberosa	1	0	0	0	0.25	2
Little Spider	57	B	4.0	Muck	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Little Spider	57	C	6.0	Detritus	TOTAL	Total Density @ Station	1	2	1	1	1.25	
Little Spider	57	C	6.0	Detritus	NAFL	Najas flexilis	1	1	1	1	1.00	1
Little Spider	57	C	6.0	Detritus	POAM5	Potamogeton amplifolis	1	0	0	0	0.25	1
Little Spider	57	C	6.0	Detritus	PORO	Potamogeton robbinsii	0	1	0	0	0.25	1
Little Spider	57	C	6.0	Detritus	SAGR	Sagittaria graminea	0	0	0	1	0.25	3
Little Spider	58	A	2.5	Muck	TOTAL	Total Density @ Station	3	2	2	2	2.25	
Little Spider	58	A	2.5	Muck	NYTU	Nymphaea tuberosa	1	1	1	1	1.00	2
Little Spider	58	A	2.5	Muck	NUVA	Nuphar variegatum	1	0	1	1	0.75	2
Little Spider	58	A	2.5	Muck	NAFL	Najas flexilis	1	0	0	1	0.50	1
Little Spider	58	A	2.5	Muck	BRSC	Brasenia Schreberi	0	1	0	0	0.25	2
Little Spider	58	A	2.5	Muck	RA SP.	Ranunculus spp.	0	0	0	1	0.25	1
Little Spider	58	A	2.5	Muck	CH SP.	Chara spp.	0	0	0	1	0.25	4
Little Spider	58	B	3.5	Muck	TOTAL	Total Density @ Station	1	0	1	0	0.50	
Little Spider	58	B	3.5	Muck	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Little Spider	58	B	3.5	Muck	POAM5	Potamogeton amplifolis	0	0	1	0	0.25	1
Little Spider	58	C	4.0	Muck	TOTAL	Total Density @ Station	3	4	2	4	3.25	
Little Spider	58	C	4.0	Muck	PORO	Potamogeton robbinsii	2	3	2	2	2.25	1
Little Spider	58	C	4.0	Muck	NAFL	Najas flexilis	1	0	0	1	0.50	1
Little Spider	58	C	4.0	Muck	POAM5	Potamogeton amplifolis	1	1	1	1	1.00	1
Little Spider	58	C	4.0	Muck	VAAM3	Vallisneria Americana	1	1	0	0	0.50	1
Little Spider	58	C	4.0	Muck	PORI2	Potamogeton richardsonii	0	1	0	0	0.25	1
Little Spider	59	A	2.5	Sand	TOTAL	Total Density @ Station	1	0	0	1	0.50	
Little Spider	59	A	2.5	Sand	CH SP.	Chara spp.	1	0	0	0	0.25	4
Little Spider	59	A	2.5	Sand	EL SP.	Eleocharis spp.	0	0	0	1	0.25	3
Little Spider	59	B	4.0	Sand	TOTAL	Total Density @ Station	1	1	0	0	0.50	
Little Spider	59	B	4.0	Sand	CH SP.	Chara spp.	1	1	0	0	0.50	4
Little Spider	59	B	4.0	Sand	EL SP.	Eleocharis spp.	1	1	0	0	0.50	3
Little Spider	59	C	8.5	Sand	TOTAL	Total Density @ Station	0	0	1	0	0.25	
Little Spider	59	C	8.5	Sand	PORO	Potamogeton robbinsii	0	0	1	0	0.25	1
Little Spider	60	A	3.0	Sand	TOTAL	Total Density @ Station	0	1	1	1	0.75	

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Little Spider	60	A	3.0	Sand	PORO	Potamogeton robbinsii	0	1	0	0	0.25	1
Little Spider	60	A	3.0	Sand	POZO	Potamogeton zosteriformis	0	0	1	0	0.25	1
Little Spider	60	A	3.0	Sand	EL SP.	Eleocharis spp.	0	0	0	1	0.25	3
Little Spider	60	B	5.5	Sand	TOTAL	Total Density @ Station	1	1	0	1	0.75	
Little Spider	60	B	5.5	Sand	EL SP.	Eleocharis spp.	1	0	0	0	0.25	3
Little Spider	60	B	5.5	Sand	CH SP.	Chara spp.	1	1	0	1	0.75	4
Little Spider	60	B	5.5	Sand	NYTU	Nymphaea tuberosa	0	1	0	0	0.25	2
Little Spider	60	B	5.5	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Little Spider	60	B	5.5	Sand	NAFL	Najas flexilis	0	0	0	1	0.25	1
Little Spider	60	C	8.0	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	60	C	8.0	Sand	CH SP.	Chara spp.	1	0	1	0	0.50	4
Little Spider	60	C	8.0	Sand	NAFL	Najas flexilis	1	1	0	1	0.75	1
Little Spider	60	C	8.0	Sand	PO SP.	Potamogeton SP.	1	0	0	0	0.25	1
Little Spider	61	A	2.5	Sand	TOTAL	Total Density @ Station	2	1	1	1	1.25	
Little Spider	61	A	2.5	Sand	EL SP.	Eleocharis spp.	2	1	1	0	1.00	3
Little Spider	61	A	2.5	Sand	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Little Spider	61	A	2.5	Sand	CH SP.	Chara spp.	1	1	1	0	0.75	4
Little Spider	61	A	2.5	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Little Spider	61	B	6.5	Sand	TOTAL	Total Density @ Station	1	1	1	2	1.25	
Little Spider	61	B	6.5	Sand	CH SP.	Chara spp.	1	0	0	2	0.75	4
Little Spider	61	B	6.5	Sand	NAFL	Najas flexilis	1	0	1	0	0.50	1
Little Spider	61	B	6.5	Sand	PO SP.	Potamogeton SP.	0	1	0	1	0.50	1
Little Spider	61	C	11.0	Sand	TOTAL	Total Density @ Station	0	0	1	1	0.50	
Little Spider	61	C	11.0	Sand	PORO	Potamogeton robbinsii	0	0	1	0	0.25	1
Little Spider	61	C	11.0	Sand	ELCA7	Elodea canadensis	0	0	0	1	0.25	1
Little Spider	62	A	2.0	Muck	TOTAL	Total Density @ Station	1	1	2	2	1.50	
Little Spider	62	A	2.0	Muck	NYTU	Nymphaea tuberosa	1	1	1	1	1.00	2
Little Spider	62	A	2.0	Muck	NAFL	Najas flexilis	1	1	1	1	1.00	1
Little Spider	62	A	2.0	Muck	CH SP.	Chara spp.	1	0	0	0	0.25	4
Little Spider	62	A	2.0	Muck	BRSC	Brasenia Schreberi	1	1	1	0	0.75	2
Little Spider	62	A	2.0	Muck	POCO	Pontederia cordata	0	1	1	0	0.50	3
Little Spider	62	A	2.0	Muck	VAAM3	Vallisneria Americana	0	0	1	1	0.50	1
Little Spider	62	B	4.0	Muck	TOTAL	Total Density @ Station	4	3	4	3	3.50	
Little Spider	62	B	4.0	Muck	PORO	Potamogeton robbinsii	2	1	1	1	1.25	1
Little Spider	62	B	4.0	Muck	NAFL	Najas flexilis	1	2	2	2	1.75	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Little Spider	62	B	4.0	Muck	POAM5	Potamogeton amplifolis	1	1	1	1	1.00	1
Little Spider	62	C	6.0	Muck	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	62	C	6.0	Muck	POAM5	Potamogeton amplifolis	1	1	1	1	1.00	1
Little Spider	62	C	6.0	Muck	NAFL	Najas flexilis	0	1	1		0.67	1
Little Spider	62	C	6.0	Muck	POIL	Potamogeton Illinoisensis	0	1	0	1	0.50	1
Little Spider	63	A	3.5	Muck	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	63	A	3.5	Muck	NUVA	Nuphar variegatum	1	1	1	0	0.75	2
Little Spider	63	A	3.5	Muck	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Little Spider	63	A	3.5	Muck	NAFL	Najas flexilis	1	0	0	1	0.50	1
Little Spider	63	A	3.5	Muck	CH SP.	Chara spp.	0	0	1	0	0.25	4
Little Spider	63	A	3.5	Muck	EL SP.	Eleocharis spp.	0	0	1	1	0.50	3
Little Spider	63	B	4.5	Sand	TOTAL	Total Density @ Station	0	0	1	0	0.25	
Little Spider	63	B	4.5	Sand	NAFL	Najas flexilis	0	0	1	0	0.25	1
Little Spider	63	C	6.0	Muck	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	63	C	6.0	Muck	POAM5	Potamogeton amplifolis	1	1	1	1	1.00	1
Little Spider	63	C	6.0	Muck	NAFL	Najas flexilis	1	1	1	0	0.75	1
Little Spider	63	C	6.0	Muck	PORO	Potamogeton robbinsii	1	0	0	0	0.25	1
Little Spider	64	A	3.5	Sand	TOTAL	Total Density @ Station	1	0	1	1	0.75	
Little Spider	64	A	3.5	Sand	MYSI	Myriophyllum sibiricum	1	0	0	0	0.25	1
Little Spider	64	A	3.5	Sand	NAFL	Najas flexilis	1	0	1	0	0.50	1
Little Spider	64	A	3.5	Sand	EL SP.	Eleocharis spp.	0	0	1	1	0.50	3
Little Spider	64	A	3.5	Sand	PO SP.	Potamogeton SP.	0	0	0	1	0.25	1
Little Spider	64	B	6.0	Sand	TOTAL	Total Density @ Station	0	0	1	0	0.25	
Little Spider	64	B	6.0	Sand	PORO	Potamogeton robbinsii	0	0	1	0	0.25	1
Little Spider	64	C	9.5	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	64	C	9.5	Sand	NAFL	Najas flexilis	1	1	1	1	1.00	1
Little Spider	64	C	9.5	Sand	CH SP.	Chara spp.	1	0	1	0	0.50	4
Little Spider	64	C	9.5	Sand	VAAM3	Vallisneria Americana	0	1	0	1	0.50	1
Little Spider	65	A	4.0	Sand	TOTAL	Total Density @ Station	0	0	0	1	0.25	
Little Spider	65	A	4.0	Sand	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
Little Spider	65	B	6.5	Sand	TOTAL	Total Density @ Station	1	0	1	1	0.75	
Little Spider	65	B	6.5	Sand	NAFL	Najas flexilis	1	0	1	1	0.75	1
Little Spider	65	C	8.5	Muck	TOTAL	Total Density @ Station	0	1	2	2	1.25	
Little Spider	65	C	8.5	Muck	PORO	Potamogeton robbinsii	0	1	2	1	1.00	1
Little Spider	65	C	8.5	Muck	POAM5	Potamogeton amplifolis	0	0	1	1	0.50	1

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Lake Location	Location Code	Depth Code	Depth (ft)	Substrate	Species Code	Species	Density Rating	Density Rating	Density Rating	Density Rating	Average	Type
Little Spider	65	C	8.5	Muck	NAFL	Najas flexilis	0	0	0	1	0.25	1
Little Spider	65	C	8.5	Muck	RA SP.	Ranunculus spp.	0	0	0	1	0.25	1
Little Spider	66	A	3.5	Sand	TOTAL	Total Density @ Station	1	1	1	1	1.00	
Little Spider	66	A	3.5	Sand	CH SP.	Chara spp.	1	1	0	1	0.75	4
Little Spider	66	A	3.5	Sand	EL SP.	Eleocharis spp.	1	0	1	1	0.75	3
Little Spider	66	A	3.5	Sand	NAFL	Najas flexilis	1	0	0	0	0.25	1
Little Spider	66	A	3.5	Sand	PO SP.	Potamogeton SP.	0	1	0	0	0.25	1
Little Spider	66	A	3.5	Sand	PORI2	Potamogeton richardsonii	0	0	0	1	0.25	1
Little Spider	66	B	5.0	Sand	TOTAL	Total Density @ Station	1	0	1	1	0.75	
Little Spider	66	B	5.0	Sand	PO SP.	Potamogeton SP.	1	0	1	0	0.50	1
Little Spider	66	B	5.0	Sand	CH SP.	Chara spp.	0	0	1	1	0.50	4
Little Spider	66	C	7.0	Muck	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Little Spider	67	A	2.0	Sand	TOTAL	Total Density @ Station	0	0	0	0	0.00	
Little Spider	67	B	4.0	Sand	TOTAL	Total Density @ Station	1	1	1	2	1.25	
Little Spider	67	B	4.0	Sand	CH SP.	Chara spp.	1	0	1	1	0.75	4
Little Spider	67	B	4.0	Sand	NAFL	Najas flexilis	1	0	1	1	0.75	1
Little Spider	67	B	4.0	Sand	PO SP.	Potamogeton SP.	1	1	0	0	0.50	1
Little Spider	67	B	4.0	Sand	EL SP.	Eleocharis spp.	0	1	0	0	0.25	3
Little Spider	67	B	4.0	Sand	VAAM3	Vallisneria Americana	0	0	0	1	0.25	1
Little Spider	67	B	4.0	Sand	PORO	Potamogeton robbinsii	0	0	0	1	0.25	1
Little Spider	67	B	4.0	Sand	POAM5	Potamogeton amplifolis	0	0	0	1	0.25	1
Little Spider	67	C	7.5	Muck	TOTAL	Total Density @ Station	2	1	1	1	1.25	
Little Spider	67	C	7.5	Muck	PORO	Potamogeton robbinsii	2	1	0	0	0.75	1
Little Spider	67	C	7.5	Muck	NAFL	Najas flexilis	1	1	1	1	1.00	1
Little Spider	67	C	7.5	Muck	POAM5	Potamogeton amplifolis	1	0	1	1	0.75	1
Little Spider	67	C	7.5	Muck	POIL	Potamogeton Illinoensis	0	1	0	0	0.25	1
Little Spider	67	C	7.5	Muck	CH SP.	Chara spp.	0	1	0	0	0.25	4

Type 1 = Submersed

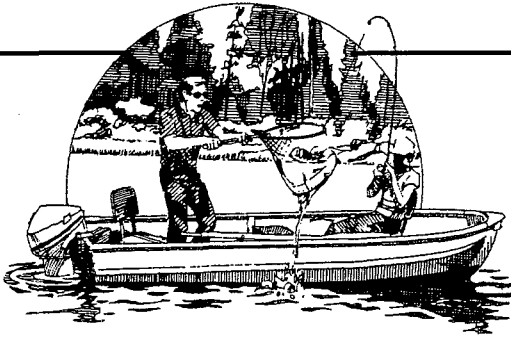
Type 2 = Floating-leaf

Type 3 = Emergent

Type 4 = Chara. sp. (algae)

Appendix E

***2000 Spider Chain of Lakes
Survey Data***



Spider Chain of Lakes Improvement Association

Box 1082
Hayward, Wisconsin 54843

To Spider Chain of Lakes Residents and Property Owners,

Last fall, many of you took the time to complete a comprehensive community survey. The survey was designed to provide insight into your thoughts and opinions about the Spider Chain of Lakes. The Spider Chain of Lakes Improvement Association (SCLIA) will fully consider these results as they plan future lake management programs. Enclosed is a summary of the results of the survey for your personal review.

Of the 150 surveys that were sent out, 85 were completed and returned. Although the association had hoped for a higher number of respondents, we feel the 57% response rate was good and shows the high level of interest you and your neighbors have in the Spider Chain of Lakes. In addition, there were a number of hand written comments included with many of the responses.

If you have any questions regarding the survey results, feel free to call or write.

Sincerely,
The Board of Directors

Spider Chain of Lakes
Improvement Association

Fall 2000 Survey

Summary Results

March, 2001

SPIDER CHAIN OF LAKES IMPROVEMENT ASSOCIATION SURVEY SUMMARY

A survey was sent to approximately 150 homeowners on and close to the Spider Chain of Lakes. A total of 85 questionnaires were returned and tabulated.

PART A – Lake Use

- 1) Why did you buy property on a lake?

The majority of respondents appreciate the peace and tranquility. Other top reasons cited included fishing, observing wildlife, and enjoying the view. Entertaining friends and relatives, swimming and motorized boating were also mentioned a number of times.

- 2) How often do you engage in each of the following on the SCL?

Respondents were given 15 lake use activities from which to choose. Swimming, fishing, scenic viewing, and hiking/walking were cited most often by respondents. These activities were performed frequently or whenever possible; whereas most other activities were on an occasional basis. Over 80% indicated they never use jet skis and in excess of 60% do not engage in sailing, snowmobiling, ice fishing, and cross country skiing.

- 3) What is your satisfaction level while participating in recreational activities on SCL?

90% of the respondents indicated that their experiences were usually pleasurable, including over 60% who felt their experiences were always pleasurable.

- 4) How would you rate the condition of the SCL as a whole for the following activities?

Most indicated that the lake is good to excellent for swimming, canoeing, row/paddleboating, power boating/water skiing, cross country skiing, scenic viewing, hiking/walking and pontooning. Many felt the lake was only fair to good for fishing.

- 5 & 6) When at your property on SCL, how do you feel about the number of people using the lake?

90% of the respondents indicated that the lake is not crowded on the weekdays. On weekends, 68% indicated that the lake was not crowded while 27% believe that the lake is crowded.

- 7) Have you discontinued any lake activities that you enjoyed in the past?

Most respondents have not changed their activities. Of the 20% that have, health factors were listed as the primary reason.

8) Are you aware of the boating regulations on the SCL?

98% were aware that the hours for water/jet skiing and high speed vehicles are 11:00 a.m. to 3:00 p.m.

9) Do you feel the laws are strict enough, not strict enough or are too strict?

68% believe the laws are strict enough and 17% believe they are not strict enough. Only 5% of the respondents believe they are too strict.

10) Are the present boating laws adequately enforced?

Only 30% indicated that the boating laws are adequately enforced, whereas 50% feel that the enforcement is not adequate.

11) Who should be charged with the enforcement of the present boating laws?

20% of the respondents felt that everyone on the lake should be involved with enforcing the boating laws or at least in warning violators. 20% felt the sheriff was the best enforcement agency and 15% felt the DNR should be responsible. A number of respondents felt the resort owners should be more active in informing guests of the regulations on the SCL.

12) Should changes be made to the boating laws?

39% felt changes should be made while 44% felt no change was necessary. Suggestions on possible changes to the current boating regulations was the most active area for the entire survey, indicating a very high level of interest in these regulations. Suggested changes to the boating laws include 24% who felt jet skis should be banned, other suggestions ranged from making the SCL a totally quiet lake, enforcing the speed regulations for fishing boats, as well as jet skis. Some want to expand the hours for water skiing/jet skis. Others want to raise the boat speed limits to 20 mph (nobody runs at 10 mph). It was also suggested that special regulations should be considered for North Lake.

13) Do you fish the SCL?

Over 70% of the respondents indicated that they fish the SCL.

14) If you do not fish on the SCL, did you in the past?

Of those who answered no to question 13, less than 10% fished the SCL in the past. The primary reason cited for not fishing any more was that the fishing is not as good as it once was.

15) How do you rate the present fishing quality of the SCL?

Very Poor	4%
Poor.....	16%
Fair.....	42%
Good	28%
Excellent.....	10%

- 16) Which of the following fish do you think has increased, decreased, or remained the same in number since you started fishing on the SCL?

A significant number of respondents expressed some uncertainty if various fish had decreased or increased. However, 50% feel that walleyes have decreased, 48% feel muskies have stayed the same, and 51% felt that largemouth bass had stayed the same or increased. In addition, 65% felt that panfish had decreased or stayed the same, as well as 55% who felt smallmouth bass had also decreased or stayed the same.

- 17) Which of the following best describes your opinion of public access to the SCL, adequate or inadequate?

93% believe there is adequate public access to the SCL.

- 18) Should the existing channels between the lakes be expanded or be improved?

24% of the respondents feel the existing channels should be expanded or improved, while 76% feel no improvements were necessary. Those who feel some improvements are necessary believe the channels, especially the access to Clear Lake, should be deeper, but not wider. Many who favor no change to the channels want them left alone so we can limit larger boats on the lakes.

PART B – Plant Management

- 19) Do you feel the SCL has excessive aquatic plant problems?

Yes	8% (1999)
	12% (2000)
No	55% (1999)
	53% (2000)
Occasionally	15% (1999)
	15% (2000)
Don't Know	22% (1999)
	20% (2000)

- 20) Do you use fertilizer on your SCL property?

An overwhelming majority (88%) do not use fertilizer on their property.

- 21) Do you use phosphate free fertilizer?

All those who indicated they use fertilizer on their property in #21 also indicated they use phosphate free fertilizer.

PART C – Water Quality

- 22) How do you rate the existing water quality of the SCL?

47% rated the SCL water quality excellent, 43% as good, 7% as fair, 0% as poor, and 3% didn't know.

23) Have you noticed any change in water quality since you bought property on the SCL?

60% of the respondents indicated that the water quality has not changed since they bought property on the SCL, 9% felt the quality had deteriorated, 5% felt it has improved, 10% indicated it was variable and 16% had no opinion.

24) Please describe any changes in lake water quality that may have affected your use of SCL?

No specific comments were voiced in response to this question.

25) What are the three most important criterion to you for judging the quality of the SCL?

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>	<u>Total</u>
Clarity of Lake	23	13	6	42
Remoteness/Solitude	9	18	8	35
Clean Environment	10	9	12	31
Scenic Surroundings	10	9	11	30
Proximity of Nature	6	7	13	30
Quality of Fisheries	8	15	4	27
Condition for Swimming	6	4	9	19
Friendliness	1	1	7	9
Other	0	0	2	2

26) Which of the following do you believe are the three most significant causes of the problems on the lake?

Most respondents believe the number of water/jet skiers is the number one cause of problems on the SCL. Number two is excessive sediment deposits on the lake bottom, number three is development around the lake, followed by runoff from lawn fertilizers, excessive boat speed, and gasoline/oil from motor boats.

27) To what extent do you think the water quality affects the value of your property?

80% of the respondents believe the value of their property is much or very much affected by the water quality. Another 12% felt the value was somewhat affected by the quality of the water.

28) Are you familiar with local land/zoning regulations?

80% of the respondents are familiar with local land and zoning regulations.

- 29) If you answered yes to question 28, do you feel the regulations are adequate to protect the water quality of the SCL?

72% feel that the regulations are adequate and 12% feel they are inadequate.

Especially cited as an area needing improvement was the enforcement of zoning regulations dealing with wetlands and building setbacks.

- 30) Do you feel the land/zoning regulations are adequately enforced?

56% of the respondents believe the regulations are adequately enforced, 24% think they are not adequately enforced, and 20% expressed no opinion.

One respondent felt strongly that the county should take over the zoning as they would be more impartial and fair. "As a committee they are much more knowledgeable about the laws and would administer the enforcement in a way that would keep the township out of court. In that way all property owners, whether they are friends of a board member or, heaven forbid, just a regular person, could be assured of having a fair decision made according to the law."

- 31) What do you feel are the three most valuable resources in the SCL area?

	<u>1st</u>	<u>2nd</u>	<u>3rd</u>
Natural Beauty	47	8	13
Fisheries Resource	15	11	10
Wildlife	7	19	16
Trees	0	17	17
Recreation	2	7	14

- 32) What describes your opinion of the lake level?

72% of the respondents believe the lake level is just right or from their experience nothing has changed. 13% believe the lake level to be too low and 6% believe it to be too high.

- 33) If you indicated a problem with the lake level, to what do you attribute the problem?

Written comments ranged from the statement that the lake level in 2000 was just right to suggestions the dam be removed because it is creating wider, shallower lake with current lake levels or the high level of the lake in 2000 is causing undue shoreline erosion.

- 34) Are you aware of the Spider Lake Improvement Association?

91% of the respondents are aware of the SCLIA.

- 35) Have you attended an association meeting within the last 12 months?

Only 42% of the respondents have attended an association meeting within the past 12 months.

36) What changes would encourage you to attend association meetings?

It was also suggested the SCLIA make all homeowners feel welcome with current up-to-date mailing and to make it clear that the association is there to protect everyone's enjoyment of the lake whether it be fishing, skiing, jet skiing, sailing, etc.

37) Were you aware the association members and other volunteers will construct and install fish cribs in SCL this summer?

82% of the respondents were aware of the efforts to install fish cribs in SCL last summer.

38) Did you assist in some way with the project or other association projects?

Less than half, 42% of the respondents had assisted with the fish crib construction and/or other association projects.

39) What additional association activities would you like to see the SCLIA undertake?

Activities mentioned included: 1) the improvement of the picnic areas; 2) the formulation of a loon watch group with the Sig Olson Institute; 3) sponsorship of a program for the free inspection of boats by the DNR to promote increased safety; 4) a more active role in the regulation of ATV's; and 5) a more active fish stocking program.

40) What can the SCLIA do to improve its communications with its members/non-members?

Suggestions in that area included the use of local merchants to promote the association and the placing of bulletin boards in the SCL area (i.e. Dow's Corner) to publicize association activities.

41) If you are not a member of the association, under what conditions would you join?

No responses were given to this question.

PART D – Demographics

42) On SCL, do you own, rent, etc.?

44% of the respondents own a permanent home on SCL, 48% own a seasonal home, 5% rent, 2% own land only and 1% own business property.

43) If you did not live year round at the SCL, when do you spend time at the SCL?

The large majority of people who do not live year round at the SCL spend the spring, summer and fall at SCL. A small number spend time during the winter at the SCL.

44) How long have you owned your property at the SCL?

The average respondent has owned their property on SCL for almost 18 years. 27 owners have held property for 10 years or less, while 12 owners have owned property for more than 25 years.

45) How many adults (18 or over) live in your household?

An average of 2.25 adults live in households on the SCL. The most adults in any one household was 8, while three households had 4 adults and six had 3 adults.

46) Are there any other comments or concerns regarding the SCL that you would like to mention?

A number of respondents voiced favorable comments about the great job the SCLIA is doing. Lakeshore restoration projects also received praise.

Finally, a number of areas were cited where improvements are needed. They include the need for monitoring septic systems, the need for a more aggressive strategy to protect against eurasian milfoil, the need for increased duck habitat, the need for testing for chemical pollutants, the need for more buoys, the need to post signs for boaters to watch for loons, and the need to have a telephone number to report violations on the lake.