Webster Lake

2021 Aquatic Vegetation Management Update

Webster Lake Conservation Association
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Acknowledgements

Clarke Aquatic Services would like to thank the Indiana Department of Natural Resources Division of Fish and Wildlife's LARE Program for providing the funding and guidance on this project. Clarke Aquatic Services passion is to make communities around the world more livable, safe, and comfortable. Our goal is to help preserve and enhance lakes and ponds in an environmentally friendly manner so lake property owners and lake communities can enjoy the recreational and aesthetic value of their waterways to the fullest. We would be remiss if we didn't include a special thank you to Mike Wyrick and the Webster Lake Conservation Association, along with Rod Edgell of the LARE program.

Thank you!

Executive Summary

Webster Lake is located in Kosciusko County with 653 surface acres and has a mean depth of 12 feet. The lake is known as the premier muskie lake in the state of Indiana. This is due to the intense stocking effort conducted by the Department of Natural Resources since 1978. In summer months Webster Lake is a very popular fishing, boating, swimming, and water-skiing resource, and a public beach is located on the western side of Webster Lake. Much of the open water is deep enough on Webster Lake to accommodate boats, but in recent years, dense beds of Eurasian watermilfoil (*Myriophyllum spicatum*) have interrupted the popular summer activity.

Clarke Aquatic Services (CAS) was contracted by the Webster Lake Conservation Association (WLCA) to complete aquatic vegetation sampling, herbicide treatments, and to update the Webster Lake Aquatic Vegetation Management Plan (AVMP) in 2021. The primary invasive species within Webster Lake is Eurasian watermilfoil (EWM). Other invasive species present in the lake have included curly-leaf pondweed (*Potamogeton crispus*) and Starry stonewort (*Nitellopsis obtusa*). A common native species of submerged aquatic vegetation present in Webster Lake that can reach nuisance levels is Coontail (*Ceratophyllum demersum*). Because of extensive shallow areas within the lake, the lake can become heavily infested with dense growth of these nuisance species. In 2018, there was a spike in the growth of Eurasian watermilfoil with 175 acres treated. In 2019, a significant reduction in Eurasian watermilfoil was observed documenting only 88.49 acres. The 2020 season saw a slight increase of Eurasian watermilfoil of 136 acres. In 2021, 98.75 acres of Eurasian watermilfoil were treated.

WLCA was awarded a $38,680 grant from the Lake and River Enhancement (LARE) program for selective Eurasian watermilfoil treatments, sampling, and plan update in 2021. An invasive survey was completed on May 11, 2021. The survey documented 98.75 acres of Eurasian watermilfoil. These areas were treated on June 3rd, 2021, with 2.0 ppm of 2, 4-D liquid and ProcellaCOR at 3 PDU's. A Tier 2 survey completed on August 31, 2021, found only 3 sites containing Eurasian watermilfoil, a decrease from 6 sites in 2020. Curly-leaf pondweed was found at 8 sites during the Tier 2 survey in 2021, a change from 2020 where none was recorded. No starry stonewort was collected during the survey in 2021.

Vegetation controls in 2021 met 3 of the 4 LARE objectives and goals of this update by limiting nuisance plant issues in high use areas and maintaining overall plant coverage throughout the lake. A similar strategy for the 2022 season is recommended.

Problem Statement

Aquatic vegetation is an important component of lakes in Indiana. However, as a result of many factors, this vegetation can develop to a nuisance level. Nuisance aquatic vegetation, as used in this plan, describes plant growth that negatively impacts the present uses of the lake including fishing, boating, swimming, aesthetic, and lakefront property values. The primary invasive species within Webster Lake are Eurasian watermilfoil and curly-leaf pondweed (CLP). Current native species at nuisance levels since 2019 are coontail and duckweed.

Goals and Objectives

The vegetation management goals of the Webster Lake Aquatic Vegetation Management Plan are:

- Maintain a stable, diverse aquatic plant community that supports a good balance of predator and prey fish and wildlife species, good water quality, and is resistant to minor habitat disturbances and invasive species
- Direct efforts to preventing and controlling the negative impacts of aquatic invasive species
- Provide reasonable public recreational access while minimizing the negative impacts on plant and fish and wildlife resources

Specific management objectives had been developed for Webster Lake in past plans. Below are the plant management objectives for Webster Lake:

- Keep Eurasian watermilfoil below 10% occurrence in summer Tier 2 surveys
- Keep curly-leaf pondweed below 10% occurrence in spring Tier 2 surveys
- Keep starry stonewort below 10% occurrence in summer Tier 2 surveys
- Maintain native plant coverage at 80% of sample sites in summer Tier 2 Survey.

Plant Management History

The morphology of Webster Lake includes extensive shallow areas; accordingly, a large percentage of the lake can become infested with heavy growth of invasive and nuisance species that negatively impact boating, fishing, swimming, and property value. Whole lake fluridone treatments were completed in 1999, 2002, and 2010. After the 2010 Sonar treatment, Eurasian watermilfoil was greatly reduced, but native vegetation was also adversely impacted. In the years following the Sonar treatment, IDNR limited treatments due to a concern of fish cover lacking throughout the lake (Aquatic Control 2017). Traditional non-selective shoreline treatments were allowed, but offshore Eurasian watermilfoil treatments were limited. In 2011, Eurasian watermilfoil was not detected which resulted in a year without treatment. In 2012, 45 acres of Eurasian watermilfoil were treated with 2,4-D herbicide, 53 acres in 2013, 26 acres in 2014, and 26 acres in 2015 (Aquatic Control 2017). These treatments are outlined in Table 1. Over 100 acres of Eurasian watermilfoil were documented in 2014 and 2015. Data from the 2015 Tier 2 survey depicted a large increase in overall plant coverage and native abundance, therefore IDNR lifted treatment restrictions in 2016. In addition to invasive Eurasian watermilfoil treatments, starry stonewort, an invasive macroalgae, was treated in a 4.5-acre area in 2015 and 2016. In the spring of 2016, invasive mapping revealed 155.4 acres of Eurasian watermilfoil. All Eurasian watermilfoil areas were treated with 2.0 ppm of 2, 4-D, which led to a decrease in abundance. The spring 2017 survey documented 59.4 acres of Eurasian watermilfoil and 71.4 acres of curly-leaf pondweed. Eurasian

watermilfoil areas were treated with 2.0ppm 2, 4-D, and 16 acres of curly-leaf pondweed were treated with Aquathol K at 1.0ppm (Aquatic Control 2018). The summer of 2017 Tier 2 survey revealed that invasive frequency and overall native plant coverage met the management plan objective. In 2018, 175 acres of Eurasian watermilfoil using 2,4-D, was treated and native plant coverage did not meet the objective at 71.1%, which was below the 80% outlined in the goals section. For 2019, a significant decline in EWM growth was expected in the spring. All objectives were met for 2019, except for native plant coverage which was recorded at 70.0%. Spring 2020 brought on an increase in Eurasian watermilfoil compared to 2019, at 136 acres. In 2021, 98.75 acres were treated with and 3 PDU's of ProcellaCOR and 2.0 ppm 2,4-D, which yielded seasonal control of EWM.

Table 1. Webster Lake Treatment History 1988-2021.

Year	Targeted Vegetation	Treated Acres	Chemical Approved	Total Cost	Per Acre Cost
1988	Eurasian watermilfoil, Pondweed, Naiad, eel grass, algae	*	Reward, Komeen, Aquathol K, Hydrothol, Sonar AS, CuSO4	$20,527.00	$200.00
1989	Eurasian watermilfoil, pondweeds, chara, algae	*	Reward, Komeen, Aquathol K, Hydrothol, Sonar, CuSO4, and Cidekick	$18,185.00	*
1990	Eurasian watermilfoil, pondweeds, chara, algae	*	Reward, Komeen, Aquathol, and CuSO4	$12,080.00	$200.00
1991	Eurasian watermilfoil, flatstem pw, curlyleaf pw, algae	*	Reward, Aquathol K, Komeen, and CuSO4	$18,000.00	$200.00
1992	Eurasian watermilfoil, mixed pondweeds, chara, and filamentous algae	*	Reward, Komeen, Aquathol K, Sonar, and CuSO4	$18,050.00	*
1993	Eurasian watermilfoil, coontail, pondweeds, and chara	65	Sonar, Aquathol K, Hydrothol, Reward, and CuSO4	$19,400.00	$300.00
1994	Eurasian watermilfoil, coontail, mixed pondweeds, chara, and filamentous algae	32.5	Reward, Komeen, Aquathol K, Hydrothol, and CuSO4	$10,125.00	$312.00
1995	Eurasian watermilfoil, mixed milfoil, coontail, pondweeds, elodea, and chara	*	Reward Komeen, Aquathol K, and CuSO4	$13,230.00	*
1996	Eurasian watermilfoil	60	2,4-D	*	*
1997	Eurasian watermilfoil	60	Reward	*	*
1998	Eurasian watermilfoil	60	Reward	*	*
1999	Eurasian watermilfoil, pondweeds, coontail, and chara	174	Sonar SRP, Nautique, Reward, and CuSO4	$75,367.00	$433.00
2000	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	48	Reward, Nautique, Navigate, Aquathol K, and Copper Sulfate	$19,585.00	$408.00
2001	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	65	Reward, Nautique, Navigate, Aquathol K, and Copper Sulfate	$23,695.00	$364.00
2002	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	653	Sonar SRP, Sonar PR, Sonar AS, Nautique, and Copper Sulfate	$73,390.00	$112.38
2003	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	28	Reward, Nautique, Navigate, Aquathol K, and Copper Sulfate	$6,601.00	$235.75
2004	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	35.75	Reward, Nautique, Navigate, Aquathol K, and Copper Sulfate	$11,575.00	$322.10

2005	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	64 EWM, 80 Shoreline	Reward and Nautique Shoreline & Renovate for EWM	$49,80 0.00**	$345.80
2006	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	121 CLP, 46 EWM, 40 shoreline	Reward & Komeen Shoreline, Renovate EWM, Aquathol early CLP	$51,175.00**	$247.22
2007	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	121 CLP, 40 EWM, 38 shoreline	Reward & Komeen Shoreline, Renovate EWM, Aquathol early CLP	$46,144.00**	$231.87
2008	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	121 CLP, 46.8 EWM, 38 shoreline	Reward & Komeen Shoreline, Renovate EWM, Aquathol early CLP	$47,406.00**	$230.35
2009	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	31.7 CLP, 38.7 EWM, 38 shoreline	Reward & Komeen Shoreline, Renovate EWM, Aquathol early CLP	$35,201.00**	$324.70
2010	Eurasian watermilfoil	653	SonarONE and Sonar AS	$125,000	$191.42
2011	Eurasian watermilfoil, curly-leaf pondweed, coontail, chara, and filamentous algae	0 (1.75 EWM on backwater)	Renovate Max G	$875.00	$500.00
2012	Eurasian watermilfoil in main lake, algae, coontail, Eurasian watermilfoil in channels only	45.3 EWM (15.3 web), 7.6 native	2,4-D, Reward, Komeen, Aquathol	$18,781.00	$355.00
2013	Eurasian watermilfoil in main lake, algae, coontail, milfoil in channels and select main lake areas	53.0 EWM, 26 native	2,4-D, Reward, Komeen, Aquathol	$24,685***	$312.46
2014	Eurasian watermilfoil in main lake, algae, coontail, milfoil in channels and select main lake areas	26.2 EWM, 69.5 native	2,4-D, Reward, Komeen, Aquathol	$34,530***	$355.25
2015	Eurasian watermilfoil in main lake, algae, starry stonewort, coontail, milfoil in channels and select main lake areas	26.0 EWM, 4.0 SSW, 90.9 native	2,4-D, Reward, Clipper, Komeen, Aquathol	$43,460***	$371.77
2016	Eurasian watermilfoil, algae, coontail, starry stonewort, coontail, pondweed	60.8 native, 4.5 SSW, 158.8 EWM	2,4-D, Reward, Clipper	$62,638****	$285.24
2017	Eurasian watermilfoil, algae, coontail, coontail, pondweed	60.8 native, 138.6 EWM, 15 CLP	2,4-D, Reward, Clipper, Aquathol	$63,050****	$294.08
2018	Eurasian watermilfoil, Misc. Species	175 EWM 60.5 natives	2,4-D Captain, Cygnet Plus, Reward	$45,470.45****	$190.08
2019	Eurasian watermilfoil, Misc. Species	88.49EWM, 68.59 shore	2,4-D, Clipper, Tribune, Cygnet Plus, Captain	$42,440.49****	$270.18
2020	Eurasian watermilfoil	136 EWM 17.73 shore	2,4-D, Clipper, Copper sulfate, Tribune, Cygnet Plus	$44,274.25****	$325.54
2021	Eurasian watermilfoil	98.75 EWM 89 Shore	ProcellaCOR, 2,4 D, Clipper, Copper sulfate, Tribune, Cygnet Plus	$30,608.00****	$309.86

***insufficient data, **approximately $20,000 funded by LARE, ***approximately $5,000 funded by LARE, ****80% of EWM treatment funded by LARE**

In 2021, an invasive survey was completed on May 11, 2021. The survey documented 98.75 acres of Eurasian watermilfoil. This was a decrease of approximately 38 acres from 2020. Treatment for Eurasian watermilfoil was completed on June 3, 2021, for control of Eurasian watermilfoil. The treatment is displayed by area in Table 2 and illustrated in Figure 1.

Table 2. Eurasian watermilfoil Treatment Summary June 3, 2021.

Area	Acres	Average depth (ft)	Treatment
1	13	4	ProcellaCOR at 3 PDU/acre-ft
2	4.75	3	ProcellaCOR at 3 PDU/acre-ft
3	20.5	5	2,4 D at 2.00ppm
4	3.75	3	2,4 D at 2.00ppm
5	15	4	2,4 D at 2.00ppm
6	6.5	4	2,4 D at 2.00ppm
7	32.75	6	2,4 D at 2.00ppm
8	2.5	3	2,4 D at 2.00ppm

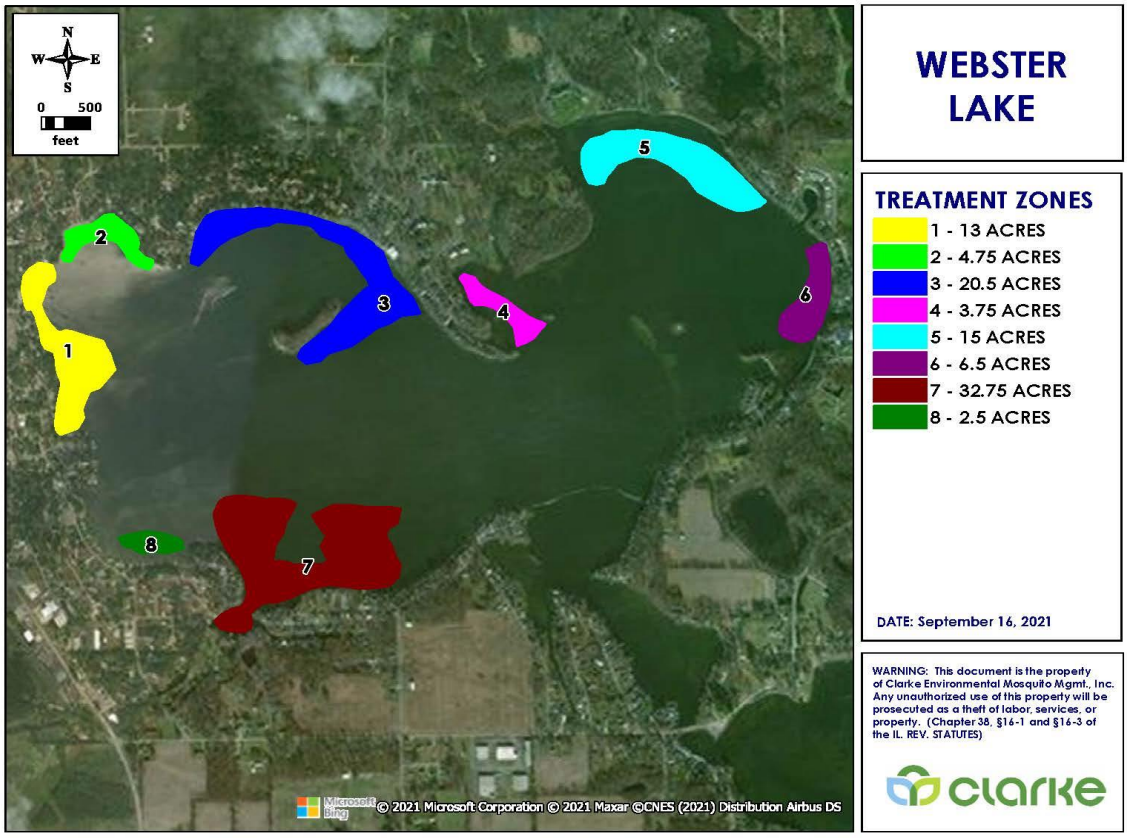


Figure 1. Webster Lake Treatment Areas June 3, 2021.

A total of 88.95 acres of privately funded shoreline treatments (Figure 2) occurred using contact herbicides on May 6th, May 19th and June 24th, 2021. The May 6th treatment was an early-season treatment for curly-leaf pondweed and was completed prior to the mapping of Eurasian watermilfoil on May 11. Shoreline areas outside of Eurasian watermilfoil treatment areas were treated on May 19th. Areas within Eurasian watermilfoil areas and a few touch up areas were treated on June 24th, which included 12 acres of channels.

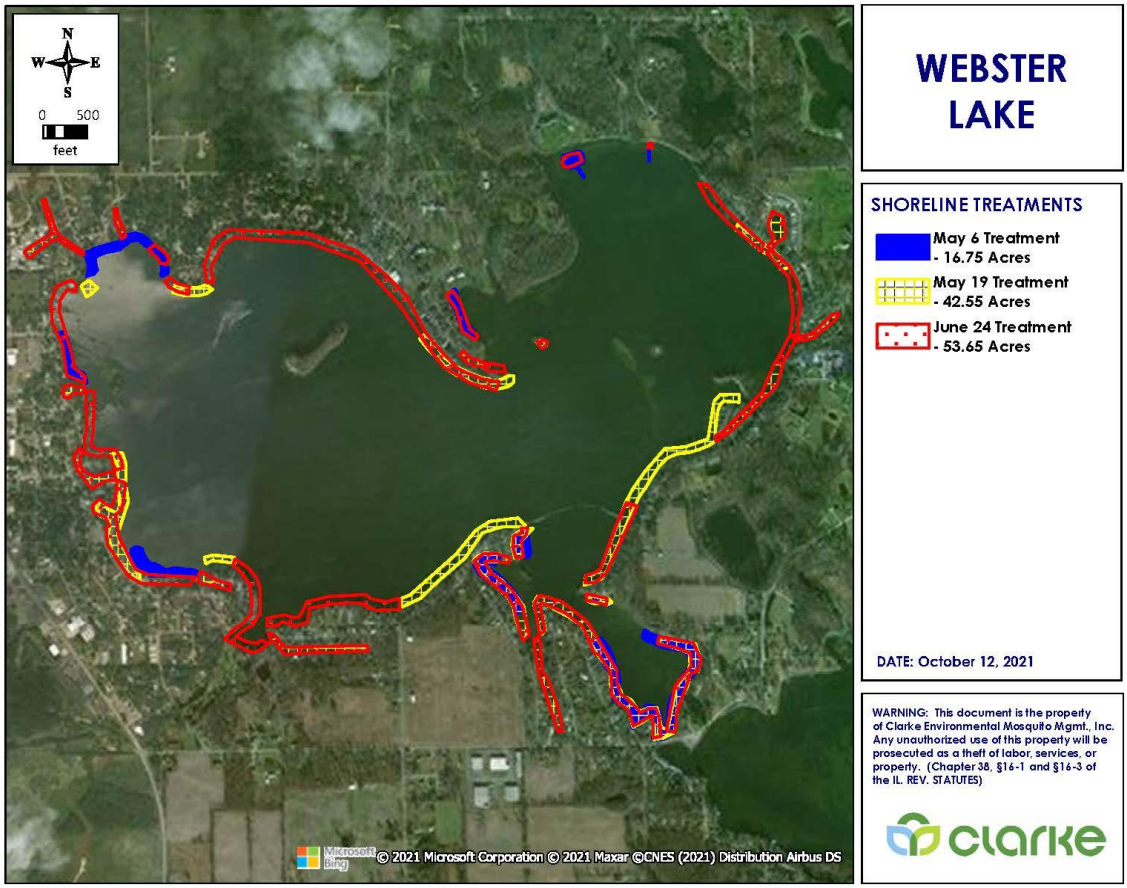


Figure 2. Webster Lake 2021 Shoreline Treatment Areas on May 6, May 19, and June 24, 2021.

Aquatic Plant Community Characterization

Aquatic vegetation sampling is a must to create an effective aquatic vegetation management plan. Sampling provides useful and important data that allows lake managers to identify and locate areas of nuisance and/or beneficial native submersed vegetation throughout the waterbody. It also allows for annual monitoring to create a proactive plan if any changes occur in the plant community. Monitoring also evaluates the effectiveness of management and treatment techniques from season to season. In 2021, invasive species mapping surveys and Tier 2 surveys were completed on Webster Lake.

Methods

The Tier 2 survey fulfills the following objectives:

1. To document the distribution and abundance of submersed aquatic vegetation
2. To compare present distribution and abundance with past distribution and abundance within select areas and at a lake-wide scale

The Tier 2 survey in 2021 followed the Tier 2 survey protocol issued by the IDNR LARE program. Once a site was reached, the boat was slowed to a stop and the coordinates were recorded on a hand-held GPS unit and later downloaded into mapping software. These coordinates are existing from previous sruveys. A depth measurement was taken by dropping a two-headed standard sampling rake that was attached to a rope marked off in 1-foot increments. An additional ten feet of rope was released, and the boat was reversed at minimum operating speed for a distance of ten feet. Once the rake is retrieved the individual species are placed on the rake and the abundance on the rake is scored with either a 0 (no plants retrieved), 1 (1-19% of rake teeth filled), 3(20-99% of rake teeth filled), or 5 (100% of rake teeth filled) (IDNR 2018).

Tier 2 Sampling Results

A Tier 2 survey was completed on August 31st, 2021. Secchi depth was recorded at 6 feet, an increase from 2020 Secchi depth at 3 feet 8 inches. Native plants were present at 66 of the 90 sites and 10 species were collected, of which 8 were native (Figure 3). Eurasian watermilfoil (Figure 4) and curly-leaf pondweed (Figure 5) were the only two invasive species collected being found at 3 and 8 different sites in Webster Lake, respectively. The results of the August 2021 Tier 2 survey for Webster Lake can be found in Table 3.

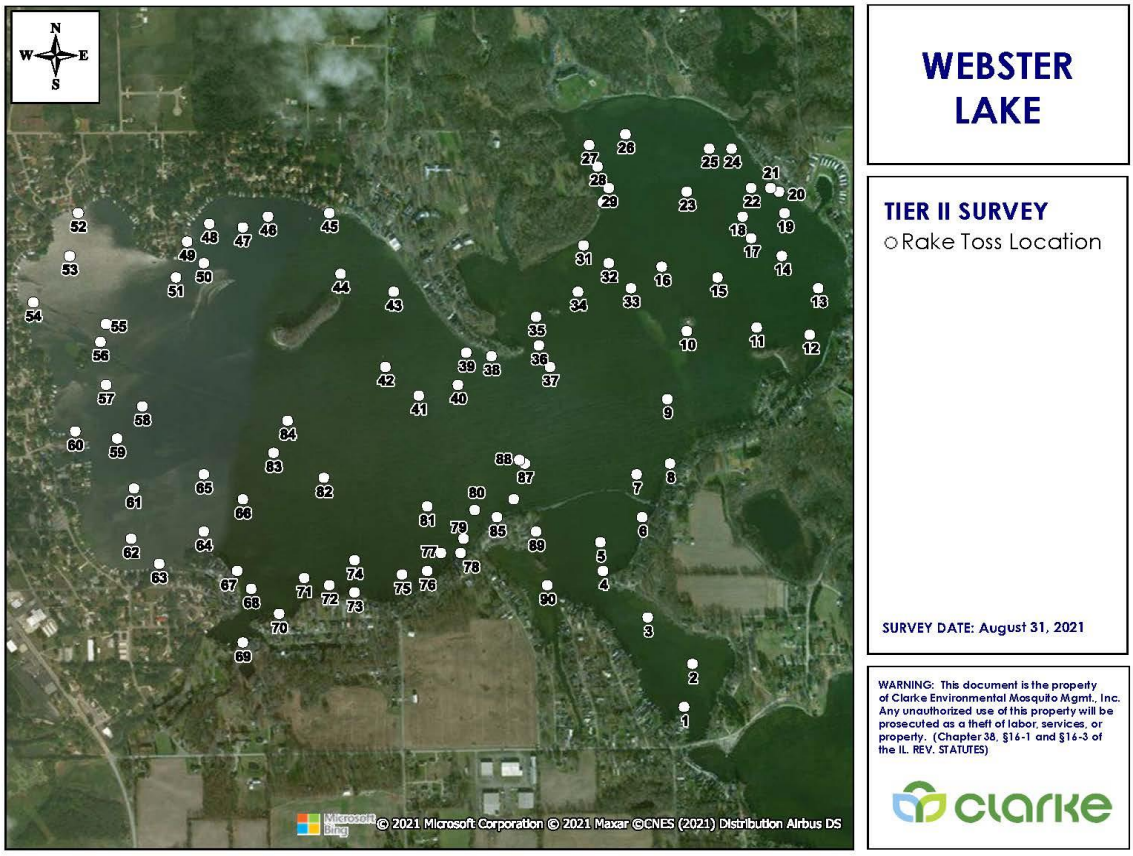


Figure 3. Webster Lake Tier 2 Distribution August 31, 2021.

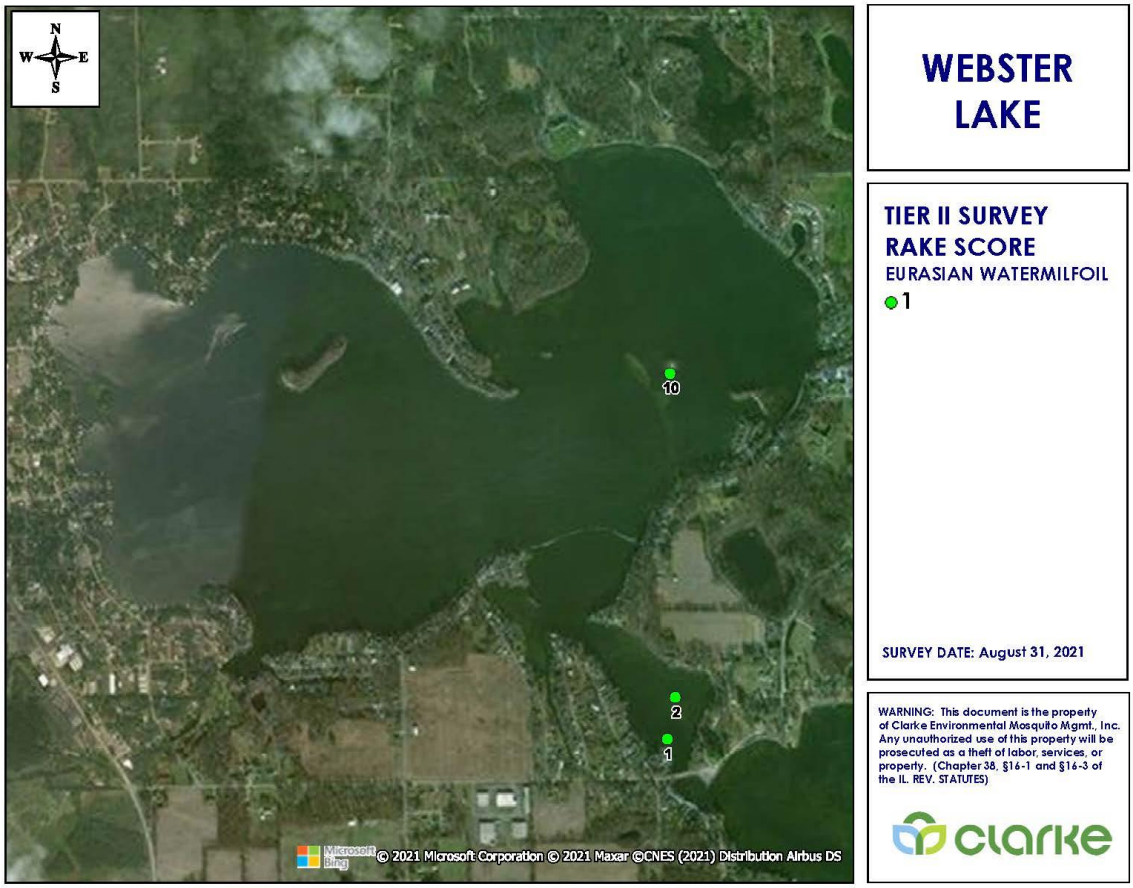


Figure 4. Webster Lake EWM Distribution August 31, 2021.

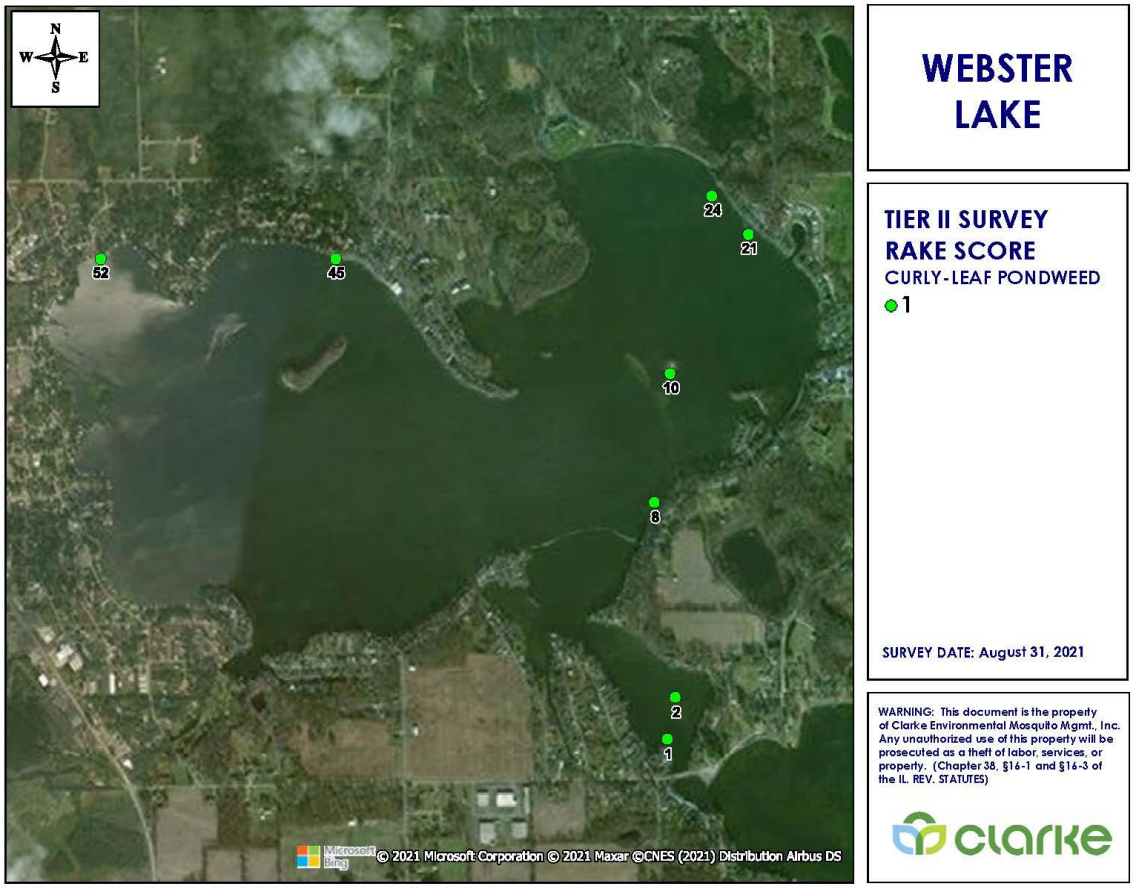


Figure 5. Webster Lake CLP Distribution August 31, 2021.

Table 3. Webster Lake 2021 Tier 2 Sampling Results.

Occurrence and Abundance of Submersed Aquatic Plants in Webster Lake.

County:	Kosciusko	Secchi (ft):	6	Mean species/site:	1.28
Date:	8/31/2021	Sites with plants:	67	SE Mean species/site:	0.13
Littoral Depth (ft):	17.1	Sites with native plants:	66	Mean native species/site:	1.16
Littoral Sites:	86	Number of species:	10	SE Mean natives/site:	0.11
Total Sites:	90	Number of native species:	8	Species diversity:	0.72
		Maximum species/site:	7	Native species diversity:	0.66

All Depths	Frequency of	Rake score frequency per species				Plant
Species	Occurrence	0	1	3	5	Dominance
Coontail	58.9	41.1	50.0	6.7	2.2	16.2
Illinois pondweed	30.0	70.0	24.4	5.6	0.0	8.2
Curly-leaf pondweed	8.9	91.1	8.9	0.0	0.0	1.8
Small pondweed	8.9	91.1	8.9	0.0	0.0	1.8
Sago pondweed	5.6	94.4	4.4	1.1	0.0	1.6
Leafy pondweed	4.4	95.6	4.4	0.0	0.0	0.9
Chara	3.3	96.7	1.1	2.2	0.0	1.6
Eurasian watermilfoil	3.3	96.7	3.3	0.0	0.0	0.7
Nitella	2.2	97.8	0.0	2.2	0.0	1.3
Richardson's pondweed	2.2	97.8	2.2	0.0	0.0	0.4

Occurrence and Abundance of Submersed Aquatic Plants in Webster Lake.

County:	Kosciusko	Secchi (ft):	6	Mean species/site:	2.10
Date:	8/31/2021	Sites with plants:	29	SE Mean species/site:	0.25
Littoral Depth (ft):	17.1	Sites with native plants:	28	Mean native species/site:	1.72
Littoral Sites:	29	Number of species:	10	SE Mean natives/site:	0.21
Total Sites:	29	Number of native species:	8	Species diversity:	0.81
		Maximum species/site:	7	Native species diversity:	0.75

Depths: 0 to 5 ft	Frequency of	Rake score frequency per species				Plant
Species	Occurrence	0	1	3	5	Dominance
Coontail	65.5	34.5	51.7	6.9	6.9	21.4
Illinois pondweed	51.7	48.3	37.9	13.8	0.0	15.9
Curly-leaf pondweed	27.6	72.4	27.6	0.0	0.0	5.5
Small pondweed	13.8	86.2	13.8	0.0	0.0	2.8
Chara	10.3	89.7	3.4	6.9	0.0	4.8
Eurasian watermilfoil	10.3	89.7	10.3	0.0	0.0	2.1
Leafy pondweed	10.3	89.7	10.3	0.0	0.0	2.1
Sago pondweed	10.3	89.7	6.9	3.4	0.0	3.4
Nitella	6.9	93.1	0.0	6.9	0.0	4.1
Richardson's pondweed	3.4	96.6	3.4	0.0	0.0	0.7

Occurrence and Abundance of Submersed Aquatic Plants in Webster Lake.

County:	Kosciusko	Secchi (ft):	6	Mean species/site:	1.15
Date:	8/31/2021	Sites with plants:	19	SE Mean species/site:	0.20
Littoral Depth (ft):	17.1	Sites with native plants:	19	Mean native species/site:	1.15
Littoral Sites:	27	Number of species:	5	SE Mean natives/site:	0.20
Total Sites:	27	Number of native species:	5	Species diversity:	0.62
		Maximum species/site:	3	Native species diversity:	0.62

Depths: 5 to 10 ft	Frequency of	Rake score frequency per species				Plant
Species	Occurrence	0	1	3	5	Dominance
Coontail	59.3	40.7	48.1	11.1	0.0	16.3
Illinois pondweed	37.0	63.0	33.3	3.7	0.0	8.9
Small pondweed	11.1	88.9	11.1	0.0	0.0	2.2
Leafy pondweed	3.7	96.3	3.7	0.0	0.0	0.7
Sago pondweed	3.7	96.3	3.7	0.0	0.0	0.7

Occurrence and Abundance of Submersed Aquatic Plants in Webster Lake.

County:	Kosciusko	Secchi (ft):	6	Mean species/site:	0.83
Date:	8/31/2021	Sites with plants:	16	SE Mean species/site:	0.14
Littoral Depth (ft):	17.1	Sites with native plants:	16	Mean native species/site:	0.83
Littoral Sites:	24	Number of species:	4	SE Mean natives/site:	0.14
Total Sites:	24	Number of native species:	4	Species diversity:	0.35
		Maximum species/site:	2	Native species diversity:	0.35

Depths: 10 to 15 ft	Frequency of	Rake score frequency per species				Plant
Species	Occurrence	0	1	3	5	Dominance
Coontail	66.7	33.3	62.5	4.2	0.0	15.0
Illinois pondweed	8.3	91.7	8.3	0.0	0.0	1.7
Richardson's pondweed	4.2	95.8	4.2	0.0	0.0	0.8
Small pondweed	4.2	95.8	4.2	0.0	0.0	0.8

Occurrence and Abundance of Submersed Aquatic Plants in Webster Lake.

County:	Kosciusko	Secchi (ft):	6	Mean species/site:	0.30
Date:	8/31/2021	Sites with plants:	3	SE Mean species/site:	0.15
Littoral Depth (ft):	17.1	Sites with native plants:	3	Mean native species/site:	0.30
Littoral Sites:	5	Number of species:	2	SE Mean natives/site:	0.15
Total Sites:	10	Number of native species:	2	Species diversity:	0.44
		Maximum species/site:	1	Native species diversity:	0.44

Depths: 15 to 20 ft	Frequency of	Rake score frequency per species				Plant
Species	Occurrence	0	1	3	5	Dominance
Coontail	20.0	80.0	20.0	0.0	0.0	4.0
Sago pondweed	10.0	90.0	10.0	0.0	0.0	2.0

Plant Sampling Discussion

A summer Tier 2 survey was completed on August 31, 2021, and found 3 sites with Eurasian watermilfoil present, 8 sites with curly-leaf pondweed, and no starry stonewort was detected during the survey. Coontail decreased in abundance this year from 82.2 frequency of occurrence to 58.9 across all depths. Table 4 compares surveys completed on Webster Lake from 2011 through 2021 for all depths (2004-2010 can be found in the appendix). Depths broken down into 5-foot increments can also be found in the Appendix. Eurasian watermilfoil occurrence decreased in 2021 from 6.7% to 3.3% during the summer Tier 2 survey. Sites with plants increased tremendously from 63 in 2019 to 83 in 2020 and in 2021 sites decreased again to 67. The number of native species increased to 8 in 2021 with the two previous seasons recording 7 native species. Illinois pondweed decreased in frequency of occurrence from the 2020 survey from 42.2% to 30.0%. Curly-leaf pondweed occurred in the summer survey at 8.9%, the first time since 2016; and starry stonewort was not documented during the survey in 2020 or 2021. In 2021, three of the four objectives of the plant management plan were met, except native plant coverage at 73.3%.

- Keep Eurasian watermilfoil below 10% occurrence in summer Tier 2 surveys – 3.3% in 2021
- Keep curly-leaf pondweed below 10% occurrence in spring Tier 2 surveys – 8.9% in 2021
- Keep starry stonewort below 10% occurrence in summer Tier 2 surveys – 0% in 2021
- Maintain native plant coverage at 80% of sample sites in summer Tier 2 Survey – 73.3% in 2021

Table 4. Webster Lake Tier 2 Data from 2011-2021.

Surveyor	**AC**	**AC**	**AC**	**AC**	**AC**	**AC**	**AC**	**AC**	**IDNR**	**Clarke**	**IDNR**	**Clarke**	**IDNR**	**Clarke**	**IDNR**	**Clarke**
Date	8/24/11	8/13/12	8/13/13	8/11/14	8/12/15	4/25/16	8/3/16	8/7/17	8/1/18	8/8/18	8/1/19	8/14/19	8/4/20	8/18/20	8/5/21	8/31/21
Total Sites	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Littoral Sites	65	80	86	80	84	89	89	90	90	90	90	90	70	90	45	86
Sites with Plants	41	46	48	56	71	67	72	75	69	64	64	63	70	83	45	67
% Sites With Plants	45.6%	51.1%	53.3%	62.2%	78.9%	74.4%	80.0%	83.3%	76.6%	71.1%	71.1%	70.0%	77.8%	92.2%	50%	77.9%
Sites with Native Plants	41	43	35	53	68	46	72	74	69	64	63	63	69	83	44	66
Percent Littoral Coverage	63%	58%	56%	70%	85%	75%	81%	83%	76.6%	71.0%	71.0%	70%	77.8%	92.2%	50%	73.3%
Maximum Plant Depth	9.0	12.0	15.0	15.0	18.0	19.0	19.0	20.0	19.5	20.0	18.0	20.0	19.0	15.0	17.0	17.1
Secchi (ft)	3.5	3.0	5.0	8.5	7.5	7.0	4.0	8.5	4.0	2.75	6.0	8.2	6.0	3.8	6.0	6.0
Number of Species	10	9	10	9	13	9	9	9	6	6	11	10	8	8	8	10
Number of Native Species	9	7	8	7	11	7	8	8	5	5	9	7	6	7	7	8
Species Diversity	0.77	0.79	0.78	0.79	0.69	0.68	0.51	0.56	0.44	0.53	0.65	0.62	0.59	0.63	0.75	0.72
Native Species Diversity	0.76	0.73	0.80	0.73	0.57	0.48	0.45	0.53	0.42	0.5	0.62	0.56	0.56	0.60	0.72	0.66
Mean Native Species/Site	0.72	0.71	0.50	0.99	1.11	0.63	1.08	1.16	0.99	0.94	1.03	1.06	1.16	1.48	0.69	1.28
All Depths																
Eurasian Watermilfoil	0.0	7.8	34.4	40.0	30.0	47.8	6.7	3.3	2.2	2.2	2.2	3.3	1.1	6.7	0.0	3.3
Curly-leaf Pondweed	1.1	3.3	2.2	1.1	0.0	6.7	0.0	0.0	0.0	0.0	1.1	2.2	0.0	0.0	4.4	8.9
Starry Stonewort	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0
Coontail	22.2	28.9	11.1	37.8	71.1	44.4	73.3	76.7	73.3	61.1	60.0	66.7	72.2	82.2	30.0	58.9

Sago Pondweed	25.6	18.9	11.1	0.0	3.3	0.0	1.1	0.0	0.0	0.0	0.0	4.4	0.0	1.1	0.0	5.6
Chara Spp.	5.6	3.3	13.3	18.9	4.4	7.8	5.6	4.4	2.2	5.6	6.7	0.0	4.4	8.9	6.7	3.3
Slender Naiad	3.3	10.0	7.8	25.6	8.9	1.1	0.0	3.3	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Canada Waterweed	0.0	0.0	1.1	0.0	0.0	2.2	0.0	1.1	0.0	0.0	2.2	0.0	0.0	0.0	0.0	1.1
Flat-stemmed Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	1.1	0.0
Horned Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Bladderwort	1.1	0.0	0.0	1.1	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0
Water stargrass	4.4	0.0	2.2	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unidentified Pondweed	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Small Pondweed	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	1.1	0.0	8.9
Nitella	5.6	0.0	0.0	0.0	3.3	1.1	2.2	2.2	0.0	0.0	2.2	0.0	0.0	11.1	0.0	2.2
Illinois Pondweed	0.0	0.0	0.0	1.1	1.1	4.4	15.6	2.2	15.6	25.6	5.6	18.9	17.8	42.2	16.7	30.0
Leafy Pondweed	2.2	6.7	2.2	12.2	5.6	0.0	1.1	11.1	6.7	0.0	16.7	0.0	16.7	0.0	10.0	4.4
Variable Watermilfoil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spiny Naiad	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Large-leaved Pondweed	2.2	2.2	0.0	0.0	8.9	2.2	0.0	14.4	0.0	0.0	0.0	1.1	0.0	1.1	0.0	0.0
White-stemmed Pondweed	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0
Northern Watermilfoil	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Filamentous algae	52.2	43.3	46.7	54.4	48.9	37.8	56.7	40.0	35.6	0.0	41.1	0.0	35.6	0.0	46.7	80.0
Narrow leaved Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	8.9	0.0	0.0	0.0	0.0

Richardson's pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2
Variable pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0

Plant Management Discussion and Action Plan

A decrease in occurrence for EWM was seen in 2021 compared to the 2020 season in which IDNR allowed for 136 acres of EWM to be treated in the lake. In 2021, 100 acres of EWM were anticipated and 98.75 acres of EWM were treated. Additional treatments were made for nuisance native vegetation in the 2021 season along the shoreline. Due to the treatments in 2021, it is estimated to treat no more than 100 acres of EWM in 2022. It is also recommended to treat approximately 70 acres of shoreline for nuisance species that are limiting navigation and multiple recreational uses. It is recommended that the association plan on treating 75 acres of EWM with 2,4-D at 2.0 ppm and 25 acres of EWM with ProcellaCOR at 3PDU's in April or early May. It is also recommended that the association treat 50 acres of CLP with an early season Diquat treatment to be completed before water temperatures reach 60 degrees. If late summer issues with Coontail again impede navigation, additional treatment would be requested of the DNR at that time.

Two sites of starry stonewort were found in 2019, but zero in 2020 and 2021. It is important for this invasive species to be controlled in 2022 if found. There is potential for LARE maintenance funding for starry stonewort control. It is not recommended that WLCA request LARE funding for treatment of the two sites in 2022 due to the lack of presence in the last two seasons.

It is our recommendation that WLCA apply to LARE for $45,881 for the treatment of EWM, $8,750 for early season curly-leaf pondweed, and $4,600 for an Aquatic Management Plan update (Table 5). LARE funding has a maximum cap of $35,000. A copy of this grant application is in the Appendix. Total LARE Grant requested is $47,384.80.

Table 5. Proposed WLCA plant management budget for 2021.

Plant Management Action Plan	Estimated Cost
Invasive Surveys (3), Tier 2 survey (August) and Plan Update (Nov)	$4,600
Up to 75 acres EWM treatment (May) 2,4-D 2.0ppm	$33,206
Up to 50 acres Early Season (April) CLP treatment with Diquat 1.0 gal/acre	$8,750
Up to 25 acres EWM treatment ProcellaCOR EC 3PDUs/ac. Ft*	$12,675
Total	$59,231
Total LARE Grant Requested	$47,384.80

*estimate based on 3 PDU's per acre, rate may change due to the scale of the treatment

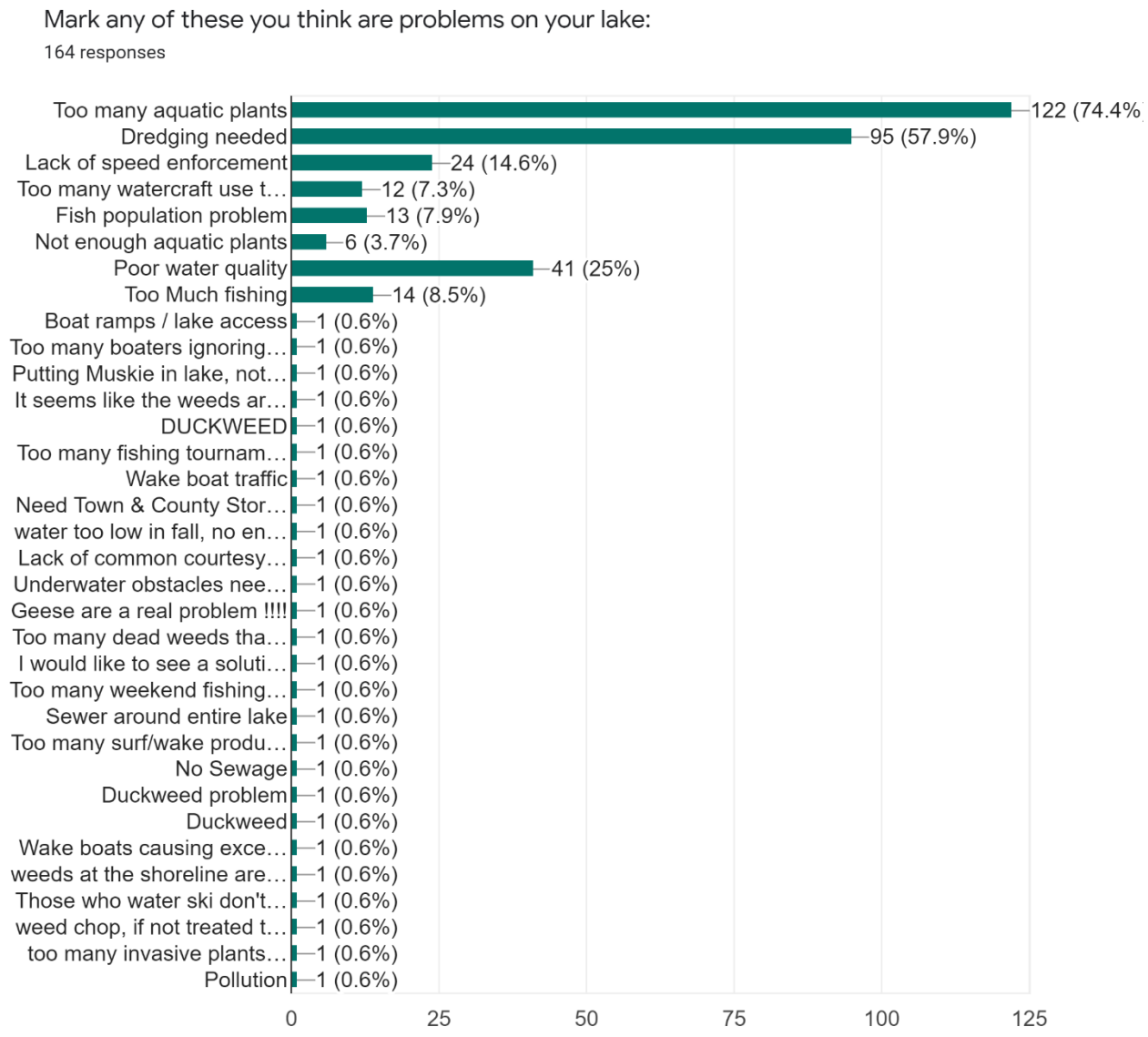
Public Involvement

A public meeting was held for the WLCA on August 14, 2021. This meeting was created to gain public opinion and support. Only 2 residents were in attendance. To meet requirements of the LARE grant program, an electronic survey was sent out to residents around the lake area to gain insight to their history and needs. There were 177 completed electronic questionnaires. The results from the survey are below in Table 6.

Table 6. 2021 Public Survey Results.

2021 Webster Lake Public Use Survey		
Are you a lake property owner?	Yes - 174	No - 3
Are you currently a member of your lake association?	Yes - 163	No - 14
How many watercrafts do you currently have registered in Indiana?	0 - 11 1 - 71 2 - 62 3 or more - 33	
Do you have a current Indiana Fishing License?	Yes - 100	No - 77
How many years have you been at the lake?	5 or less - 34 5-10 - 22 Over 10 years - 121	
How do you use the lake?	Boating - 172 Swimming - 158 Fishing - 106 Irrigation - 23 Drinking water - 0 Other - 11	
Do you have aquatic plants at your shoreline in nuisance quantities?	Yes - 128	No - 49
Do you donate funding towards aquatic plant control?	Yes - 157	No - 20
Do aquatic plants interfere with your use or enjoyment of the lake?	Yes - 139	No - 38
Do you support efforts to control invasive plants on the lake?	Yes - 173	No - 4
Are you aware that LARE funds can only be used for controlling invasive plants, not native plants?	Yes - 134	No - 43
Mark any of these you think are problems on your lake:	Too many aquatic plants Dredging needed Lack of speed enforcement Too many watercraft use the lake Fish population problem Not enough aquatic plants Poor water quality Too much fishing other	122 95 24 12 13 6 41 14 26

Please add any additional comments:



Aquatic plants have caused damage to our boat motor. Swimming is difficult as weeds wrap around your legs at our shoreline.

Entirely too much weed spraying that is also eradicating native plants

Good year at lake weeds were bad early in the year. Once treatment started I thought it was good.

dont like muskie boat traffic on lake or that webster made a muskie lake.

This year the lake treatments seemed to really do what was needed. Timing sometimes seems a little behind, but I think we all understand that predicting when and where problems will arise is an imperfect science. Our one still very nagging problem continues to be duckweed coming from Backwater lake.

Only time I've seen FW on Webster Lake in the last three years was when I called to report an abandoned vessel.

We live at 124 Ems w17 on. The spraying of our lake front and channel has helped immensely. You guys are doing a great job for us. We appreciate it.
The weed control on the lake this year was the best I've seen in a long time. GREAT job
Muskie should not be in lake!
ALGAE BLOOMS ARE TERRIBLE THIS YEAR. LILLY PAD OVERGROWTH. WATER QUALITY IS NOT GOOD. WEEDS NEEDING TO GET UNDER CONTROL. ECHO BAY SHORELINE IS RESEDING AND NEEDS A ROCK SEAWALL. WEEDS, LILLY PAD CONTROL AND DREDGING NEEDS TO BE DONE IN THE ECHO BAY AREA OF THE LAKE. WORSE AREA OF THE LAKE.
I very much appreciate the efforts Of the WLCA as well as the Indiana DNR. I felt overall there seemed to be good cooperation and communication re: the perpetual weed management problem. We live in a cove area (Epworth Forest) and the sediment build up Seems to be becoming an increasing issue as the depth off our pier has decreased from 5 ft or so to now it seems 2-3 ft. There isn't much current through our cove so it seems the annual buildup of weeds, sediment, the added problem created by neighbors using water circulators that perhaps clear sediment from under their pier areas but push the sediment toward our piers where it seems to settle and build up every year. I think a more coordinated approach among the neighbors in our area could perhaps provide better results for all concerned, and perhaps some guidance from DNR management as to how to do that would be helpful. It would be awesome if somehow we could work in partnership to do some dredging of the entire cove back down to the sand bottom snd initial depth of about 6 ft from what I understand the original dredging created, would be helpful. Duck weed continues to be a huge issue as that stuff just floats around the lake, as well as the huge population of Wilde Canadian Geese as well as Swans- all can

contributes to a growing imbalance in the overall lake water quality. That. being said, I think the overall lake seems to be in good shape and we enjoyed a nice season on Webster.
I'm tired of weeds. I've been on lake Webster as a vacationer/property owner for 55 years. It seems worse than when I was younger
I would like to see more aggressive management of weeds throughout the summer, dredging where needed and much tighter control of fishing on the lake. It astounds me that there is no cost to put a boat in to fish the lake. Full fishing tournaments are run on the lake where organizers profit from the boats that enter, but there is no fee to launch a boat. Many of the invasive species that are introduced to the lake are from fishing boats that travel to lakes across the region (zebra mussels). Meanwhile the costs to control weeds, etc is on the backs of home/land owners. There should be a toll/launch fee and the proceeds should contribute to helping manage the weeds. Secondly, something needs to be done to address the water quality on backwater, which seems to be a contributing factor to overall water quality on the lake. I am a proponent of fishing, however, I would like to see more consideration to aggressive weed control and overall lake and water quality over the muskie population and fishermen who don't pay anything to fish the lake.
We are on the East side of the lake. We have owned our property for 50+ years. We have so much cut off weeds that float to our shore. It's massive and stinks. It has been going on the last couple of years. We never used to have this problem.
We are on a channel on Webster Lake. Duck Weed and Weed Chop are the biggest problem. This year the treatments were very effective and we were able to enjoy the lake. We were able to swim, fish, and just enjoy the lake view. Fish came back into the channel. Repeat whatever was done this year. Past years were terrible and all we could look at was solid weed chop and duck weed. It looked like you could almost walk across the channel. Fish could not live in the channel and you could not fish anyway because of the solids on the surface.
Curlyleaf Pondweed is replacing EWM. LARE help is needed in order to control this weed.
Too many fishing tournaments which leads to increase in trash in the lake and fishing lines wrapped around our boat lift and pier.
In place of dredging, lake would benefit from "bio" applications to clean up the bottom to the lake which is full of run off debris(muck).
Can stumps be removed?
Too frequent fishing tournaments which lead more trash. We've had fishing lines around our pier and an entire tackle box at the bottom near our swimming area.
The weed problem is discouraging. We would love to see a cleaner lake.
Dredging is needed on the channel- near Miller's landing.
This year was the best for water treatment and control of weeds
overall think weed c.ontrol has been very good the past few years, this past late summer we had like a thick mat in our channel, never did see anyone spraying for this problem, also how every fall(like early Sept. our channel is so low I am at the point of having to take my boat out and there is a lot of boating ahead I would like to do, I know the stories of been dry, water is not

being let out, it is just hard to believe we can loose so much water in a short period of time, like 6" in a week, but overall think lake is in good shape.
We have been a lake owner on MIller Landing for over 54 years. Most of the time we are ashamed of our lakeshore because of the plants growing along our shoreline. Many people try to rack this stuff out every year for most of their time that should be spent being with their family and enjoying it. So, so sad.
Too little weed control
Regarding the question about too many aquatic plants at the shoreline, we had a horrible problem with the curly pondweed invasion early in the year but once the weeds were sprayed and we rake the dead weeds out, then it has been much better. We also purchased a water circulator this year which has helped greatly to reduce the amount of raking necessary.
I appreciate the work the Association, in cooperation with the State, to make the lake less weedy this year. I live near a channel, however, and hear the boaters leaving the channel need to reverse their engines to get rid of weeds on their propeller. It appears that duckweed travels from Backwater via the culvert and I wonder if that issue could be addressed in some manner?
There needs to be a proper balance of aquatic plant control. I think this year there were too many plants removed from the lake. In the Spring we had too much plant growth in some areas of the lake and it certainly needed treatment. However, I believe we removed too many plants and the fishing and water quality has suffered.
Early this year was the best the lake had look in years, it was great to be able to boat & use JetSkis without fear of damage to them from the weeds, much and duckweed. However as summer heat came in the got worse and we were not able to let kids swim in front of our house trying to get the much and duckweek out constantly. We greatly appreciate all of the efforts and know this is a constant job and we are trying to help and do our part as well.
Weeds causing engines to over heat more this year than previous years.
The DNR should use proceeds earned from muskellunge operations to finance staffed boat cleaning stations at boat ramps to eliminate hitchhiker species from entering the lake. The spread of invasive species can be linked to the volume of boats that participate in weekend fishing tournaments.
Overall, I would like to see more weed control and would be willing to support that financially.
While I understand that fish need natural habitat, I also feel that Webster is over-fished anyway. So why are we providing habitat for fish that don't exist?
Fisherman are sometimes very close to the piers/shoreline. I have witnessed them getting their lines stuck on various property owners items. I also had one fisherman refuse to move when I was trying to back my boat out of the lift.
I have been on the lake for 32 years and there has been a drastic increase in the quality of the water over that period.
Both dredging and annual weed harvesting should be pursued due to lake bottom rising
This year the lake has been the best it has been in many years regarding duckweed and other weeds in the lake. We still have had issues with too much gunk in our channel from time to time, but overall this year has been much more clear. Thank you for treating in the channel!

Hi.
We need to get this weed and algae problem under control, look at Lake Property Values and related taxes over the past 20 years and see if the equal percentage of lake treatment for weeds compares with increases in aquatic treatments vs . increases in property taxes.
Duck weed was not as bad this summer.
The weeds were much better this year than last year.
Weed control was better this year especially after second spraying. Curly leaf was becoming a problem but seems to be under control. Duckweed was better, but "lake wool" is plentiful
The aquatic plant life of non-native plants makes the lake less enjoyable and a great deal of work for lake front property owners to deal with.
The whole lake needs treated with Sonar...this was done when I was on the board and the lake weed control has never been better and I have been here 30 plus years
Dnr needs to patrol the water between Governors island and the point on Webster lake. Many jet skiers go way too fast through there. Also need to write some tickets to speed boats going too close to fishermen. The water quality in Webster has been bad over the last few years. Clarity is really bad. It's like coffee water. I know you are wrorking on nuisance aquatic plants but what is being done about the clarity? I know Webster is a mud / muck bottom which contributes to the problem. Also I am interested in learning more about the dam at Webster. I would like to learn more about preventative maintenance, repairs needed, water level controls and regulations. Can you have someone contact me about that? Thanks for doing the survey! Look forward to hearing back from you. Doug
North end of echo bay getting hard to navigate due to muck and sediment.
Early evening/evening many boats going to fast. We used to be able to see lake bottom…now only sometimes. During heavy boating….lots of floating weeds make clarity of water very poor.
There is a lot of duckweed on Webster Lake that my boat's filter has to do a lot of work to make sure it does not get into the engine.
To many weed s killed the last 2 years. Bad for the fish.
The sandy swim area out front use to be so enjoyable for water activities. Now sand is totally covered with dead black weeds that stinks!! I didn't realize how much energy was created by dead weeds—it actually creates large, oval "bumps" in the ice. I have had this area dredged for years but to no avail. This is one of the main reasons I do not financially support this organization!
Need to balance weed control with appropriate fish habitat. Bass fishing has really taken a hit in the past couple of years.
We have lived on this lake for 28 years and it seems like the weeds are taking over the lake. I couldn't believe the amount of weeds and what I always thought looked like weed pods are laying on the bottom of the lake right now around the shore lines. We took the pontoon out last night and repeatedly had to put it in reverse because of all the weeds wrapping around the prop.
And there needs to be speed enforcement in channels and near the shoreline. In the last 2 to 3 years it seems that people think it isn't necessary to idle. It is hard to watch the pontoon across

the channel crash into our neighbors pier because others are disrespectful to nature and others property.
No Water Craft pays attension to Idle speed or distance from property along with the excess speed with the kids on the wave runners
We love Webster Lake. The weeds are a major issue with irresponsible boat captains coming in second.
This year Duck weed was a real problem. I know that it is a a natural happening in hot weather but do to algae and cut weeds our bay was awful most of the time. The wakeboard boats are tearing up the lake because it is not deep enough to for them to run safely with out damage or even safely. The weed control this was satisfactory on all count but need to be done yearly to keep our lake usable.
Frequent Pollution in the form of litter along shorelines :beer cans: fishing bait containers….
Algae and weeds are chocking the lake
The lake, especially in the cove on the east side of the Eagle Point peninsula and in front of Epworth Forest Church Camp) is in dire need of dredging. The weeds are so thick we cannot swim in the cove and the weeds clog our boat intakes. The weeds are so thick at times and the odor they put off is foul smelling. If you are interested, feel free to email me and I will send pictures. Please dredge this cove!
Too many weekend fishing tournaments. I feel if we're going to have tournaments and public access to the lake, they're should be a launch fee that goes back into the lake conservation fund.
Duckweed is a big problem on Lake Webster
Webster has too much muck, need to be able to remove muck!!
I answered "Yes" to a few questions about whether aquatic plant control was needed. I want to qualify that I believe that should be done within reason. I am not supporting elimination of almost all growth.
I'd like sewage at my house and I have property that is adjacent to land that is owned by the county that I would like to go in half with on a seawall
We appreciate our Webster Lake Conservation Association's communication and all of their work!
Need more spraying for weeds
I appreciate the efforts toward weed control, but as a 4-5 day per week cruiser of the lake I encountered many days when I spent more time in reverse than going forward(at least it felt that way)!
Mucky bottom and weed control are big problems
Duck weed is ridiculous
The ECHO BAY area accumulates weeds that clog the boat motor and add an unpleasant odor to the shoreline.
Wish there was something they could do to fix duckweed problem
Clearing out more weeds

I would love for the water level to be lowered for a few weeks in the off season so that I could dredge and clean up my own beach area.
The weed situation where I live (631 N Center St W) is virtually untenable. We dredged over a decade ago but need another one. I cannot get my PWC out without it clogging on weeds. I can't swim off of my peer because the accumulated weed chop And weeds are within 2 feet of the surface - even30 feet from shore. I use a submerges aerato/fan but it makes little difference.
Is the state planning on putting in a bridge?
Weed control is a hard problem on all lakes it is a hard thing to balance i believe a sewer system on the East side of Webster lake would also help weed growth and water quality
There is an abundance of lily pads surrounding our pier. Not a major concern at all.
None
It seems as the fish population has dropped significantly in last 14 years.
The quality of the lake has gone down

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Appendix

WPT	Lat	Long	Depth	Rake score	Eurasian watermilfoil	Curly-leaf Pondweed	Fil. Algae	Chara	Nitella	Coontail	Illinois pondweed	Small pondweed	Leafy pondweed	Sago pondweed	Richardson's pondweed
1	41.31750	-85.67150	4.3	3	1	1	P			1					
2	41.31870	-85.67120	4.5	3	1	1	P								
3	41.32000	-85.67280	4	1			P			1					
4	41.32130	-85.67440	3.5	1			P			1					
5	41.32210	-85.67450	6	0			P								
6	41.32280	-85.67300	4.2	1			P			1					
7	41.32400	-85.67320	6	0			P								
8	41.32430	-85.67200	4.3	3		1	P				1				
9	41.32610	-85.67210	7.5	3			P			1	1	1			
10	41.32800	-85.67140	4.2	5	1	1				3	3	1	1	3	
11	41.32810	-85.66890	6.1	3			P			1	1				
12	41.32790	-85.66700	4	1			P				1				
13	41.32920	-85.66670	17	0			P								
14	41.33010	-85.66800	11	1			P								
15	41.32950	-85.67030	11.8	1						1					
16	41.32980	-85.67230	13.8	0			P								
17	41.33060	-85.66910	12.3	3			P			3					
18	41.33120	-85.66940	14.5	1			P			1					
19	41.33130	-85.66790	6.2	0			P								
20	41.33190	-85.66810	3.6	3			P	1			1				
21	41.33200	-85.66840	4.5	3		1	P				1				
22	41.33200	-85.66910	6.1	1			P			1					
23	41.33190	-85.67140	16	1			P			1					
24	41.33310	-85.66980	3.9	3		1	P			1					
25	41.33310	-85.67060	5.3	1			P			1					
26	41.33350	-85.67360	12.5	1						1					
27	41.33320	-85.67490	3.8	5			P			5					
28	41.33260	-85.67460	7.9	1			P			1					
29	41.33200	-85.67420	17.1	1			P			1					
30	41.33160	-85.67440	3	3			P			1	1				

31	41.33040	-85.67510	2.8	5			P			5	1				
32	41.32990	-85.67420	6	1			P				1				
33	41.32920	-85.67340	8	1			P			1					
34	41.32910	-85.67530	5.1	1			P			1					
35	41.32840	-85.67680	4.3	1			P			1					
36	41.32760	-85.67670	6.5	0			P								
37	41.32700	-85.67630	8.3	1			P			1	1				
38	41.32730	-85.67840	3.1	3			P	3			1				
39	41.32740	-85.67930	7.3	1			P				1				
40	41.32650	-85.67960	19.1	0			P								
41	41.32620	-85.68100	13.8	1			P			1					
42	41.32700	-85.68220	11	1						1					
43	41.32910	-85.68190	6.8	0			P								
44	41.32960	-85.68380	11	3			P			1					1
45	41.33130	-85.68420	4.8	3		1	P			1					
46	41.33120	-85.68640	13.9	0											
47	41.33090	-85.68730	18	0			P								
48	41.33100	-85.68850	9.2	1			P			1					
49	41.33050	-85.68930	4.1	1			P				1				
50	41.32990	-85.68870	10.5	0											
51	41.32950	-85.68970	7.5	1			P			1					
52	41.33130	-85.69320	3.8	5		1	P	3	3	1		1		1	
53	41.33010	-85.69350	11.5	1						1	1				
54	41.32880	-85.69480	14	0			P								
55	41.32820	-85.69220	15.2	0			P								
56	41.32770	-85.69240	10.9	1			P			1	1				
57	41.32650	-85.69220	6.1	0			P								
58	41.32590	-85.69090	11.1	1			P			1		1			
59	41.32500	-85.69180	13.2	0			P								
60	41.32520	-85.69330	4.5	3					3						1
61	41.32360	-85.69120	8	1			P			1					

62	41.32220	-85.69130	5.5	1			P				1				
63	41.32150	-85.69030	3.5	1			P			1					
64	41.32240	-85.68870	6.1	0			P								
65	41.32400	-85.68870	18	0											
66	41.32330	-85.68730	7.3	5						3	3				
67	41.32130	-85.68750	3.5	3						1	3	1			
68	41.32080	-85.68700	9	3						1	1		1		
69	41.31930	-85.68730	5	3			P				3	1			
70	41.32010	-85.68600	3.2	3			P			1	3			1	
71	41.32110	-85.68510	11	1			P			1					
72	41.32090	-85.68420	7	5						3	1				
73	41.32070	-85.68330	3.8	3			P			1	1				
74	41.32160	-85.68330	7.7	3						3	1	1			
75	41.32120	-85.68160	12	0											
76	41.32130	-85.68070	8.1	3						1		1		1	
77	41.32180	-85.68020	16	1			P							1	
78	41.32180	-85.67950	3.5	3			P			1	1				
79	41.32220	-85.67940	11.1	1			P			1					
80	41.32300	-85.67900	11	1			P			1					
81	41.32310	-85.68070	13.2	1			P			1					
82	41.32390	-85.68440	18	0			P								
83	41.32460	-85.68620	10.5	1						1					
84	41.32550	-85.68570	13	1						1					
85	41.32280	-85.67820	3.5	3			P			1	1				
86	41.32330	-85.67760	9	0			P								
87	41.32430	-85.67720	12.2	0			P								
88	41.32440	-85.67740	18.5	0			P								
89	41.32240	-85.67680	3.2	3			P			3			1		
90	41.32090	-85.67640	3.8	1			P						1		

Historical Tier 2 data from 2004-2010 for All Depths							
Surveyor	AC	AC	AC	AC	AC	AC	AC
Date	8/25/04	8/2/05	8/3/06	8/13/07	8/27/08	7/30/09	9/21/10
Total Sites	160	160	90	90	90	90	90
Littoral Sites	159	160	88	87	90	88	65
Sites with Plants	125	146	74	68	78	77	29
% Sites With Plants	78.1%	91.3%	82.2%	75.6%	86.7%	85.6%	32.2%
Sites with Native Plants	113	144	74	68	78	76	29
Percent Littoral Coverage	79%	91%	84%	78%	87%	88%	45%
Maximum Plant Depth	12	14	18	18	20	17	8
Secchi (ft)	5	8	7	7	9	5	5
Number of Species	13	15	10	8	7	10	6
Number of Native Species	11	13	9	7	6	8	6
Species Diversity	0.85	0.80	0.55	0.40	0.60	0.68	0.71
Native Species Diversity	0.80	0.74	0.55	0.37	0.59	0.58	0.71
Mean Native Species/Site	1.21	1.49	1.10	0.92	1.27	1.31	0.40
Species- All Depths							
Eurasian Watermilfoil	12.5	6.3	1.1	2.2	1.1	21.1	0.0
Curly-leaf Pondweed	21.3	20.0	0.0	0.0	0.0	3.3	0.0
Starry Stonewort	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coontail	36.9	66.3	70.0	72.2	74.4	74.4	17.8
Sago Pondweed	3.8	7.5	2.2	2.2	5.6	1.1	10.0
Chara Spp.	11.3	13.8	10.0	7.8	10.0	4.4	6.7
Slender Naiad	22.5	28.8	22.2	6.7	30.0	40.0	0.0
Canada Waterweed	0.6	0.6	0.0	0.0	0.0	0.0	0.0

Flat-stemmed Pondweed	29.4	9.4	0.0	1.1	0.0	0.0	0.0
Horned Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Bladderwort	0.0	0.6	0.0	1.1	0.0	0.0	0.0
Water Stargrass	5.6	8.8	1.1	1.1	2.2	2.2	2.2
Unidentified Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Small Pondweed	7.5	3.1	1.1	0.0	0.0	4.4	0.0
Nitella	1.3	0.6	1.1	0.0	0.0	0.0	2.2
Illinois Pondweed	0.6	0.0	0.0	0.0	0.0	2.2	1.1
Leafy Pondweed	0.0	0.0	1.1	0.0	4.4	2.2	0.0
Variable Watermilfoil	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spiny Naiad	1.9	1.3	0.0	0.0	0.0	0.0	0.0
Large-leaved Pondweed	0.0	3.1	1.1	0.0	0.0	0.0	0.0
White-stemmed Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Northern Watermilfoil	0.0	5.0	0.0	0.0	0.0	0.0	0.0
Filamentous algae	70.0	0.0	0.0	0.0	0.0	42.2	60.0
Narrow leaved Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Tier Data Comparison for depths 0-5ft, 5-10ft, 10ft-15ft, 15-20ft 2004-2019																							
Surveyor	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	IDNR	Clarke	IDNR	Clarke	IDNR	Clarke	IDNR	Clarke
Date	8/25/04	8/2/05	8/3/06	8/13/07	8/27/08	7/30/09	9/21/10	8/24/11	8/13/12	8/13/13	8/11/14	8/12/15	4/25/16	8/3/16	8/7/17	8/1/18	8/8/18	8/8/19	8/14/19	8/4/20	8/18/20	8/5/21	8/31/21
Species Frequency of Occurrence - Depth 0 to 5 ft																							
Eurasian Watermilfoil	18.2	9.6	0.0	3.4	0.0	32.3	0.0	0.0	6.9	37.0	43.9	34.5	55.2	6.9	6.9	0.0	3.4	3.4	10.3	0.0	10.0	0.0	10.3
Curly-leaf Pondweed	20.0	19.2	0.0	0.0	0.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0	3.4	6.9	6.7	0.0	10.3	27.6
Coontail	45.5	63.5	34.8	58.6	69.4	67.7	26.9	30.4	40.5	22.2	61.0	82.8	58.6	69.0	72.4	69.0	62.1	55.2	79.3	66.7	80.0	31.0	65.5
Sago Pondweed	0.0	135.5	4.3	3.4	5.6	3.2	7.7	39.1	17.2	3.7	0.0	10.3	0.0	3.4	0.0	0.0	0.0	0.0	3.4	0.0	2.0	0.0	10.3
Starry stonewort	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0
Chara Spp.	18.2	23.1	30.4	17.2	22.2	12.9	19.2	21.7	6.9	18.5	26.8	10.3	20.7	13.8	10.3	6.9	6.9	20.7	0.0	13.3	10.0	20.7	10.3
Slender Naiad	29.1	26.9	21.7	13.8	41.7	74.2	0.0	4.3	17.2	14.8	0.0	6.9	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Naiad	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	24.1	0.0	10.0	0.0	0.0	0.0
Canada Waterweed	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	6.4	6.9	0.0	3.4	0.0	0.0	6.9	0.0	0.0	0.0	3.4	0.0
Flat-stemmed Pondweed	23.6	5.8	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0
Common Bladderwort	0.0	1.9	0.0	3.4	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0
Water Stargrass	3.6	9.6	0.0	0.0	0.0	3.2	0.0	4.3	0.0	3.7	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Unidentified Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Small Pondweed	1.8	1.9	4.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.3	0.0	2.0	0.0	13.8
Nitella	1.8	1.9	4.3	0.0	0.0	0.0	7.7	8.7	0.0	0.0	0.0	10.3	3.4	6.9	6.9	0.0	0.0	6.9	0.0	0.0	14.0	0.0	6.9
Illinois Pondweed	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0	0.0	3.4	10.3	13.8	0.0	24.1	17.2	6.9	34.5	26.7	48.0	20.7	51.7
Leafy Pondweed	0.0	0.0	4.3	0.0	0.0	0.0	0.0	4.3	6.9	3.7	7.3	6.9	0.0	0.0	6.9	10.3	0.0	24.1	0.0	13.3	0.0	10.3	10.3
Spiny Naiad	5.5	3.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Large-leaved Pondweed	0.0	1.9	0.0	0.0	0.0	0.0	0.0	8.7	6.9	0.0	0.0	10.3	0.0	0.0	13.8	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0
Narrow leaved pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	6.9	0.0	0.0	0.0	0.0
Northern Watermilfoil	0.0	13.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Filamentous algae	65.5	0.0	0.0	0.0	0.0	58.1	92.3	73.9	75.9	77.8	73.2	69.0	51.7	75.9	55.2	51.7	0.0	58.6	0.0	35.6	0.0	48.3	89.7
Richardson's Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4
Variable pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0
Species Frequency of Occurrence - Depth 5 to 10 ft																							
Eurasian Watermilfoil	12.2	0.0	2.7	2.3	2.6	20.0	0.0	0.0	9.5	45.5	58.1	36.7	66.7	13.3	3.3	7.4	0.0	3.7	0.0	3.8	3.3	0.0	0.0
Curly-leaf Pondweed	26.8	13.6	0.0	0.0	0.0	5.0	0.0	2.1	7.1	4.5	3.2	0.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0
Starry Stonewort	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0
Coontail	36.6	77.3	86.5	88.6	84.2	87.5	19.1	27.1	40.5	9.1	29.0	73.3	55.6	86.7	83.3	74.1	67.6	74.1	85.2	73.1	86.7	37.0	59.3
Sago Pondweed	2.4	4.5	2.7	2.3	5.3	0.0	14.9	29.1	28.6	20.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.4	0.0	0.0	0.0	3.7
Chara Spp.	2.4	0.0	5.4	4.5	2.6	0.0	2.1	0.0	2.4	13.6	19.4	3.3	0.0	3.3	3.3	0.0	2.9	0.0	0.0	0.0	10.0	0.0	0.0
Slender Naiad	14.6	34.1	24.3	4.5	28.9	32.5	0.0	4.2	9.5	4.5	45.2	3.3	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flat-stemmed Pondweed	29.3	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Common Bladderwort	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	3.3	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	00	0.0	0.0
Water Stargrass	9.8	18.2	2.7	2.3	5.3	2.5	4.3	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Small Pondweed	7.3	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1
Nitella	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0
Illinois Pondweed	2.4	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.0	0.0	3.2	0.0	3.7	20.0	3.3	14.8	47.1	11.1	22.2	23.1	43.3	29.6	37.0

Leafy Pondweed	0.0	0.0	0.0	0.0	7.9	5.0	0.0	2.1	9.5	2.3	25.8	3.3	0.0	0.0	16.7	0.0	0.0	18.5	0.0	7.7	0.0	14.8	3.7
Large-leaved Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	0.0	13.3	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0
Variable pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0
Northern Watermilfoil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Filamentous algae	80.5	0.0	0.0	0.0	0.0	35.0	57.4	58.3	35.7	36.4	48.4	56.7	48.1	70.0	53.3	51.9	0.0	55.6	0.0	61.5	0.0	70.4	81.5

Surveyor	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	AC	IDNR	Clarke	INDR	Clarke	IDNR	Clarke	IDNR	Clarke
Date	8/25/04	8/2/05	8/3/06	8/13/07	8/27/08	7/30/09	9/21/10	8/24/11	8/13/12	8/13/13	8/11/14	8/12/15	4/25/16	8/3/16	8/7/17	8/1/18	8/8/18	8/8/19	8/14/19	8/4/20	8/18/20	8/5/21	8/31/21
Species Frequency of Occurrence - Depth 10 to 15 ft																							
Eurasian Watermilfoil	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0	7.1	6.7	0.0	28.6	37.5	0.0	0.0	0	5.9	0.0	0.0	0.0	0.0	0.0	0.0
Curly-leaf Pondweed	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coontail	25.0	25.0	100.0	71.4	75.0	64.3	0.0	0.0	7.1	0.0	0.0	71.4	33.3	81.0	90.5	91.7	58.8	66.7	50.0	83.3	80.0	29.2	66.7

Chara Spp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.0	0.0	4.2	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slender Naiad	25.0	0.0	22.2	0.0	8.3	0.0	0.0	0.0	0.0	6.7	12.5	19.0	0.0	0.0	4.8	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flat-stemmed Pondweed	25.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Water Stargrass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.8	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	
Small Pondweed	0.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	0.0	0.0	0.0	0.0	0.0	4.2
Leafy Pondweed	0.0	0.0	5.6	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	9.5	0.0	4.8	14.3	12.5	0.0	12.5	0.0	33.3	0.0	8.3	0.0
Large-leaved Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	19.0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Illinois Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	19.0	4.8	12.5	5.9	0.0	0.0	8.2	10.0	4.2	8.3
Filamentous algae	25.0	0.0	0.0	0.0	0.0	28.6	0.0	0.0	14.3	26.7	25.0	23.8	25.0	23.8	9.5	12.5	0.0	12.5	0.0	12.5	0.0	33.3	62.5
Richardson's pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.2
Variable pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0
Species Frequency of Occurrence - Depth 15 to 20 ft																							
Coontail	0.0	0.0	41.7	40.0	25.0	40.0	0.0	0.0	0.0	0.0	0.0	30.0	0.0	30.0	40.0	40.0	40.0	20.0	20.0	60.0	NA	10.0	20.0
Sago Pondweed	0.0	0.0	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	10.0
Large-leaved Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Illinois Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	10.0	0.0	NA	0.0	0.0
Slender Naiad	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Chara Spp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	NA	0.0	0.0
Curly-leaf Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NA	0.0	0.0
Flat-stemmed pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	NA	0.0	0.0
White-stemmed pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	NA	0.0	0.0
Leafy pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	NA	0.0	0.0
Filamentous algae	0.0	0.0	0.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	30.0	20.0	0.0	0.0	0.0	0.0	10.0	NA	10.0	90.0

List of Aquatic Plant Names

Common Name	*Scientific Name*
Coontail	*Ceratophyllum demersum*
Illinois pondweed	*Potamogeton illinoensis*
EURASIAN WATERMILFOIL	*MYRIOPHYLLUM SPICATUM*
Small pondweed	*Potamogeton pusillus*
Narrow-leaved pondweed	*Potamogeton sp.*
CURLY-LEAF PONDWEED	*POTAMOGETON CRISPUS*
Horned pondweed	*Zannichellia palustris*
STARRY STONEWORT	*NITELLOPSIS OBTUSA*
Variable watermilfoil	*Myriophyllum heterophyllum*
Chara Spp.	*Chara sp.*
Slender naiad	*Najas flexilis*
Common naiad	*Najas flexilis*
Canada waterweed	*Elodea canadensis*
Flat-stemmed pondweed	*Potamogeton zosteriformis*
Common bladderwort	*Utricularia marcrohiza*
Water stargrass	*Heteranthera dubia*
Unidentified pondweed	*Potamogeton sp.*
Nitella	*Nitella sp.*
Leafy pondweed	*Potamogeton foliosus*
SPINY NAIAD	*NAJAS MARINA*
Northern watermilfoil	*Myriophyllum sibiricum*
Filamentous algae	*Algae*
White-stemmed pondweed	*Potamogeton praelongus*
Richardson's pondweed	*Potamogeton richardsonii*
Large leaved pondweed	*Potamogeton amplifolius*
Sago pondweed	*Stuckenia pectinata*
Variable pondweed	*Potamogeton gramineus*

***The scientific and common names of NON-NATIVE species are shown in ALL CAPITAL LETTERS.