Webster Lake Aquatic Vegetation Management Plan

2024 Update

Kosciusko County, Indiana

Prepared for:

The Webster Lake Conservation Association

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Executive Summary

The following report summarizes invasive plant management activities on Webster Lake implemented through the IDNR's Lake and River Enhancement (LARE) program. Webster Lake is located in Kosciusko County, Indiana. It has 653 acres surface acres with a maximum depth of 52 feet and an average depth of 12.5 feet. This report outlines strategies to manage the invasive plants of Eurasian watermilfoil (EWM), starry stonewort (SSW,) and curly-leaf pondweed (CLP) in Webster Lake.

Webster Lake has a long history of invasive plant management. EWM and CLP have been present in the lake for decades. Webster Lake has many large, shallow, muddy flats that allow plants to proliferate over a large percentage of the lake's surface area. Webster Lake also has a watershed that is large compared to other Indiana lakes, being 31,459 acres. This creates a high nutrient environment in the lake, with plenty of available plant habitat. These factors lend themselves to dense stands of aquatic plants and severe infestations of invasive aquatic plants. It is estimated that total EWM acreage in Webster Lake has been as high as 255 acres or about 38 percent of the total lake acreage (based on the 2001 AVMP). EWM coverage and density cause significant lake use impairment each spring, which is a major challenge for lake residents.

The Webster Lake Conservation Association has actively managed invasive plants on an annual basis, spending signficant time and resources to ensure reasonable lake use for residents. EWM has been the main target for management efforts, with annual treatment acreages generally ranging from 25 to 175 acres annually. EWM infestation has been so severe that whole-lake fluridone treatments have been implimented at least 3 times in the past, with fluridone treatments being used in 1999, 2002, and 2010. Since 2010, spot treatments for EWM have been used annually, with the 2, 4-D being the main product used for EWM control through 2020.

A newer EWM control product called ProcellaCOR was used for the the first time on Webster Lake in 2021. ProcellaCOR is more expensive thatn 2, 4-D, yet it often provides more complete and longer lasting control for EWM. Because of the expense and limited funds, ProcellaCOR has been used since 2020 in some areas, with 2, 4-D also being used to enable the lake association to treat all areas of EWM annually with the available funds.

Visual surveys were completed on both April 2, 2024 and April 15, 2024. These surveys prioritized 50.0 acres for early season treatments targeting primarily CLP. Treatment of these 50.0 acres took place on April 24, 2024 being funded by the lake association and LARE. These early season treatments provide very good CLP control and have the added benefit of supressing EWM growth. They are an important part of the overall invasive plant management strategy at Webster Lake.

Another visual survey was conducted on May 8, 2024 to identify all areas of EWM not controlled by the previous early season treatments. GPS waypoints taken on May 8, 2024 were combined with waypoints taken in the previous two surveys to develop a comprehensive EWM distribution map for the whole lake. A total of 112.4 acres of EWM beds were mapped. These 112.4 acres of EWM were treated selectively on May 20, 2024. ProcellaCOR herbicide was used to treat 27.5 acres of EWM while the remaining 84.9 acres were treated with 2, 4-D.

On May 20, Aquatic Weed Control discoved one area of SSW infestation along the west shore of Webster Lake. Waypoints and pictures of the SSW were submitted to the IDNR. The state of Indiana funded the treatement of SSW with funds from the Great Lakes Restoration Initiative (GLRI). 1.0 acre of SSW was treated on Webster Lake through the GLRI on both June 20, 2024 and September 3, 2024. GLRI is not expected to fund any SSW treatments on Webster Lake in 2025.

A Tier II survey was conducted on Webster Lake on August 21, 2024. EWM abundance after treatement was very low, with EWM being collected at 3 of the 90 sample locations. Seven species of native plants were found during the survey, and native plants were found at 71 of the 90 sample locations for a native coverage of 78.8% of all sites. Native species diversity was 0.62 in 2024 which might be considered moderate to a bit low when compared with other area lakes. The mean number of native species per site found was 1.1. It would appear the native plant community in Webster Lake is stable, with 2024 metrics being much in line with historical plant survey data.

Aquatic Weed Control recommends treating all EWM agressively in 2025 as the top priority. Aquatic Weed Control recomends a whole lake fluridone treatment as the best management practice to address the severe EWM infestation in Webster Lake, believing it to be the lowest risk, most economical, and most helpful to native plants and lake health over a 5 year period. The DNR has stated that they will not approve a whole-lake fluridone treatment for 2025, so a spot-treatment strategy must be used instead. The best spot treatment strategy will be to prioritize ProcellaCOR treatments. Aquatic Weed Control recomends ProcellaCOR at a rate of 2-4 PDU/acre-foot for all EWM areas. 2, 4-D at a rate of 2.0 parts per million (ppm) should be kept as an option for EWM treatments as well. Because of the severity of the EWM infestation and the inability to use fluridone to gain control of the EWM as has been done in the past, it is requested that the DNR provide 80% funding to treat 84.5 acres of EWM with ProcellaCOR.

Funding should also be set aside for early season CLP treatments in 2025. CLP is very dense in some areas of the lake and severely impairs use of the lake. It is important to note that any early season treatments will provide suppression of EWM in the treatment areas, so the early season treatments have been an integral part of the strategy to manage both the CLP and EWM. It is recommended that funding for up to 77.5 acres of early season pondweed treatments be set aside for 2025. Diquat at a rate of 2.0 gallons per acre in combination with copper sulfate at 1.0 part per million are recommended for the early season treatments.

Aquatic Weed Control also recommends that funding be set aside to selectively and aggressively treat all areas of SSW infestation. SSW is likely to expand in Webster Lake in the next several years, and funding should be set aside to manage all SSW areas on an annual basis. These areas of SSW will likely require two to three treatments annually to maintain control and try to slow the spread of SSW. Webster Lake will apply for maximum LARE SSW maintenance funding to help meet this need in 2025.

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Problem Statement

Eurasian watermilfoil (EWM) has been present in Webster Lake for many years, and it impacts the use of the lake in many areas. Starry stonewort (SSW) was first found in 2015. Aggressive treatment in the past had made SSW undetectable, but it was found again in 2024. SSW is expected to increase in Webster Lake but should be treated aggressively to slow the spread and minimize its impact on lake use. Curly-leaf pondweed (CLP) also dominates much of the littoral zone in the spring. EWM, CLP, and SSW can form dense mats in shallow areas, which can inhibit fishing, swimming, and boating. Dense EWM, CLP, and SSW beds may also prevent the growth of beneficial native species. These native plants often provide less recreational interference and more desirable aquatic habitat.

Management Objectives

The following specific, quantifiable objectives have been established to evaluate the success of EWM management activities at Webster Lake. These objectives have been developed in the past with coordination between the IN DNR and previous LARE contractors.

1. Keep EWM below 10% occurrence in summer Tier 2 surveys.

2. Keep CLP below 10% occurrence in spring Tier 2 surveys.

3. Keep SSW below 10% occurrence in summer Tier 2 surveys.

4. Maintain native plant coverage at 80% of sample sites in summer Tier 2 survey.

Treating invasive plants will not eradicate them from Webster Lake. However, if these objectives are met each year, the indication would be that they are being controlled effectively on a seasonal basis without causing damage to the native plant community.

In 2024, two of the four objectives were met, one was not met, and one was not applicable. EWM was found at 3.3% of sample locations in the tier II survey meeting objective one. There was no spring tier II survey, so objective two was not applicable. SSW was not collected in the 2024 tier II survey so objective 3 was met. Native plant coverage was 78.8% so objective four was narrowly missed.

Aquatic Vegetation Management History

Table 1 summarizes the LARE treatment history for Webster Lake going back to 2008. It also outlines many historical privately funded treatments as well. Data from before 2024 was taken from the 2023 AVMP completed by Solitude Lake Management (Solitude Lake Management, 2023 AVMP). The Webster Lake Conservation Association has actively managed invasive plants and impaired areas for many years.

Table 1: Webster Lake Treatment History

Year	Target species	Acres	Herbicide
2008	EWM*, CLP, coontail, chara, And filamentous algae	121 CLP, 46.8 EWM, 38 SL	Reward & Komeen SL, Renovate EWM, Aquathol early CLP
2009	EWM*, CLP, coontail, chara, and filamentous algae	31.7 CLP, 38.7 EWM, 38 SL	Reward & Komeen SL, Renovate EWM, Aquathol early CLP
2010	EWM*	653	SonarONE and Sonar AS
2011	EWM*, CLP, coontail, chara, and filamentous algae	0 (1.75 EWM on backwater	Renovate Max G
2012	EWM* in main lake, algae, coontail, EWM in channels only	45.3 EWM (15.3 web), 7.6 native	2,4-D, Reward, Komeen, Aquathol
2013	EWM* in main lake, algae, coontail, EWM in channels and select main lake areas	53.0 EWM, 26 native	2,4-D, Reward, Komeen, Aquathol
2014	EWM* in main lake, algae, coontail, EWM in channels and select main lake areas	26.2 EWM, 69.5 native	2,4-D, Reward, Komeen, Aquathol
2015	EWM* in main lake, algae, starry stonewort**, coontail, EWM in channels and select main lake areas	60.8 native, 4.5 SSW, 158.8 EWM	2,4-D, Reward, Clipper
2016	EWM*, algae, coontail, coontail, pondweed	60.8 native, 4.5 SSW, 158.8 EWM	2,4-D, Reward, Clipper
2017	Eurasian watermilfoil, algae, coontail, coontail, pondweed	60.8 native, 138.6 EWM, 15 CLP	2,4-D, Reward, Clipper, Aquathol
2018	EWM*, Misc. Species	175 EWM 60.5 natives	2,4-D Captain, Cygnet Plus, Reward
2019	EWM*, Misc. Species	88.49EWM, 68.59 shore	2,4-D, Clipper, Tribune, Cygnet Plus, Captain
2020	EWM*	136 EWM 17.73 shore	2,4-D, Clipper, Copper sulfate, Tribune, Cygnet Plus
2021	EWM*	98.75 EWM 89 Shore	ProcellaCOR, 2,4 D, Clipper, Copper sulfate, Tribune, Cygnet Plus
2022	EWM*, CLP	62 EWM 50 CLP 63 SL	ProcellaCOR, 2,4 D, , Tribune, Captain, Clipper, Copper sulfate Propeller, Cygnet Plus, Sunwet
2023	EWM*, CLP, algae, coontail, various pondweed spp.	91.75 EWM, 31.5 early CLP, 68.6 SL and Channels	ProcellaCOR and 2,4-D for EWM, Diquat for CLP, Captain, Diquat, Flumioxazin, Cygnet Plus, Sunset for Shoreline and Channels
2024	EWM*, CLP*, SSW**	112.5 EWM, 50.0 Early season CLP 1.0 SSW	ProcellaCOR and 2, 4-D Diquat and Copper Flumioxazin

*LARE and Association Funded

** GLRI Funded

2024 Vegetation Treatments

Curly-Leaf Pondweed Treatments

A visual survey was completed on April 2, 2024. This survey found that CLP was not yet ready for treatment. A second visual survey was conducted on April 15, 2024. This second survey prioritized 50.0 acres for early season (CLP) treatment. All 50.0 acres were treated on April 24, 2024 with a combination of Diquat and copper sulfate. These early season treatments were funded by both the lake association and LARE. The early season CLP treament areas are described in Figure 1 and Table 2.

Figure 1: Webster Lake 2024 Early Season CLP Treatment Areas

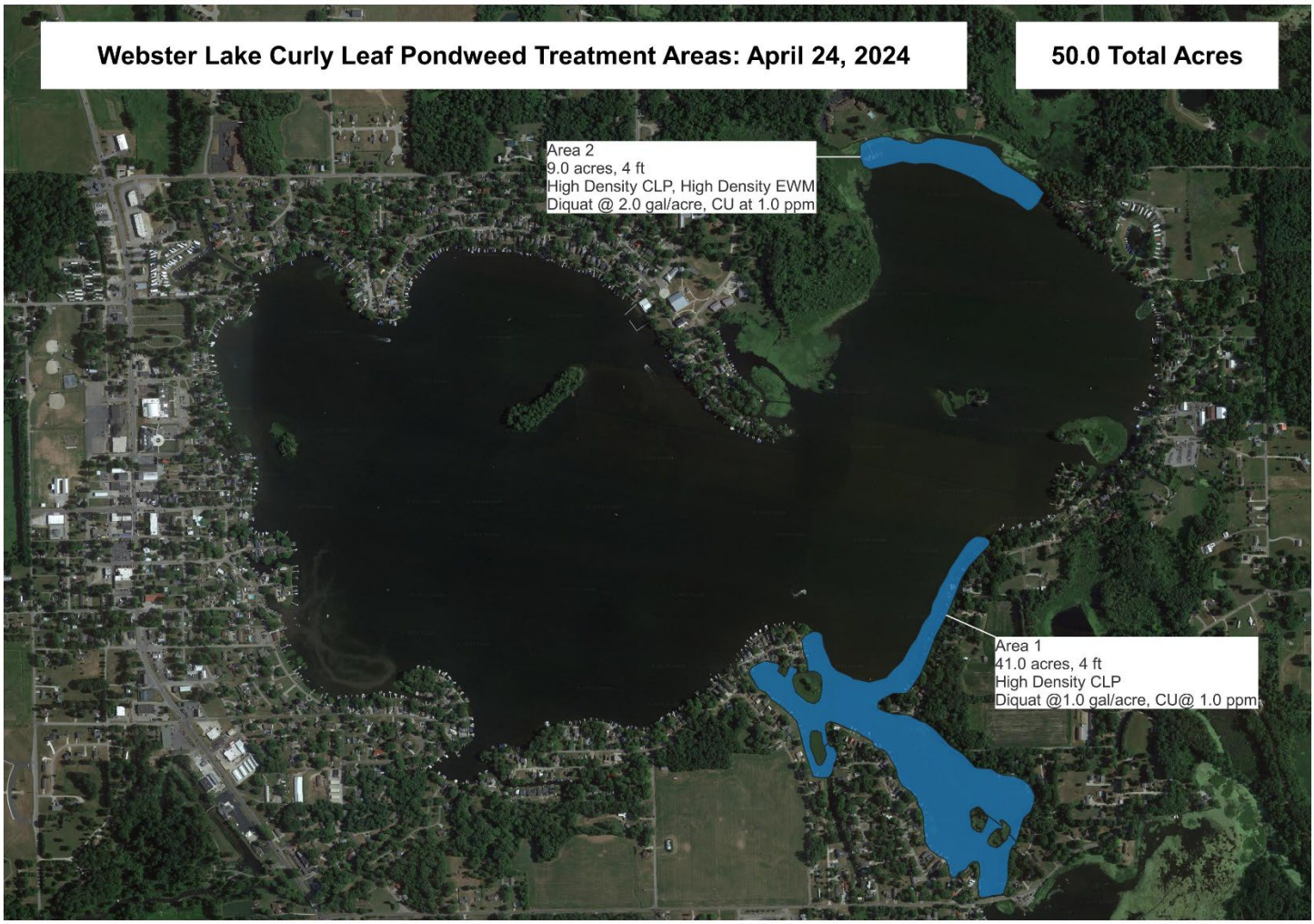


Table 2: Webster Lake 2024 Early Season CLP Treatment Details

Webster Lake 2024 Early Season Curly-Leaf Treatment		
Area	**Acres**	**Herbicide Rate**
Area 1	41.0	Diquat at 1.0 gal/acre +copper at 1.0 ppm
Area 2	9.0	Diquat at 2.0 gal/acre +copper at 1.0 ppm
Total Acres	50.0	

Eurasian Watermilfoil Treatments

Another visual survey was conducted on May 8, 2024 to identify and map all areas of EWM for treatment. This survey mapped 112.4 acres of EWM. All 112.4 acres of EWM were treated selectively with either ProcellaCOR herbicide or at a rate of 3 PDU/ac-ft or with 2, 4-D herbicide at a rate of 2.0 ppm. This treatment was funded by both LARE and the Webster Lake Conservation Association. The 2024 EWM treatments are described in Figure 2 and Table 3.

Figure 2: Webster Lake 2024 EWM Treatment Areas

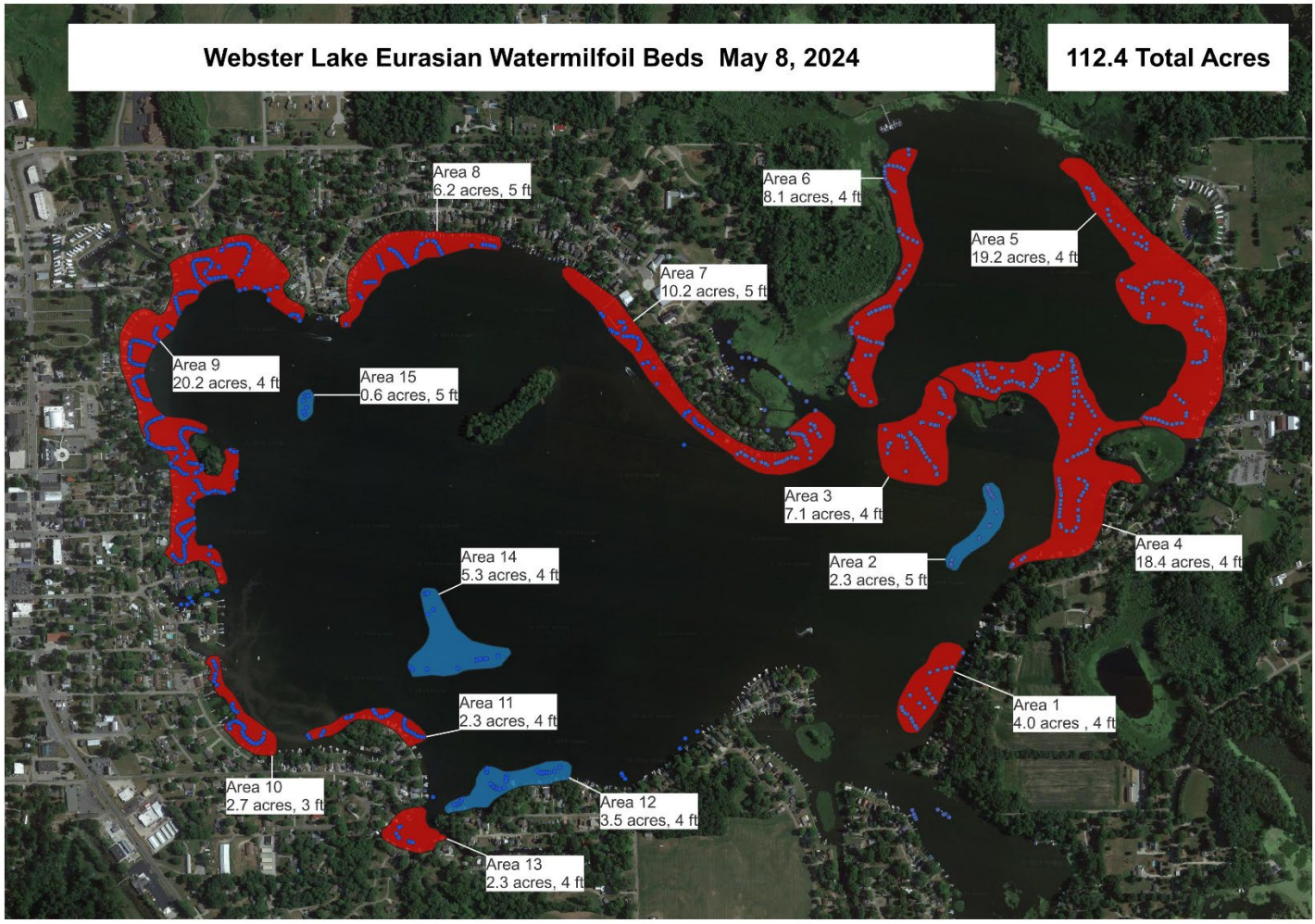


Table 3: Webster Lake 2024 EWM Treatment Details

Webster Lake 2024 Eurasian Watermilfoil Treatment			
Area	Acres	Avg depth	Herbicide
Area 1	4.0	4	2, 4-D @ 2.0 ppm
Area 2	2.3	5	2, 4-D @ 2.0 ppm
Area 3	7.1	4	2, 4-D @ 2.0 ppm
Aera 4	18.4	4	2, 4-D @ 2.0 ppm
Area 5	19.2	4	2, 4-D @ 2.0 ppm
Area 6	8.1	4	2, 4-D @ 2.0 ppm
Area 7	10.2	5	2, 4-D @ 2.0 ppm
Area 8	6.2	5	2, 4-D @ 2.0 ppm
Area 9	20.2	4	ProcellaCOR @ 3 PDU/ac-ft
Area 10	2.7	3	ProcellaCOR @ 3 PDU/ac-ft
Area 11	2.3	4	ProcellaCOR @ 3 PDU/ac-ft
Area 12	3.5	4	2, 4-D @ 2.0 ppm
Area 13	2.3	4	ProcellaCOR @ 3 PDU/ac-ft
Area 14	5.3	4	2, 4-D @ 2.0 ppm
Area 15	0.6	5	2, 4-D @ 2.0 ppm
Total Acres	112.4		

Starry Stonewort Treatments

On May 20, Aquatic Weed Control discovered one area of SSW infestation along the west shore of Webster Lake. Waypoints and pictures of the SSW were submitted to the IDNR who then funded the treatement of SSW with funds from the Great Lakes Restoration Initiative. 1.0 acre of SSW was treated on Webster Lake through the GLRI on both June 20, 2024 and September 3, 2024. All treatments used flumioxazin at a rate of 200 parts per billion (ppb). GLRI is not expected to fund any SSW treatments on Webster Lake in 2025.

Figure 3: Webster Lake 2024 GLRI SSW Treatment Area (Map Provided by GLRI)

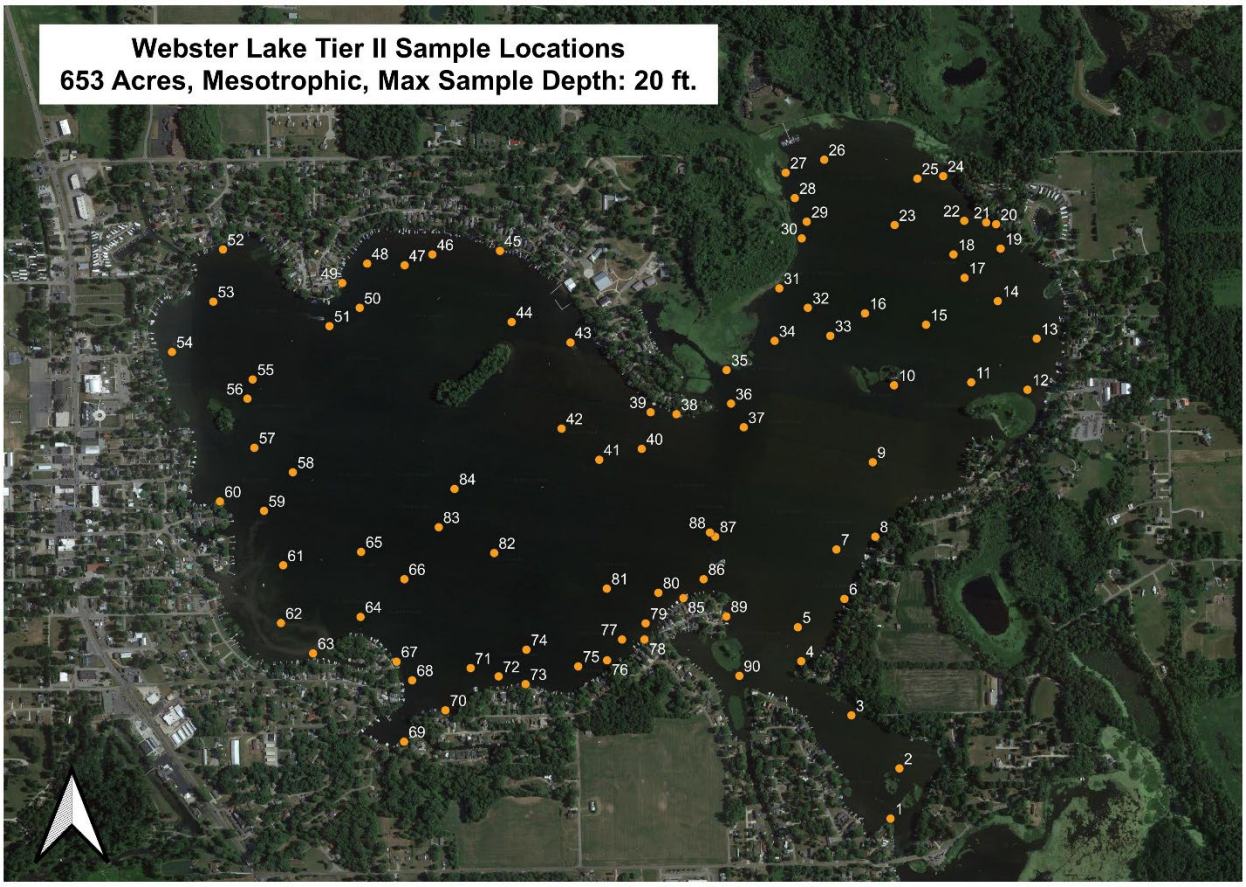
Table 4: Webster Lake 2024 SSW Treatment Details

Area	Acres	Dates Treated	Average Depth	Herbicide	Herbicide Rate
Area 1 (white polygon on map)	1.0	June 20, 2024 September 3, 2024	4	Flumioxazin	200 ppb
Total Acres	1.0				

Tier II Survey Results

A Tier II survey was conducted on August 21, 2024, by Aquatic Weed Control. Aquatic plant sampling methods used for surveys on Webster Lake are outlined in the Tier II Aquatic Vegetation Survey Protocol (IDNR 2018). Sample locations are identical to those used by the IDNR. Common and scientific names for aquatic plants are consistent with those listed in the original AVMP and are included in the appendix to this report. Ninety sample sites are spaced throughout the lake. The sample sites used in this survey are shown in **Error! Reference source not found.**.

Figure 4: Webster Lake Tier II Sample Locations



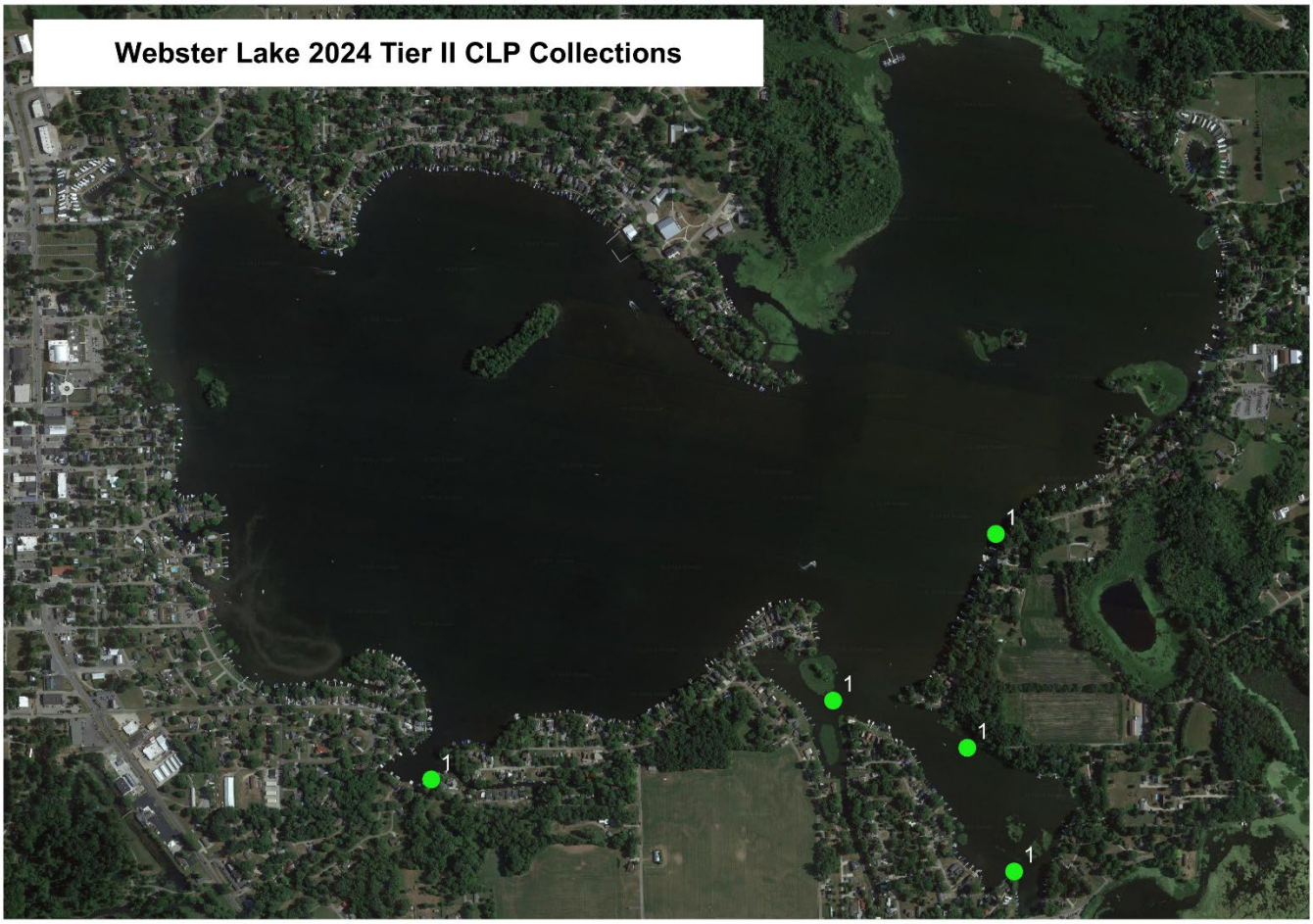
Invasive Species

Eurasian watermilfoil *(Myriophyllum spicatum)* and curly-leaf pondweed *(Potamogeton crispus)* are the two exotic plant species collected in Webster Lake in the 2024 Tier II survey. Starry stonewort *(Nitellopsis obtusa)* was observed in 2024, but not collected in the Tier II survey.

Curly-Leaf pondweed

All Tier II CLP collections for the summer 2024 Tier II survey are described in Figure 5. In the summer 2024 Tier II survey, CLP was collected at 5 of the 90 sample locations. CLP dies off naturally as water temperatures reach about 75 degrees, so summer Tier II surveys will not reflect total CLP abundance in lakes.

Figure 5: Webster Lake 2024 Tier II CLP Collections



Eurasian watermilfoil

All Tier II EWM collections for the summer 2024 Tier II survey are described in Figure 6. In the summer 2024 Tier II survey, EWM was collected at 3 of the 90 sample locations. This is 3.3% of sample locations and met the objective of keeping EWM frequency below 10% in summer Tier II surveys. It is important to note that this survey was conducted after aggressive EWM treatments, so it does not reflect total EWM abundance in Webster Lake.

Figure 6: Webster Lake 2024 Tier II EWM Collections

Tier II Survey Data Tables

Results from the August 20, 2024, Tier II survey on Webster Lake are summarized in Table 5. Site frequency, dominance, diversity, and other metrics are shown for the entire survey (all depths) and for each 5-foot depth contour where plants were present. In this survey, plants were sampled to a maximum depth of 20 feet.

Table 5: Webster Lake 2024 Tier II Data

Occurrence and Abundance of Submersed Aquatic Plants in Webster Lake.

County:	Kosciusko	Secchi (ft):	6.5	Mean species/site:	1.19
Date:	8/21/2024	Sites with plants:	71	SE Mean species/site:	0.09
Littoral Depth (ft):	20.0	Sites with native plants:	70	Mean native species/site:	1.10
Littoral Sites:	90	Number of species:	9	SE Mean natives/site:	0.08
Total Sites:	90	Number of native species:	7	Species diversity:	0.67
		Maximum species/site:	4	Native species diversity:	0.62

All Depths	Frequency of	Rake score frequency per species				Plant
Species	Occurrence	0	1	3	5	Dominance
Coontail	63.3	36.7	17.8	23.3	22.2	39.8
White-Stemmed Pondweed	20.0	80.0	8.9	8.9	2.2	9.3
Illinois Pondweed	11.1	88.9	7.8	3.3	0.0	3.6
Chara	6.7	93.3	2.2	3.3	1.1	3.6
Curly-Leaf Pondweed	5.6	94.4	5.6	0.0	0.0	1.1
Small Pondweed	4.4	95.6	3.3	1.1	0.0	1.3
Eurasian Watermilfoil	3.3	96.7	2.2	1.1	0.0	1.1
Eel Grass	2.2	97.8	1.1	1.1	0.0	0.9
Slender Naiad	2.2	97.8	1.1	1.1	0.0	0.9
Filamentous Algae	50.0					

Occurrence and Abundance of Submersed Aquatic Plants in Webster Lake.

County:	Kosciusko	Secchi (ft):	6.5	Mean species/site:	1.62
Date:	8/21/2024	Sites with plants:	27	SE Mean species/site:	0.18
Littoral Depth (ft):	20.0	Sites with native plants:	26	Mean native species/site:	1.38
Littoral Sites:	29	Number of species:	9	SE Mean natives/site:	0.14
Total Sites:	29	Number of native species:	7	Species diversity:	0.81
		Maximum species/site:	4	Native species diversity:	0.76

Depths: 0 to 5 ft	Frequency of	Rake score frequency per species				Plant
Species	Occurrence	0	1	3	5	Dominance
Coontail	55.2	44.8	24.1	13.8	17.2	30.3
Illinois Pondweed	24.1	75.9	20.7	3.4	0.0	6.2
Chara	20.7	79.3	6.9	10.3	3.4	11.0
White-Stemmed Pondweed	20.7	79.3	6.9	10.3	3.4	11.0
Curly-Leaf Pondweed	17.2	82.8	17.2	0.0	0.0	3.4
Eel Grass	6.9	93.1	3.4	3.4	0.0	2.8
Eurasian Watermilfoil	6.9	93.1	3.4	3.4	0.0	2.8
Small Pondweed	6.9	93.1	3.4	3.4	0.0	2.8
Slender Naiad	3.4	96.6	0.0	3.4	0.0	2.1
Filamentous Algae	75.9					

Occurrence and Abundance of Submersed Aquatic Plants in Webster Lake.

County:	Kosciusko	Secchi (ft):	6.5	Mean species/site:	1.11
Date:	8/21/2024	Sites with plants:	24	SE Mean species/site:	0.12
Littoral Depth (ft):	20.0	Sites with native plants:	24	Mean native species/site:	1.07
Littoral Sites:	27	Number of species:	4	SE Mean natives/site:	0.11
Total Sites:	27	Number of native species:	3	Species diversity:	0.47
		Maximum species/site:	3	Native species diversity:	0.44

Depths: 5 to 10 ft	Frequency of	Rake score frequency per species				Plant
Species	Occurrence	0	1	3	5	Dominance
Coontail	77.8	22.2	25.9	29.6	22.2	45.2
White-Stemmed Pondweed	18.5	81.5	7.4	7.4	3.7	9.6
Illinois Pondweed	11.1	88.9	3.7	7.4	0.0	5.2
Eurasian Watermilfoil	3.7	96.3	3.7	0.0	0.0	0.7
Filamentous Algae	66.7					

Occurrence and Abundance of Submersed Aquatic Plants in Webster Lake.

County:	Kosciusko	Secchi (ft):	6.5	Mean species/site:	1.08
Date:	8/21/2024	Sites with plants:	18	SE Mean species/site:	0.16
Littoral Depth (ft):	20.0	Sites with native plants:	18	Mean native species/site:	1.08
Littoral Sites:	24	Number of species:	3	SE Mean natives/site:	0.16
Total Sites:	24	Number of native species:	3	Species diversity:	0.46
		Maximum species/site:	2	Native species diversity:	0.46

Depths: 10 to 15 ft	Frequency of	Rake score frequency per species				Plant
Species	Occurrence	0	1	3	5	Dominance
Coontail	75.0	25.0	8.3	33.3	33.3	55.0
White-Stemmed Pondweed	25.0	75.0	12.5	12.5	0.0	10.0
Small Pondweed	8.3	91.7	8.3	0.0	0.0	1.7
Filamentous Algae	16.7					

Occurrence and Abundance of Submersed Aquatic Plants in Webster Lake.

County:	Kosciusko	Secchi (ft):	6.5	Mean species/site:	0.40
Date:	8/21/2024	Sites with plants:	2	SE Mean species/site:	0.27
Littoral Depth (ft):	20.0	Sites with native plants:	2	Mean native species/site:	0.40
Littoral Sites:	10	Number of species:	3	SE Mean natives/site:	0.27
Total Sites:	10	Number of native species:	3	Species diversity:	0.63

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	0.0	10.0	10.0	16.0
Slender Naiad	10.0	90.0	10.0	0.0	0.0	2.0
White-Stemmed Pondweed	10.0	90.0	10.0	0.0	0.0	2.0
Filamentous Algae	10.0					

Tier II data for each survey conducted on Webster Lake since 2019 is included in Table 6. Data prior to 2024 was taken from the 2023 AVMP written by Solitude Lake Management. This data helps to describe any long-term changes or trends in the plant community of Webster Lake.

Table 6: Webster Lake Historical Tier II Data

Webster Lake Historical Tier II Data									
Surveyor	**IDNR**	**Clarke**	**IDNR**	**Clarke**	**IDNR**	**Clarke**	**Clarke**	**SOLitude**	**AWC**
Date	8/1/19	8/14/19	8/4/20	8/18/20	8/5/21	8/31/21	8/17/22	8/29/23	8/21/24
Total Sites	90	90	90	90	90	90	90	90	90
Littoral Sites	90	90	70	90	45	86	86	84	90
Sites with Plants	64	63	70	83	45	67	57	66	71
% Sites With Plants	71.10%	70.00%	77.80%	92.20%	50%	77.90%	63.30%	73.30%	78.88%
Sites with Native Plants	63	63	69	83	44	66	57	62	70
Percent Littoral Coverage	71.0%	70.0%	77.8%	92.2%	50.0%	73.3%	66.2%	93.3%	78.9%
Maximum Plant Depth	18	20	19	15	17	17.1	19.1	17	20
Secchi (ft)	6	8.2	6	3.8	6	6	8.9	7.9	6.5
Number of Species	11	10	8	8	8	10	6	8	9
Number of Native Species	9	7	6	7	7	8	6	5	7
Species Diversity	0.65	0.62	0.59	0.63	0.75	0.72	0.66	0.69	0.67
Native Species Diversity	0.62	0.56	0.56	0.6	0.72	0.66	0.66	0.51	0.62
Mean Native Species/Site	1.03	1.06	1.16	1.48	0.69	1.28	0.93	0.96	1.1
Species Frequency of Occurrence - All Depths									
Eurasian Watermilfoil	2.2	3.3	1.1	6.7	0.0	3.3	0.0	18.9	3.3
Curly-leaf pondweed	1.1	2.2	0.0	0.0	4.4	8.9	0.0	6.7	5.6
Starry Stonewort	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coontail	60.0	66.7	72.2	82.2	30.0	58.9	50.0	60.0	63.3
Sago Pondweed	0.0	4.4	0.0	1.1	0.0	5.6	1.1	3.3	0.0
Chara Spp.	6.7	0.0	4.4	8.9	6.7	3.3	4.4	3.3	6.7
Slender Naiad	0.0	0.0	0.0	0.0	0.0	0.0	8.9	0.0	2.2
Canada Waterweed	2.2	0.0	0.0	0.0	0.0	1.1	0.0	0.0	0.0
Flat-stemmed Pondweed	1.1	0.0	0.0	0.0	1.1	0.0	0.0	0.0	0.0
Common Bladderwort	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
Small Pondweed	0.0	3.3	0.0	1.1	0.0	8.9	0.0	0.0	4.4
Nitella	2.2	0.0	0.0	11.1	0.0	2.2	0.0	0.0	0.0
Illinois Pondweed	5.6	18.9	17.8	42.2	16.7	30.0	12.2	28.9	11.1
Leafy Pondweed	16.7	0.0	16.7	0.0	10.0	4.4	0.0	2.2	0.0
Large-leaved Pondweed	0.0	1.1	0.0	1.1	0.0	0.0	0.0	1.1	0.0
White-stemmed Pondweed	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0
Narrow leaved Pondweed	0.0	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Richardson's pondweed	0.0	0.0	0.0	0.0	0.0	2.2	18.9	0.0	0.0
Variable pondweed	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0
Eelgrass	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	2.2
Filamentous algae	41.1	0.0	35.6	0.0	46.7	80.0	62.2	61.1	50.0
Species Frequency of Occurrence - 0 to 5 feet									
Eurasian Watermilfoil	3.4	10.3	0.0	10.0	0.0	10.3	0.0	0.0	6.9
Curly-leaf pondweed	3.4	6.9	6.7	0.0	10.3	27.6	0.0	0.0	17.2
Starry Stonewort	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coontail	55.2	79.3	66.7	80.0	31.0	65.5	58.0	63.3	55.2
Sago Pondweed	0.0	3.4	0.0	2.0	0.0	10.3	0.0	10.0	0.0
Chara Spp.	20.7	0.0	13.3	10.0	20.7	10.3	13.8	0.0	20.7
Slender Naiad	24.1	0.0	10.0	0.0	0.0	0.0	20.7	0.0	3.4
Canada Waterweed	6.9	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0
Flat-stemmed Pondweed	0.0	0.0	0.0	0.0	3.4	0.0	0.0	0.0	0.0
Common Bladderwort	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0
Small Pondweed	0.0	10.3	0.0	2.0	0.0	13.8	0.0	0.0	6.9
Nitella	6.9	0.0	0.0	14.0	0.0	6.9	0.0	0.0	0.0
Illinois Pondweed	6.9	34.5	0.0	48.0	20.7	51.7	13.8	40.0	24.1
Leafy Pondweed	24.1	0.0	13.3	0.0	10.3	10.3	0.0	6.7	0.0
Large-leaved Pondweed	0.0	0.0	0.0	2.0	0.0	0.0	0.0	3.3	0.0
White-stemmed Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.7
Filamentous algae	58.6	0.0	35.6	0.0	48.3	0.0	0.0	0.0	75.9
Narrow leaved Pondweed	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Richardson's pondweed	0.0	0.0	0.0	0.0	0.0	3.4	27.6	0.0	0.0
Variable pondweed	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0
Eelgrass	0.0	3.4	0.0	0.0	0.0	0.0	0.0	0.0	6.9

Webster Lake Historical Tier II Data Continued

Species Frequency of Occurrence - 5 to 10 feet									
Eurasian Watermilfoil	3.7	0.0	3.8	3.3	0.0	0.0	0.0	0.0	3.7
Curly-leaf pondweed	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0
Starry Stonewort	0.0	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coontail	74.1	85.2	73.1	86.7	37.0	59.3	55.6	53.6	77.8
Sago Pondweed	0.0	7.4	0.0	0.0	0.0	3.7	3.7	0.0	0.0
Chara Spp.	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0
Slender Naiad	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.0
Canada Waterweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
Common Bladderwort	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Small Pondweed	0.0	0.0	0.0	0.0	0.0	11.1	0.0	0.0	0.0
Nitella	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0
Illinois Pondweed	11.1	22.2	23.1	43.3	29.6	37.0	14.8	28.6	11.1
Leafy Pondweed	18.5	0.0	7.7	0.0	14.8	3.7	0.0	0.0	0.0
Large-leaved Pondweed	0.0	3.7	0.0	0.0	0.0	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	0.0	18.5
Filamentous algae	55.6	0.0	61.5	0.0	70.4	0.0	0.0	0.0	66.7
Narrow leaved Pondweed	0.0	14.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Richardson's pondweed	0.0	0.0	0.0	0.0	0.0	0.0	29.6	0.0	0.0
Variable pondweed	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0
Eelgrass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Species Frequency of Occurrence - 10 to 15 feet									
Eurasian Watermilfoil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
Starry Stonewort	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coontail	66.7	50.0	83.3	80.0	29.2	66.7	50.0	81.0	75.0
Sago Pondweed	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chara Spp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slender Naiad	0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0
Canada Waterweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
Common Bladderwort	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Small Pondweed	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	8.3
Nitella	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Illinois Pondweed	0.0	0.0	8.2	10.0	4.2	8.3	12.5	23.8	0.0
Leafy Pondweed	12.5	0.0	33.3	0.0	8.3	0.0	0.0	0.0	0.0
Large-leaved Pondweed	0.0	0.0	0.0	0.0	0.0	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	0.0	25.0
Filamentous algae	12.5	0.0	12.5	0.0	33.3	0.0	0.0	0.0	16.7
Narrow leaved Pondweed	0.0	8.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Richardson's pondweed	0.0	0.0	0.0	0.0	0.0	4.2	4.2	0.0	0.0
Variable pondweed	0.0	0.0	0.0	0.0	3.7	0.0	0.0	0.0	0.0
Eelgrass	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Species Frequency of Occurrence - 15 to 20 feet									
Eurasian Watermilfoil	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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
Starry Stonewort	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coontail	20.0	20.0	60.0	0.0	10.0	20.0	10.0	25.0	20.0
Sago Pondweed	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0
Chara Spp.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Slender Naiad	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0
Canada Waterweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Flat-stemmed Pondweed	10.0	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
Small Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Nitella	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Illinois Pondweed	0.0	10.0	0.0	0.0	0.0	0.0	0.0	8.3	0.0
Leafy Pondweed	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0
Large-leaved Pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
White-stemmed Pondweed	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0
Filamentous algae	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	10.0
Narrow leaved Pondweed	0.0	0.0	0.0	0.0	0.0	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
Variable pondweed	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Eelgrass	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Water Clarity and Water Quality

Table 7 summarizes the Secchi readings taken in each Tier II survey on Webster Lake since 2019. Although water clarity can fluctuate greatly based on weather, rain events, and algal blooms, water clarity in Webster Lake might be considered moderate when compared to many other area lakes.

In 2019 through 2024, water clarity seemed stable, with Secchi readings generally between 6.0 and 8.9 feet. The exception would be August of 2020, when Secchi depth was 3.8 feet. It is very important to continue to monitor water clarity and quality as part of lake management and monitoring because water clarity can be an important indicator for changing water quality.

Table 7: Webster Lake Secchi History

Date	Secchi Depth (ft)
8/1/2019	6.0
8/14/2019	8.2
8/4/2020	6.0
8/18/2020	3.8
8/5/2021	6.0
8/31/2021	6.0
8/17/2022	8.9
8/29/2023	7.9
8/21/2024	6.5

During the 2024 Tier II survey, Aquatic Weed Control collected data to construct dissolved oxygen and temperature profiles for Webster Lake. These profiles are described in Figure 7 and Figure 8. In 2024, Webster Lake had enough oxygen present (approximately 3ppm) to support fish life to a depth of approximately 22 feet.

Data from the temperature profile indicated thermal stratification in Webster Lake starting at a depth of around 20 feet in summer 2024. The water temperature was 72.3 degrees at the surface and dropped to 56.7 degrees at 36 feet of depth.

Figure 7: Webster Lake 2024 Dissolved Oxygen Profile

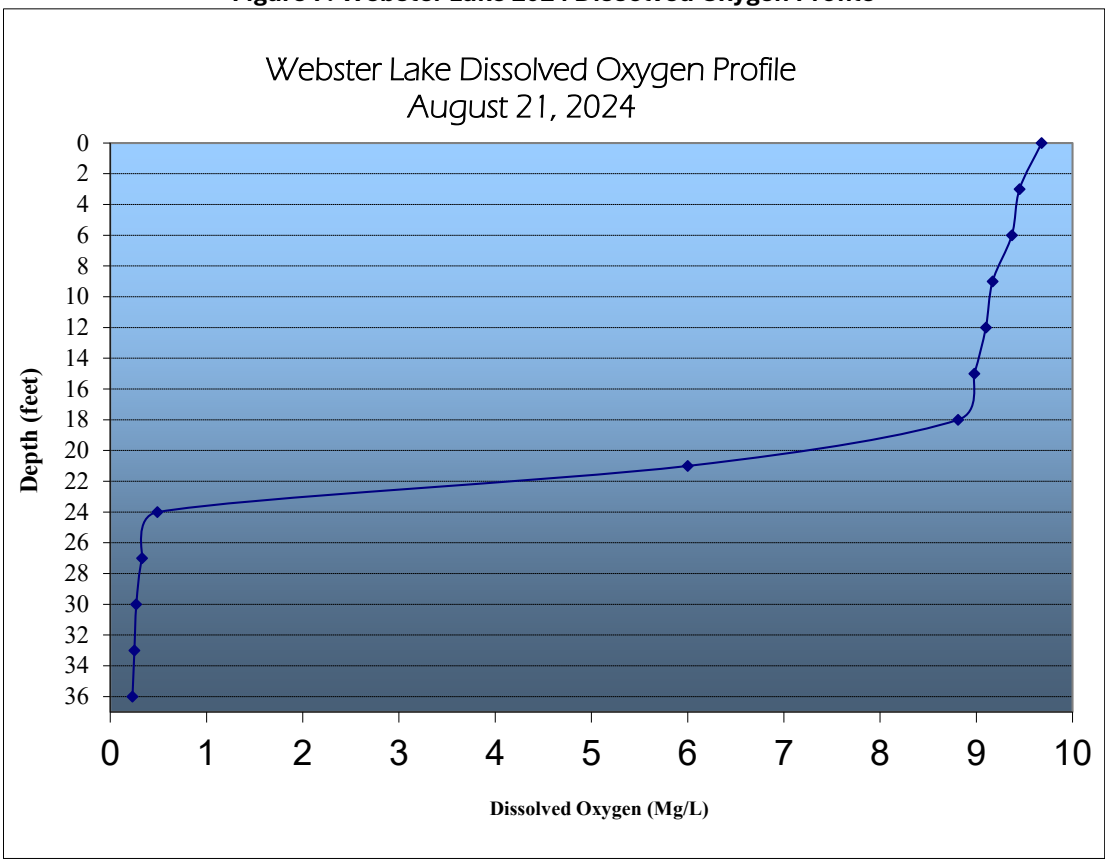
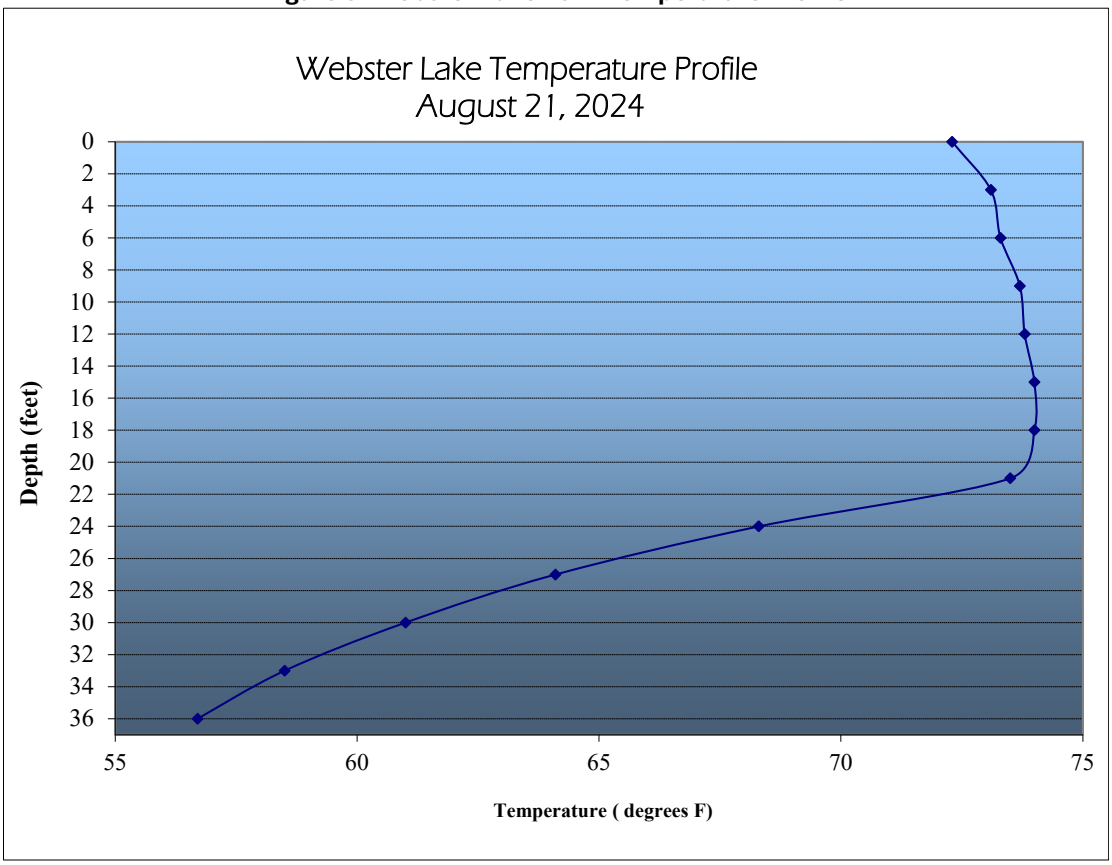


Figure 8: Webster Lake 2024 Temperature Profile



Tier II Discussion

The summer 2024 Tier II survey indicates the native plant community is stable in Webster Lake. Native plant diversity was 0.62 in 2024 with 7 species of native plants being collected. The average number of native plant species collected at each sample site in 2024 was 1.1. Native plants were found at 70 of the 90 sample sites in 2024, which is 77.8% native plant coverage.

EWM is very abundant in the lake each spring. 2024 marks 14 full years since the most recent Sonar treatment. Generally, these treatments provide some level of residual control for 3 to 7 years, so no residual control from that treatment can be expected. In 2024, a total of 112.4 acres were treated for EWM control with ProcellaCOR and 2, 4-D. However, EWM was also present in varying degrees in the 50.0 acres of early season treatment areas. EWM was collected at 3 of 90 sample locations in the 2024 Tier II survey. It's important to note that the survey took place after aggressive mapping and EWM treatment. 2025 EWM density is expected to be similar to 2024 if re-growth occurs in 2024 2,4-D treatment areas and past treatment areas that showed no re-growth in 2024.

CLP is very abundant in many areas of Webster Lake in the spring. It generally dies back as the summer goes on but not before dominating the littoral zone for much of the spring. In 2024, after 50.0 acres of early season treatment, CLP was found at 5 sample locations in the summer. Given CLP severity and abundance in spring, it will likely continue to be a management challenge in the future.

SSW was not collected in the 2024 Tier II survey in Webster Lake. However, it was observed by Aquatic Weed Control in Spring of 2024, and it was treated by Aquatic Control with GLRI funding as directed by the DNR. SSW is expected to continue to expand its distribution in coming years and will likely need significant management to help slow its spread and prevent impairment.

2025 Action Plan

Priority 1: Eurasian watermilfoil

Option 1: Whole-Lake Fluridone Treatment

EWM coverage in Webster Lake was 112.5 acres in 2024 and could be increasing based on spring abundance each year. The historical maximum acreage is approximately 255 acres or around 38% total lake coverage. EWM treatment acreage has increased in the last 3 years (62, 91.75, and 112.5 acres). This is concerning, although EWM abundance for 2025 is difficult to predict. In situations where EWM distribution and density are so high, Aquatic Weed Control recommends a whole-lake fluridone treatment as the best management practice for the following reasons:

1. *This is the least risky management option for significant negative impacts due to the early and slow EWM control.*
2. *Aquatic Weed Control feels Fluridone will provide the best advantage for native plants over a 5-year period by preventing EWM from dominating the littoral zone each spring. Fluridone treatments generally result in a short-term decline in the native plant abundance, with native plants commonly rebounding to near or even above pre-Fluridone abundance within 5 years.*
3. *It is the least expensive EWM control option over a 5-year period.*
4. *It provides the greatest level of EWM control.*
5. *It provides the greatest level of lake access for lake residents.*
6. *It provides the greatest chance to meet LARE program goals of developing stable, diverse ecosystems accessible for multiple lake uses.*

The spot treatments in Option 2 (below) should be implemented only if a whole-lake Sonar treatment is denied by the IDNR. Aquatic Weed Control believes that option 2 has a greater chance of negative impacts, provides less EWM control, less lake access for residents, and is likely more expensive over a 5-year period. However, the DNR has indicated that a whole-lake Fluridone treatment will not be allowed in 2025, so specific treatment protocols and costs are given only for Option 2.

Because of the severity of the EWM infestation and the rapid EWM growth that occurs in mid to late May, it is important that no restrictions be placed on treatment timing. Any timing restrictions can add risk to an already difficult EWM situation.

Position Statement from the IDNR on Fluridone in Webster Lake

> *"DNR agrees that there are times whole-lake treatments are justified, but disagrees with AWC that this is the best option for Webster Lake at this time. 2024 treatment acreages are similar to what have been treated in past years and it should not be assumed that this level will increase. Natural variation and success of ProcellaCOR treatments play a role in what level of EWM will be in Webster Lake in 2025. The current native plant coverage and diversity in the lake are adequate and the 2024 treatment was very successful at controlling EWM for the entire season. The 2010 Fluridone treatment was successful at controlling EWM temporarily, but it also had a severe impact on native plants. Those native plants did recover but only after treatments were reduced for multiple seasons. Because of the risk sonar imposes on native plants and the fact that spot treatments have been very successful at controlling EWM while maintaining adequate plant coverage DNR feels sonar is not the best option at Webster Lake at this time."* (IDNR and LARE Staff, 2025)

Option 2: Spot Treatments for EWM and CLP

All areas of EWM growth should be treated aggressively in 2025. We recommend setting aside funding to treat up to 84.5 acres of EWM selectively with ProcellaCOR herbicide in 2025. ProcellaCOR should be used at a rate of 3 PDUs per surface acre. Treatment timing is likely to be late May or early June. 2, 4-D may be used if ProcellaCOR label restrictions would prevent the use of ProcellaCOR.

If Option 2 is chosen, then the EWM treatment funding cap of $35,000 should be waived. It is recommended that LARE fund 80% of all EWM treatment for all areas of EWM with ProcellaCOR to help get the EWM back to a more manageable level. This seems like a reasonable compromise between the DNR and lake association that could address DNR concerns about fluridone and allow the association to afford the control needed for reasonable lake access and use.

Early Season Treatments

We recommend that at least 77.5 acres of early season curly-leaf pondweed be permitted and funded in 2025. The early season treatments provided good CLP control in Webster Lake in 2024, and they had the added benefit of supressing EWM within treatment areas. These treatments would be an important part of trying to manage all EWM in the lake in 2025. Diquat at a rate of 2.0 gallons per acre in combination with copper sulfate at a rate of 1.0 ppm should be used for these treatments.

Starry stonewort

We recommend that maximum SSW maintenance funding be granted to Webster Lake in 2025. SSW is expected to become more problematic in Webster Lake in the coming years. SSW treatments can

help keep SSW impairment low and can slow the spread of the invasive plant. The aquatic vegetation control permit will request up to 5.0 acres of selective SSW control so that if new areas of infestation become problematic and need to addressed quickly. Clipper herbicide at a rate of 200 ppb should be used for the most complete SSW control. Each area of SSW would need treated two to three times per year. Methods for distributing information on education and awareness for SSW can be found in the Pubic Involvement section of this document.

Surveys and Planning

A spring visual survey should also be completed to verify CLP and EWM locations prior to any herbicide treatments in 2025.

A summer (post treatment) Tier II survey should be used to monitor both invasive and native plant populations. The AVMP should also be updated for 2025. The Tier II survey will help to determine if native plant abundance is meeting the target objectives laid out in this plan. It will also help to determine if EWM site frequency remains below 10% which is a long-term goal of this project.

2025 Project Budget

EWM Spot Treatment (Option 2)
Treat 84.5 acres with ProcellaCOR (3pdu/ac-ft) herbicide and $ 61,262

Early Season CLP Treatment
Treat 77.5 acres in the early season with Diquat (2 gal/acre) and copper (1.0 ppm) $ 21,700

Starry Stonewort
Treat up to 5.0 acres of SSW 3 times with Clipper herbicide (200ppb) or
Cutrine Ultra Herbicide (0.8 ppm) up to $10,000

Aquatic Vegetation Management Plan
Update the Aquatic Vegetation Management Plan for 2025 (includes Tier II Survey) up to $ 5,500

Total 2025 Cost Estimate:	**up to $ 98,462.00**
Recommended LARE Cost Share	**$75,769.60**
Recommended Association Cost Share	**$22,692.40**

Public Involvement

Parties interested in the improvement of Webster Lake include members of the Webster Lake Conservation Association as well as others who access the lake at the IDNR owned access site on Backwater Lake. The most common and often most effective methods for keeping the public informed about aquatic vegetation management practices are lake association meetings as well as periodical newsletters sent out by the associations. It is recommended that association members encourage neighbors and other lake users to attend lake association meetings so that interested parties are well informed about the LARE program. Making sure that meetings are well advertised and planned well in advance of the meeting dates are ways to help ensure good attendance. Carry-in dinners, door prizes, contests, guest speakers, and discussion panels are all excellent ways to boost attendance, encourage involvement, and keep association members informed about lake management activities. The Webster Lake Conservation Association has been very active for many years and has encouraged local residents to be involved in the lake management process.

The Webster Lake Conservation Association held a public meeting on August 10, 2024, and discussed issues related to the LARE program. Justin Blotkamp of Aquatic Weed Control attended this meeting to summarize LARE activities on the lake. Forty-eight total lake use surveys were returned. Some of these responses were returned at the meeting, while others were filled out online. Forty-seven of forty-eight residents were in favor of continuing invasive vegetation control. Not everyone answered every question, which is why question totals do not always add up to the total number of surveys returned. The results of all survey responses are summarized in Figure 9.

Figure 9: Webster Lake 2024 Public Survey Results

IDNR Lake & River Enhancement - Lake Use Survey

Lake name Webster Lake Date 8/10/24

Are you a lake property owner? Yes 44 No 2

Are you currently a member of your lake association? Yes 43 No 3

How many watercrafts do you currently have registered in Indiana? 19 1 16 2 10 3 or more

Do you have a current Indiana Fishing License? Yes 24 No 24

How many years have you been at the lake? 8 5 or less 8 6-10 years 32 Over 10 years

How do you use the lake (mark all that apply)

47 Swimming
48 Boating
27 Fishing
3 Irrigation
Drinking water
4 Other

Do you have aquatic plants at your shoreline in nuisance quantities? Yes 35 No 12

Do you donate funding toward aquatic plant control? Yes 44 No 4

Do aquatic plants interfere with your use or enjoyment of the lake? Yes 40 No 8

Do you support efforts to control invasive plants on the lake? Yes 47 No 1

Are you aware that LARE funds can only be used for controlling invasive plants, not native plants? Yes 43 No 4

Mark any of these you think are problems on your lake:

5 Too many watercraft use the lake
9 Lack of speed enforcement
3 Too much fishing
4 Fish population problem
32 Dredging needed
32 Too many aquatic plants
1 Not enough aquatic plants
13 Poor water quality

Please add any comments below or on the back:
See continued page for additional comments.

Webster Lake 2024 Public comments: (unedited and complete)

Channel properties need constant care and cleaning so that we can move our boats in and out.
Too many wake boats. Too much Duckweed.
Weed control needs to be primary focus
Improvement of weed control.
The WLCA and DNR continue to work hard and spend significant amounts of money on controlling invasive weeds on the lake. However, it seems that everything is always one step behind the actual growth, and the lake is intermittently choked by weed growth. In addition, it seems that the constant killing of weeds is leading to larger and denser algae blooms in the later season. In turn, the dead algae builds up in the shallowest parts of the lake, rendering them unusable unless the material is removed. It's a never-ending cycle from which we need to break free.
Introduction of muskies was a huge mistake. They eat pan fish, fishermen race their boats in early am. $254 for a fishing license is highway robbery. I'll just let my 16 year old grandson catch fish for my supper.
Dredging needed in channel between property and island… water lever has been reduced to a foot or less in some spots due to the increased sediment pushed by wind and flow. (144 EMS W17)
Disagree with DNR muskie program as I believe it involves introducing an invasive species into our lake.
Fair condition , removal of duckweed would be an improvement.
We have so much weed growth and aquatic growth, then it is pushed towards the shoreline and then it sinks 77 feet from my shore. The muck was 4 feet deep of dead decaying riding plants. In addition, the lack of a sewer on the east side of Webster Lake certainly enhances the problem. we need a consistent effort over the next 10 to 15 years to dredge highly impacted areas, and control aquatic plants. This will eventually choke our lake.
The duck weed makes it unpleasant to swim. The "islands" of floating grasses and "hairballs" are disgusting along the shoreline. Our canal stinks terribly despite the crap being pulled from it by an individual
We are unaware of how to know the water quality in our lake. Who tests for this. We recently read in news that Indiana tests only a very small fraction of lake, pond, and river water. Where is this information found? Big unknown.
1)Eliminate/manage invasive aquatic plants and animals/fish, 2)Manage aquatic plants
Pretty good condition, Needs dredging and to get rid of duck weed.
1. I have noticed an increase in what appears to be day use of the lake for boating and recreation. I am glad that people get to use and enjoy the lake, however, there should be some governance over this - especially around the major holidays of summer. There is always an uptick in usage and people are clearly not familiar with normal boating rules and traffic patterns of the lake. Many times anchoring in areas that are not safe or sensible for those that normally use the lake. The sooner we can move to a conservancy the better in my opinion. 2. Governance of fishing tournaments Thanks for all you do for everyone's benefit and enjoyment of the lake. It is appreciated.
The weeds at Lake Webster have been extremely pervasive over the last 2 years and would like to see more aggressive treatment take place
Weed control improvements
Consistency of weed control is critical to maintaining user enjoyment and property values.
In general lake Webster condition is good except for the increase of excessive weeds and lily pads near some of the shorelines and blocking access to open lake.
Enforced counter-clockwise boating would make boating safer
Plant more lilies in areas that enhance the lake and provide a natural filtering of sediment.
Dredging required, improvement in water clarity & vegetation control needed, completion of the sewer system around the entire lake is required. Would like to see a return of a variety of fish for recreational

fishing (perch, pike, bass, crappie, etc) and a return of turtles and frogs. Need much less emphasis on Muskie fishing.
Needs dredging on south shoreline at mouth of Webster Bay
Those that have speedboats and do wake boarding disregard the depths and areas to do so. I've seen them in four foot of water creating a brown wake from disturbing and destroying the bottom and churning up all the aquatic plants. Wake boarding either needs tighter controls or a ban. The water quality is poor due to the total plant kills currently employed by the conservation assoc. there needs to be the targeted kill of invasive but the use a broad spectrum weed killer and take away the plants needed to be present for fish life and lake clarity.
Too many weeds and duckweed this year
More weed control and dredging needed
Spraying of invasive weeds is overdone to the detriment of native plants.
need help with dredging on my channel, haven't received much help from
m other property owners to maintain
state should take over dam and expense. they control who is on the lake and open to all from outsiders. to benefit all.
Fishing has improved lately. I also believe removal of septic fields along lake will improve water quality and reduce some of the duckweed
Algae blooms are increasing. Too many invasive weeds. 5 Muskies per acre are too many.

References Cited

IDNR. 2018. Tier II Aquatic Vegetation Survey Protocol. IN Department of Natural Resources, Division of Fish and Wildlife.

IDNR. 2025. IDNR Position Statement on Fluridone. Email Communication. IN Department of Natural Resources, Division of Fish and Wildlife.

Solitude Lake Management. 2023. Webster Lake 2023 Aquatic Vegetation Management Plan. 2249 Reum Rd. Suite 2. Niles, MI.

Appendix

Common and scientific names of all plants found in this report are included below.

Common Name	Scientific Name
American pondweed	*Potamogeton nodosus*
Brittle naiad	*Najas minor*
Chara	*Chara sp.*
Coontail	*Ceratophyllum demersum*
Common bladderwort	*Utricularia vulgaris*
Curly-leaf pondweed	*Potamogeton crispus*
Canada waterweed	*Elodea canadensis*
Eel grass	*Vallisneria americana*
Eurasian watermilfoil	*Myriophyllum spicatum*
Flat-stemmed pondweed	*Potamogeton zosteriformis*
Illinois pondweed	*Potamogeton illinoensis*
Large – leaved pondweed	*Potamogeton amplifolius*
Leafy pondweed	*Potamogeton foliosus*
Narrow leaved pondweed	*Potamogeton pusillus*
Nitella	*Nitella sp.*
Richardson's pondweed	*Potamogeton richardsonii*
Sago pondweed	*Stuckenia pectinata*
Slender naiad	*Najas flexilis*
Southern naiad	*Najas guadalupensis*
Small pondweed	*Potamogeton pusillus*
Spiny naiad	*Najas marina*
Starry stonewort	*Nitellopsis obtusa*
Variable pondweed	*Potamogeton gramineus*
White-stemmed pondweed	*Potamogeton praelongus*

Tier II Data Sheet and GPS Coordinates - 2024

Webster Lake	8/21/2024																
Latitude	**Longitude**	**Site**	**Depth**	Algae	EWM	CLP	Coontail	Illinois pondweed	Sago pondweed	Large-leaved pondweed	leafy pondweed	Chara	Small Pondwee	Slender Naia	White-Stem Pondwee	Eel Grass
41.317456	-85.67149	1	3.5	p		1	3	1								
41.318681	-85.6712	2	4.5	p			3									
41.319974	-85.67276	3	4.5		3	1	3						3			
41.321294	-85.67439	4	3	p			1									
41.32212	-85.6745	5	5.5	p			1									
41.322811	-85.67298	6	3.5	p			3									
41.324016	-85.67325	7	6	p			1									
41.324327	-85.67198	8	2.5	p		1	5	1								
41.326141	-85.67207	9	7				3									
41.328016	-85.67137	10	3.5				5									
41.32809	-85.66887	11	6	p			3									
41.327908	-85.66704	12	3.5	p			1	1								
41.329153	-85.66674	13	17	p												
41.330067	-85.668	14	10.5	p			1									
41.329491	-85.67033	15	10.5				5									
41.329769	-85.67232	16	13													
41.330635	-85.66908	17	10.5				5									
41.331204	-85.66944	18	14													
41.331346	-85.66791	19	6	p			3									
41.331941	-85.66805	20	4	p				3								
41.331982	-85.66838	21	4.5	p				1								
41.332023	-85.66909	22	6	p												
41.331921	-85.67135	23	20													
41.333112	-85.66978	24	3.5	p	1											
41.333051	-85.67061	25	5.5	p				3								
41.333512	-85.67364	26	11.5				5									
41.333194	-85.6749	27	4	p												
41.332578	-85.6746	28	5.5	p			3									
41.332002	-85.67421	29	16.5													
41.331596	-85.67437	30	2.5	p				1								
41.330378	-85.6751	31	3	p								3				
41.329904	-85.67417	32	6	p				1								
41.329221	-85.67344	33	7				5									
41.329099	-85.67526	34	5.5	p												
41.328388	-85.67682	35	4	p			5	1								
41.327569	-85.67667	36	6.5	p			3									
41.326994	-85.67626	37	9	p			1									
41.327312	-85.67845	38	3									5		3		
41.327359	-85.67928	39	7				5	3								
41.326466	-85.67957	40	16.5													
41.326202	-85.68095	41	10.5				5									
41.32696	-85.68218	42	11.5				3						1			
41.329058	-85.68189	43	6.5	p			1									
41.329559	-85.6838	44	10.5				5						1			
41.331292	-85.68418	45	4.5	p			1					1			3	
41.331204	-85.68638	46	11.5				3								3	
41.33094	-85.68728	47	16													
41.33098	-85.6885	48	9				5									
41.330507	-85.68931	49	2.5	p								3				
41.329904	-85.68874	50	14				3								3	
41.329458	-85.68972	51	7	p			1									
41.331326	-85.69318	52	3				1					3				
41.330053	-85.6935	53	10.5				3								1	
41.328828	-85.69484	54	10.5				3									
41.328158	-85.69222	55	20				5								1	
41.327691	-85.69239	56	11	p												
41.326493	-85.69216	57	6	p			1									
41.325897	-85.69091	58	12													
41.324956	-85.69185	59	12	p			3									
41.325187	-85.69328	60	4	p								1				
41.32363	-85.69123	61	8	p			3								1	
41.322222	-85.6913	62	5.5	p											1	
41.321484	-85.69025	63	3	p												
41.322371	-85.68871	64	6	p												
41.323955	-85.68869	65	20													
41.323291	-85.68729	66	7.5				5									
41.321281	-85.68754	67	4	p											3	1
41.320827	-85.68704	68	7.5				5								3	
41.319331	-85.6873	69	4.5			1	1								5	
41.320096	-85.68595	70	3													3
41.321125	-85.68513	71	13				3								3	
41.320922	-85.68422	72	6.5		1		3								3	
41.320733	-85.68335	73	3	p											3	
41.321572	-85.68332	74	7.5				5									
41.321166	-85.68164	75	15													
41.321315	-85.6807	76	6.5				3								5	
41.321822	-85.68021	77	15.5				3							1		
41.321822	-85.67948	78	2	p			5									
41.322215	-85.67945	79	11				5									
41.32296	-85.67903	80	12				5									
41.323061	-85.68071	81	12.5				3								1	
41.323928	-85.68437	82	16.5													
41.324557	-85.68617	83	10.5				5								1	
41.325491	-85.68566	84	12				1									
41.322831	-85.67822	85	3				5						1		1	
41.323291	-85.67756	86	8	p			1									
41.324327	-85.67718	87	11.5	p												
41.324428	-85.67736	88	18.5													
41.322384	-85.67682	89	3	p			1								1	
41.320936	-85.6764	90	3.5	p		1	1									

IDNR LARE Aquatic Vegetation Control Permit

APPLICATION FOR INDIANA AQUATIC VEGETATION CONTROL PERMIT

State Form 26727 (R7 / 11-24)

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND WILDLIFE
ATTENTION: LICENSING UNIT
402 West Washington Street, Room W273
Indianapolis, IN 46204
Telephone: (317) 234-1074
Fax: (317) 232-8150
E-mail: AquaticVegPermit@dnr.in.gov

FEE: $20.00 per water body (lake/river)

INSTRUCTIONS:
1. Please type or print information.
2. Be sure to read all regulations.
3. Submit one application for each water body (lake/river).
4. Submit completed application with payment to Indiana DNR as required by IC 14-22-9-10.

Type of permit *(check one)*: ☐ Whole lake ☑ Multiple treatment areas

If multiple areas, complete a section for each treatment area on page 2. Attach additional pages as necessary.

Name of applicant (company): Webster Lake Conservation Association	Name of lake association (if applicable): Webster Lake Conservation Association
Business Address *(number and street or rural route, city, state, and ZIP code)*: P.O. Box 79 North Webster, Indiana 46555	
Telephone number: (574) 361-6091	E-mail address: mywyrick1@gmail.com
Name of certified applicator: TBD	Certification number: TBD
Name of water body *(One application per water body.)*: Webster Lake	Drinking water supply? ☐ Yes ☑ No
Nearest town: North Webster, Indiana	County of water body: Kosciusko

AGREEMENT

I have read the aquatic vegetation control permits laws (IC 14-22-9-10 and 312 IAC 9-10-3) and agree to abide by them. Under penalties of perjury (IC 35-44-2-1), I certify that the information supplied by me is true and correct to the best of my knowledge.

Signature of applicant	Date *(month, day, year)*: TBD
Printed name of applicant	

Please return completed application with license fee made payable to the Indiana DNR to the address shown above.

FOR OFFICE USE ONLY

Application number	Check number	Other
Approved by:		Date Approved *(month, day, year)*
Signature of permitting biologist		Date *(month, day, year)*

Please complete one section for EACH treatment area.
Attach a color map detailing the treatment area and denote the location of any water supply intake (if applicable).

Treatment area number	Total acres to be controlled	Proposed shoreline treatment length (feet)	Perpendicular distance from shoreline (feet)	Maximum depth of treatment area (feet)
1	up to 84.5	TBD	TBD	TBD

Latitude / longitude or UTMs: ALL EWM

Treatment method: ☑ Chemical ☐ Biological control ☐ Physical ☐ Mechanical

Expected month(s) of treatment: May-August

Specify the method used to determine presence of vegetation and date (*month/year*)
☐ Rake ☑ Visual ☐ Other (*specify*): _____ Date: May - August

List chemical(s) to be used, method of physical or mechanical control and disposal area or the species and stocking rate for biological control:
ProcellaCOR, 2, 4-D

Name of Aquatic Plant	Check if Target Species	% Relative Abundance of Community	Name of Aquatic Plant	Check if Target Species	% Relative Abundance of Community
Eurasian watermilfoil	☑	70		☐	
Sago pondweed	☐	10		☐	
chara	☐	10		☐	
coontail	☐	10		☐	
	☐			☐	

Treatment area number	Total acres to be controlled	Proposed shoreline treatment length (feet)	Perpendicular distance from shoreline (feet)	Maximum depth of treatment area (feet)
2	up to 77.5	TBD	TBD	TBD

Latitude / longitude or UTMs: Early Season CLP

Treatment method: ☑ Chemical ☐ Biological control ☐ Physical ☐ Mechanical

Expected month(s) of treatment: April or May

Specify the method used to determine presence of vegetation and date (*month/year*)
☐ Rake ☑ Visual ☐ Other (*specify*): _____ Date: April or May

List chemical(s) to be used, method of physical or mechanical control and disposal area or the species and stocking rate for biological control:
diquat, copper

Name of Aquatic Plant	Check if Target Species	% Relative Abundance of Community	Name of Aquatic Plant	Check if Target Species	% Relative Abundance of Community
curly-leaf pondweed	☑	70		☐	
large-leaved pondweed	☐	10		☐	
chara	☐	10		☐	
coontail	☐	10		☐	
	☐			☐	

Treatment area number	Total acres to be controlled	Proposed shoreline treatment length (feet)	Perpendicular distance from shoreline (feet)	Maximum depth of treatment area (feet)
3	up to 5.0	TBD	TBD	TBD

Latitude / longitude or UTMs: All SSW

Treatment method: ☑ Chemical ☐ Biological control ☐ Physical ☐ Mechanical

Expected month(s) of treatment: June - September

Specify the method used to determine presence of vegetation and date (*month/year*)
☐ Rake ☑ Visual ☐ Other (*specify*): _____ Date: June - September

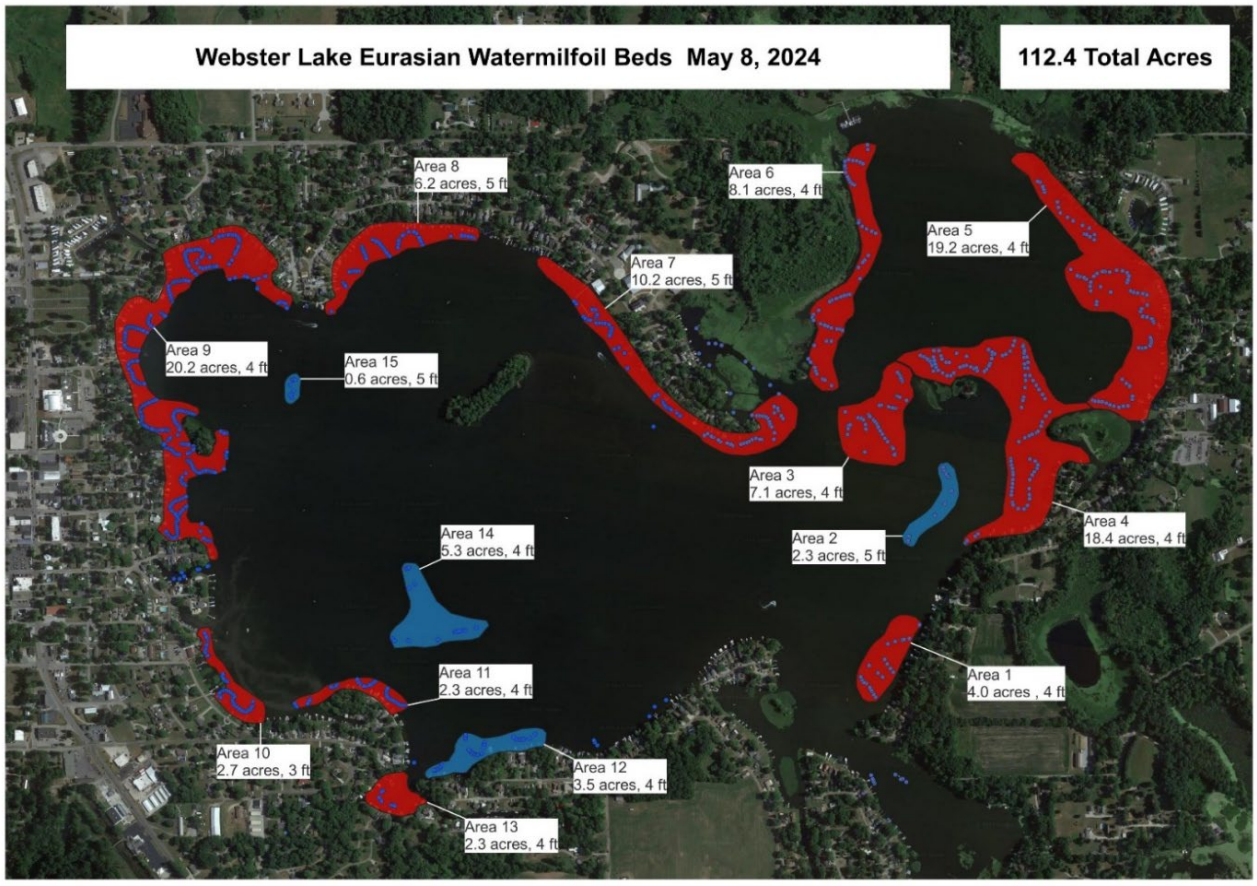
List chemical(s) to be used, method of physical or mechanical control and disposal area or the species and stocking rate for biological control:
cutrine ultra, flumioxazin

Name of Aquatic Plant	Check if Target Species	% Relative Abundance of Community	Name of Aquatic Plant	Check if Target Species	% Relative Abundance of Community
SSW	☑	70		☐	
chara	☐	10		☐	
slender naiad	☐	10		☐	
coontail	☐	10		☐	
	☐			☐	

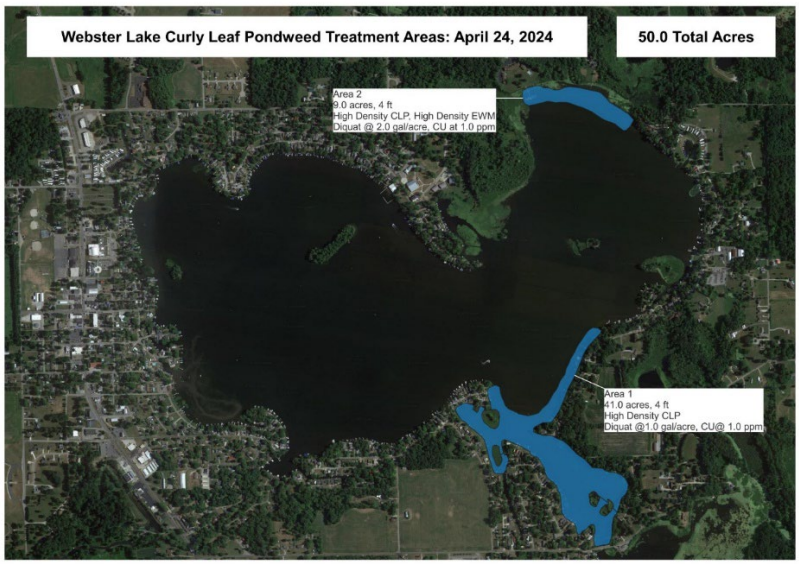
Webster Lake 2025 Permit Maps

The maps below are only meant to give a general description of some likely treatment areas for 2025. Visual surveys will take place in 2025 to map CLP, EWM, and SSW abundance. The SSW areas are expected to be within or near the white area on the SSW map below.

Webster Lake Potential EWM Areas



Webster Lake Potential Early Season CLP Areas



Webster Lake Potential SSW Area (provided by GLRI)