2019 AIS Management Assessment and Summary Report: ACEI-21918 Big Trade Lake

Prepared for:

Round Trade Lakes Improvement Association

Trade Lake, Wisconsin

Polk and Burnett Counties

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Introduction

This summary report discusses the 2019 aquatic invasive species education, management planning, and management implementation completed on Big Trade Lake. Eurasian Watermilfoil (EWM) management was planned and implemented on Big Trade Lake in 2019. These actions were guided by Lake Education and Planning Services (LEAPS) and completed in part by volunteers from the Round Trade Lakes Improvement Association (RTLIA).

The following actions from the 2018-21 AIS Control of an Established Infestation (ACEI) grant funded project on Big and Little Trade Lakes are included in this project summary.

- 2019 LEAPS Contracting with the RTLIA
- 2019 EWM Management Planning
- 2019 EWM Management Implementation
- 2019 Aquatic Plant Survey Work
- 2019 AIS Education
- 2019 Water Quality Sampling

2019 LEAPS Contracting with the RTLIA

A contract was drawn up between LEAPS and the RTLIA covering the time frame from April 1, 2019 to March 31, 2020. Table 1 reflects the tasks that were included in that contract and the extent of completion for each as of the end of February 2020.

Table 1: Contracted LEAPS Services and Completion Status for Big and Little Trade Lakes in 2019

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Earned Value Table -- Calculation of Estimated Progress

Post % Complete to Historical Tab

Lake Education and Planning Services
2019 RTLIA-Big&LittleTrade-AIS

Enter date as mm/dd/yy
EV Table Date = 29-Feb-20

Cost Code	Task Description	Manager	Start Date	Finish Date	Task Budget		Percent Complete	Earned Value
			1-Apr-19	31-Mar-20	$ 6,300		75.9%	$ 4,780
1	2019 CLP/EWM Management Planning	DLB				x		
1.1	CLP/EWM management planning		1-Apr-19	30-Jun-19	1,500	x	100.0%	1,500
1.2	Preparation of WDNR permit		1-Apr-19	30-May-19	600	x	100.0%	600
1.4	Applicator support		1-May-19	30-Jun-19	300	x	100.0%	300
2	2019 Aquatic Plant Survey Support	DLB				x		
2.1	Pre-Post Treatment Surveys		1-May-19	30-Jun-19	300	x	90.0%	270
2.3	Fall Bed-mapping Support		1-Aug-19	31-Mar-20	300	x	90.0%	270
2.4	Summer EWM survey and physical removal		1-Jul-19	30-Sep-19	320	x	100.0%	320
3	2018 AIS Education Support	DLB				x		
3.1	AIS Workshop		1-Jun-19	30-Sep-19	240	x	100.0%	240
3.2	ZM Dock-Out Day		1-Sep-19	31-Oct-19	320	x	0.0%	
4	2018 Water Quality Monitoring Support	DLB				x		
4.1	Preparation of bottles, labslips, coolers		1-Apr-19	31-Oct-19	320	x	100.0%	320
5	2018 Project Management Support	DLB				x		
5.1	End of Year Summary Report		1-Oct-19	31-Mar-20	900	x	0.0%	
5.2	Meetings		1-Apr-19	31-Mar-20	600	x	80.0%	480
5.3	General Expenses		1-Apr-19	31-Mar-20	600	x	80.0%	480
	TOTALS				6,300			4,780
	Total Project Progress:	$4,780			/ $ 6,300	=	**75.9%**	

In 2019, contracting between LEAPS and the RTLIA was set up with equal monthly payments throughout the project. This was done to provide the RTLIA with a consistent and unchanging invoice payment allowing them to plan accordingly. Billing was done in a way where each invoice sent was the same increase in the percentage of completion for every task in the project, even though in reality, tasks are completed at different times. As an example, CLP and EWM planning is 100% completed early in the year, but is billed the same way that the End of Year Summary is which is not completed until near the end of the project. Table 1 reflects the actual percent completion of each task as of February 2020. The invoices included in the 2019 Reimbursement Request for this project reflect a 56.67% completion rate for all tasks through the end of November 2019.

Completion of the 2019 Summary Report (this document) and small percentages of a few other items have yet to be completed. These few services related to the 3-yr ACEI project will be completed and a new contract will be drawn up for 2020 LEAPS services. Consultant support for a ZM Dockout Day was not needed.

2019 EWM Management Planning – Big Trade Lake

Based on how the 3-yr ACEI grant was set up, initial plans for EWM treatment in Big Trade Lake were to not chemically treat any area but rather focus on physical removal. However, based on 2018 fall bedmapping results which showed recolonization of EWM in several areas, it was decided to treat EWM in 2019 to perhaps extend the success of the 2018 treatment. A total of 3.67 acres of EWM in 6 beds in Big Trade Lake were chemically treated using Shredder Amine 4 (liquid 2,4-D) at 4.0ppm application rate (Figure 3). No pre-treatment survey was completed in 2019 so the proposed EWM treatment did not change.

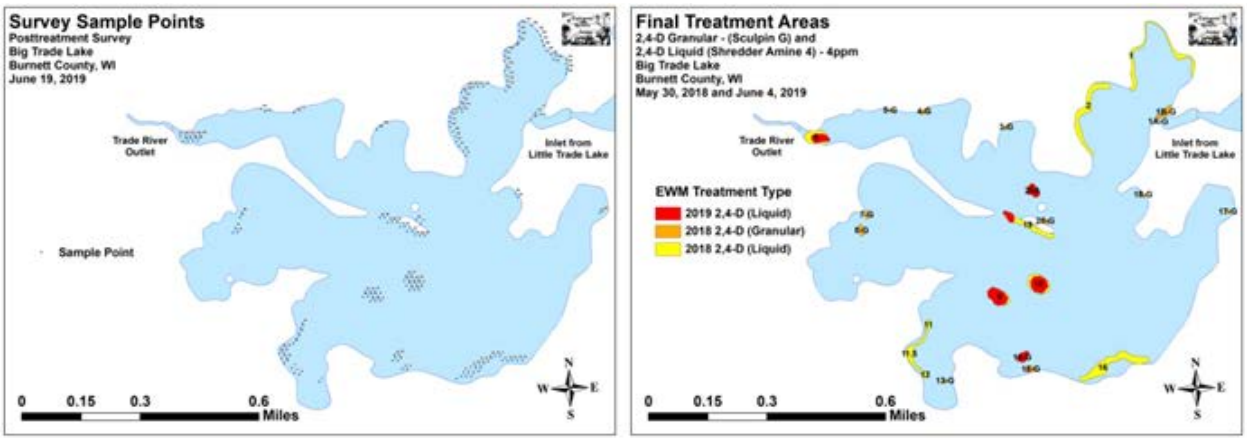


Figure 1: 2019 Big Trade Lake survey sample points and 2018/2019 treatment areas (ERS, 2019)

2019 EWM Management Implementation - Big Trade Lake

The required WDNR herbicide application permit was completed by LEAPS, the RTLIA, and Northern Aquatic Services in April and all property owners adjacent to the proposed treatment areas contacted as required by the permit, and signs were posted at the properties on the day of application.

Application of all herbicides to control EWM in Big Trade Lake was completed on June 4, 2019 by Northern Aquatic Services. Herbicide was applied between noon and 2:00pm. Water temperature was 63°F and air temperature was 75°F. Wind speed was very light at 3-4 mph out of the S. At the time of treatment, CLP, EWM, coontail, common waterweed, and filamentous algae were present.

2019 Aquatic Plant Survey Work – Big Trade Lake

In 2019, a post-treatment and fall EWM bedmapping was completed by Endangered Resource Services (ERS). A pre-treatment survey was not completed because the decision had already been made to treat the 6 beds in 2019 and nothing else and a pre-treatment survey would not have provided any new information. A point-intercept style of plant survey that included 160 points in 13.36 acres of the lake was completed post-treatment on June 19, 2019. The number of points surveyed was well over the minimum of 4-10 points/acre required by WDNR protocol for pre/post treatment surveys (Figure 1). For comparison purposes the results from the 2018 pre-treatment survey using the same points is included in this summary.

During the 2018 pre-treatment survey, CLP was found at 118 of 160 points sampled (Figure 2). CLP was not targeted for treatment in either 2018 or 2019 and it showed in the 2019 post-treatment survey when CLP was found at 132 of the 160 points surveyed (Figure 2).

EWM was found at 33 of 160 points during the 2018 pre-treatment survey (Figure 3). After a EWM treatment of more than 13 acres in 2018, EWM was nearly non-existent in the lake with no EWM found at any of the 160 survey points or between points (Figure 4). Chemical treatment in 2019 of the areas of EWM mapped in the fall of 2018, once again showed EWM to be nearly non-existent with only 2 of the 160 points having EWM (Figure 4) despite only treating 3.67 acres of the 13 plus acres included in the point-intercept survey. This suggests that the treatment in 2019 was successful, and the areas not treated since 2018 continued to be relatively EWM free. CLP was not targeted for chemical treatment in Big Trade Lake in 2018 or 2019.

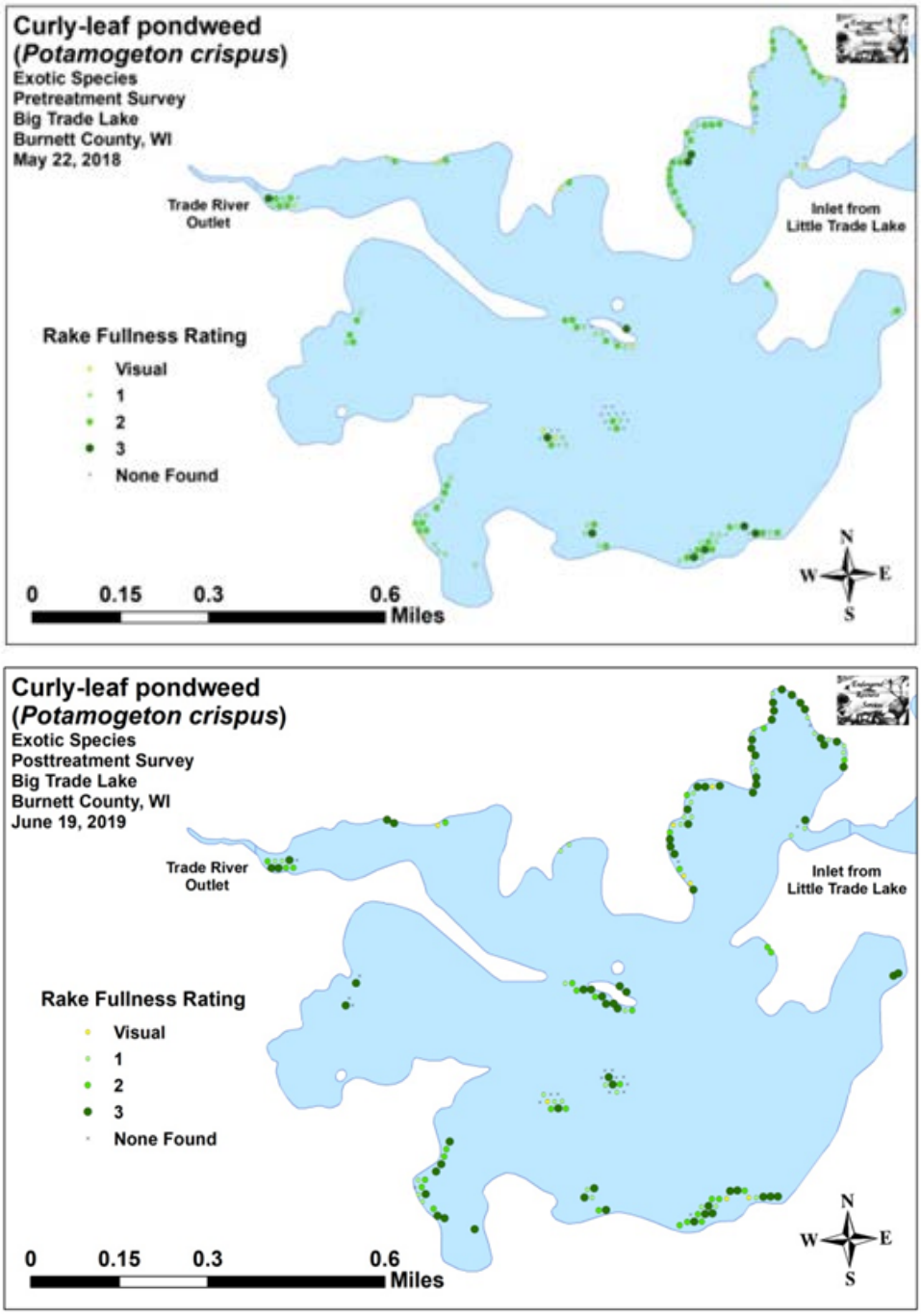


Figure 2: CLP found during the 2018 Big Trade Lake pre-treatment survey and the 2019 post-treatment survey

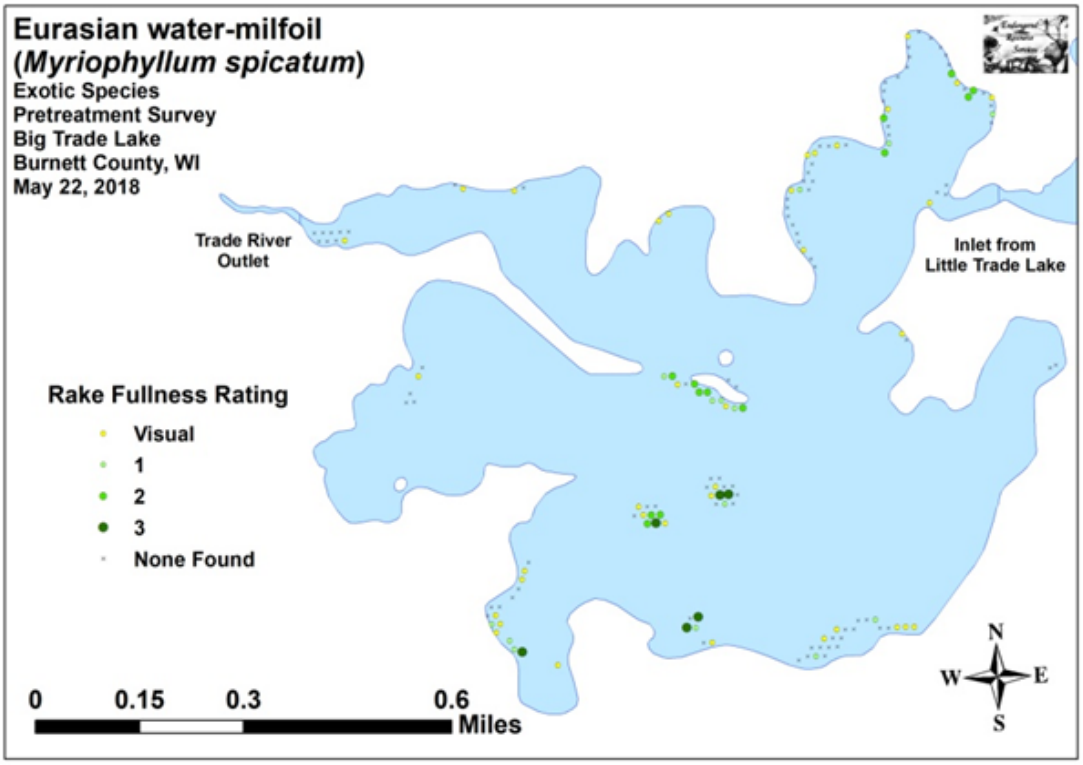


Figure 3: EWM identified during the 2018 pre-treatment survey (ERS, 2019)

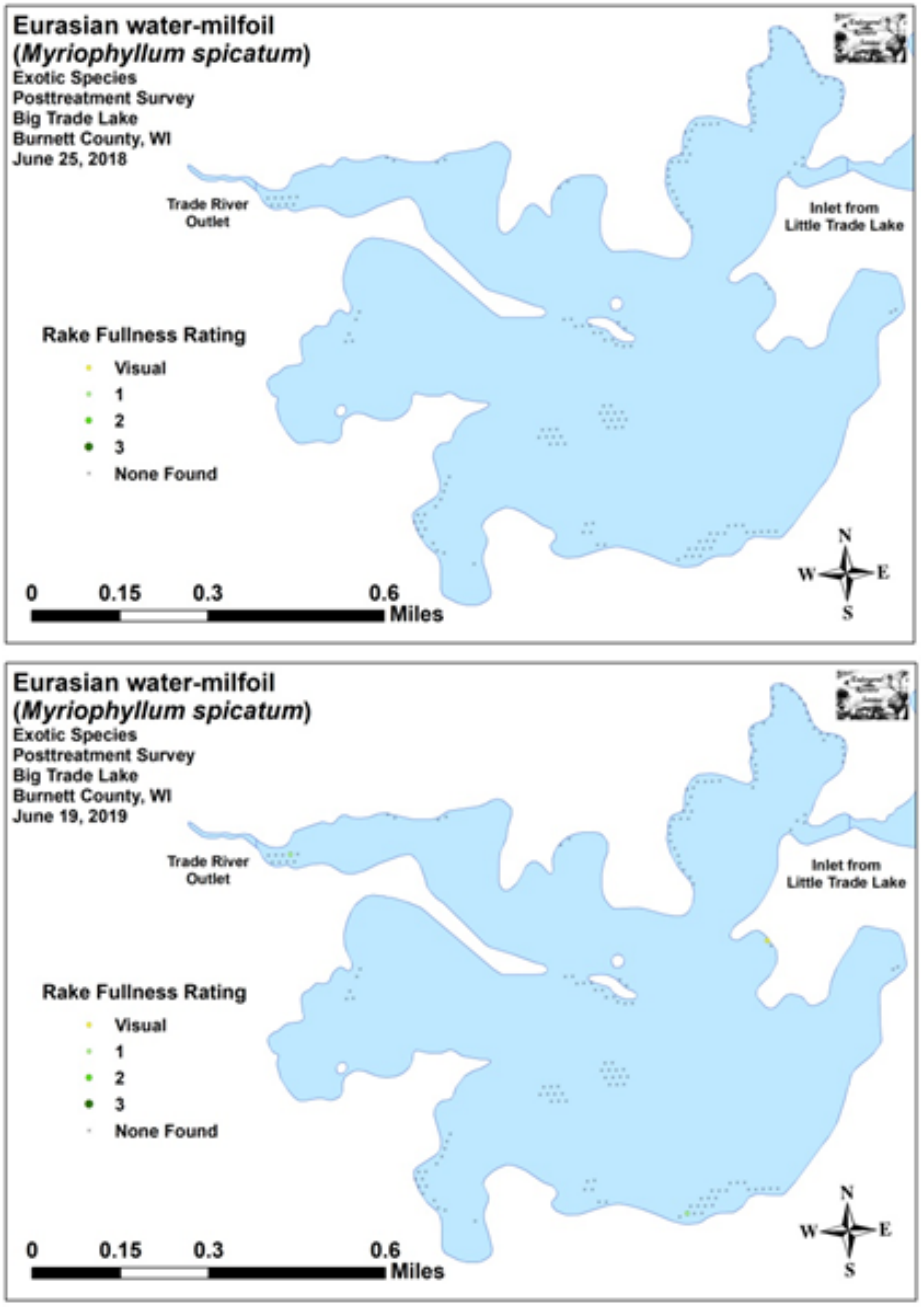


Figure 4: EWM found during the 2018 Big Trade Lake pre-treatment survey and the 2019 post-treatment survey

2019 Native Aquatic Plant Survey Results – Big Trade Lake

The 2018 littoral zone within the areas surveyed extended to 13.0ft during the pre-treatment survey before declining sharply to 11.0ft post-treatment. In 2019, it was little changed at 10.5ft. The frequency of plant occurrence was almost unchanged during all three surveys at 94.8% coverage pre-treatment 2018, 96.0% post-treatment 2018, and 95.3% post-treatment 2019. In 2018, total richness jumped from 11 species pre-treatment to 16 species post-treatment before declining to 15 post-treatment 2019. Similarly, the Simpson's Diversity Index increased from a moderately high pre-treatment value of 0.77 to

a high post-treatment value of 0.86 before declining slightly to 0.84 in 2019. The Floristic Quality Index (another measure of native plant community health) climbed from 17.0 pre-treatment to 20.7 post-treatment and also slipped slightly to 19.1 in 2019.

In 2018, mean native species richness at points with native vegetation rose sharply from 1.60 species/point pre-treatment to 2.55 species/point post-treatment. Although this increase in localized richness was highly significant, it can largely be attributed to the rise in "duckweeds"; especially in the southwest bay and along the western shoreline in the north-central bay. From June 2018 to June 2019, this value experienced another nearly significant increase to 2.84 species/point.

Total mean rake fullness in 2018 was almost unchanged from a moderate 1.99 pre-treatment to 1.97 post-treatment. However, in 2019, it experienced a highly significant increase to a high mean rake of 2.45.

Summary statistics from the three surveys is included in Table 2.

Table 2 – Pre/Post 2018 and post 2019 surveys summary statistics Big Trade Lake, Burnett County May 19 & June 25, 2018; and June 19, 2019 (ERS, 2019)

Summary Statistics:	Pre 2018	Post 2018	Post 2019
Total number of points sampled	160	160	160
Total number of sites with vegetation	145	144	142
Total number of sites shallower than the maximum depth of plants	153	150	149
Freq. of occur. at sites shallower than max. depth of plants (in percent)	94.8	96.0	95.3
Simpson Diversity Index	0.77	0.86	0.84
Mean Coefficient of Conservatism	5.7	5.3	5.3
Floristic Quality Index	17.0	20.7	19.1
Maximum depth of plants (ft)	13.0	11.0	10.5
Mean depth of plants (ft)	4.1	4.4	4.5
Median depth of plants (ft)	4.0	4.0	4.0
Average number of all species per site (shallower than max depth)	2.40	2.90	3.45
Average number of all species per site (veg. sites only)	2.53	3.02	3.62
Average number of native species per site (shallower than max depth)	1.41	2.43	2.55
Average number of native species per site (sites with native veg. only)	1.60	2.55	2.84
Species richness	11	16	15
Mean rake fullness (veg. sites only)	1.99	1.97	2.45

Coontail and Common waterweed were the most common native species in the 2018 pre-treatment survey. Post-treatment 2018, Coontail remained the most common native species despite experiencing non-significant declines in distribution and density. Although it increased slightly in mean rake fullness, Common waterweed also experienced a non-significant decline in range post-treatment and fell to become just the sixth most common native species.

During the 2019 post-treatment survey, Coontail was again the most common native species. Its distribution was almost unchanged, but it experienced a significant increase in density to a mean rake of

1.61. Common waterweed saw a non-significant decline in distribution to 25 sites, and a non-significant increase in density to a mean rake of 1.60. Despite the decline in distribution, it remained the sixth most common native species.

In 2018, in addition to CLP and EWM, Northern water-milfoil suffered a highly significant decline in range post-treatment; and White water crowfoot experienced a moderately significant decline. As both of these species are dicots and sensitive to 2,4-D, it's likely these results are at least partially tied to the herbicide application in 2018. In spite of these losses, many species demonstrated significant expansion in distribution post-treatment. Specifically, White water lily, Common watermeal, Small duckweed, and Large duckweed enjoyed highly significant increases; Flat-stem pondweed demonstrated a moderately significant increase; and Spatterdock, Sago pondweed, and Small pondweed each showed a significant increase.

The 2019 post-treatment survey found few differences in distribution when compared to the 2018 post-treatment survey. White water lily saw a significant decline in distribution. Conversely, in addition to Curly-leaf pondweed, Common watermeal experienced a highly significant increase in distribution; and filamentous algae saw a significant increase.

Additional pre and post treatment aquatic plant survey data is available in the Final 2019 Plant Survey Summary Report generated by ERS and included as an appendix to this summary.

2018 Fall EWM Bed-mapping on Big Trade Lake

From October 14-15, 2019 the entire visible littoral zone of Big Trade Lake was searched for EWM. The fall EWM bedmapping survey is a visual survey specifically looking for EWM and then marking individual plants and beds of EWM with GPS. A "bed" is determined to be any area where EWM is visually estimated to make up >50% of the area's plants and is generally continuous with clearly defined borders. During the 2019 fall survey, 24 EWM beds totaling 1.57 acres or 0.48% of the lake's total surface area were mapped. Outside of these areas, 136 additional EWM plants were marked (Figure 5). This total area was up slightly (+17.16%) from 2018 when 26 beds that covered 1.34 acres were mapped and 145 additional plants were marked (Figure 6). However, it was still down from 2017 when 32 beds on 2.97 acres were found.

These results indicate that EWM is still widespread throughout the entire littoral or shallow water area of the lake, but is still pretty much just individual or small groups of plants. The worst areas of EWM in the fall of 2018 were still the two rock piles in the middle of the lake which have proven difficult to treat with herbicides, but surprisingly, the fall 2019 EWM survey found no plants on either rock bar (Figure 5) further suggesting the chemical treatment program is working to keep levels down. This data also makes it pretty clear that if an aggressive physical removal program is not continued on Big Trade Lake, EWM will get more dense and cover a larger area of the lake eventually leading to much larger chemical treatments or possible an whole-lake treatment.

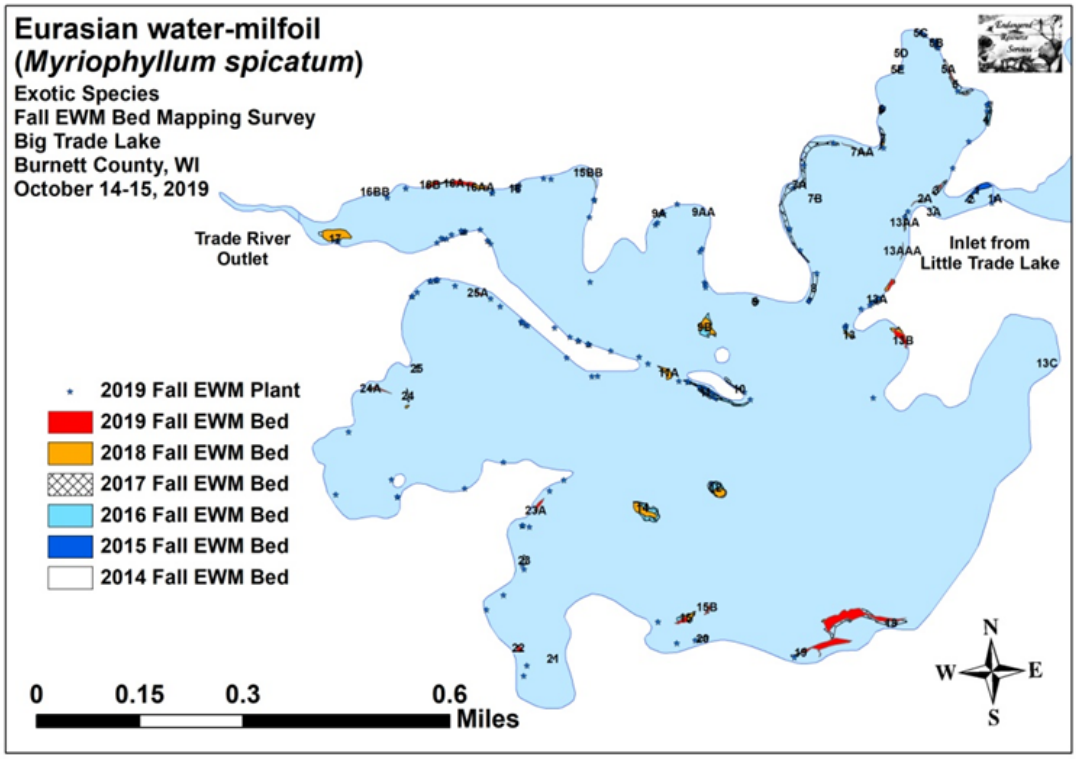


Figure 5: 2019 Big Trade Lake fall EWM bedmapping results (ERS, 2019)

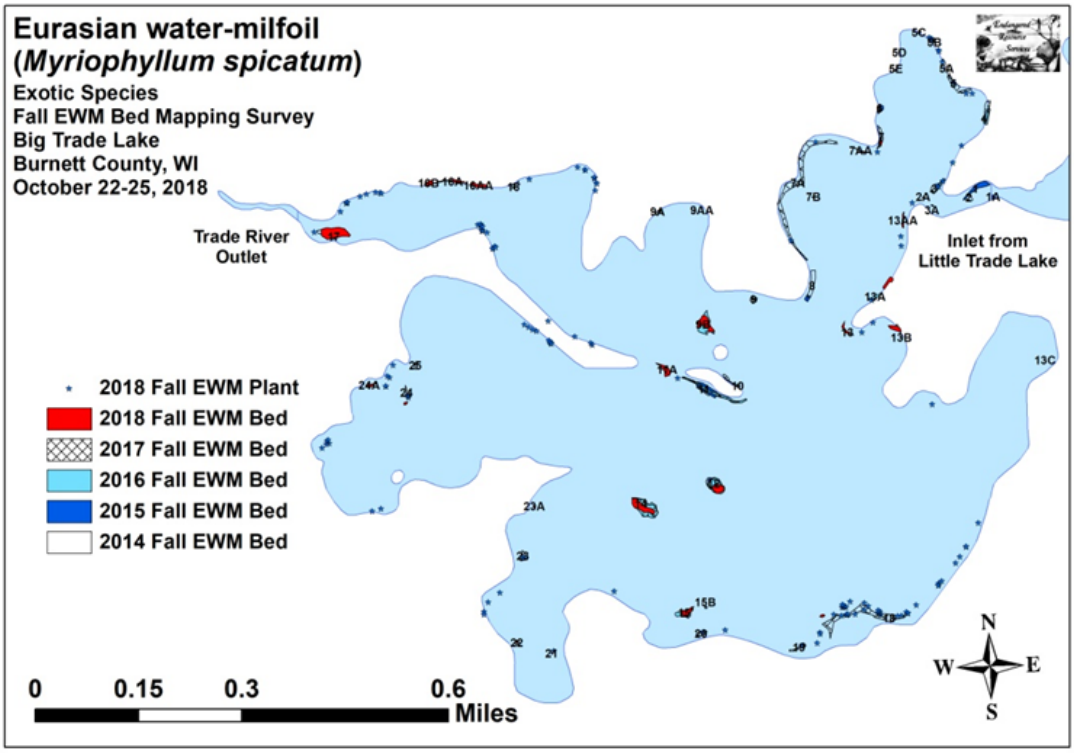


Figure 6: 2018 Big Trade Lake fall EWM bedmapping results (ERS, 2019)

Long-term Control of EWM in Big Trade Lake

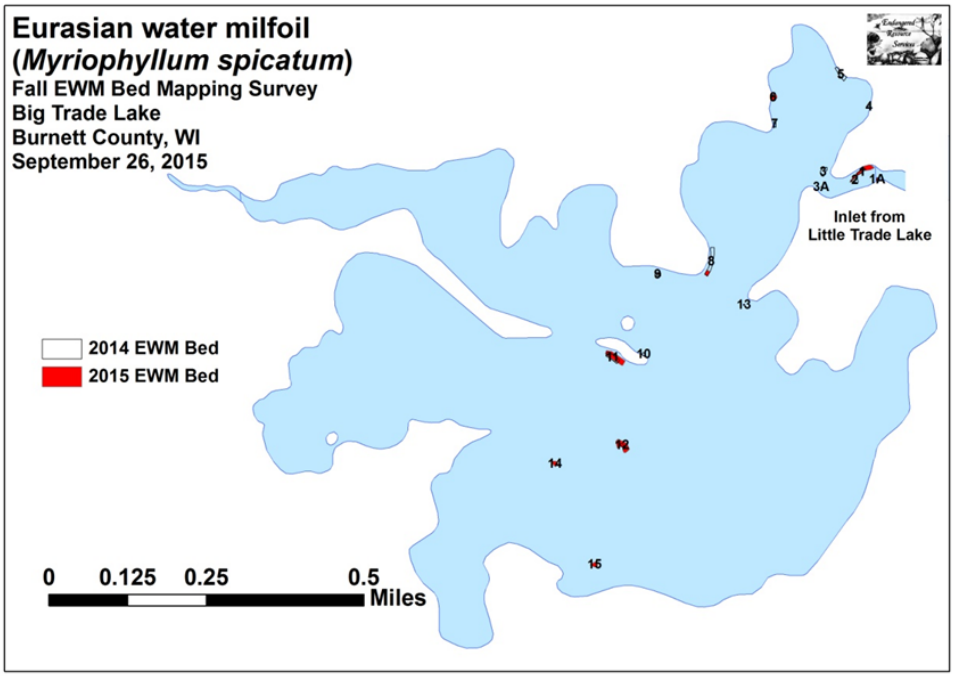
Since first found in 2012, EWM has spread throughout the lake. At the present time, selective use of herbicides and physical removal has been able to keep the amount of dense growth EWM in the fall of the year to below two acres. How long this is possible is unknown. At some point in the near future, whole-lake chemical treatment may need to be considered, even though this may have severe consequences on native northern watermilfoil in the lake. Table 3 reflects the changes in fall EWM since 2012 and identifies 2019 changes after treatment when compared to the previous year (2018). The density remained low in the 2019 fall survey, but distribution continues to grow.

Table 3: 2012-2019 fall EWM bedmapping summary – Big Trade Lake

Bed Number	2019 Fall Bed Acreage	2018 Fall Bed Acreage	2017 Fall Bed Acreage	2016 Fall Bed Acreage	2015 Fall Bed Acreage	2014 Fall Bed Acreage	2013 Fall Bed Acreage	2012 Fall Bed Acreage	2019 Change in Acreage	2019 Rake Range; Mean Rake	2019 Bed Characteristics/ Field Notes
1A	0	0	0	0	0.01	<0.01	0	0	0	<<1	1 EWM plant found
1 and 2	0	0	0	0	0.12	0.03	0.07	0.02	0	0	No EWM seen
2A	0.01	0	<0.01	0	<0.01	0	0	0	0.01	<<1-1; <1	Scattered plants – more HDA
3 and 3A	0.01	0	0.07	0.03	0	0.06	0.03	0	0.01	<<1-1; <1	Scattered plants – more HDA
4	0	0	0.11	0.08	0	<0.01	<0.01	0	0	<<<1	3 EWM plants found
5 and 5A	0.04	0	0.09	<0.01	0	0.08	<0.01	0	0.04	<<1-1; <1	Regular low density towers
5B/5C	0	0	0.01	<0.01	0	0	0	0	0	<<<1	10 EWM plants found
5D/5E	0	0	0.01	0	0	0	0	0	0	<<<1	3 EWM plants found
6	0	<0.01	0.02	0.01	0.03	0.03	0	0	-<0.01	<<<1	2 EWM plants found
7AA	0.02	0.01	0	0	0	0	0	0	0.01	<<1-1; <1	Scattered in bulrushes
7	0	0.01	0.08	0.01	0	0.02	0	0	-0.01	<<<1	1 EWM plant found
7A	0	0	0.72	0	0	0	0	0	0	<<<1	6 EWM plants found
7B	0	<0.01	0	0	0	0	0	0	<0.01	0	No EWM seen
8	0	0	0	<0.01	0.03	0.16	0	0	0	<<<1	1 EWM plant found
9	0.01	<0.01	0	0.01	0.01	0.03	0	0	0	<<1-1; <1	Scattered plants – more HDA
9AA	0	<0.01	0	0	0	0	0	0	<0.01	0	No EWM seen
9A	0	0	0.02	0	0	0	0	0	0	<<<1	4 EWM plants found
9B	0	0.17	0	0.26	0	0	0	0	-0.17	0	No EWM seen
10	0	0	0.03	0.01	0	0.01	0	0	0	<<<1	1 EWM plant found
11A	<0.01	0.08	0.07	<0.01	0	0	0	0	-0.07	2-3; 3	Microbed on saddle
11	0	0	0.15	0.17	0.19	0.10	0	0	0	<<<1	4 EWM plants found
12	0	0.10	0.22	0.18	0.15	0.01	0	0	-0.1	0	No EWM seen
13AAA	0.02	0	0	0	0	0	0	0	0.02	<<1-1; <1	Scattered plants – more HDA
13AA	<0.01	0.02	0	0	0	0	0	0	<0.01	1-3; 1	Microbed by docks
13A	0.04	0.05	0	0.03	0	0	0	0	-0.01	2-3; 2	Microbed by docks
13	0	0.03	0	0	0	<0.01	0	0	-0.03	<<<1	3 EWM plants found
13B	0.12	0.06	0.02	0.01	0	0	0	0	0.06	<<1-2; 1	Nearly continuous plants
13C	0	0	<0.01	0	0	0	0	0	0	0	No EWM found
14	0	0.20	0.32	0.42	0.03	0	0	0	-0.20	0	No EWM found
15BB	0.03	0	0	0	0	0	0	0	0.03	<<1-1; <1	Scattered plants – more HDA
15A/B	0.02	0.01	0	0.01	0	0	0	0	0.01	1-3; 3	Narrow bed next to bulrushes
15	0.05	0.06	0.10	0.07	0.04	0	0	0	-0.01	1-3; 2	Narrow/easily avoided
16	0	0	0.04	<0.01	0	0	0	0	0	<<<1	2 EWM plants found
16AA	0.01	0.06	0	0	0	0	0	0	-0.05	2-3; 2	Dense microbeds near dock
16A	0.11	0.04	0.02	0	0	0	0	0	0.07	2-3; 2	Dense microbeds near docks
16B	0.04	0.04	0	0	0	0	0	0	0	2-3; 2	Dense microbeds near dock
16BB	0.01	0	0	0	0	0	0	0	0.01	2-3; 2	Dense microbeds near dock
17	0	0.33	0.12	<0.01	0	0	0	0	-0.33	<<<1	2 EWM plants found - removed
18	0.62	0.01	0.58	0	0	0	0	0	0.61	<<1-3; 1	Nearly cont. mixed w/ NWM
19	0.28	0	0.04	0	0	0	0	0	0.28	<<1-2; <1	Regular in nav. channels
20	0	0	0.04	0	0	0	0	0	0	<<<1	2 EWM plants found
21	0	0	<0.01	0	0	0	0	0	0	0	No EWM found
22	0.03	<0.01	0.02	0	0	0	0	0	0.02	1-3; 3	Narrow – easily avoided
23	0	0	0.04	0	0	0	0	0	0	<<<1	1EWM plant found
23A	0.04	<0.01	0	0	0	0	0	0	0.03	<1-2; 1	Scattered among docks
24	0	0.01	0.03	0	0	0	0	0	-0.01	0	No EWM found
24A	0.03	0.02	0	0	0	0	0	0	0.01	<<1-1; <1	Scattered towers – more HDA
25	0	0	0.02	0	0	0	0	0	0	0	No EWM found
25A	0.02	0	0	0	0	0	0	0	0.02	<<1-3; <1	Large tower with satellites
Total Acres	**1.57**	**1.34**	**2.97**	**1.33**	**0.62**	**0.60**	**0.17**	**0.06**	**+0.23**		

Figure 7 shows what the distribution of EWM looked like in 2015 and 2019. Before 2015, EWM was only in the area of Big Trade Lake immediately adjacent to the channel coming from Little Trade Lake. The rapid distribution from the inlet area of the lake to the entire lake in just 5 years should be alarming to all residents and users of Big Trade Lake. More effort needs to be exerted by lake residents and even outside users to learn how to identify EWM, look for it on the water, and remove individual plants in and

around docks and along the shore. Any place where the bottom substrate is firm enough to support someone wading in the water, should have physical removal completed multiple times during the year. For grant purposes, this should be an almost endless source of volunteer match and will benefit the lake. There is no question the continued use of herbicides will be needed in one form or another, but these efforts should be done along with physical removal, not in place of it.



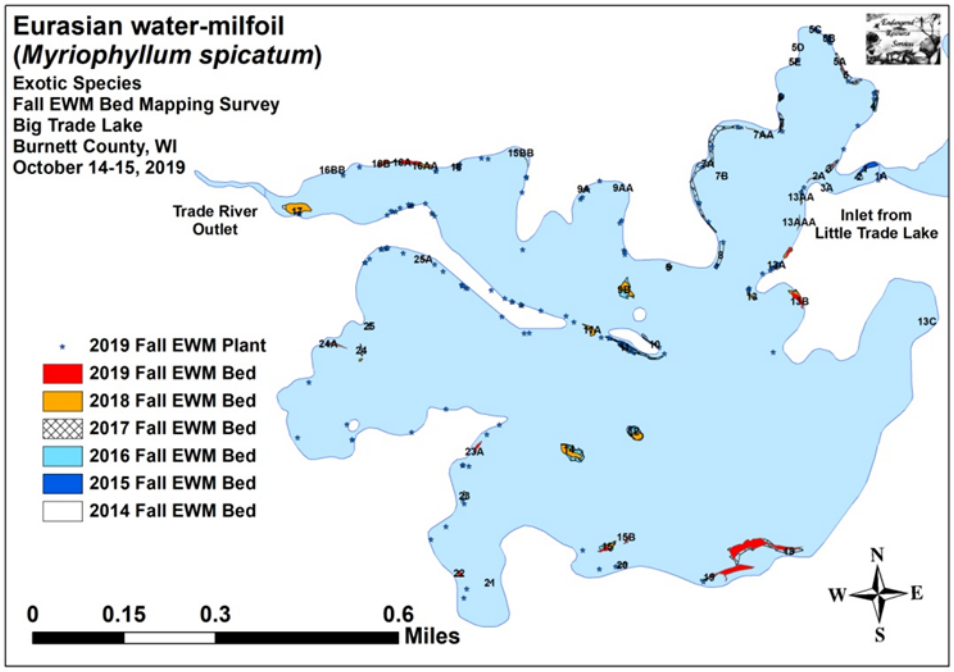


Figure 7: 2015 and 2019 EWM distribution in Big Trade Lake (ERS, 2015 and 2019)

2019 AIS Education

The 2019 AIS education project includes watercraft inspection (Clean Boats, Clean Waters), Identification and Removal Workshops, ZM Dockout Day, and Newsletter articles.

2019 Clean Boats, Clean Waters

Records indicate that a total of 244.5 hours of watercraft inspection were completed between the two landings on Big Trade Lake. At least 210 boats were counted either coming in or going out of Big Trade Lake. At least 400 people were contacted by volunteer watercraft inspectors.

2019 AIS Signage

Decontamination signs were installed at both Round Lake and Big Trade Lake public landings in 2018. In 2019, volunteer Tom Daellenbach spent many hours of time making sure the sign was in good shape and decontamination materials were fresh and complete.

Figure 8: New Decontamination Signage at the Round and Big Trade Lake Public Landings

2019 ZM Dockout Day

ZM Dockout Day inspections were held on between 10/03 and 10/27/2019 with at least three property owners documented as taking part.

2019 AIS Monitoring

AIS monitoring was completed in each month May-October by volunteers and resource professionals. At least 13 different volunteers put in a total of 75 hours of monitoring for AIS including CLP, EWM, purple loosestrife, zebra mussels, and Chinese mystery snails. In addition, at least 9 of these volunteers also completed 43+ hours of physical removal of CLP, EWM, and purple loosestrife.

2019 Newsletters

Three newsletters were sent out in 2019, one in January, one in May, and one in August. A fourth was just sent out in January 2020. These newsletters provide an update for AIS management actions, CBCW, and AIS monitoring for all who receive it.

2019 Round Trade Lake Improvement Association Meetings

The RTLIA holds at least four meetings each year: May, June, August, and September. The September meeting serves as the official annual meeting of the organization. Property owners on Long Trade Lake also hold one event each year that serves as a local informational meeting. These meetings were all completed in 2019.

2019 Water Quality Sampling

Big Trade Lake - Deep Hole was sampled 14 different days during the 2019 season. The average summer (July-Aug) secchi disk reading for Big Trade Lake - Deep Hole (Burnett County, WBIC: 2638700) was 4.5 feet. The average for the Northwest Georegion was 8.6 feet. Typically the summer (July-Aug) water was reported as MURKY and BROWN. This suggests that the Secchi depth may have been mostly impacted by tannins, stain from decaying matter. Tannins are natural and not a result of pollution. Tannins can be distinguished from suspended sediment because the water, even though it's brown, it looks clear, like tea. Though tannins are not harmful per se, they are often not perceived as aesthetically pleasing as clear water. Tannins can also be important for decreasing light penetration into the water and decreasing algal growth.

Chemistry data was collected on Big Trade Lake - Deep Hole. The average summer Chlorophyll was 21.5 µg/l 19.8 µg/l (compared to a Northwest Georegion summer average of 13.2 µg/l) and a 2018 average of 19.8 µg/l. Summer (July and August) water samples to measure total phosphorus were not completed so an average µg/l is not available. Lakes that have more than 20 µg/l and impoundments that have more than 30 µg/l of total phosphorus may experience noticeable algae blooms. TP was sampled in September and October 2019 with concentrations averaging 61.1 µg/l.

The overall Trophic State Index (based on chlorophyll) for Big Trade Lake - Deep Hole was 58, nearly the same as the 57 recorded in 2018. The TSI suggests that Big Trade Lake - Deep Hole was eutrophic. This TSI usually suggests decreased clarity, fewer algal species, oxygen-depleted bottom waters during the summer, plant overgrowth evident, warm-water fisheries (pike, perch, bass, etc.) only.

Temperature profiles of Big Trade Lake at the Deep Hole completed on six different dates indicate that the lake does stratify in the summer, but since no DO profiles were recorded one can only make assumptions that the bottom of the lake went anoxic during at least a portion of the year as well.

Volunteer monitoring or monitoring by resource professionals should be stepped up in 2020. Water sampling in September and October was completed on Big Trade Lake in 2019.

Final Notes

2019 was the second year of a three year grant funded project that covers both Little and Big Trade lakes. Two additional grants were received for Round Lake and Long Trade Lake. Expenses claimed in this reimbursement are the large costs associated with actual chemical control work and consultant

support. Not all expenses and activities are included in this reimbursement request as there will be additional requests to follow.