Eurasian Water-milfoil (*Myriophyllum spicatum*)
Pre/Post Herbicide and EWM Bed Mapping Surveys
Big Trade Lake – WBIC: 2638700
Burnett County, Wisconsin

2020 Final EWM Treatment Areas

Big Trade EWM (left) and NWM (right)

Project Initiated by: Round-Trade Lakes Improvement Association Inc., Lake Education and Planning Services, LLC, and the Wisconsin Department of Natural Resources (Grant ACEI21618)

Canopied Eurasian water-milfoil bed on "Kid Rock" (8/29/20)

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May 15-16, June 18, and August 29, 2020

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INTRODUCTION:

Big Trade Lake (WBIC 2638700) is a 327 acre drainage lake in southwest/south-central Burnett County, Wisconsin in the Town of Trade Lake (T37N R18W S20). It reaches a maximum depth of 39ft in the west-central bay and has an average depth of approximately 20ft. The lake is eutrophic in nature with summer Secchi disc readings from 1986-2020 ranging from 2.6-6.1ft and averaging 4.2ft (WDNR 2020). This poor to very poor water clarity produced a littoral zone that extended to approximately 13.5ft in 2020. The bottom substrate is predominately muck with scattered gravel and sandy areas along the shoreline and around the lake's exposed and sunken islands (Bush et al 1968).

Figure 1: 2020 Final EWM Treatment Areas

BACKGROUND AND STUDY RATIONALE:

In 2009, the Wisconsin Department of Natural Resources (WDNR) confirmed the presence of Eurasian water-milfoil (*Myriophyllum spicatum*) (EWM) in Little Trade Lake which is connected to Big Trade Lake via the Trade River Channel. In 2012, we observed EWM in the channel, and, by 2013, we found it had spread to Big Trade Lake's northeast bay with expansion into many other parts of the lake thereafter. Following the development of a WDNR approved Aquatic Plant Management Plan (APMP) that outlined strategies to control EWM and Curly-leaf pondweed (*Potamogeton crispus*) (CLP), another invasive exotic species that dominates the lake's spring littoral zone, the Round-Trade Lake Improvement Association, Inc. (RTLIA) began using manual removal and herbicide treatments to control these species.

The RTLIA – under the direction of Dave Blumer (Lake Education and Planning Services, LLC - LEAPS) – applied for and was awarded a WDNR Aquatic Invasive Species control grant (ACEI21618) to help cover the costs associated with management. In 2020, these funds were used to chemically treat seven areas totaling 10.51 acres (3.21% of the lake's surface area) for EWM only (Figure 1). On May 15-16th, we conducted a pretreatment survey to gather baseline data from the proposed treatment areas and to allow LEAPS/RTLIA to finalize treatment plans. After the May 22nd herbicide application, we completed a June 18th posttreatment survey to evaluate the effectiveness of the treatment. We also conducted an August 29th EWM bed mapping survey to determine where control might be considered in 2021. This report is the summary analysis of these three field surveys.

METHODS:

Pre/Post Herbicide Surveys:

LEAPS provided treatment shapefiles, and we generated pre/post survey points based on the size and shape of the proposed areas that covered 13.32 acres. The requested 160 point sampling grid approximated to just over 12 pts/acre – well above the minimum of 4-10 pts/acre required by WDNR protocol for pre/post treatment surveys (Appendix I).

During the surveys, we located each point using a handheld mapping GPS unit (Garmin 76CSx) and used a rake to sample an approximately 2.5ft section of the bottom. All plants on the rake were assigned a rake fullness value of 1-3 as an estimation of abundance, and a total rake fullness for all species was also recorded (Figure 2). Visual sightings of EWM and CLP were noted if they occurred within 6ft of the point; however, visuals of other species were not recorded as they do not figure into the pre/posttreatment calculation. In addition to plant data, we recorded the lake depth using a metered pole and the substrate (bottom) type when we could see it or reliably determine it with the rake.

We entered all data collected into the standard APM spreadsheet (Appendix II). Data was analyzed using the linked statistical summary sheet and the WDNR pre/post analysis worksheet. For pre/post differences of individual plant species as well as count data, we used the Chi-square analysis on the WDNR pre/post survey worksheet (UWEX 2010). For comparing averages (mean species/point and mean rake fullness/point), we used t-tests. Differences were determined to be significant at $p<0.05$, moderately significant at $p<0.01$ and highly significant at $p<0.001$.

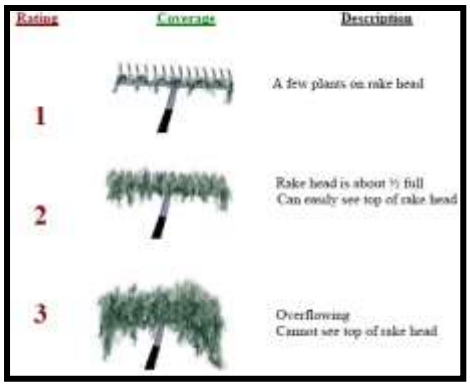


Figure 2: Rake Fullness Ratings

Late Summer Eurasian Water-milfoil Bed Mapping:

During the late summer survey, we searched the visible littoral zone of the lake and mapped all known beds of EWM. A "bed" was determined to be any area where we visually estimated that EWM made up >50% of the area's plants and was generally continuous with clearly defined borders. After we located a bed, we motored around the perimeter of the area, took GPS coordinates at regular intervals, and estimated both the range and mean rake fullness rating of EWM within the bed (Figure 2). Using the WDNR's Forestry Tool's Extension to ArcGIS 9.3.1, we plotted these coordinates to generate bed shapefiles and determine the acreage to the nearest hundredth of an acre. We also took waypoints of EWM plants outside these beds as they were generally few in number.

RESULTS AND DISCUSSION:

Finalization of Treatment Areas:

Initial expectations were to treat nine beds for Eurasian water-milfoil using liquid 2,4-D (Shredder Amine) at a concentration of 3.5ppm (Figure 3) (Appendix I). Following the pretreatment survey, it was decided to eliminate the midlake rock bars (Areas 6 and 7), but maintain all other areas as planned. This was a reduction of 2.81 acres (-21.10%) over initial expectations (Table 1).

Northern Aquatic Services (Dale Dressel – Dresser, WI) carried out the treatment on May 22nd. The reported water temperature at the time of application was 60°F, the ambient air temperature was 70°F, and winds were out of the southeast at 3-4mph.

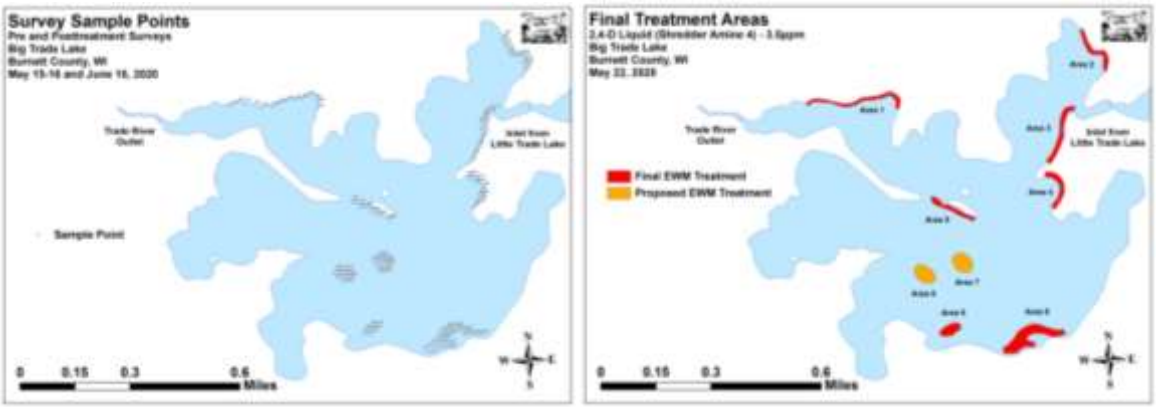


Figure 3: Survey Sample Points and Final Treatment Areas

Table 1: Spring EWM Treatment Summary
Big Trade Lake, Burnett County - May 22, 2020

Treatment Area	Proposed Acreage	Final Acreage	Difference +/-	Chemical (Brand) – Dosage – Total Gallons
1	1.61	1.61	0.00	2,4-D (Shredder Amine) – 3.5ppm – 16.04gal.
2	1.15	1.15	0.00	2,4-D (Shredder Amine) – 3.5ppm – 11.45gal.
3	1.44	1.44	0.00	2,4-D (Shredder Amine) – 3.5ppm – 10.80gal.
4	1.09	1.09	0.00	2,4-D (Shredder Amine) – 3.5ppm – 8.14gal.
5	0.99	0.99	0.00	2,4-D (Shredder Amine) – 3.5ppm – 9.86gal.
6	1.36	0.00	-1.36	-
7	1.45	0.00	-1.45	-
8	0.90	0.90	0.00	2,4-D (Shredder Amine) – 3.5ppm – 10.10gal.
9	3.34	3.34	0.00	2,4-D (Shredder Amine) – 3.5ppm – 37.40gal.
Total Acres	**13.32**	**10.51**	**-2.81**	

Pre/Post Herbicide Surveys:

All points occurred in areas between 1.0ft and 22.0ft of water. The mean depth of plant growth were almost unchanged at 4.6ft pretreatment and 4.5ft posttreatment while the median increased from 3.5ft pre to 4.0ft post (Table 2). We found most Eurasian water-milfoil was established in a thin layer of muck over sand and rock (Figure 4) (Appendix III).

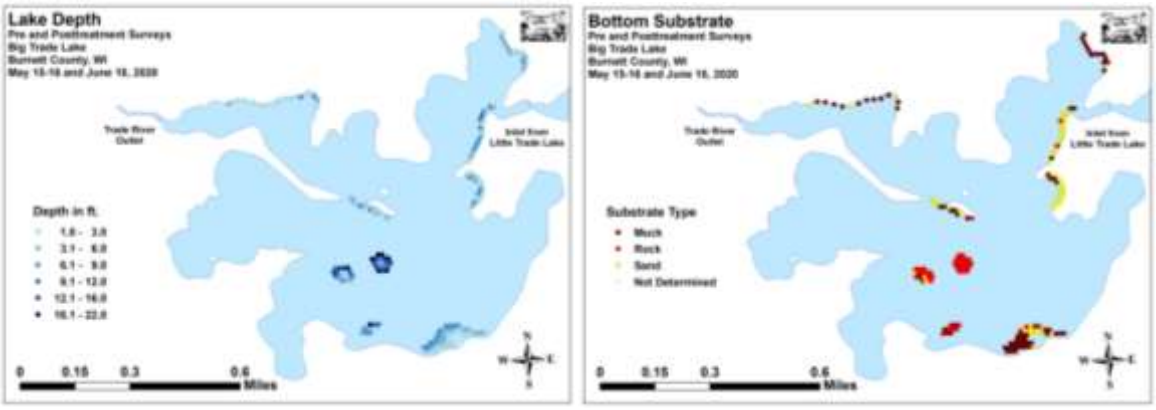


Figure 4: Treatment Area Depths and Bottom Substrate

Table 2: Pre/Post Surveys Summary Statistics
Big Trade Lake, Burnett County
May 15-16 and June 18, 2020

Summary Statistics:	Pre	Post
Total number of points sampled	160	160
Total number of sites with vegetation	129	126
Total number of sites shallower than the maximum depth of plants	148	135
Freq. of occur. at sites shallower than max. depth of plants (in percent)	87.2	93.3
Simpson Diversity Index	0.74	0.85
Mean Coefficient of Conservatism	5.6	5.4
Floristic Quality Index	18.7	23.1
Maximum depth of plants (ft)	13.5	9.5
Mean depth of plants (ft)	4.6	4.5
Median depth of plants (ft)	3.5	4.0
Average number of all species per site (shallower than max depth)	1.91	3.07
Average number of all species per site (veg. sites only)	2.19	3.29
Average number of native species per site (shallower than max depth)	0.95	2.28
Average number of native species per site (sites with native veg. only)	1.42	2.73
Species richness	13	20
Mean rake fullness (veg. sites only)	2.40	2.61

The littoral zone within the planned treatment areas declined from 13.5ft during the pretreatment survey to 9.5ft posttreatment. However, the total points with plants was almost unchanged at 129 pre and 126 post. This resulted in a littoral frequency of occurrence of 87.2% pretreatment and 93.3% posttreatment (Figure 5) (Appendix IV).

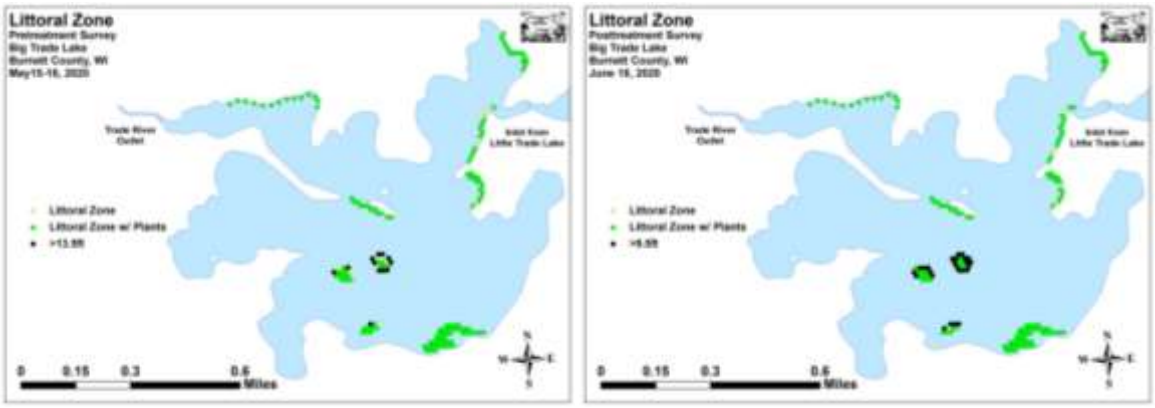


Figure 5: Pre/Post Littoral Zone

Total richness increased from 13 species pretreatment to 20 posttreatment. The Simpson's Diversity Index also rose from a moderately high pretreatment value of 0.74 to a high posttreatment value of 0.85. The Floristic Quality Index (another measure of native plant community health) climbed from 18.7 pretreatment to 23.1 posttreatment.

Largely because of "duckweed" species, mean native species richness at points with native vegetation experienced a highly significant increase **(p<0.001)** from 1.42 species/point pretreatment to 2.73 species/point posttreatment (Figure 6). Total mean rake fullness also saw a moderately significant increase **(p=0.009)** from a moderately high 2.40 pretreatment to a high 2.61 posttreatment (Figure 7) (Appendix IV).

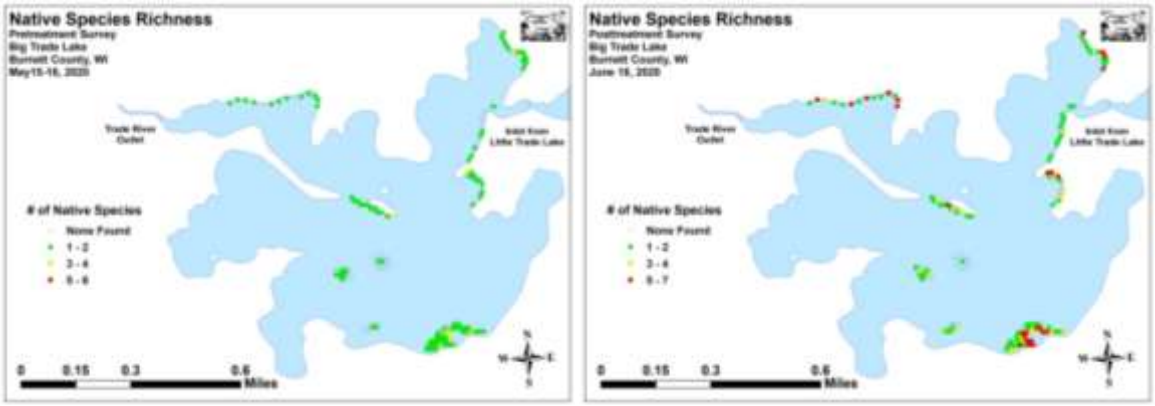


Figure 6: Pre/Post Native Species Richness

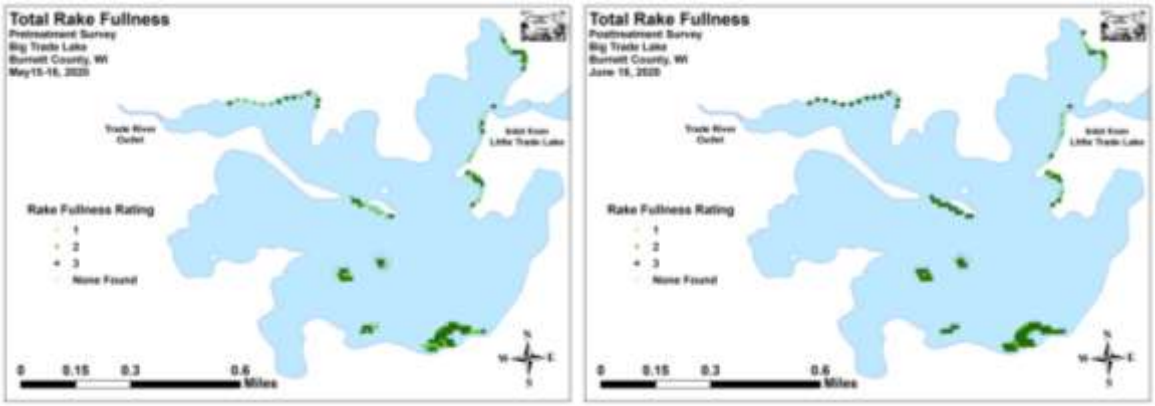


Figure 7: Pre/Post Total Rake Fullness

We found Curly-leaf pondweed at 109 of 160 sites during the pretreatment survey (68.1% coverage) with ten additional visual sightings (Figure 8) (Appendix V). Of these, 36 had a rake fullness rating of 3, 41 rated a 2, and the remaining 32 were a 1. This produced a mean rake fullness of 2.04 and suggested that 48.1% of the treatment areas had a significant CLP infestation (rake fullness 2 and 3).

During the posttreatment survey, CLP was present at 105 points (65.6% coverage) with six additional visuals (Figure 8). Sixty-six points rated a 3, 17 were a 2, and 22 were a 1 for a mean rake fullness of 2.42. The 83 nuisance points suggested that 51.9% of the beds had a significant CLP infestation posttreatment. **Our results demonstrated a highly significant increase ($p<0.001$) in total CLP density and rake fullness 3; and a highly significant decline ($p<0.001$) in rake fullness 2** (Figure 9). As CLP wasn't treated, these results are not unexpected.

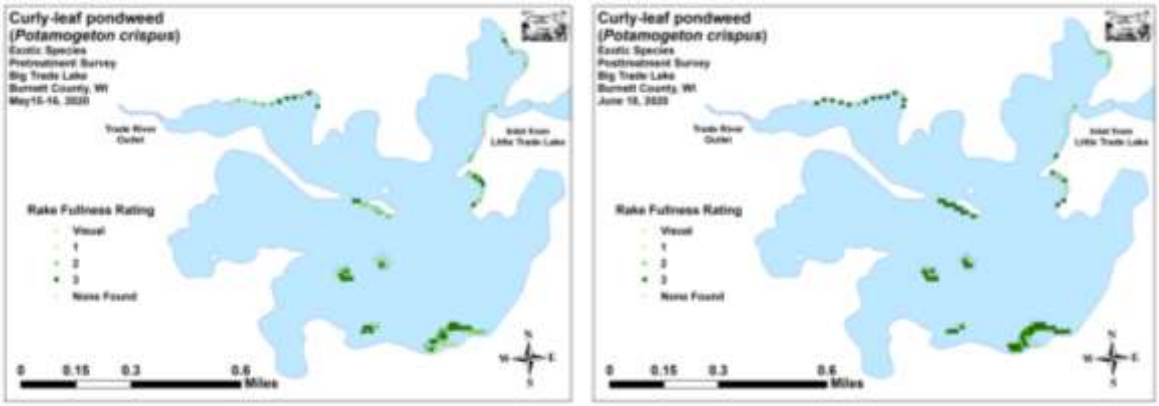
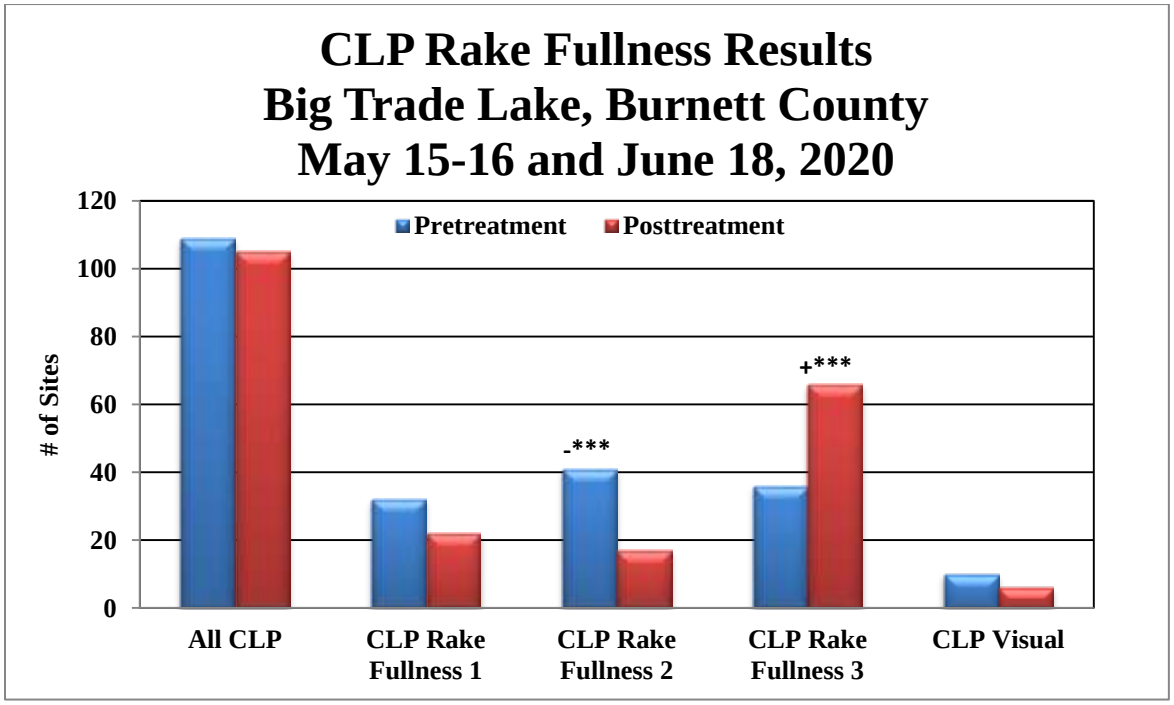


Figure 8: Pre/Post CLP Density and Distribution



Significant differences = * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Figure 9: Pre/Post Changes in CLP Rake Fullness

Eurasian water-milfoil was present at 33 of 160 sites during the pretreatment survey (20.6% coverage) with 34 additional visual sightings (Figure 10) (Appendix V). Of these, nine had a rake fullness rating of 3, 11 rated a 2, and the remaining 13 were a 1. This produced a mean rake fullness of 1.88 and suggested that 12.5% of the treatment areas had a significant EWM infestation (rake fullness 2 and 3).

During the posttreatment survey, EWM was present at a two points (2.6% coverage) both with a rake fullness of one. We also documented it as a visual at a single point (Figure 10). **Our results demonstrated a highly significant decline (p<0.001) in total EWM density, distribution, rake fullness 2 and visual sightings; and a moderately significant decline (p=0.002/p=0.004) in rake fullness 3 and 1** (Figure 11).

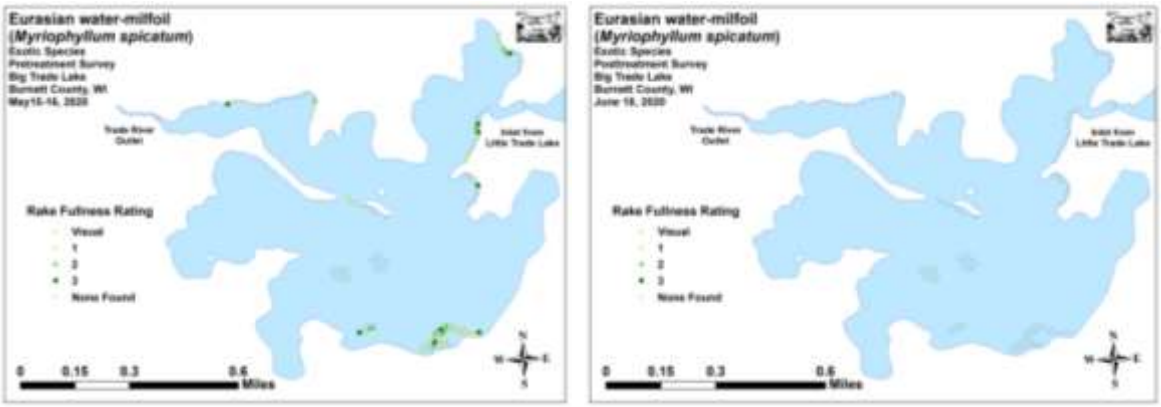
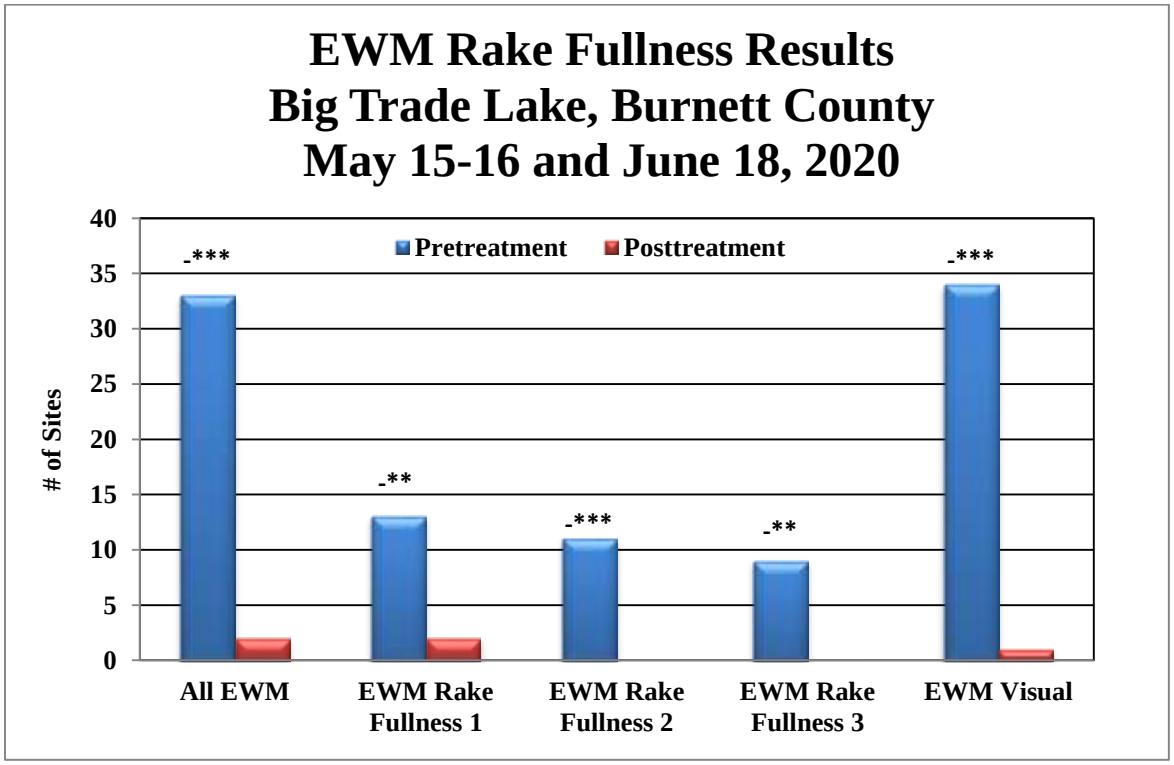


Figure 10: Pre/Post EWM Density and Distribution



Significant differences = * p<0.05, ** p<0.01, *** p<0.001

Figure 11: Pre/Post Changes in EWM Rake Fullness

Coontail (*Ceratophyllum demersum*) (Figure 12) and Common waterweed (*Elodea canadensis*) (Figure 13) were the most common native species during the pretreatment survey (Table 3) and the most and sixth most common during the posttreatment survey (Table 4). Pretreatment, Coontail was present at 84 sites with a mean rake fullness of 1.77. Posttreatment, it experienced a non-significant increase (p=0.18) in distribution to 96 sites, and was almost unchanged in density with a mean rake fullness of 1.76. Common waterweed (15 sites – mean rake 1.27 pretreatment) also had a non-significant increase (p=0.09) in distribution to 25 sites posttreatment and a density that was similarly little changed (mean rake 1.32).

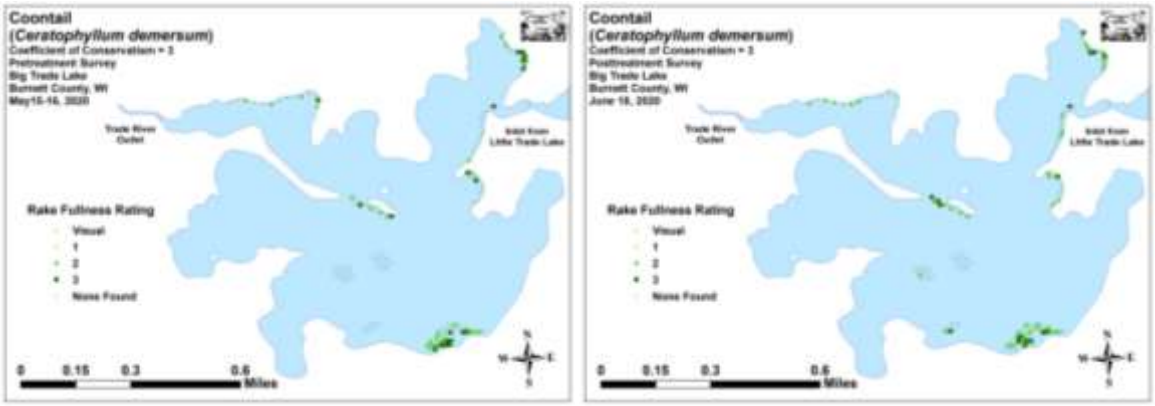


Figure 12: Pre/Post Coontail Density and Distribution

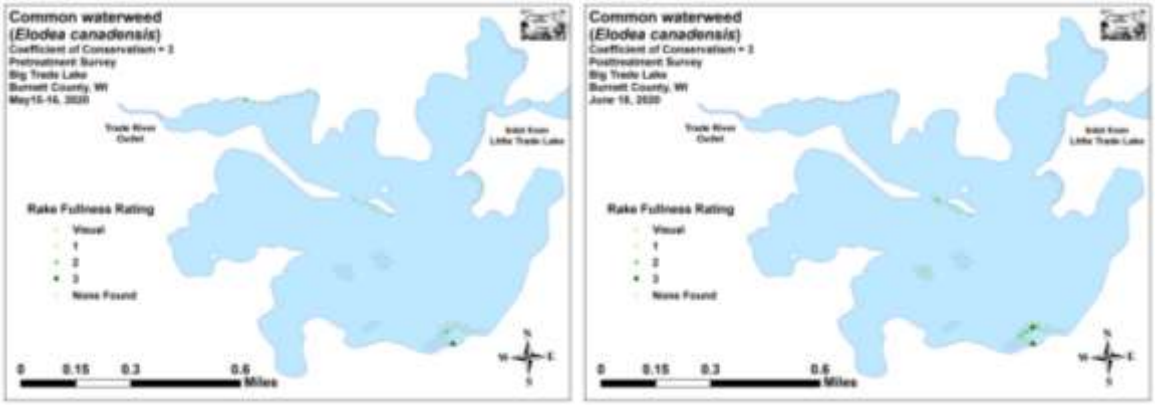


Figure 13: Pre/Post Common Waterweed Density and Distribution

Other than EWM, no species experienced a significant decline posttreatment, but many expanded their range. Specifically, White water lily (*Nymphaea odorata*), Common watermeal (*Wolffia columbiana*), Small duckweed (*Lemna minor*), and Large duckweed (*Spirodela polyrhiza*) underwent highly significant increases; Spatterdock (*Nuphar variegata*) saw a moderately significant increase; and Sago pondweed (*Stuckenia pectinata*) and Wild celery (*Vallisneria americana*) had significant increases (Figure 14) (Maps for all native species from the pre and posttreatment surveys are available in Appendixes VI and VII).

Table 3: Frequencies and Mean Rake Sample of Aquatic Macrophytes
Pretreatment Survey – Big Trade Lake, Burnett County
May 15-16, 2020

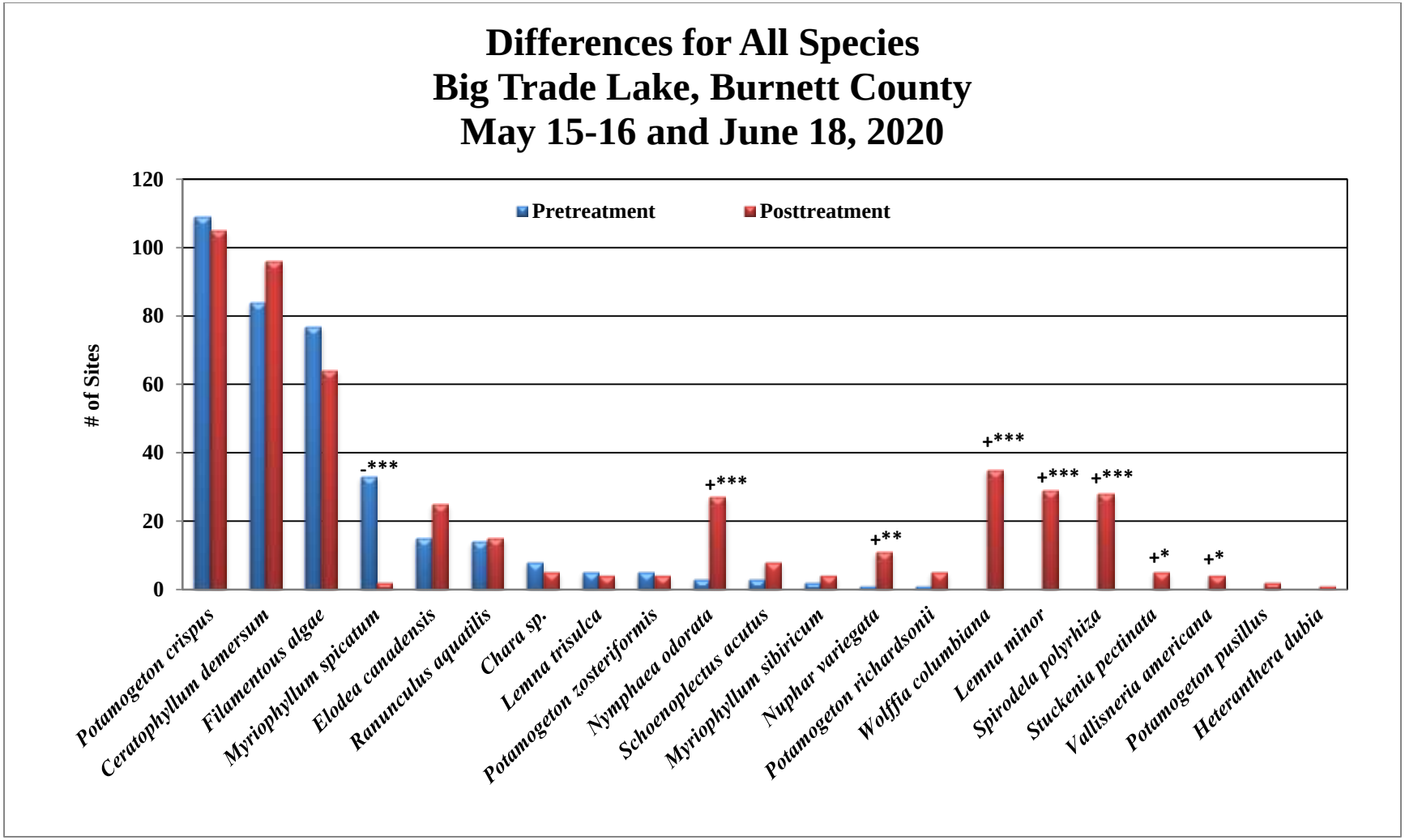
Species	Common Name	Total Sites	Relative Freq.	Freq. in Veg.	Freq. in Lit.	Mean Rake	Visual Sites
Potamogeton crispus	Curly-leaf pondweed	109	38.52	84.50	73.65	2.04	10
Ceratophyllum demersum	Coontail	84	29.68	65.12	56.76	1.77	0
	Filamentous algae	77	*	59.69	52.03	1.58	0
Myriophyllum spicatum	Eurasian water-milfoil	33	11.66	25.58	22.30	1.88	34
Elodea canadensis	Common waterweed	15	5.30	11.63	10.14	1.27	0
Ranunculus aquatilis	White water crowfoot	14	4.95	10.85	9.46	1.21	0
Chara sp.	Muskgrass	8	2.83	6.20	5.41	1.75	0
Lemna trisulca	Forked duckweed	5	1.77	3.88	3.38	1.00	0
Potamogeton zosteriformis	Flat-stem pondweed	5	1.77	3.88	3.38	1.20	0
Nymphaea odorata	White water lily	3	1.06	2.33	2.03	1.00	0
Schoenoplectus acutus	Hardstem bulrush	3	1.06	2.33	2.03	1.00	0
Myriophyllum sibiricum	Northern water-milfoil	2	0.71	1.55	1.35	1.00	0
Nuphar variegata	Spatterdock	1	0.35	0.78	0.68	1.00	0
Potamogeton richardsonii	Clasping-leaf pondweed	1	0.35	0.78	0.68	1.00	0

* Excluded from relative frequency analysis

Table 4: Frequencies and Mean Rake Sample of Aquatic Macrophytes
Posttreatment Survey – Big Trade Lake, Burnett County
June 18, 2020

Species	Common Name	Total Sites	Relative Freq.	Freq. in Veg.	Freq. in Lit.	Mean Rake	Visual Sites
Potamogeton crispus	Curly-leaf pondweed	105	25.30	83.33	77.78	2.42	6
Ceratophyllum demersum	Coontail	96	23.13	76.19	71.11	1.76	0
	Filamentous algae	64	*	50.79	47.41	1.42	0
Wolffia columbiana	Common watermeal	35	8.43	27.78	25.93	1.23	0
Lemna minor	Small duckweed	29	6.99	23.02	21.48	1.21	0
Spirodela polyrhiza	Large duckweed	28	6.75	22.22	20.74	1.25	0
Nymphaea odorata	White water lily	27	6.51	21.43	20.00	1.52	0
Elodea canadensis	Common waterweed	25	6.02	19.84	18.52	1.32	0
Ranunculus aquatilis	White water crowfoot	15	3.61	11.90	11.11	1.00	0
Nuphar variegata	Spatterdock	11	2.65	8.73	8.15	1.91	0
Schoenoplectus acutus	Hardstem bulrush	8	1.93	6.35	5.93	1.88	0
Chara sp.	Muskgrass	5	1.20	3.97	3.70	2.40	0
Potamogeton richardsonii	Clasping-leaf pondweed	5	1.20	3.97	3.70	1.20	0
Stuckenia pectinata	Sago pondweed	5	1.20	3.97	3.70	1.00	0
Lemna trisulca	Forked duckweed	4	0.96	3.17	2.96	1.25	0
Myriophyllum sibiricum	Northern water-milfoil	4	0.96	3.17	2.96	1.00	0
Potamogeton zosteriformis	Flat-stem pondweed	4	0.96	3.17	2.96	1.00	0
Vallisneria americana	Wild celery	4	0.96	3.17	2.96	1.75	0
Myriophyllum spicatum	Eurasian water-milfoil	2	0.48	1.59	1.48	1.00	1
Potamogeton pusillus	Small pondweed	2	0.48	1.59	1.48	1.00	0
Heteranthera dubia	Water star-grass	1	0.24	0.79	0.74	1.00	0

* Excluded from relative frequency analysis



Significant differences = * $p<0.05$, ** $p<0.01$, *** $p<0.001$

Figure 14: Pre/Post Macrophyte Changes

Late Summer Eurasian Water-milfoil Bed Mapping Survey:

During the August survey, we located and mapped 27 Eurasian-water milfoil beds ranging in size from <0.01 acre (Bed 13C) to 0.63 acres (Bed 25A) (Figure 15) (Appendix VIII). Collectively, they covered 3.38 acres (1.03% of the lake's surface area) (Table 5). This was an increase of 1.81 acres (+115.29%) from the 24 beds on 1.57 acres (0.48% of the lake's total surface area) we mapped in 2019. It also represented the highest total ever found on the lake (the previous high was in 2017 when we found 32 beds on 2.97 acres – 0.91% coverage) (Table 6). Outside of these areas, we marked 148 additional pioneer plants suggesting EWM is continuing to spread.

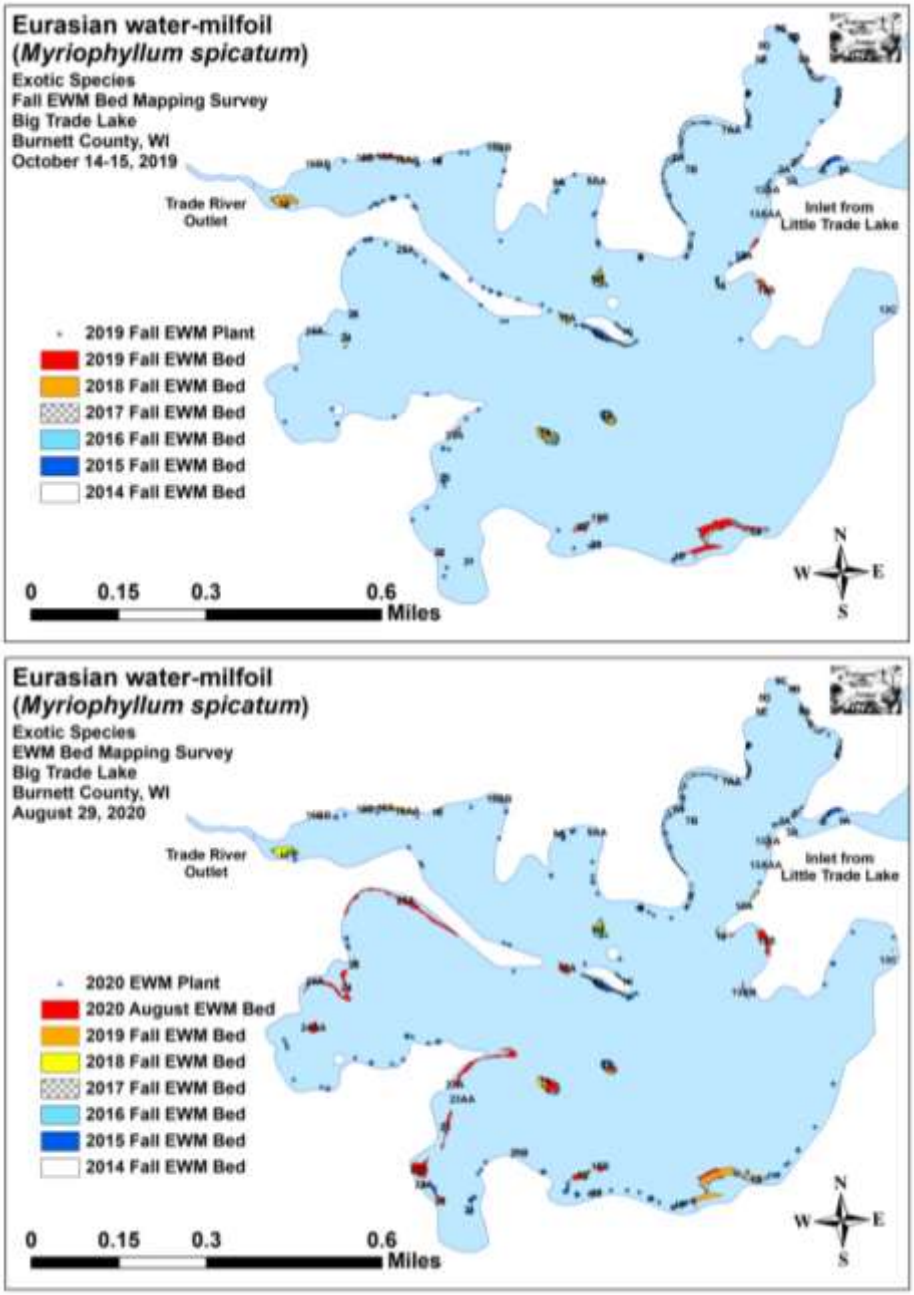


Figure 15: Fall 2019 and Late Summer 2020 EWM Bed Maps

Table 5: Late Summer Eurasian Water-milfoil Bed Mapping Summary
Big Trade Lake, Burnett County
August 29, 2020

Bed Number	2020 Area in Acres	2019 Area in Acres	2020 Change in Acreage	Rake Range; Mean Rake Fullness	Depth Range and Mean Depth	Navigation Impairment	2020 Field Notes
1A	0	0	0	-	-	-	No EWM seen
1 and 2	0	0	0	-	-	-	No EWM seen
2A	0	0.01	-0.01	<<<1	2-4; 3	None	2 EWM plants
3 and 3A	0	0.01	-0.01	-	-	-	No EWM seen
4	0	0	0	-	-	-	No EWM seen
5 and 5A	0	0.04	-0.04	<<<1	3-5; 4	None	3 EWM plants
5B/5C	0	0	0	-	-	-	No EWM seen
5D/5E	0	0	0	-	-	-	No EWM seen
6	0	0	0	-	-	-	No EWM seen
7AA	0.03	0.02	0.01	<<1-1; 1	2-5; 4	None	Continuous clusters on uninhabited shoreline
7	0	0	0	-	-	-	No EWM seen
7A	0	0	0	-	-	-	No EWM seen
7B	0	0	0	-	-	-	No EWM seen
8	0	0	0	<<<1	4	None	1 EWM plant
9	0	0.01	-0.01	<<<1	2-5; 4	None	5 EWM plants
9AA	0	0	0	<<<1	3-6; 4	None	5 EWM plants
9A	0	0	0	-	-	-	No EWM seen
9B	0	0	0	<<<1	5	None	1 EWM plant
10	0	0	0	-	-	-	No EWM seen
11A	0.11	<0.01	0.11	<1-2	2-5; 4	Minor	Most plants prop-clipped
11	0	0	0	<<<1	2-5; 4	None	4 EWM plants
12	0.06	0	0.06	1-3; 3	4-7; 5	Moderate	Solid canopied mat; fragments everywhere
13AAA	0	0.02	-0.02	<<<1	4	None	1 EWM plant
13AA	0.02	<0.01	0	<1-2; 1	2-4; 3	None	At the shoreline – inshore from all docks
13A	0	0.04	-0.04	-	-	-	No EWM seen
13	0.04	0	0.04	<<1-2; 1	2-5; 4	Minor	Mixed with NWM on uninhabited shoreline
13B	0.22	0.12	0.10	<<1-3; 1	2-6; 4	Minor	Merging clusters around docks
13BB	0.04	0	0.04	<<1-2; 1	3-6; 5	Minor	Mixed with NWM on uninhabited shoreline

Table 5 (continued): Late Summer Eurasian Water-milfoil Bed Mapping Summary
Big Trade Lake, Burnett County
August 29, 2020

Bed Number	2020 Area in Acres	2019 Area in Acres	2020 Change in Acreage	Rake Range; Mean Rake Fullness	Depth Range and Mean Depth	Navigation Impairment	2020 Field Notes
13C	<0.01	0	<0.01	1-2; 2	4-6; 5	Minor	Microbed – easily avoided
14	0.26	0	0.26	<1-3; 2	3-7; 5	Moderate	Thickening canopied mat
15BB	0	0.03	-0.03	<<<1	2-6; 4	None	2 EWM plants
15A/B	0.06	0.02	0.04	<1-3; 2	3-5; 4	None	Dense, but around bulrush bed
15	0.10	0.05	0.05	1-3; 3	4-6; 5	Moderate	Fragments everywhere – reseeding bay
16	0	0	0	-	-	-	No EWM seen
16AA	0.01	0.01	0	1-3; 2	3-6; 5	Minor	Too narrow to be moderate
16A	0	0.11	-0.11	<<<1	4	None	1 EWM plant
16B	0.01	0.04	-0.03	<<1-2; 1	2-5; 4	Minor	Scattered around docks
16BB	0.03	0.01	0.02	1-3; 3	2-5; 4	Moderate	Canopied mat by dock/ too narrow to be severe
17	0	0	0	<<<1	2-6; 4	None	4 EWM plants
18	0.13	0.62	-0.49	1-2; 2	3-6; 5	Minor	Too nar. to be mod. impair/many prop-clipped
19	0	0.28	-0.28	<<<1	3-6; 5	None	4 EWM plants
20	0	0	0	<<<1	3-6; 5	None	Scattered EWM peppered along shoreline
20B	0.02	0	0.02	<<1-3; 1	4-5; 5	Minor	EWM mixed with NWM
21	0	0	0	<<<1	3-6; 5	None	8 EWM plants
22	0.07	0.03	0.04	<<1-2; 1	3-5; 4	Minor	Plants among docks
22A/B	0.38	0	0.38	<<1-2; 1	2-6; 4	Minor	Plants among docks/rapidly filling in bay
23	0.15	0	0.15	<<1-1; 1	4-6; 5	Minor	Scattered around docks
23A	0.42	0.04	0.38	<<1-3; 2	2-6; 4	Minor	Most of bed near uninhabited shoreline
23AA	0.01	0	0.01	1-3; 3	4-6; 5	Minor	Dense microbed
23B	0.01	0	0.01	<1-1; 1	2-4; 3	Minor	Inshore from docks/scattered on raked shore
24 and 24A	0.40	0.03	0.37	<<<1-3; 1	4-7; 4	Minor	More continuous patchwork than a true bed
24AA	0.14	0	0.14	1-3; 3	5-7; 5	Sever	Solid canopied mat
25	0.02	0	0.02	<<<1-2; 1	4-7; 5	Minor	Continuous merging clusters
25A	0.63	0.02	0.61	<<<1-2; 1	4-7; 5	Minor	Continuous merging clusters
Total Acres	**3.38**	**1.57**	**+1.81**				

Table 6: Historical Late Summer/Fall Eurasian Water-milfoil Bed Mapping Summary
Big Trade Lake, Burnett County
2011-2020

Bed Number	2020 Area in Acres	2019 Area in Acres	2018 Area in Acres	2017 Area in Acres	2016 Area in Acres	2015 Area in Acres	2014 Area in Acres	2013 Area in Acres	2012 Area in Acres
1A	0	0	0	0	0	0.01	<0.01	0	0
1 and 2	0	0	0	0	0	0.12	0.03	0.07	0.02
2A	0	0.01	0	<0.01	0	<0.01	0	0	0
3 and 3A	0	0.01	0	0.07	0.03	0	0.06	0.03	0
4	0	0	0	0.11	0.08	0	<0.01	<0.01	0
5 and 5A	0	0.04	0	0.09	<0.01	0	0.08	<0.01	0
5B/5C	0	0	0	0.01	<0.01	0	0	0	0
5D/5E	0	0	0	0.01	0	0	0	0	0
6	0	0	<0.01	0.02	0.01	0.03	0.03	0	0
7AA	0.03	0.02	0.01	0	0	0	0	0	0
7	0	0	0.01	0.08	0.01	0	0.02	0	0
7A	0	0	0	0.72	0	0	0	0	0
7B	0	0	<0.01	0	0	0	0	0	0
8	0	0	0	0	<0.01	0.03	0.16	0	0
9	0	0.01	<0.01	0	0.01	0.01	0.03	0	0
9AA	0	0	<0.01	0	0	0	0	0	0
9A	0	0	0	0.02	0	0	0	0	0
9B	0	0	0.17	0	0.26	0	0	0	0
10	0	0	0	0.03	0.01	0	0.01	0	0
11A	0.11	<0.01	0.08	0.07	<0.01	0	0	0	0
11	0	0	0	0.15	0.17	0.19	0.10	0	0
12	0.06	0	0.10	0.22	0.18	0.15	0.01	0	0
13AAA	0	0.02	0	0	0	0	0	0	0
13AA	0.02	<0.01	0.02	0	0	0	0	0	0
13A	0	0.04	0.05	0	0.03	0	0	0	0
13	0.04	0	0.03	0	0	0	<0.01	0	0
13B	0.22	0.12	0.06	0.02	0.01	0	0	0	0
13BB	0.04	0	0	0	0	0	0	0	0

Table 6 (continued): Historical Late Summer/Fall Eurasian Water-milfoil Bed Mapping Summary
Big Trade Lake, Burnett County
2011-2020

Bed Number	2020 Area in Acres	2019 Area in Acres	2018 Area in Acres	2017 Area in Acres	2016 Area in Acres	2015 Area in Acres	2014 Area in Acres	2013 Area in Acres	2012 Area in Acres
13C	<0.01	0	0	<0.01	0	0	0	0	0
14	0.26	0	0.20	0.32	0.42	0.03	0	0	0
15BB	0	0.03	0	0	0	0	0	0	0
15A/B	0.06	0.02	0.01	0	0.01	0	0	0	0
15	0.10	0.05	0.06	0.10	0.07	0.04	0	0	0
16	0	0	0	0.04	<0.01	0	0	0	0
16AA	0.01	0.01	0.06	0	0	0	0	0	0
16A	0	0.11	0.04	0.02	0	0	0	0	0
16B	0.01	0.04	0.04	0	0	0	0	0	0
16BB	0.03	0.01	0	0	0	0	0	0	0
17	0	0	0.33	0.12	<0.01	0	0	0	0
18	0.13	0.62	0.01	0.58	0	0	0	0	0
19	0	0.28	0	0.04	0	0	0	0	0
20	0	0	0	0.04	0	0	0	0	0
20B	0.02	0	0	0	0	0	0	0	0
21	0	0	0	<0.01	0	0	0	0	0
22	0.07	0.03	<0.01	0.02	0	0	0	0	0
22A/B	0.38	0	0	0	0	0	0	0	0
23	0.15	0	0	0.04	0	0	0	0	0
23A	0.42	0.04	<0.01	0	0	0	0	0	0
23AA	0.01	0	0	0	0	0	0	0	0
23B	0.01	0	0	0	0	0	0	0	0
24 and 24A	0.40	0.03	0.03	0.03	0	0	0	0	0
24AA	0.14	0	0	0	0	0	0	0	0
25	0.02	0	0	0.02	0	0	0	0	0
25A	0.63	0.02	0	0	0	0	0	0	0
Total Acres	**3.38**	**1.57**	**1.34**	**2.97**	**1.33**	**0.62**	**0.60**	**0.17**	**0.06**

Descriptions of Current and Former Eurasian Water-milfoil Beds:

Beds 1, 1A, 2, 2A, 3, and 3A: The channel downstream from the bridge and the former beds at the inlet remained almost completely clear of Eurasian water-milfoil as we only saw two plants in the area formerly occupied by Bed 2A.

Beds 4, 5, 5A-5E, 6, and 7: The 2020 treatment in the north-central bay looked to have produced lasting control. We found just three plants in the far northeast corner of the bay and these may have been newly established from fragments that were blown in.

Bed 7AA: We again documented a thin row of towers establishing on the outer edge of the Hardstem bulrush (*Schoenoplectus acutus*) bed just west of the point.

Beds 7A, 7B, and 8: A few widely scattered EWM plants occurred along the southwestern shoreline in the north-central bay.

Beds 9, 9A, and 9AA: EWM plants were only widely scattered in these former beds.

Bed 9B: The 2019 treatment in this area continued to hold up as we found only a single plant in this former bed along the navigation channel north of the islands.

Beds 10 and 11: We found a few scattered plants along the shorelines of the central islands. In Bed 11, all plants found occurred outside the 2020 treatment area.

Bed 11A: Despite being treated in both 2019 and 2020, a small open microbed continues to exist on the eastern edge of the saddle between the southern island and the western point. Unfortunately, most of the plants we observed were prop-clipped.

Bed 12: "Kid Rock" had no EWM during the fall 2019 survey or the 2020 pretreatment survey so it was eliminated from treatment consideration. By late August, a small but solid canopied mat had reformed, and we observed prop-clipped fragments throughout the area.

Beds 13A, 13AA, and 13AAA: Other than Bed 13AA, the treatment along the eastern shoreline of the north-central bay downstream from the Trade River Inlet proved to be highly successful and held up throughout the summer. Even this bed was not an issue for navigation as it was small, narrow, and inshore from the dock near it.

Bed 13, 13B, and 13BB: The treatment in 13B was either ineffective or fragments from nearby untreated areas allowed it to reestablish quickly. On the points outside the bay, Beds 13 and 13BB were likely only minor impairments as they occurred along undeveloped shorelines. All of these beds were mixed with Northern water-milfoil (*Myriophyllum sibiricum*).

Bed 13C: In the lake's far northeast bay, we found a small but moderately dense microcluster of plants. At worst, it was likely only a minor impairment due to its small size.

Bed 14: Similar to "Kid Rock" (Bed 12), after seeing no evidence of Eurasian water-milfoil in fall 2019 and only a single plant during the 2020 pretreatment survey, the western midlake sunken island again supported a small but moderately dense EWM bed that was canopied an thickening into a solid mat.

Beds 15, 15A/B: The EWM beds that surround the Hardstem bulrush stand on the small sunken island along the south shoreline midlake once again survived treatment in 2019. We found these beds were again well-establish, canopied, nearly monotypic, and actively fragmenting.

Beds 15BB-16BB: Scattered small EWM beds survived the treatment along the north shoreline leading to the Trade River Outlet with most of them occurring near docks in areas likely to be disturbed by incoming/outgoing boat traffic.

Bed 17: The treatment in 2019 near the western public boat landing continued to hold up well as we saw only four plants in this area.

Beds 18 and 19: Treatment in these formerly large beds in the lake's southeast bay held up well throughout the summer; however, a thin but moderately dense surviving area of Bed 18 deserves treatment consideration again in the near future as many plants were prop-clipped. Outside this area, we found only widely-scattered plants.

Bed 20: We found a handful of plant scattered in and around the area formerly covered by Bed 20.

Beds 21, 22, 22A, 22B, 23, and 23A: EWM in the lake's southwest bay underwent significant expansion. As old beds thickened and new beds emerged, they created an almost unbroken ring of EWM along the majority of the bay's western shoreline. As an area that's likely to produce fragments that will be carried by the prevailing summer winds to many other parts of the lake, this is likely a high priority area for future control.

Beds 24, 24A, 24AA, and 25: The lake's west-central bay underwent a significant rebound in acreage. A previously unmapped deepwater bed (24AA) is potentially the source for the expansion seen in the rest of the area as it was canopied and prop-clipped.

Bed 25A: The narrow littoral zone along the south shoreline of "Cedar Point" supported nearly continuous clusters of plants. Due to the narrowness of the bed and its proximity to deep water, it will likely continue to be a low priority for treatment.

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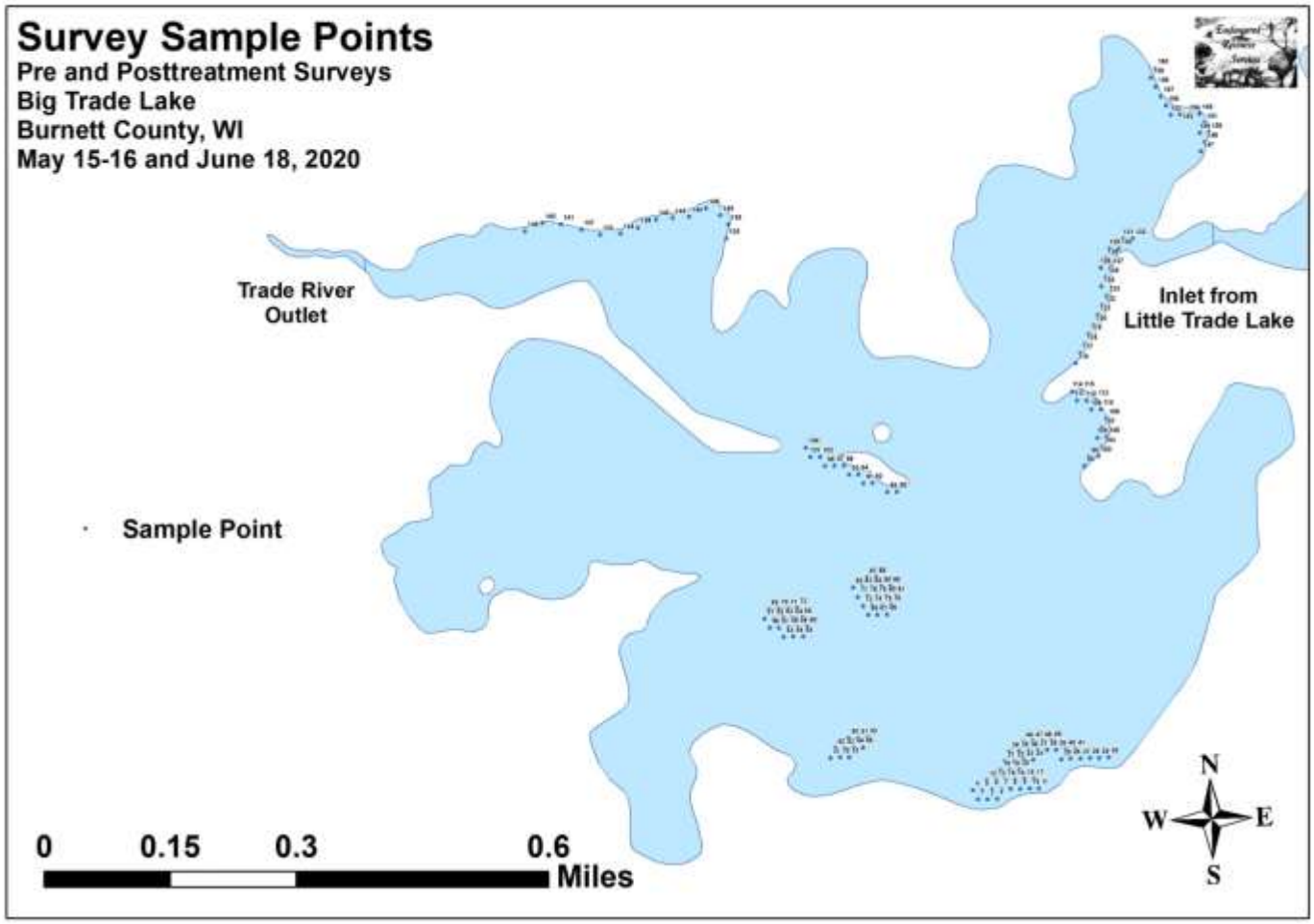
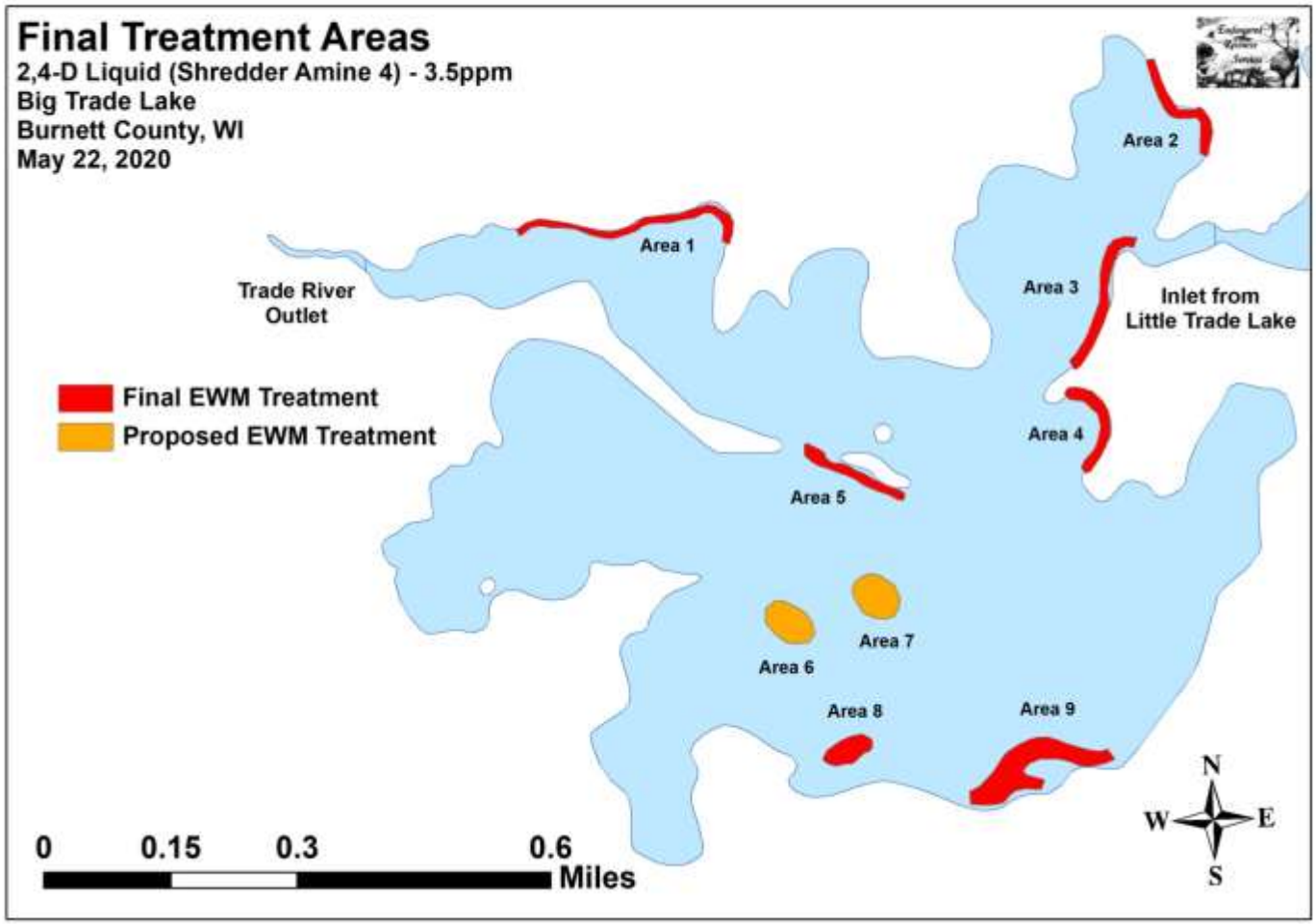
Appendix I: Survey Sample Points and Final Treatment Areas

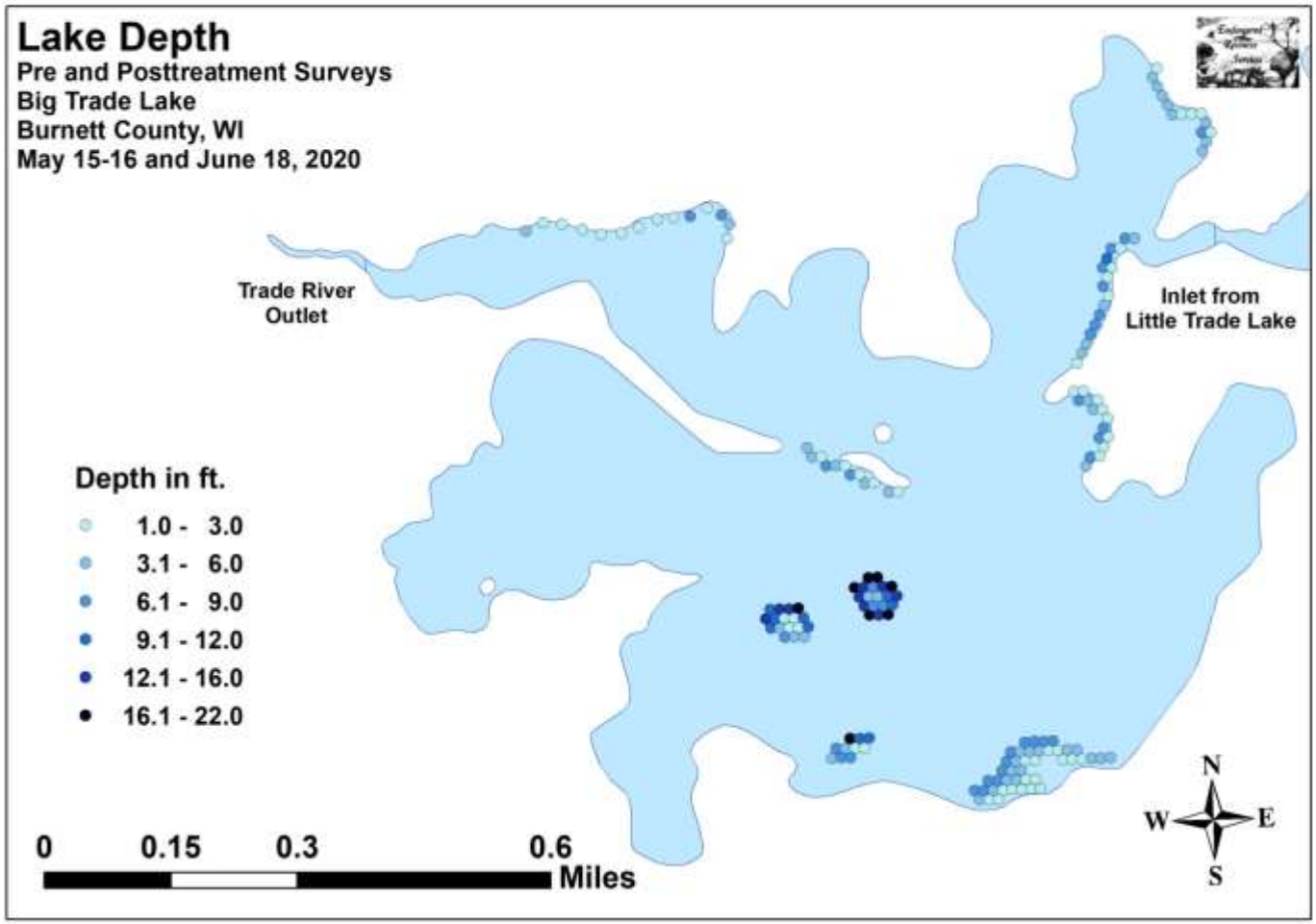

Survey Sample Points
Pre and Posttreatment Surveys
Big Trade Lake
Burnett County, WI
May 15-16 and June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Sample Point
0
0.15
0.3
0.6
Miles
N
W
E
S

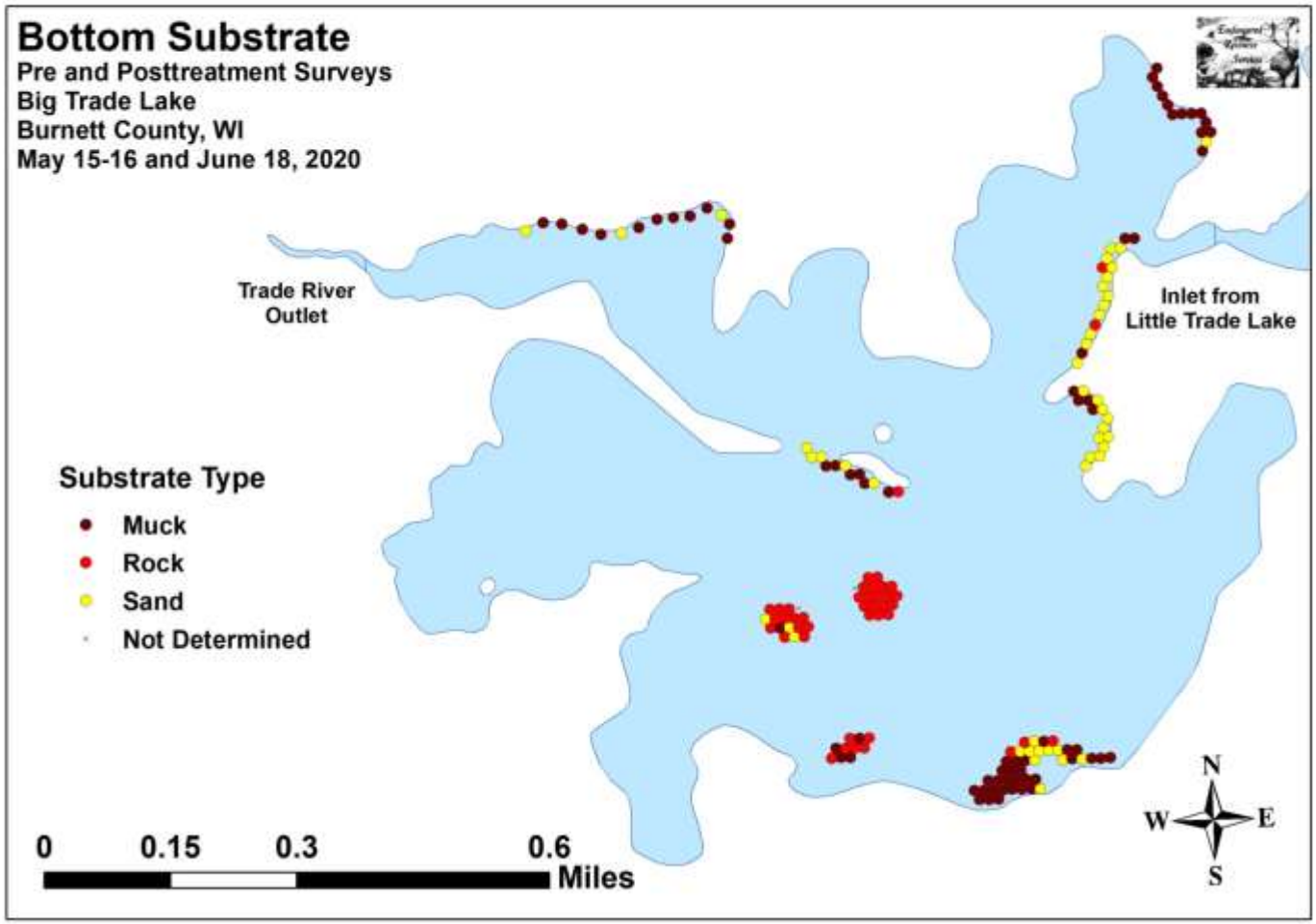

Final Treatment Areas
2,4-D Liquid (Shredder Amine 4) - 3.5ppm
Big Trade Lake
Burnett County, WI
May 22, 2020
Area 1
Area 2
Area 3
Area 4
Area 5
Area 6
Area 7
Area 8
Area 9
Trade River Outlet
Inlet from Little Trade Lake
Final EWM Treatment
Proposed EWM Treatment
0
0.15
0.3
0.6
Miles
N
W
E
S

Appendix II: Vegetative Survey Datasheet

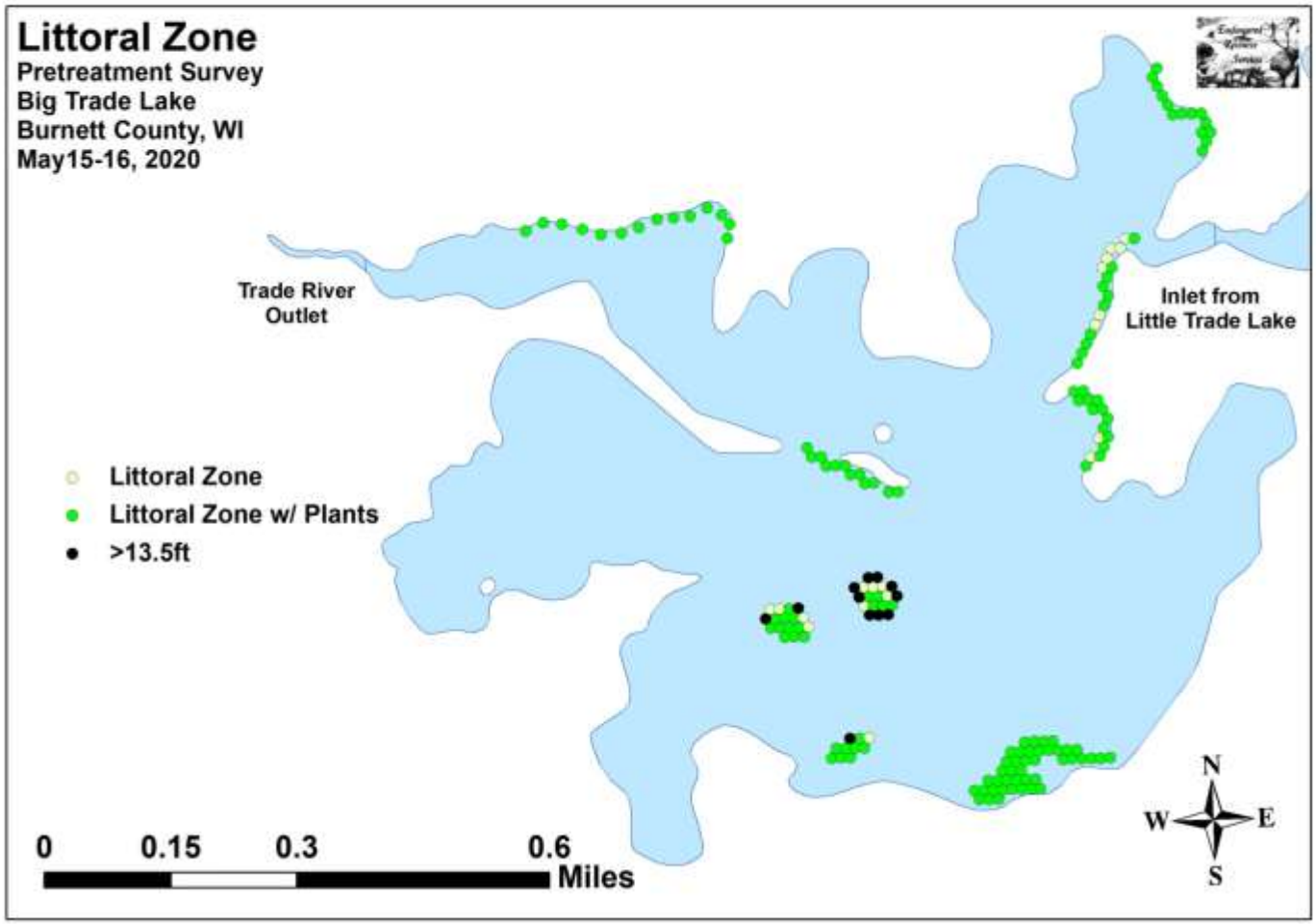
Observers for this lake: names and hours worked by each:																										
Lake:									**WBIC**									**County**						**Date:**	
Site #	**Depth (ft)**	**Muck (M), Sand (S), Rock (R)**	**Rake pole (P) or rake rope (R)**	**Total Rake Fullness**	**EWM**	**CLP**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11																									
12																									
13																									
14																									
15																									
16																									
17																									
18																									
19																									
20																									

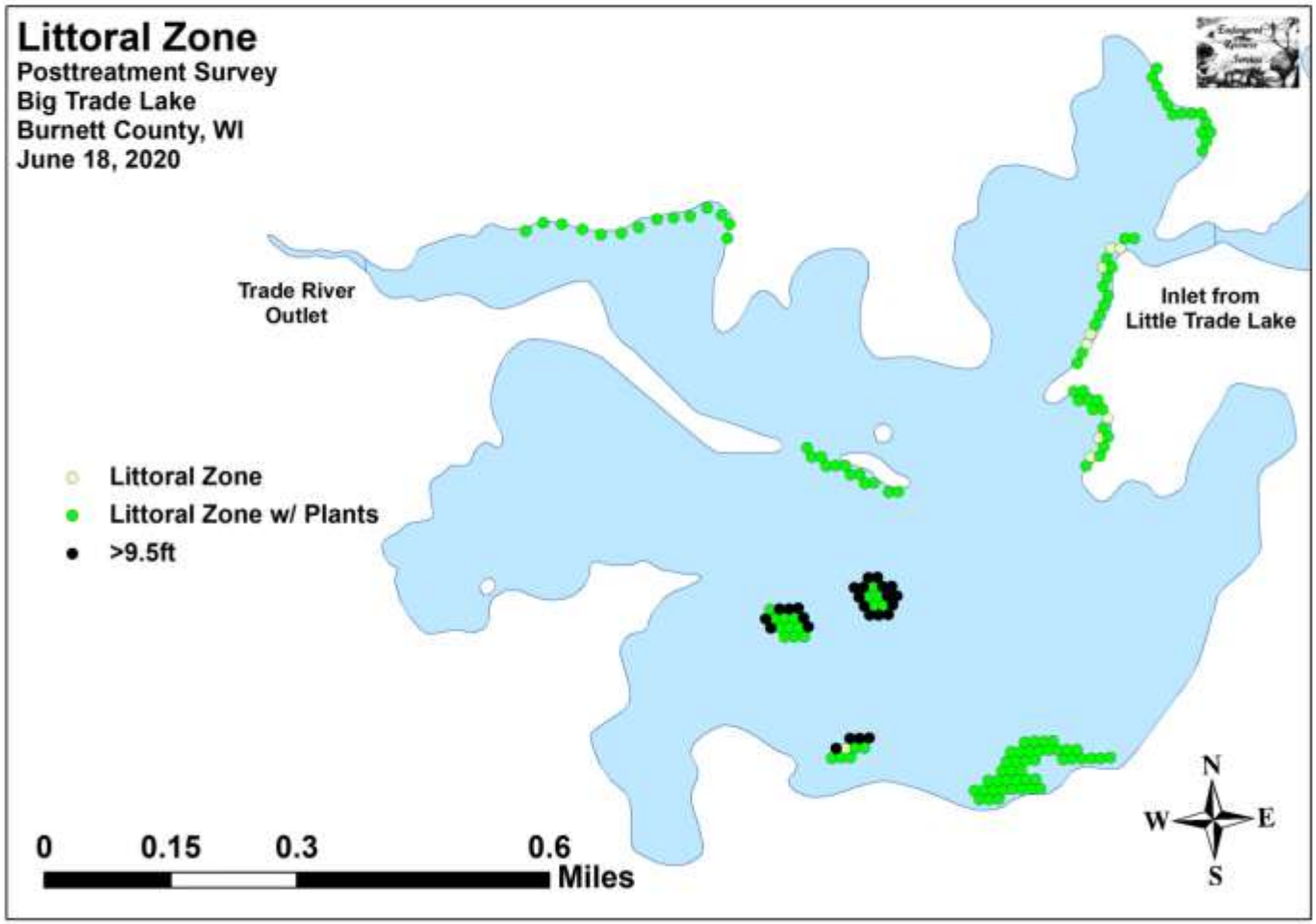
Appendix III: Pre/Post Habitat Variable Maps

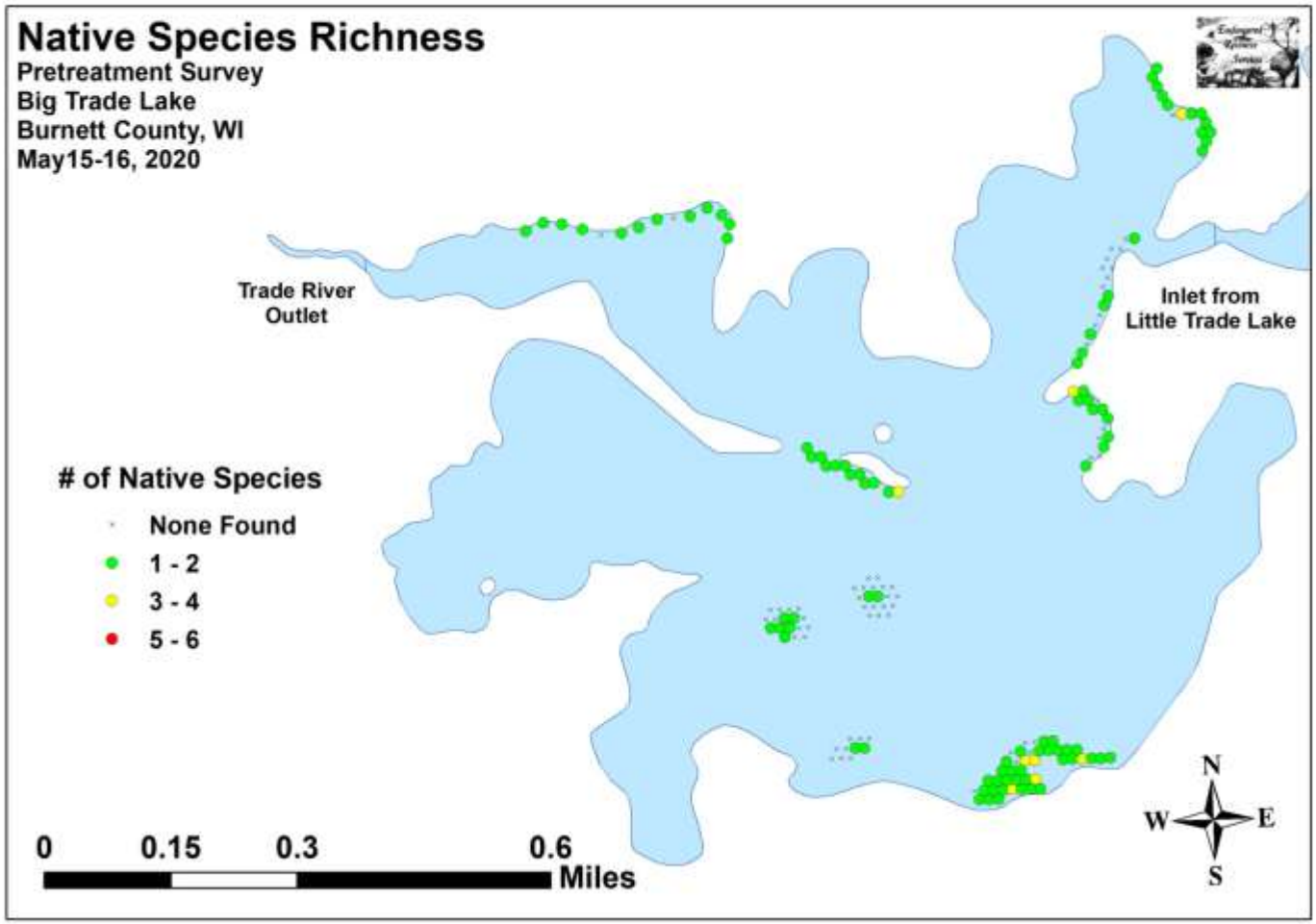

Lake Depth
Pre and Posttreatment Surveys
Big Trade Lake
Burnett County, WI
May 15-16 and June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Depth in ft.
1.0 - 3.0
3.1 - 6.0
6.1 - 9.0
9.1 - 12.0
12.1 - 16.0
16.1 - 22.0
0
0.15
0.3
0.6
Miles
N
W
E
S

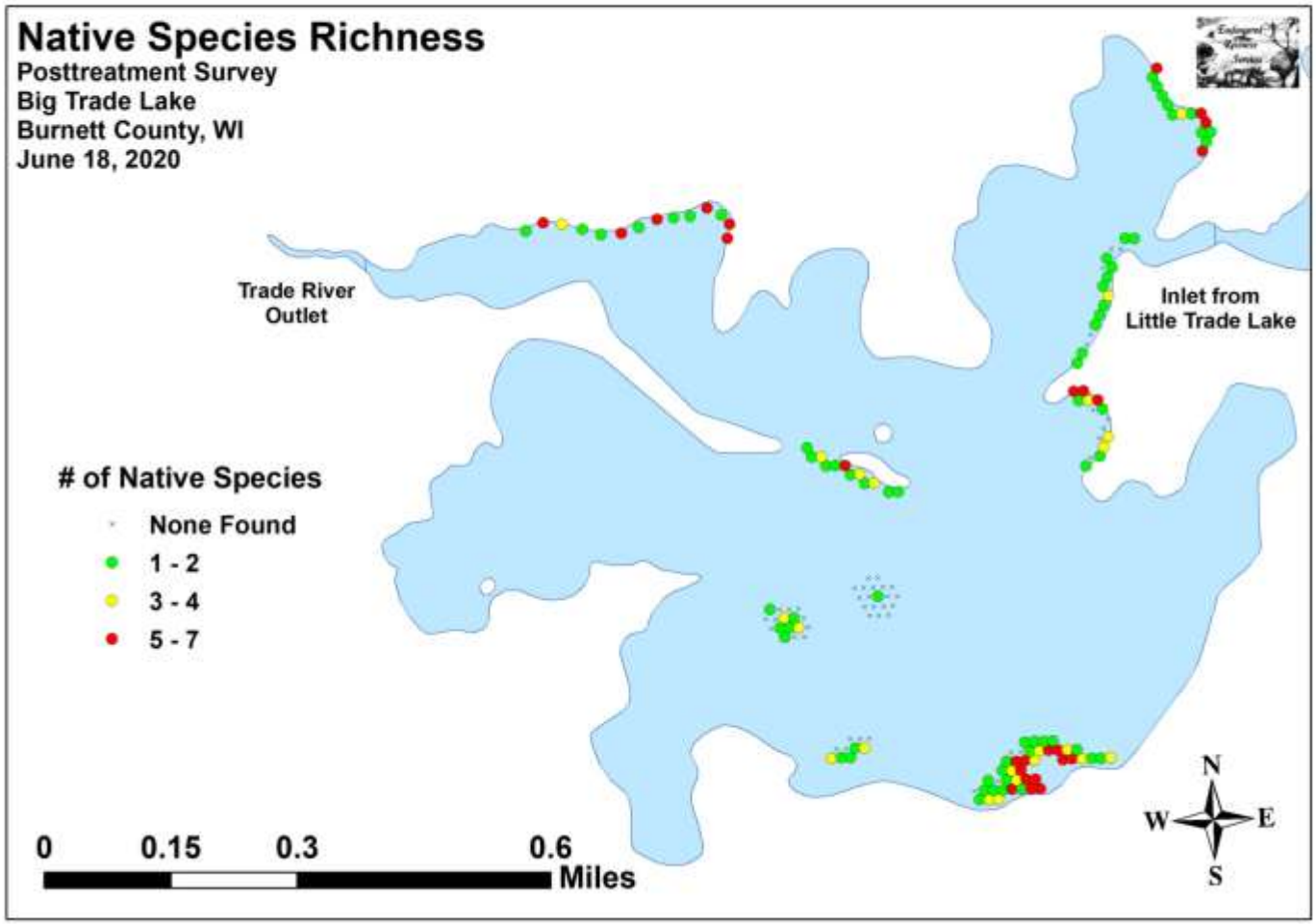

Bottom Substrate
Pre and Posttreatment Surveys
Big Trade Lake
Burnett County, WI
May 15-16 and June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Substrate Type
Muck
Rock
Sand
Not Determined
0
0.15
0.3
0.6
Miles
N
W
E
S

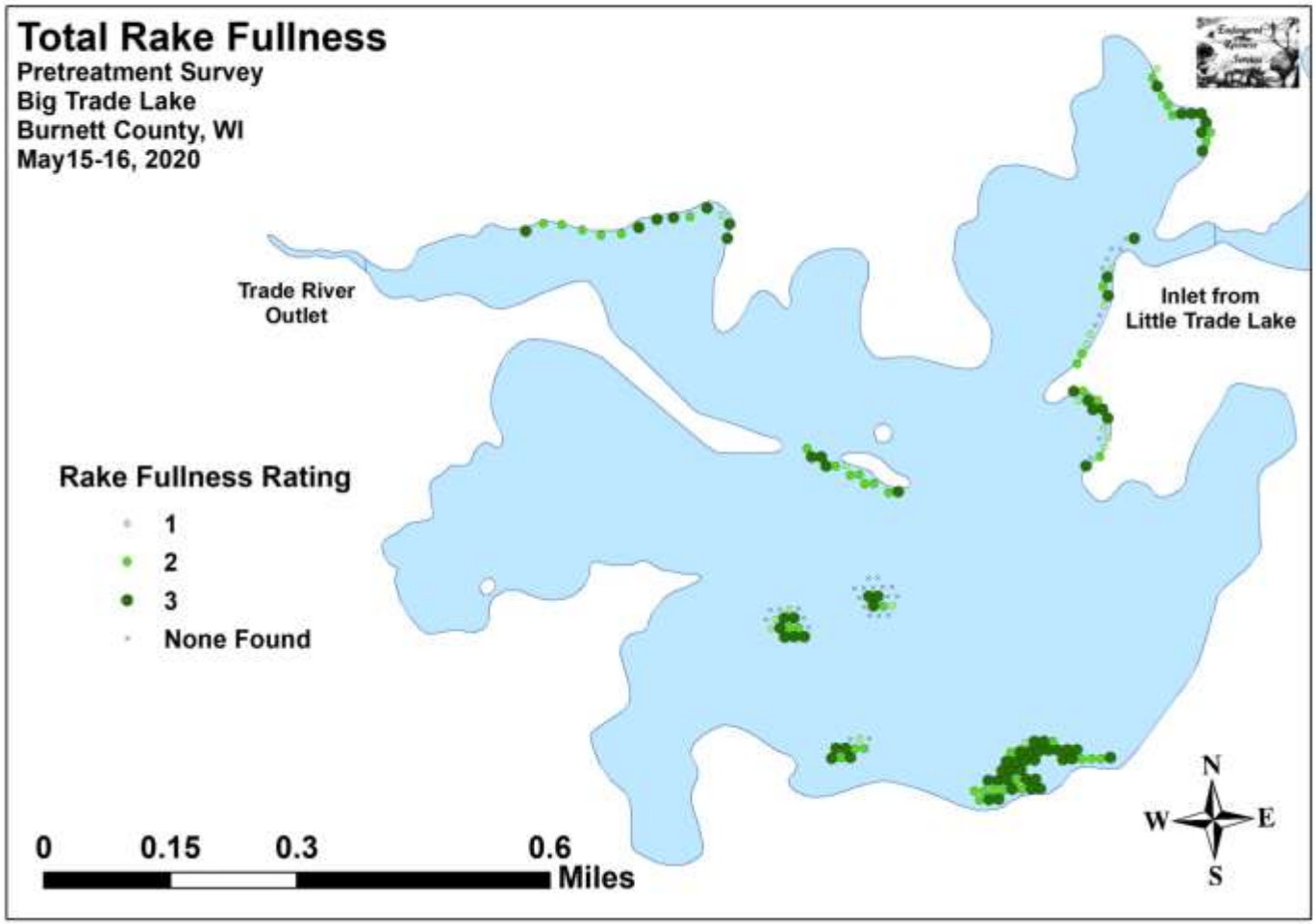
Appendix IV: Pre/Post Littoral Zone, Native Species Richness and Total Rake Fullness

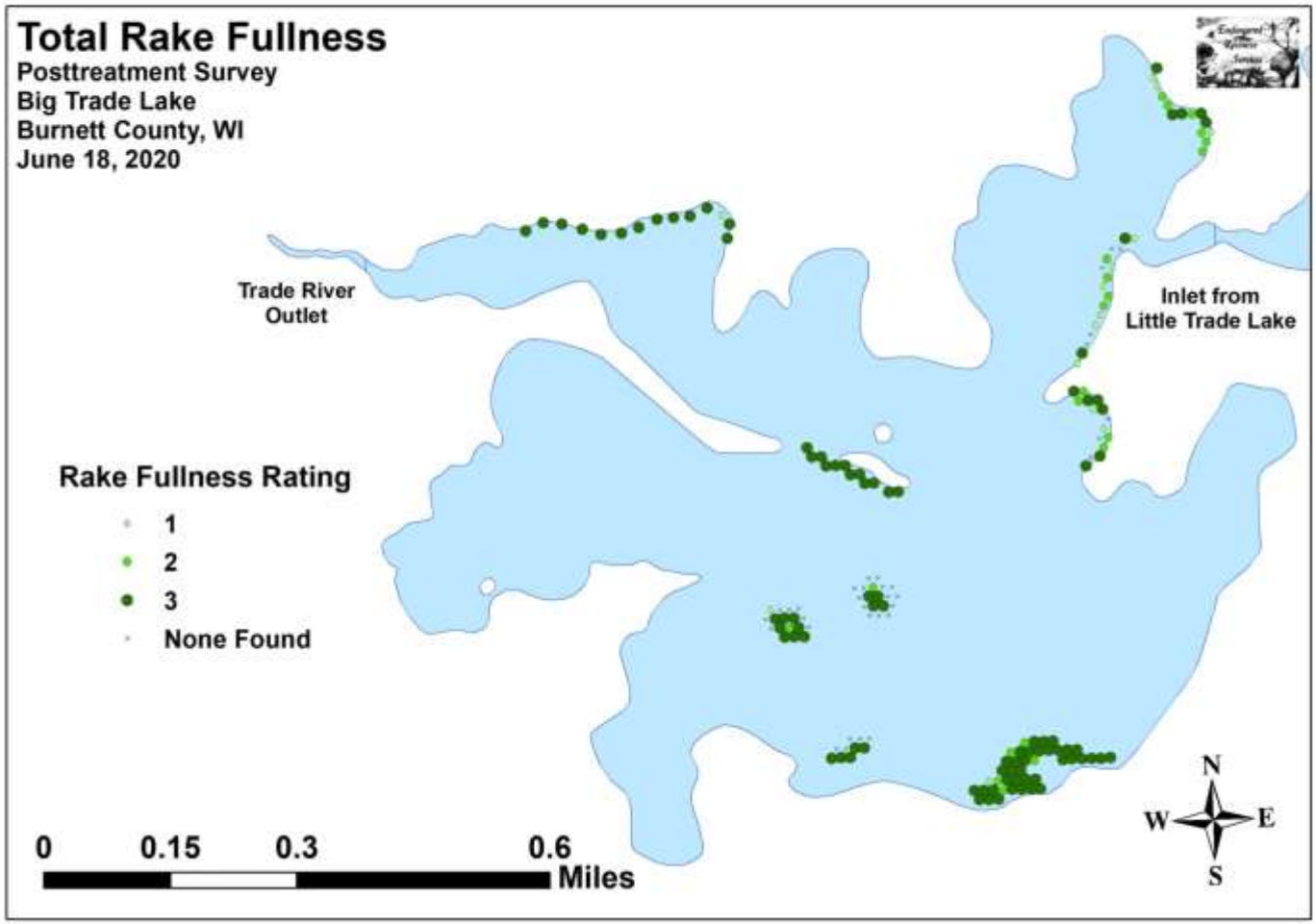

Littoral Zone
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Littoral Zone
Littoral Zone w/ Plants
>13.5ft
0
0.15
0.3
0.6
Miles
N
W
E
S


Littoral Zone
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Littoral Zone
Littoral Zone w/ Plants
>9.5ft
0
0.15
0.3
0.6
Miles
N
W
E
S

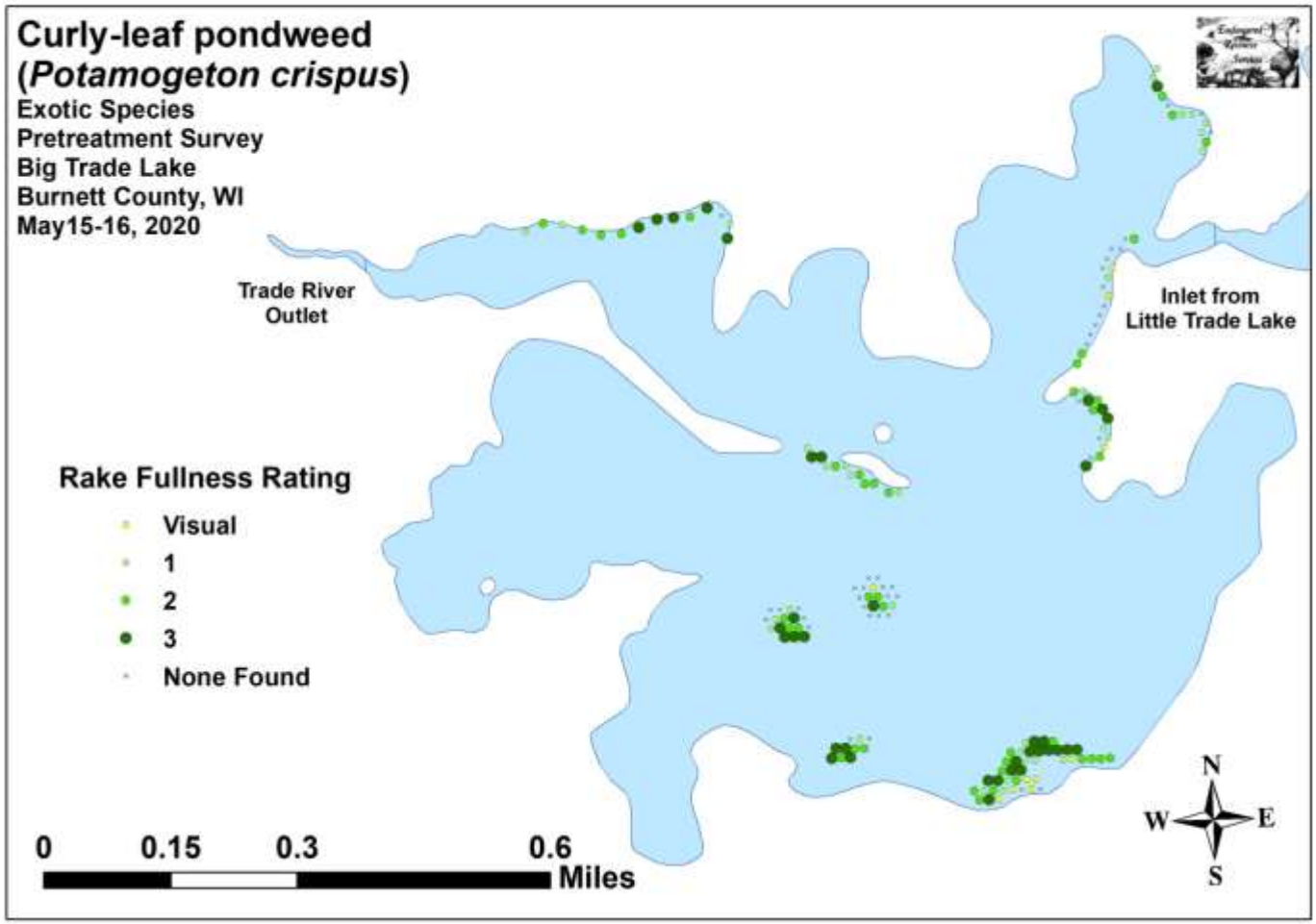

Native Species Richness
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
# of Native Species
None Found
1 - 2
3 - 4
5 - 6
0
0.15
0.3
0.6
Miles
N
W
E
S

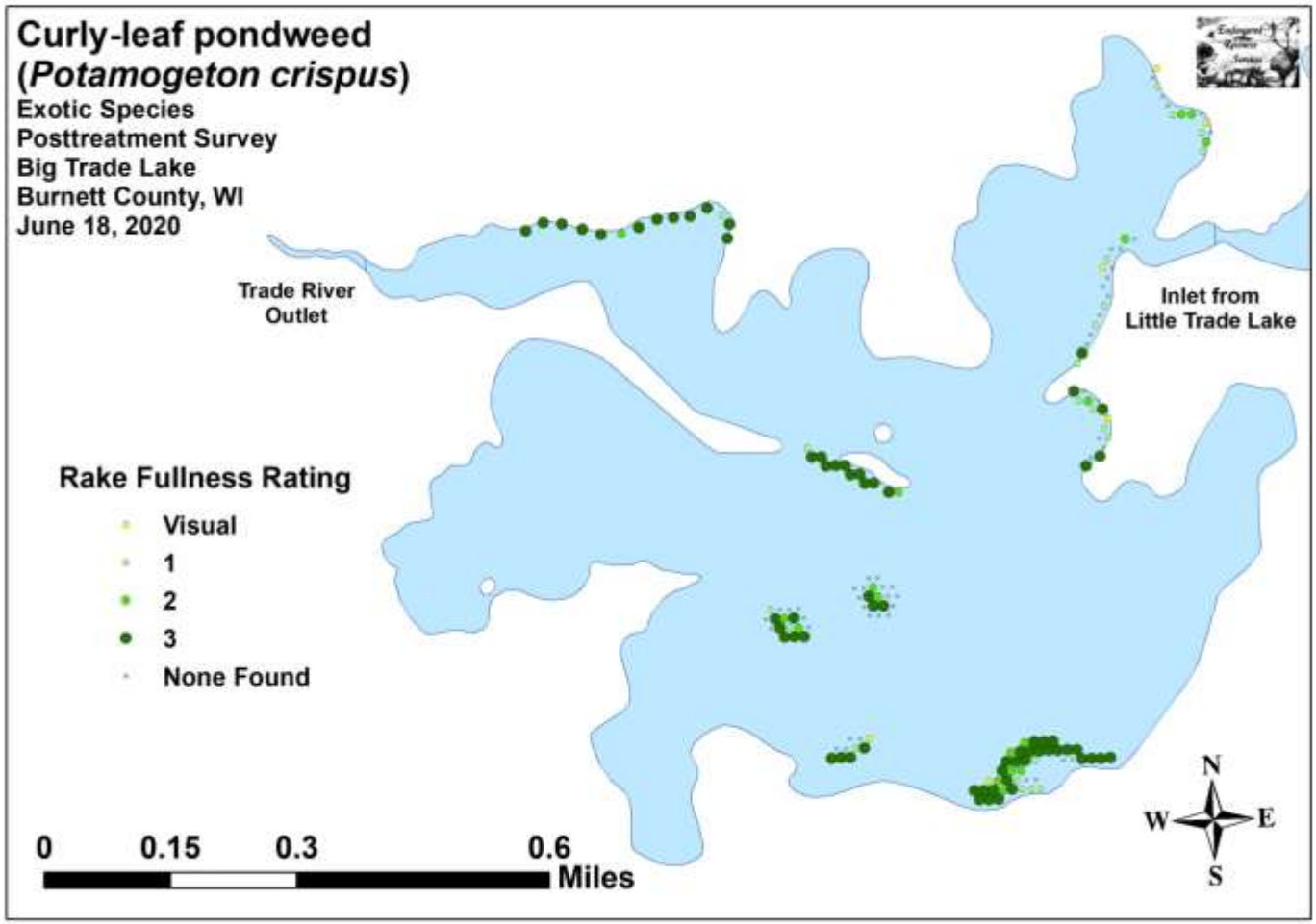

Native Species Richness
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
# of Native Species
None Found
1 - 2
3 - 4
5 - 7
0
0.15
0.3
0.6
Miles
N
W
E
S

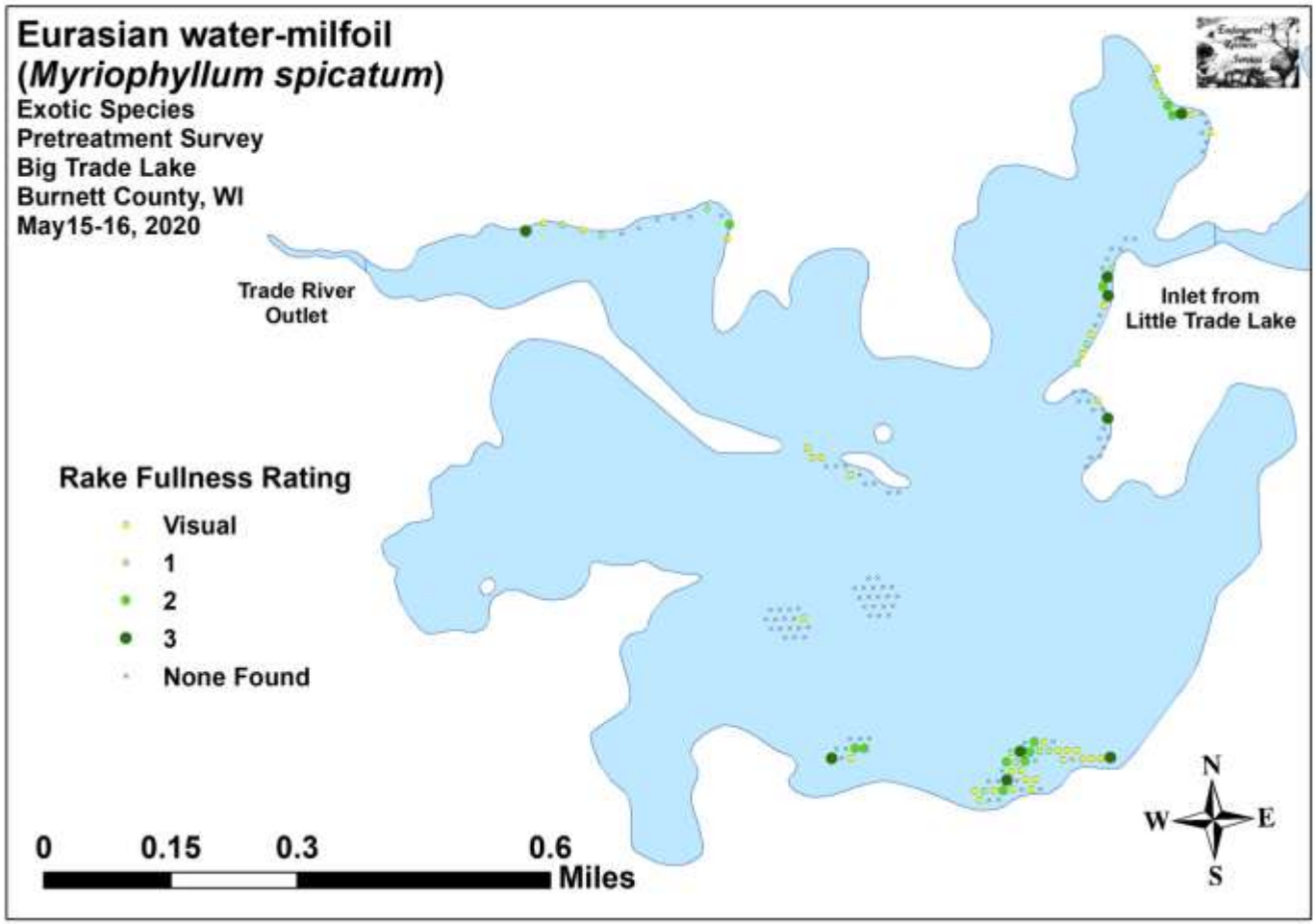

Total Rake Fullness
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

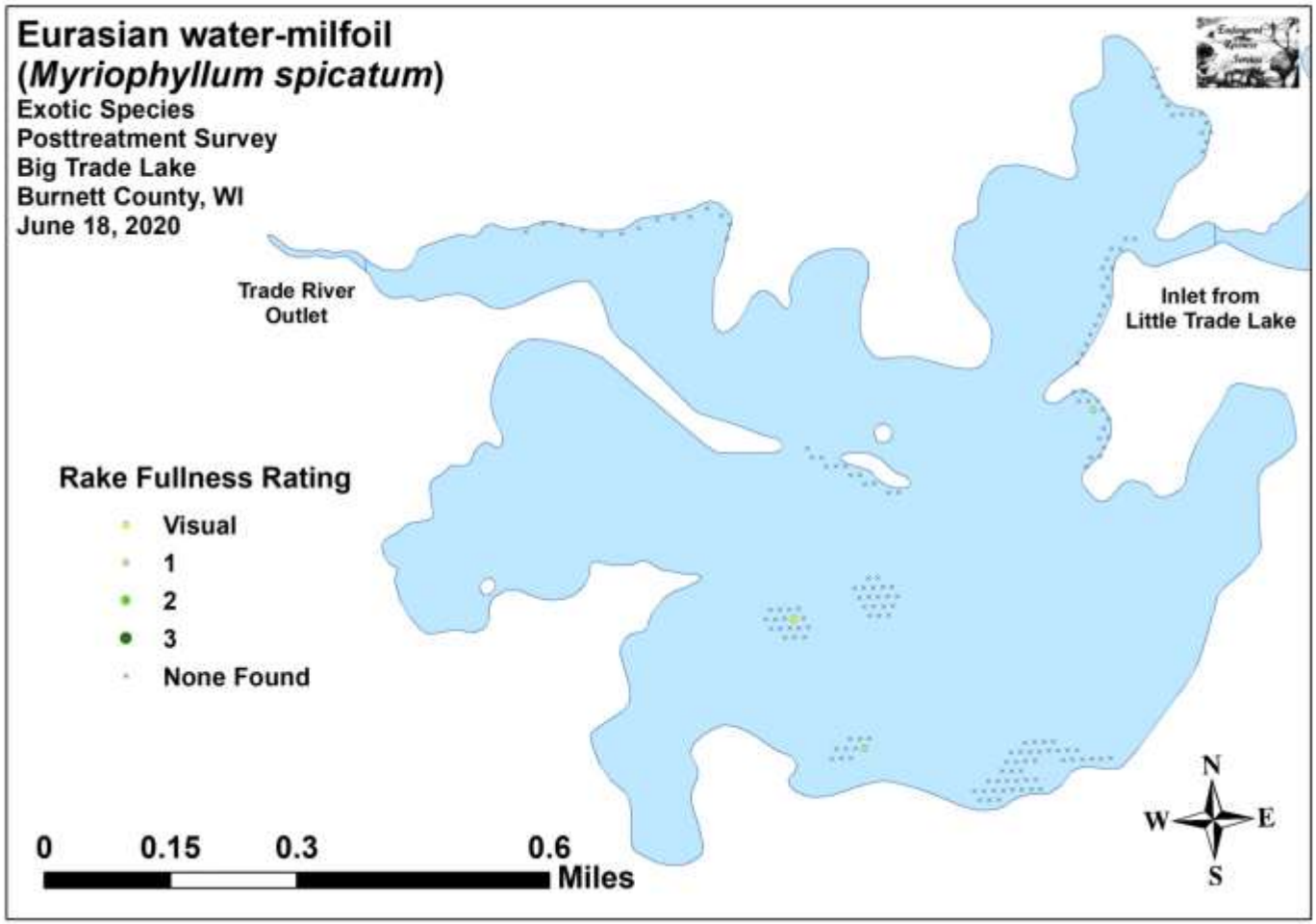

Total Rake Fullness
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

Appendix V: CLP and EWM Pre/Post Density and Distribution

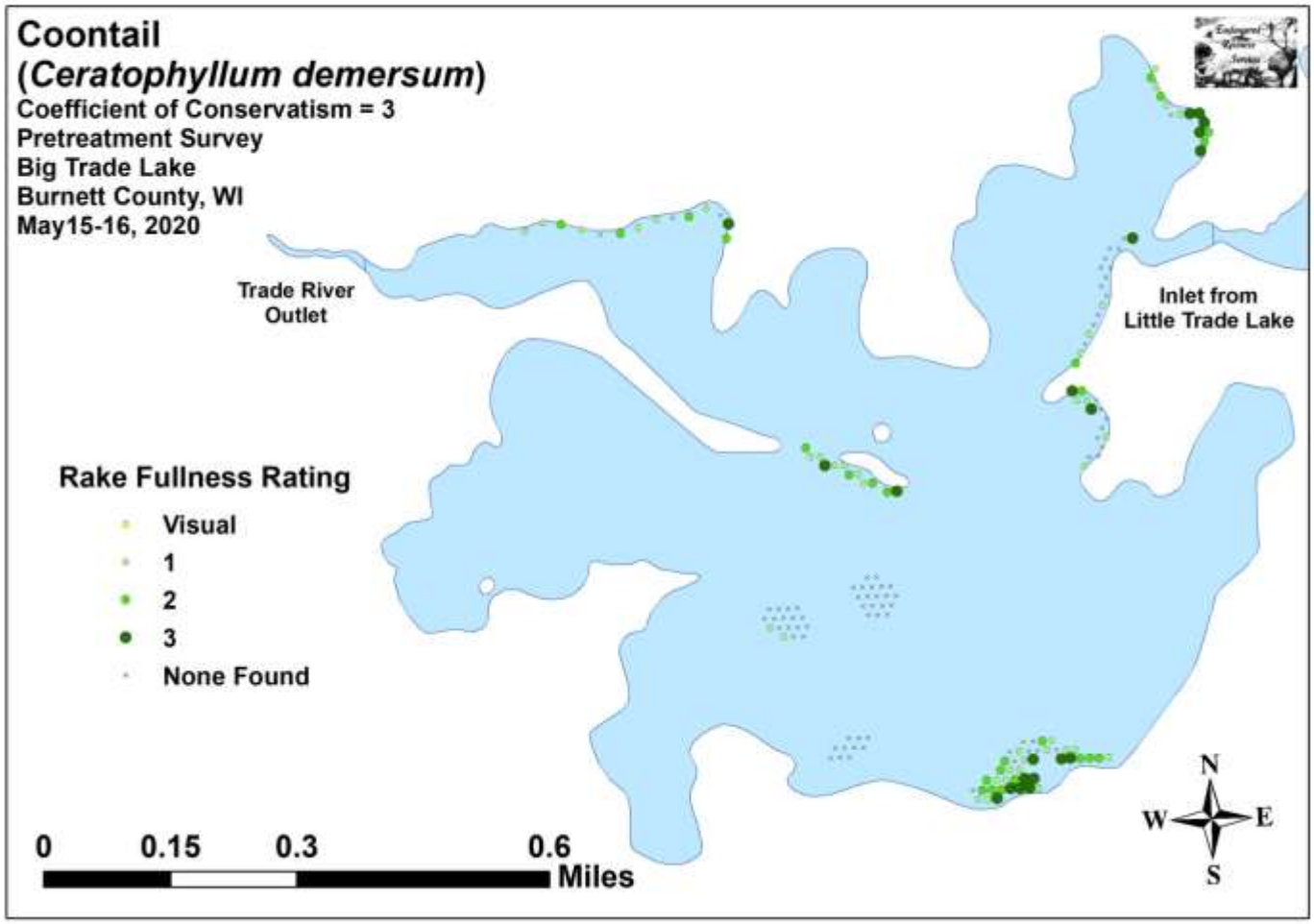

Curly-leaf pondweed
(Potamogeton crispus)
Exotic Species
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

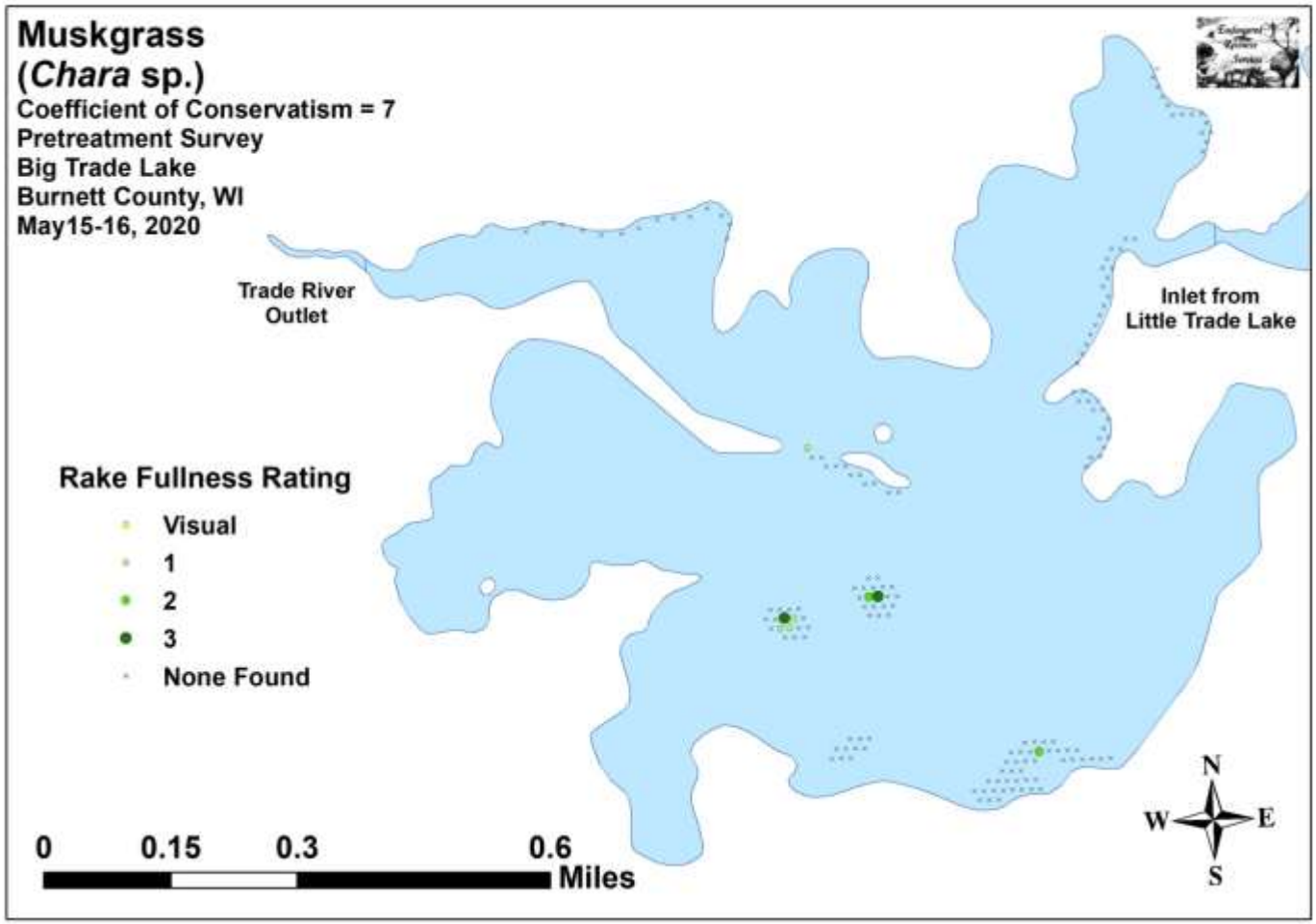

Curly-leaf pondweed
(Potamogeton crispus)
Exotic Species
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

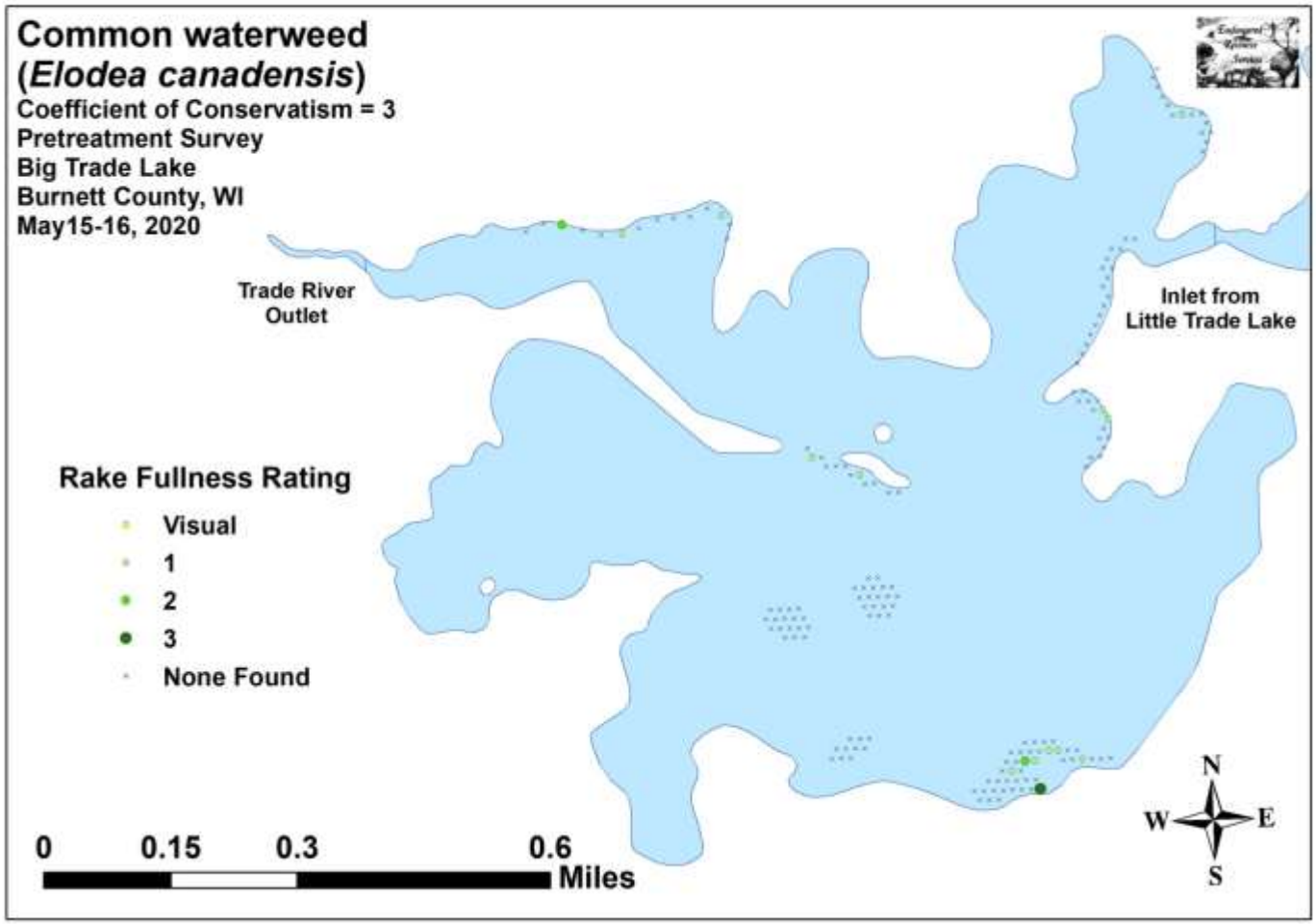

Eurasian water-milfoil
(Myriophyllum spicatum)
Exotic Species
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

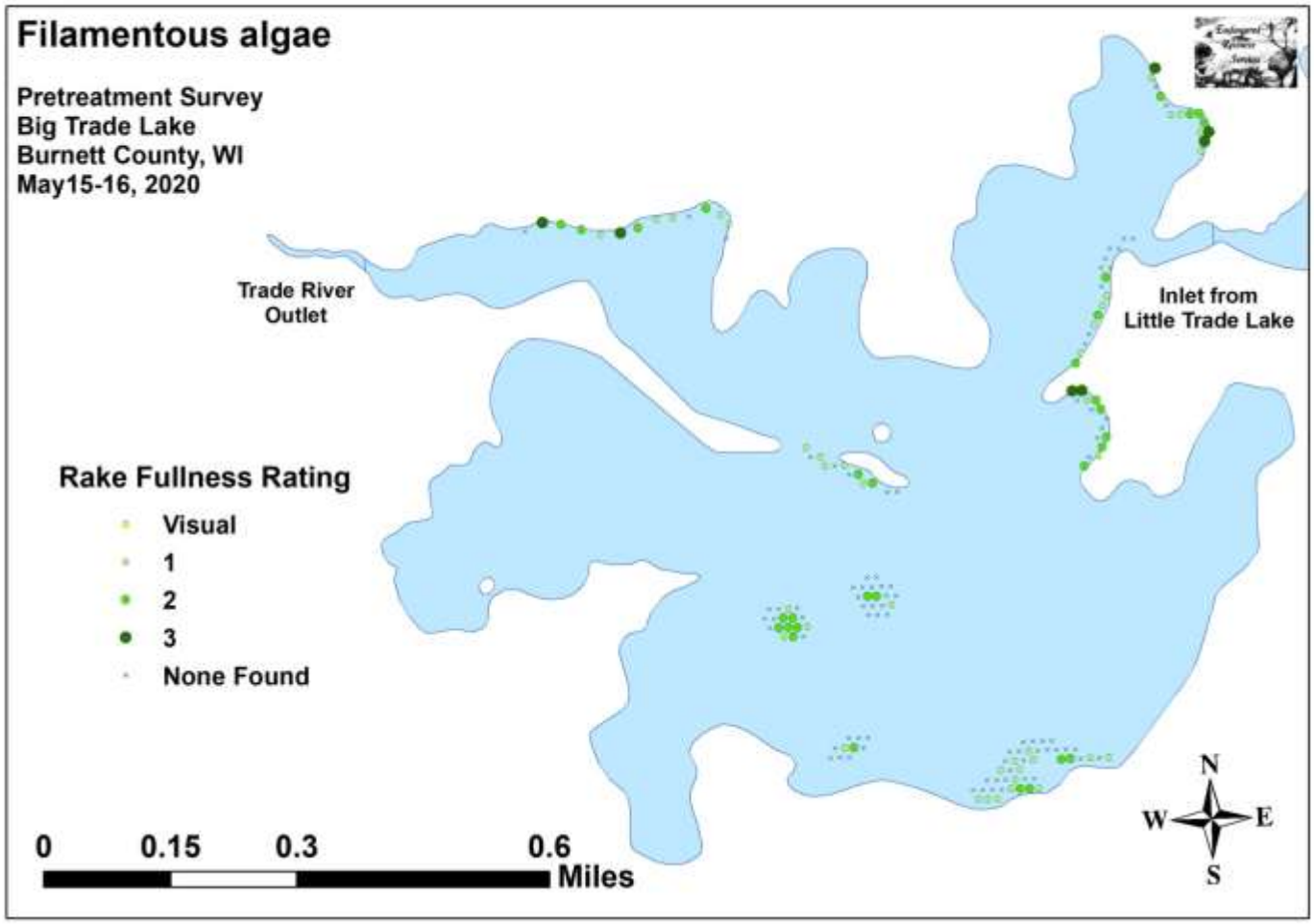

Eurasian water-milfoil
(Myriophyllum spicatum)
Exotic Species
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

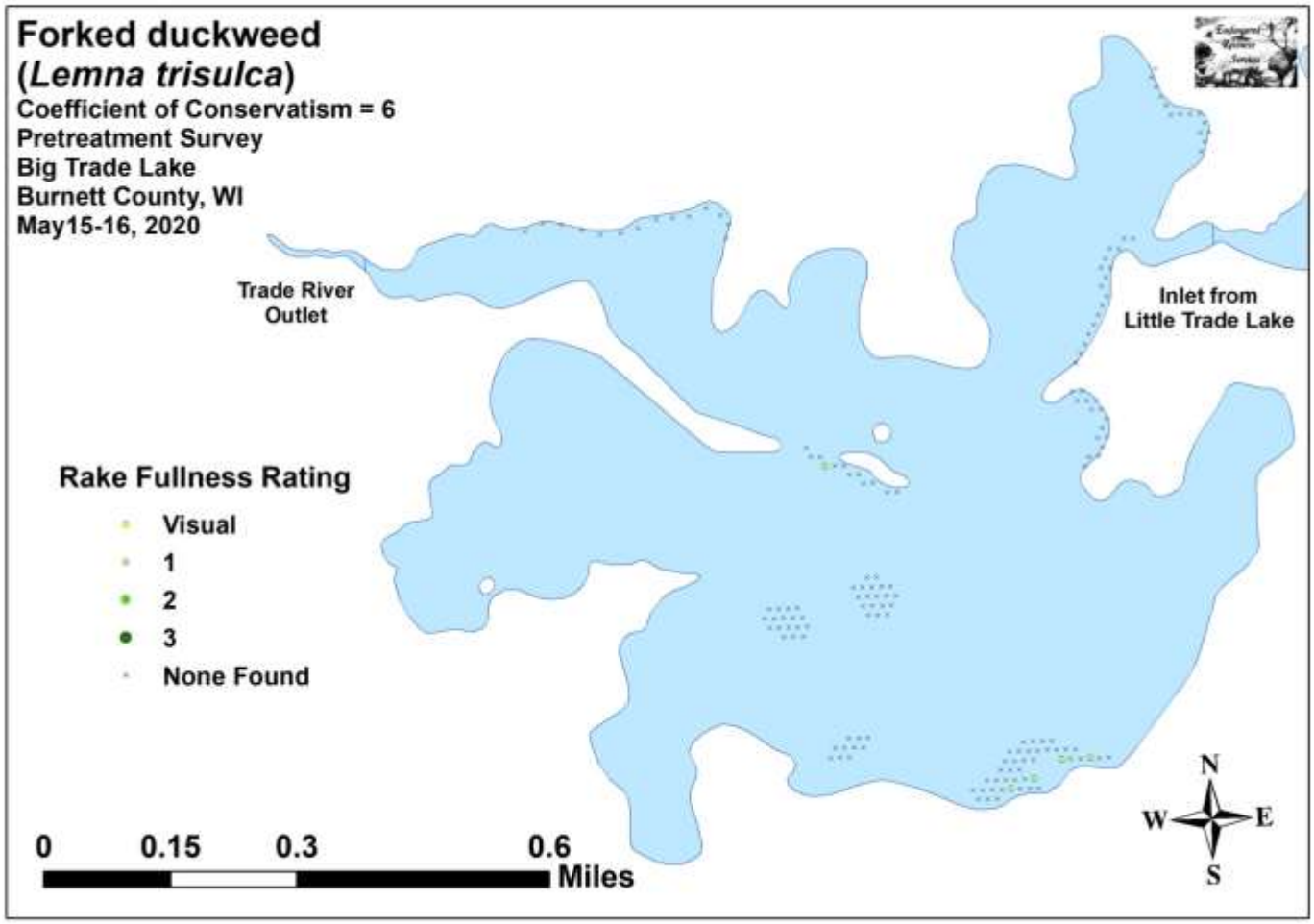
Appendix VI: Pretreatment Native Species Density and Distribution

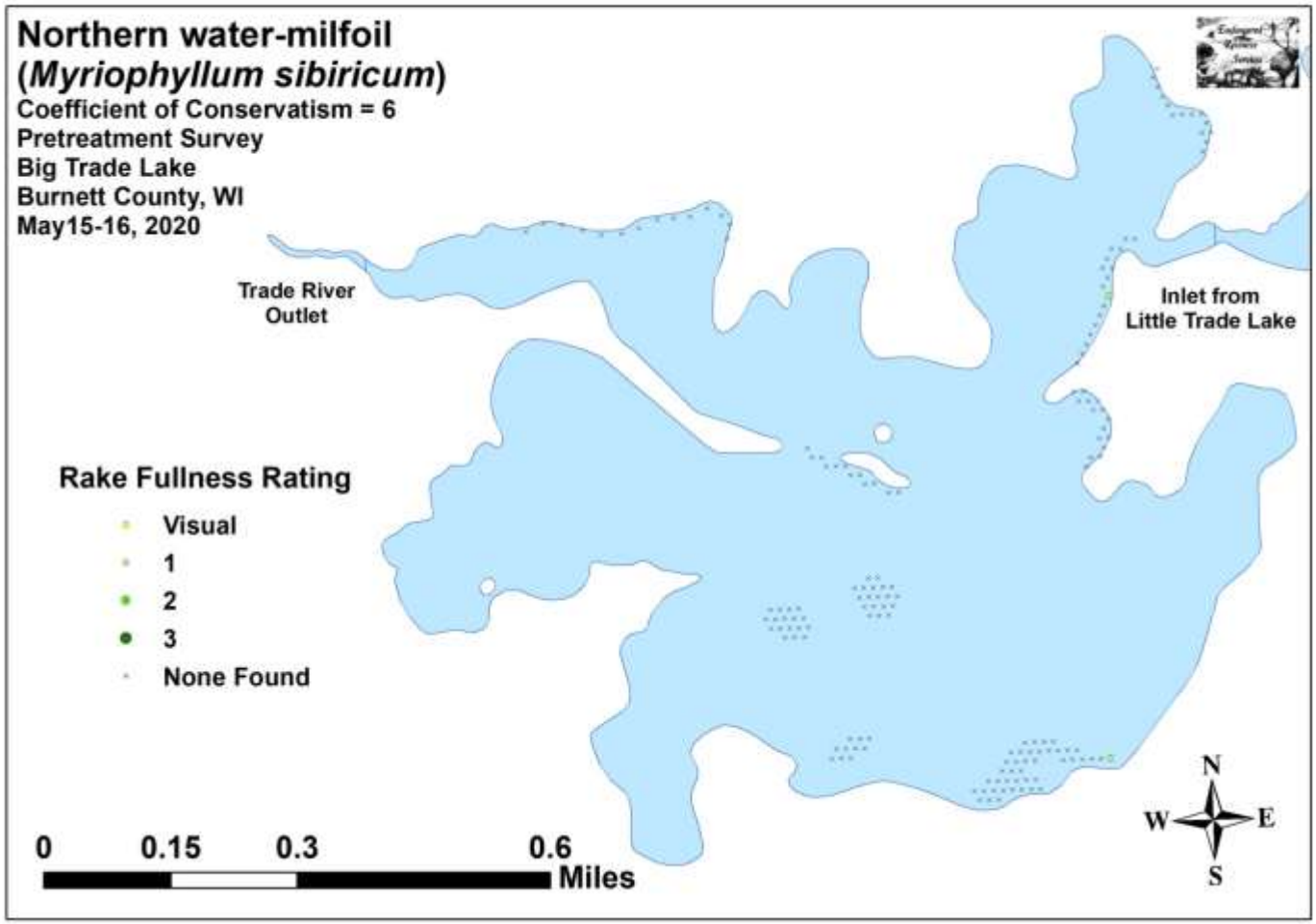

Coontail
(Ceratophyllum demersum)
Coefficient of Conservatism = 3
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

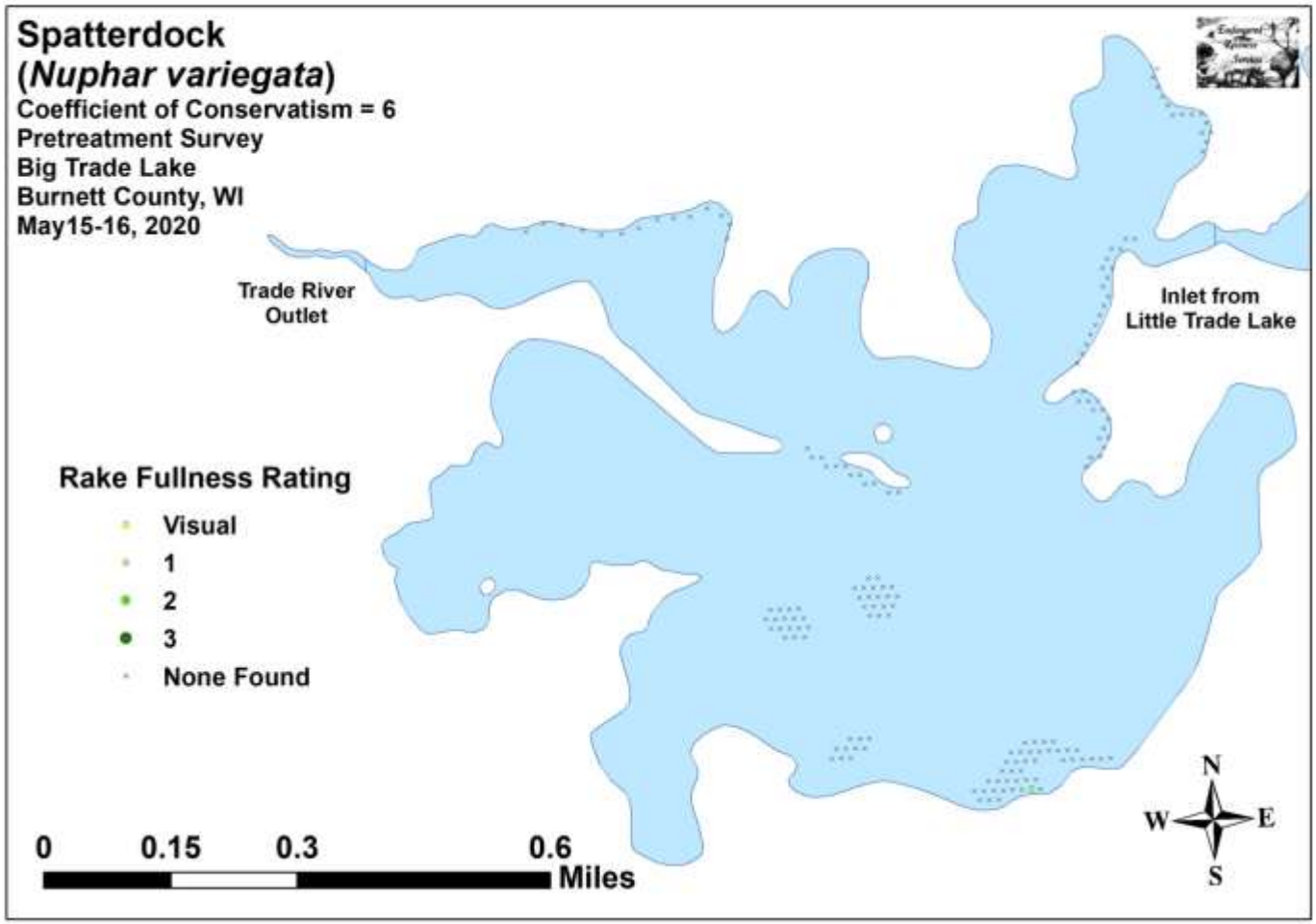

Muskgrass
(Chara sp.)
Coefficient of Conservatism = 7
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

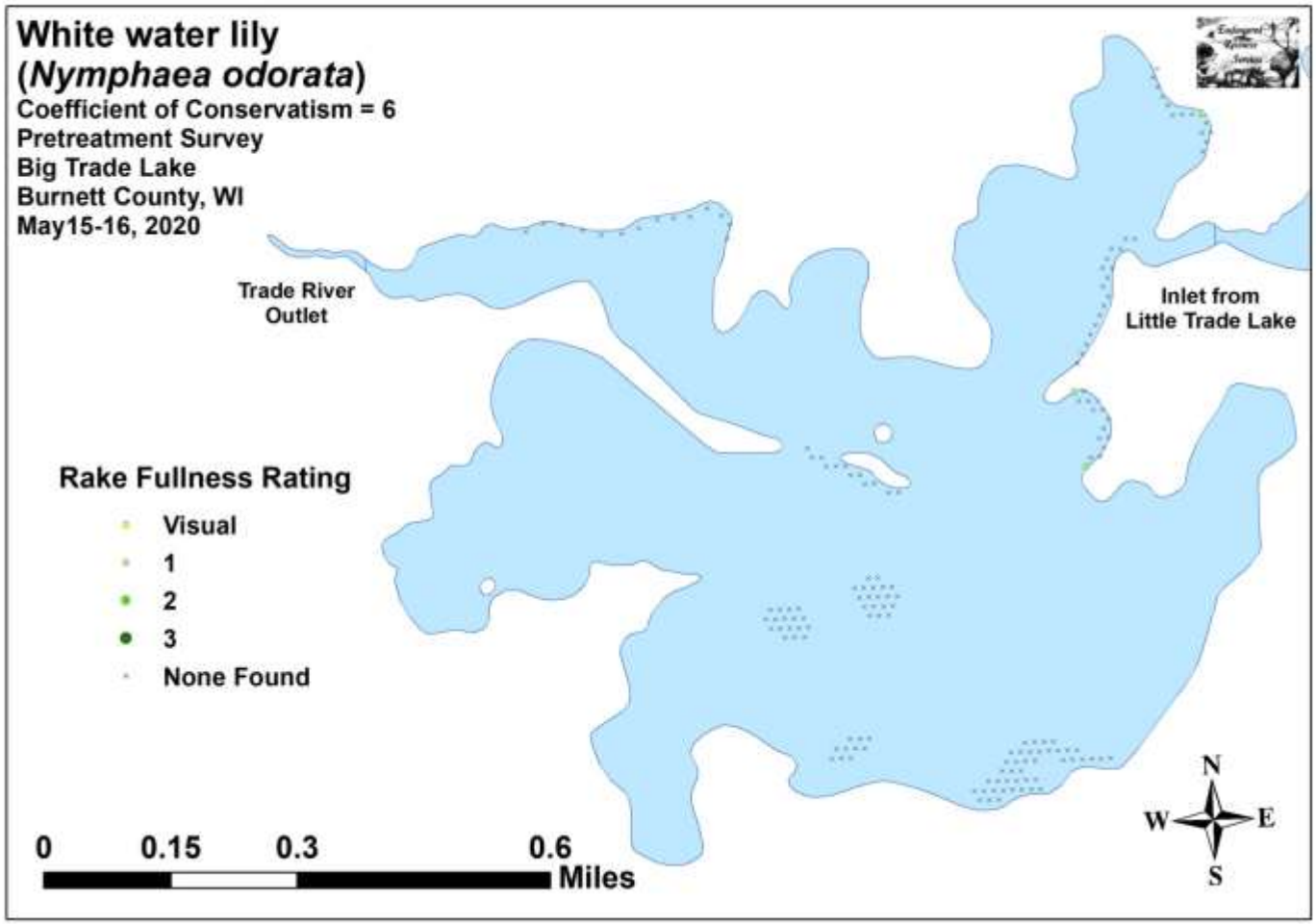

Common waterweed
(Elodea canadensis)
Coefficient of Conservatism = 3
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
N
W
E
S
0
0.15
0.3
0.6
Miles

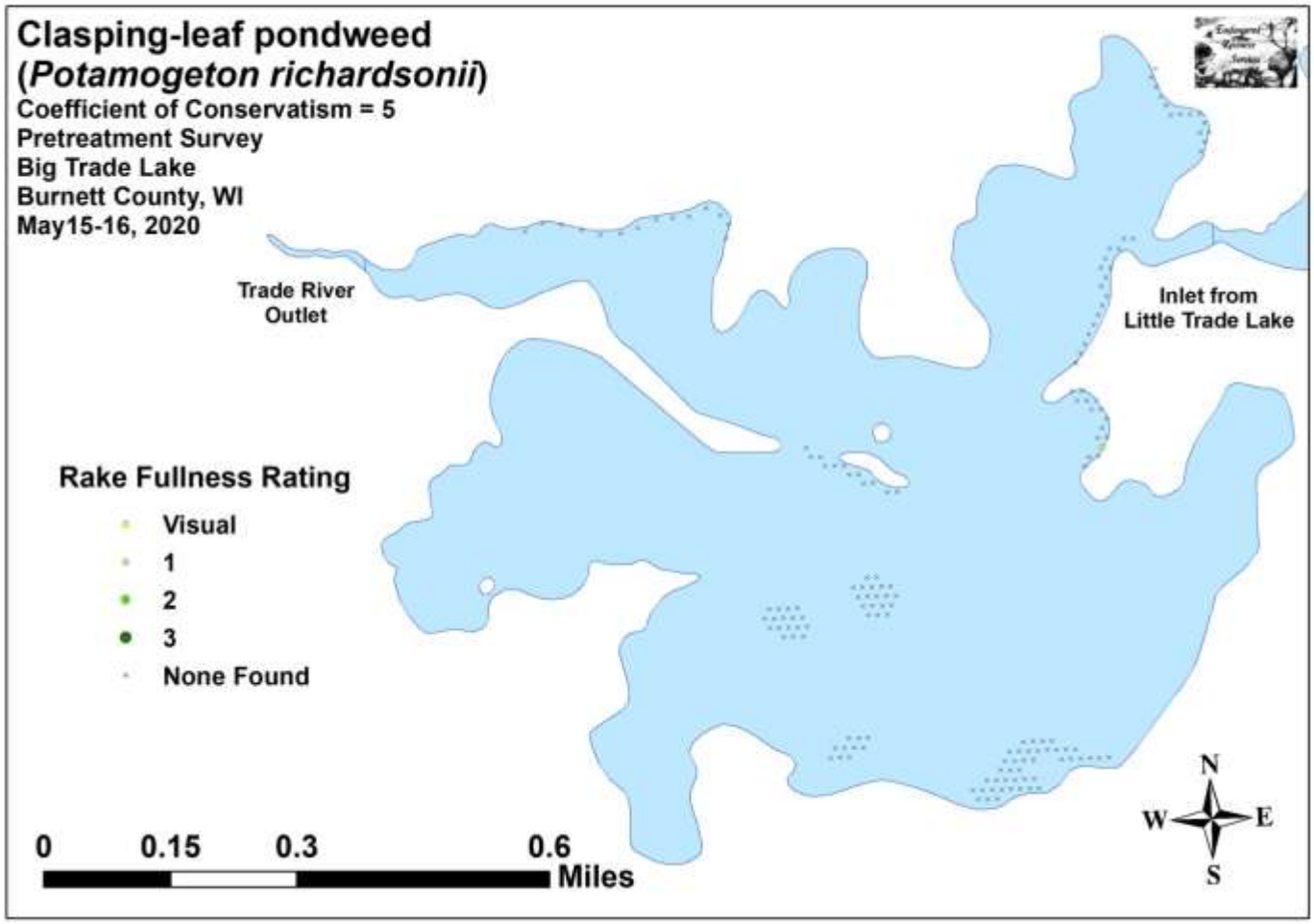

Filamentous algae
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

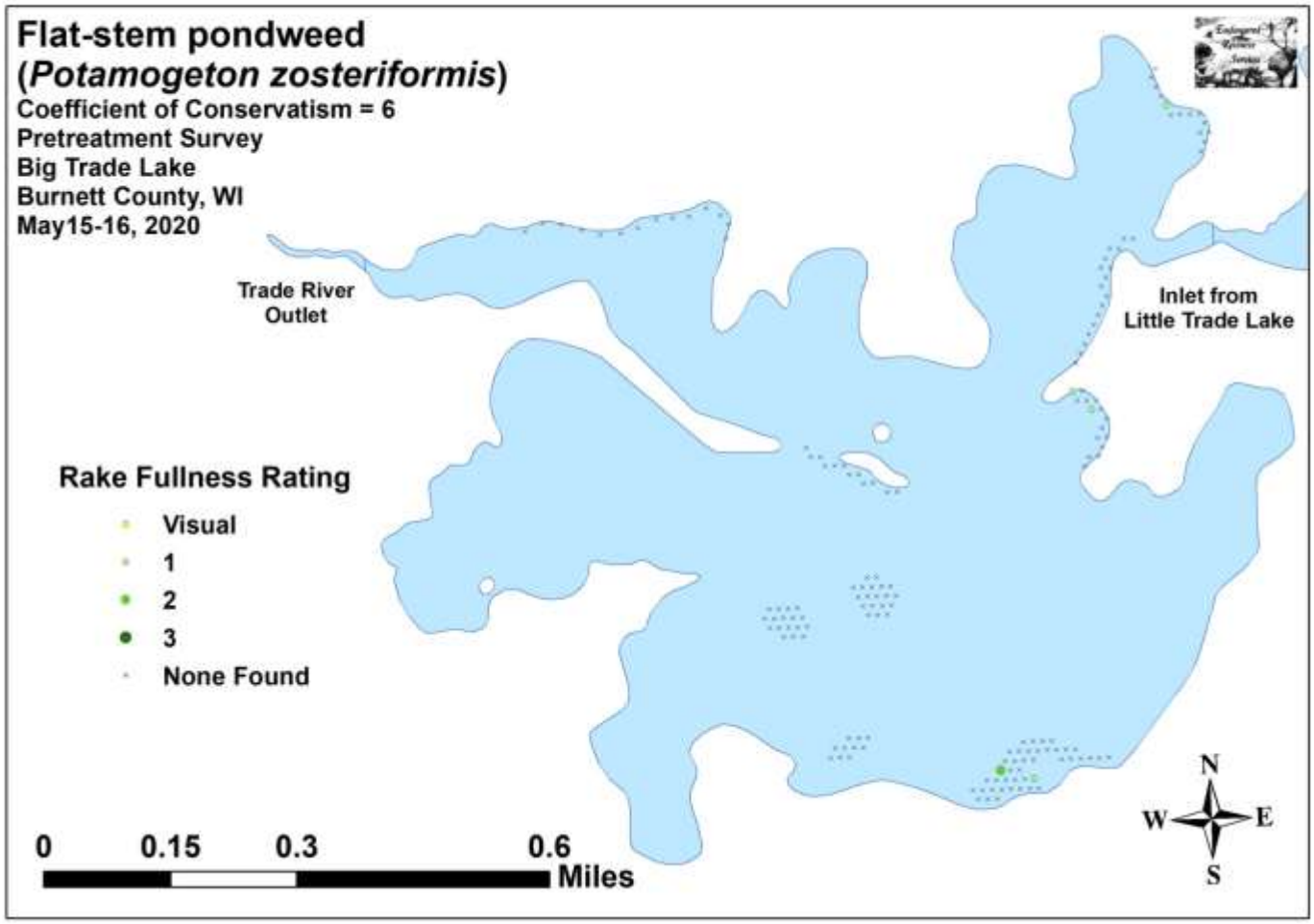

Forked duckweed
(Lemna trisulca)
Coefficient of Conservatism = 6
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

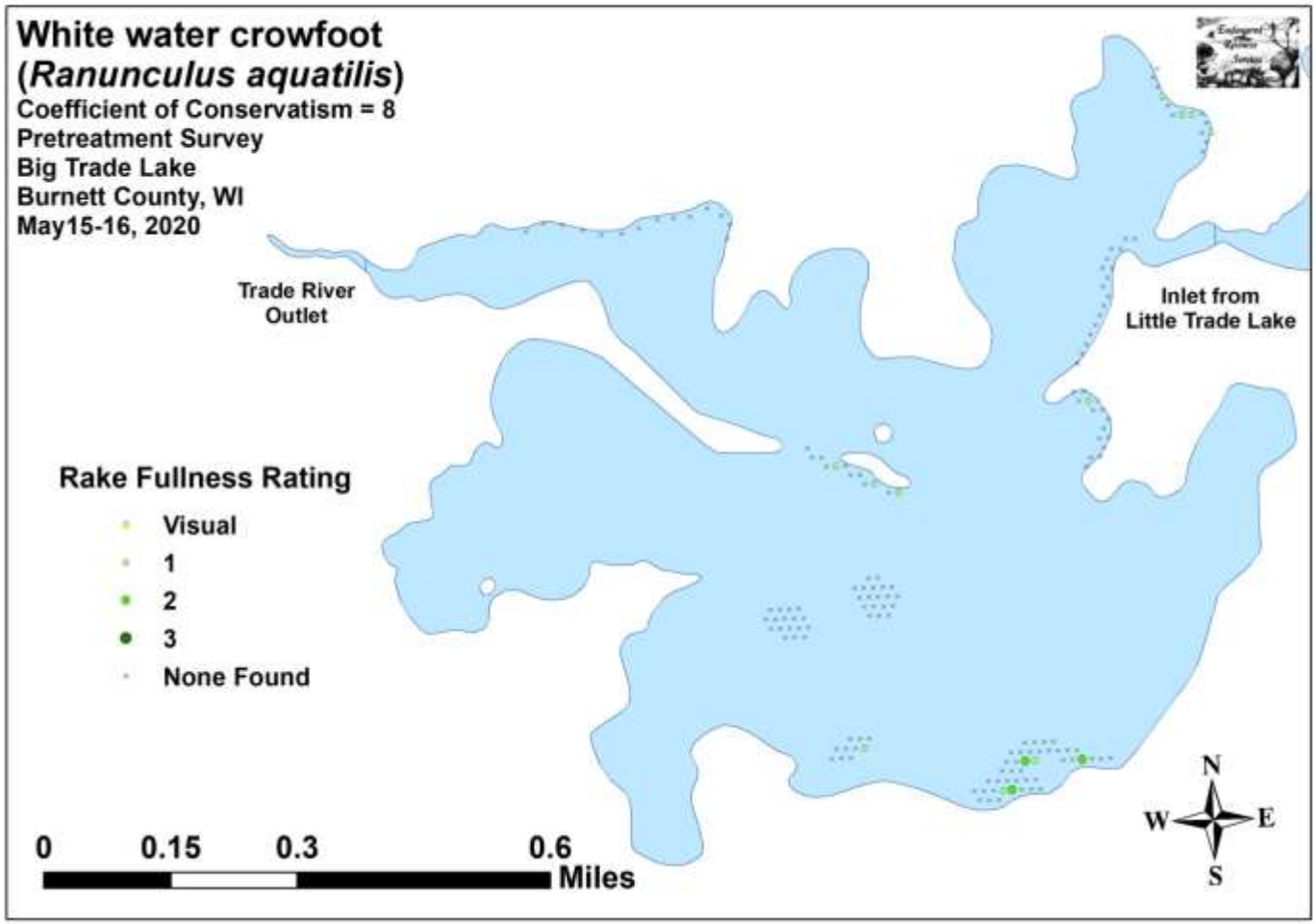

Northern water-milfoil
(Myriophyllum sibiricum)
Coefficient of Conservatism = 6
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

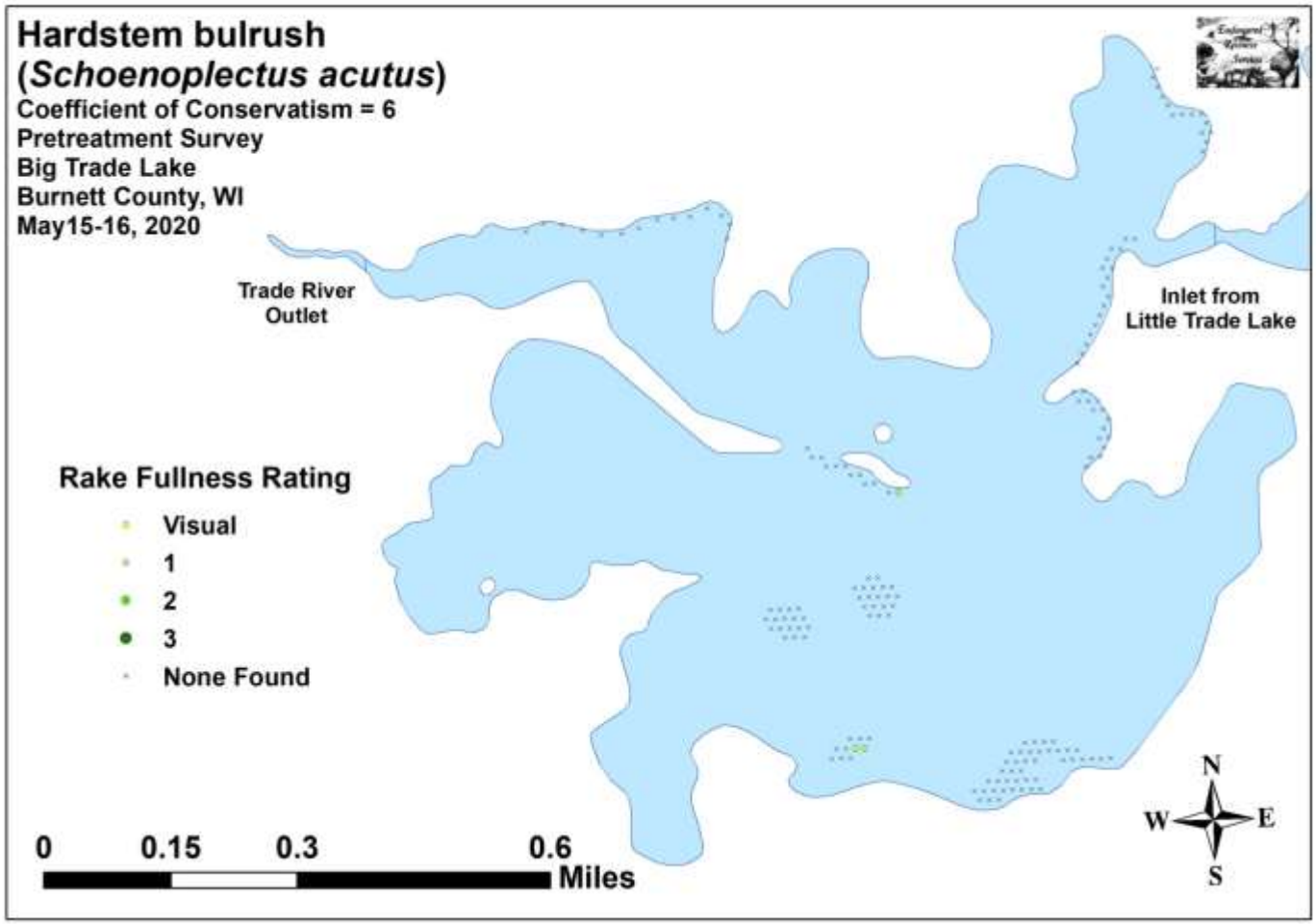

Spatterdock
(Nuphar variegata)
Coefficient of Conservatism = 6
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S


White water lily
(Nymphaea odorata)
Coefficient of Conservatism = 6
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

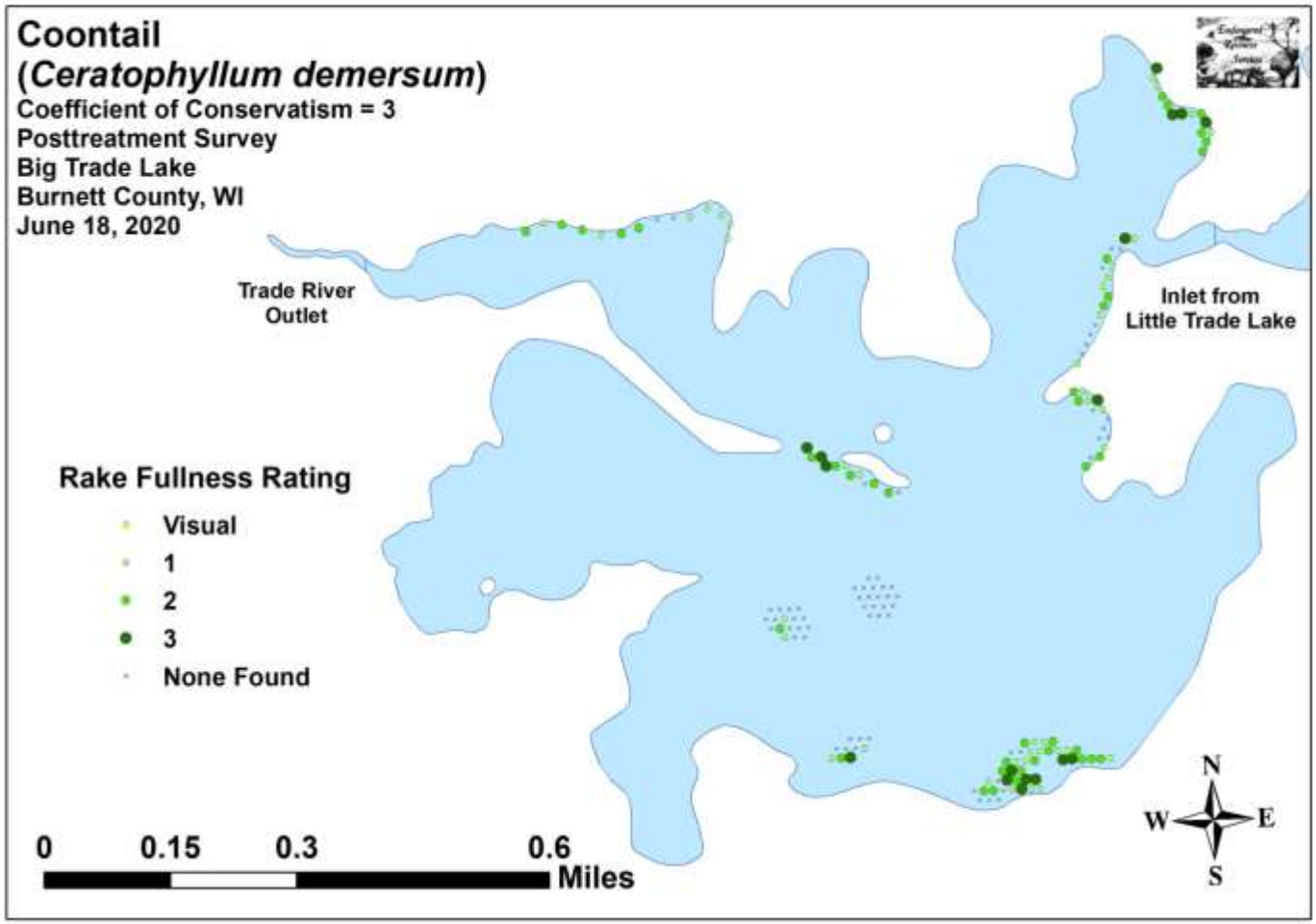

Clasping-leaf pondweed
(Potamogeton richardsonii)
Coefficient of Conservatism = 5
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

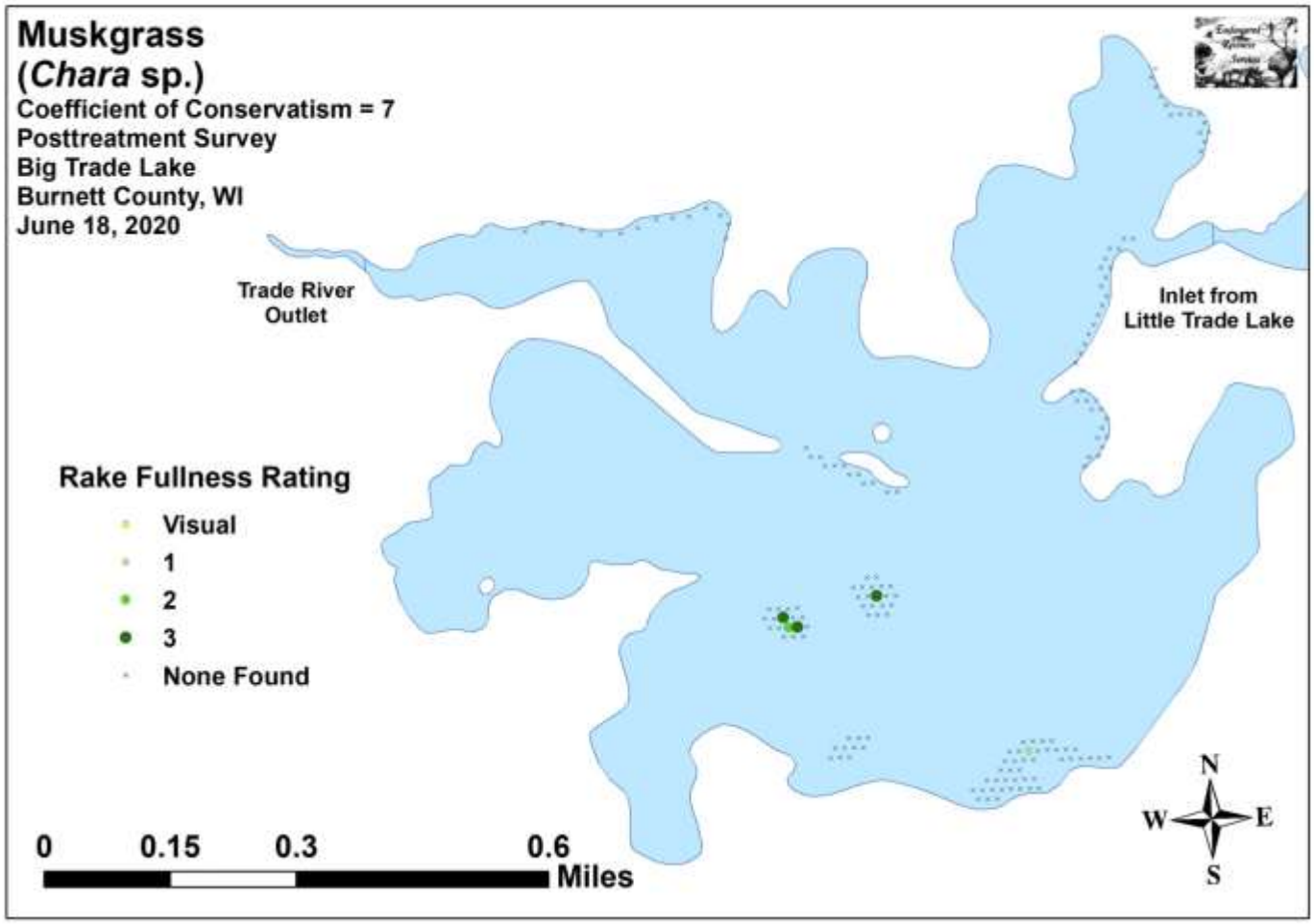

Flat-stem pondweed
(Potamogeton zosteriformis)
Coefficient of Conservatism = 6
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

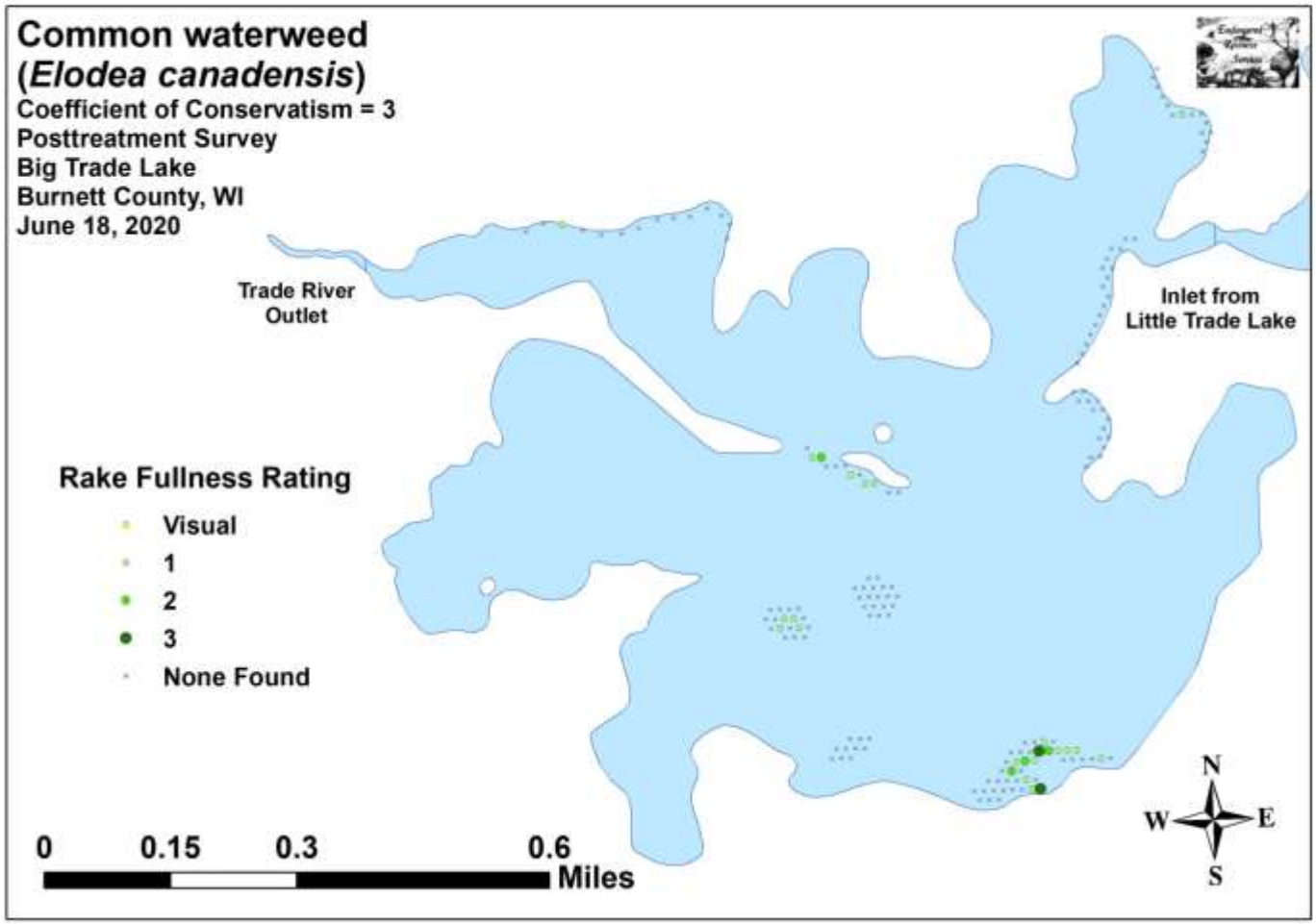

White water crowfoot
(Ranunculus aquatilis)
Coefficient of Conservatism = 8
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

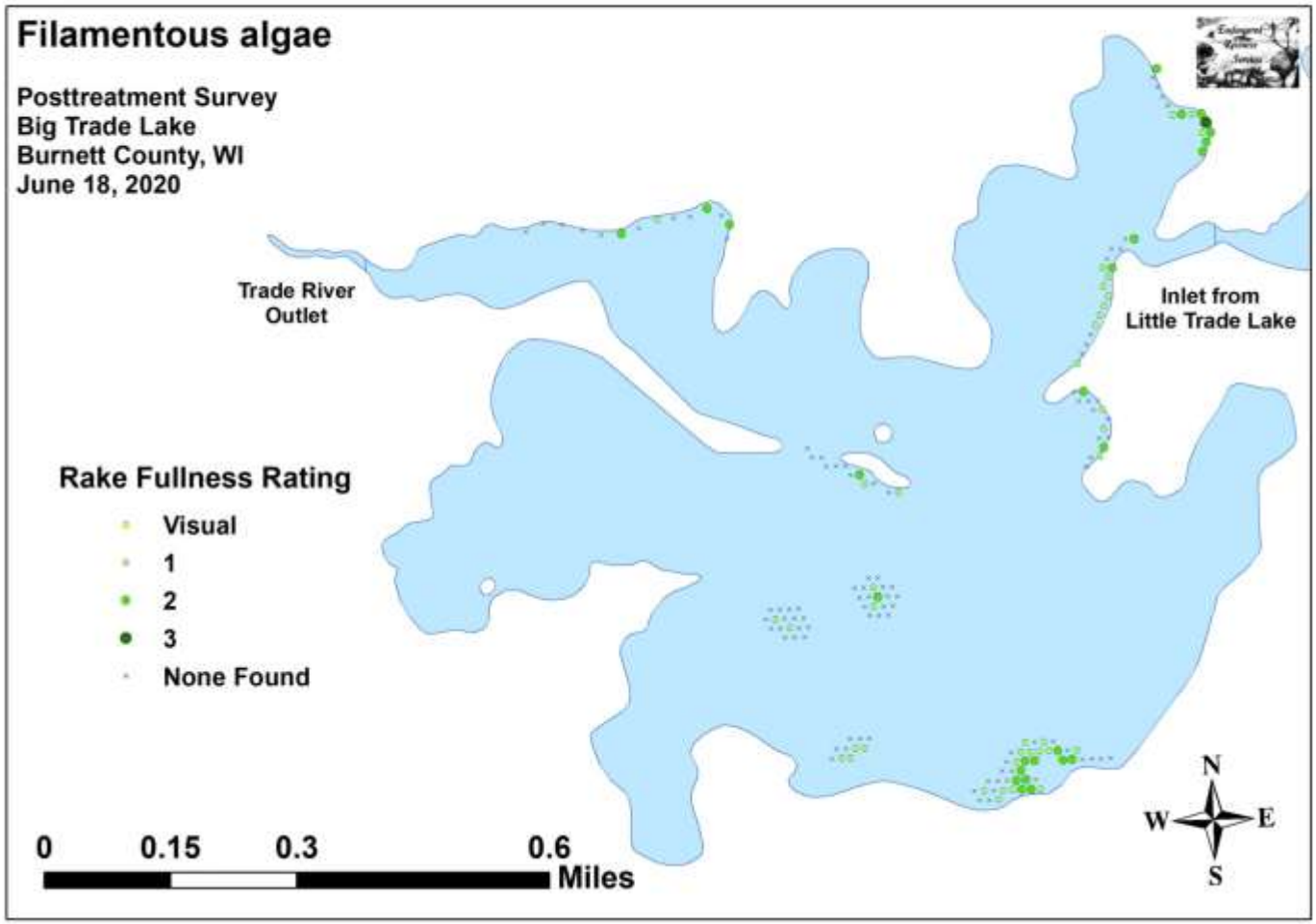

Hardstem bulrush
(Schoenoplectus acutus)
Coefficient of Conservatism = 6
Pretreatment Survey
Big Trade Lake
Burnett County, WI
May15-16, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

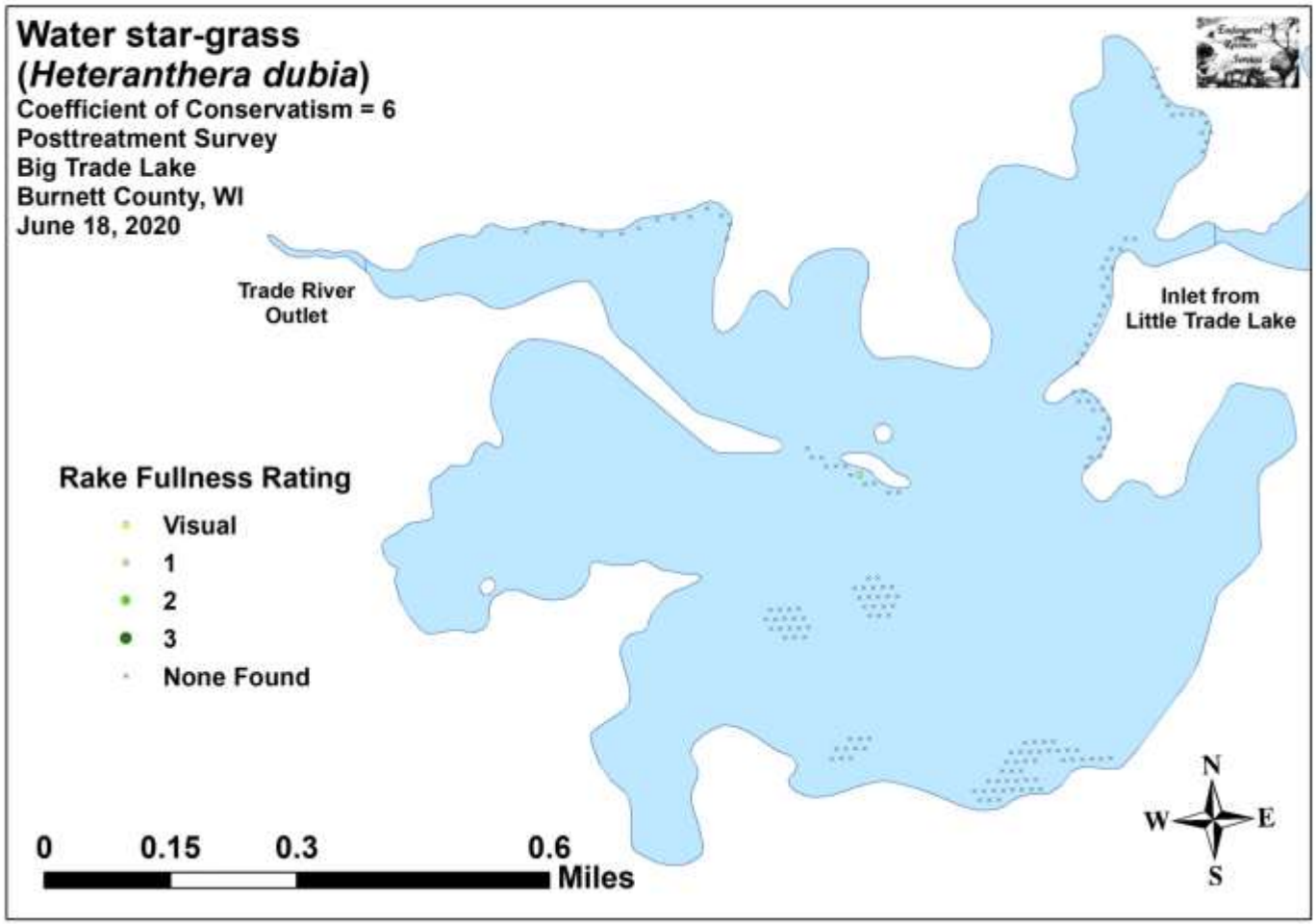
Appendix VII: Posttreatment Native Species Density and Distribution

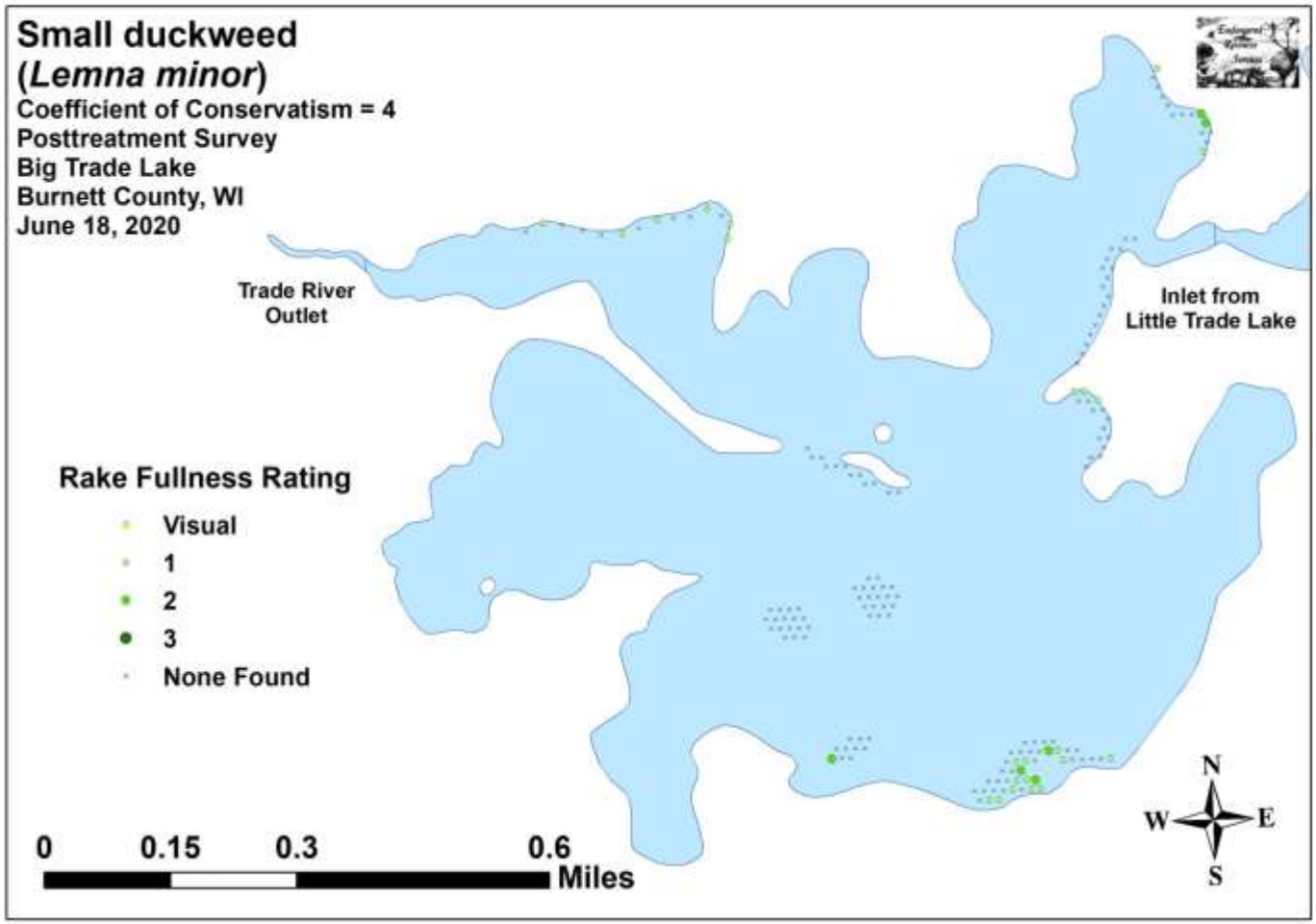

Coontail
(Ceratophyllum demersum)
Coefficient of Conservatism = 3
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S


Muskgrass
(Chara sp.)
Coefficient of Conservatism = 7
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S


Common waterweed
(Elodea canadensis)
Coefficient of Conservatism = 3
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S


Filamentous algae
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S


Water star-grass
(Heteranthera dubia)
Coefficient of Conservatism = 6
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S


Small duckweed
(Lemna minor)
Coefficient of Conservatism = 4
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
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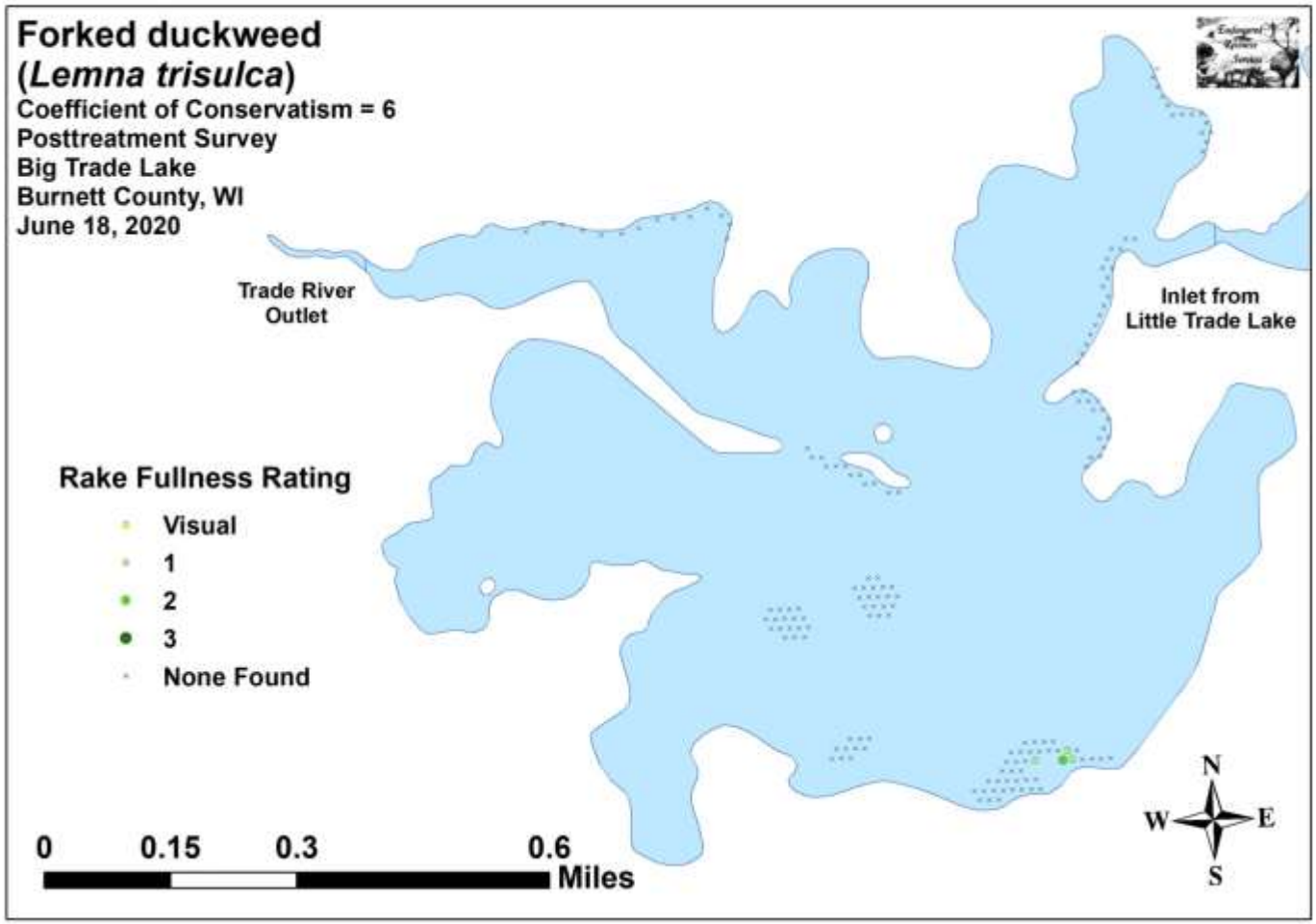
0.15
0.3
0.6
Miles
N
W
E
S


Forked duckweed
(Lemna trisulca)
Coefficient of Conservatism = 6
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
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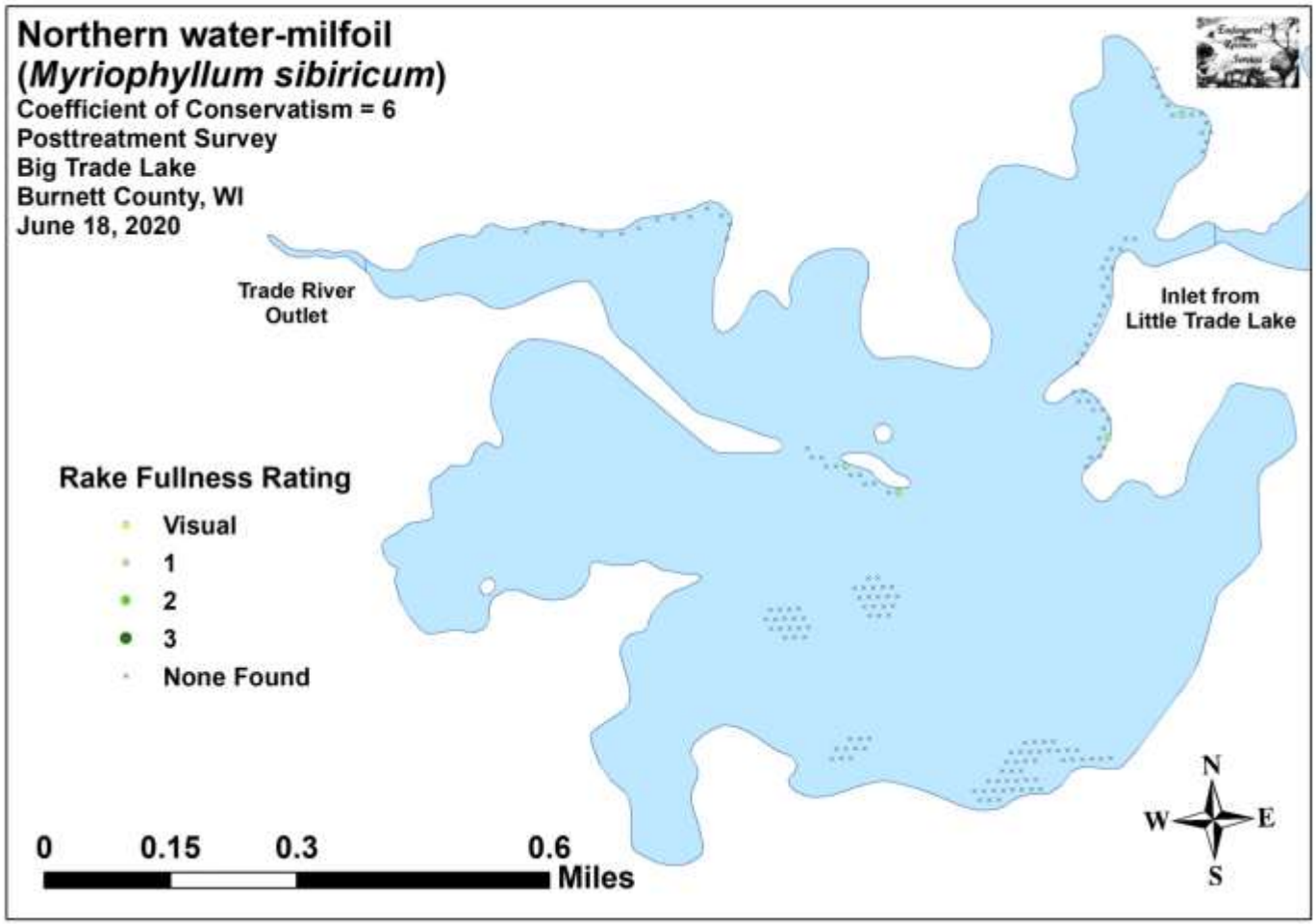
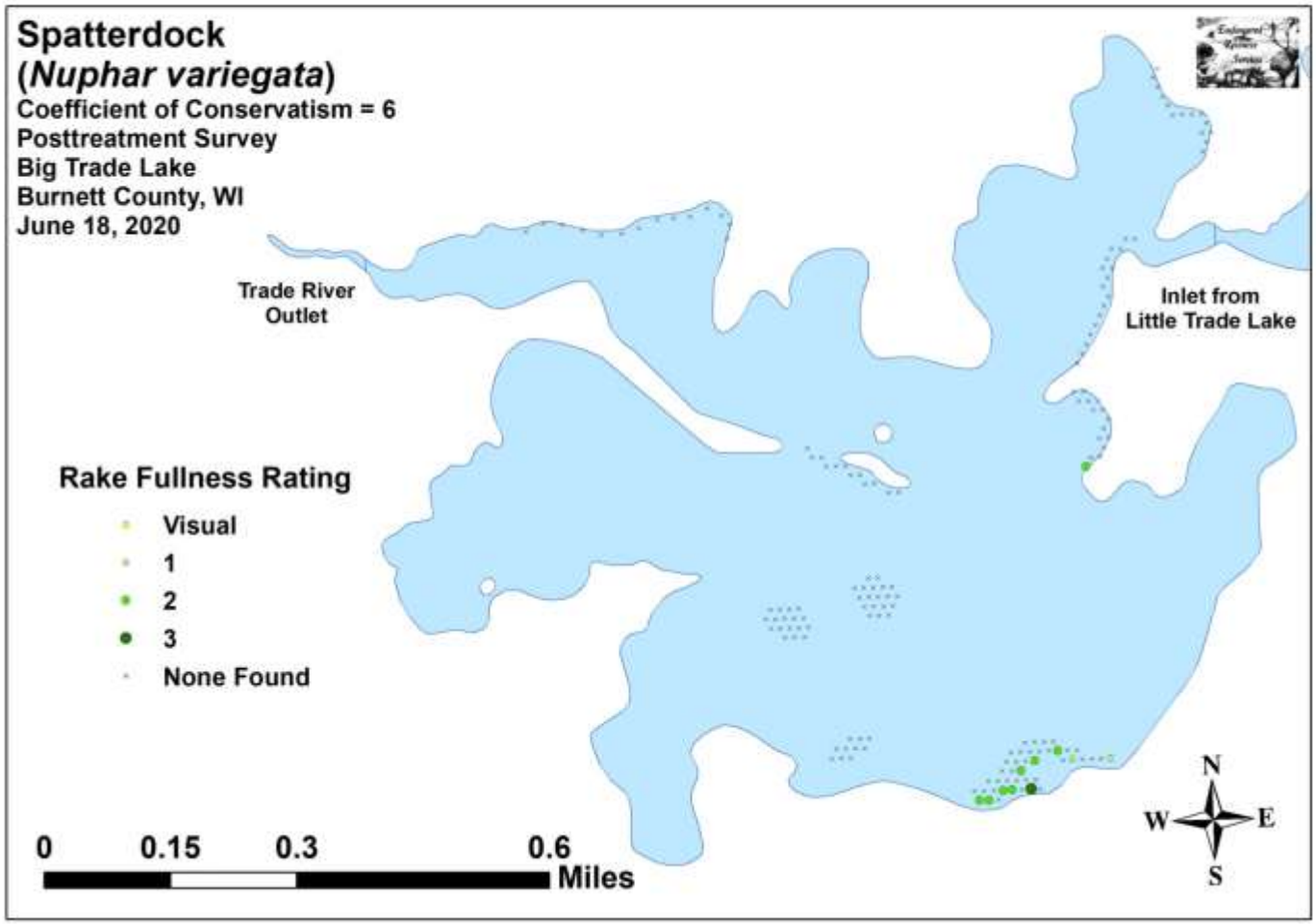
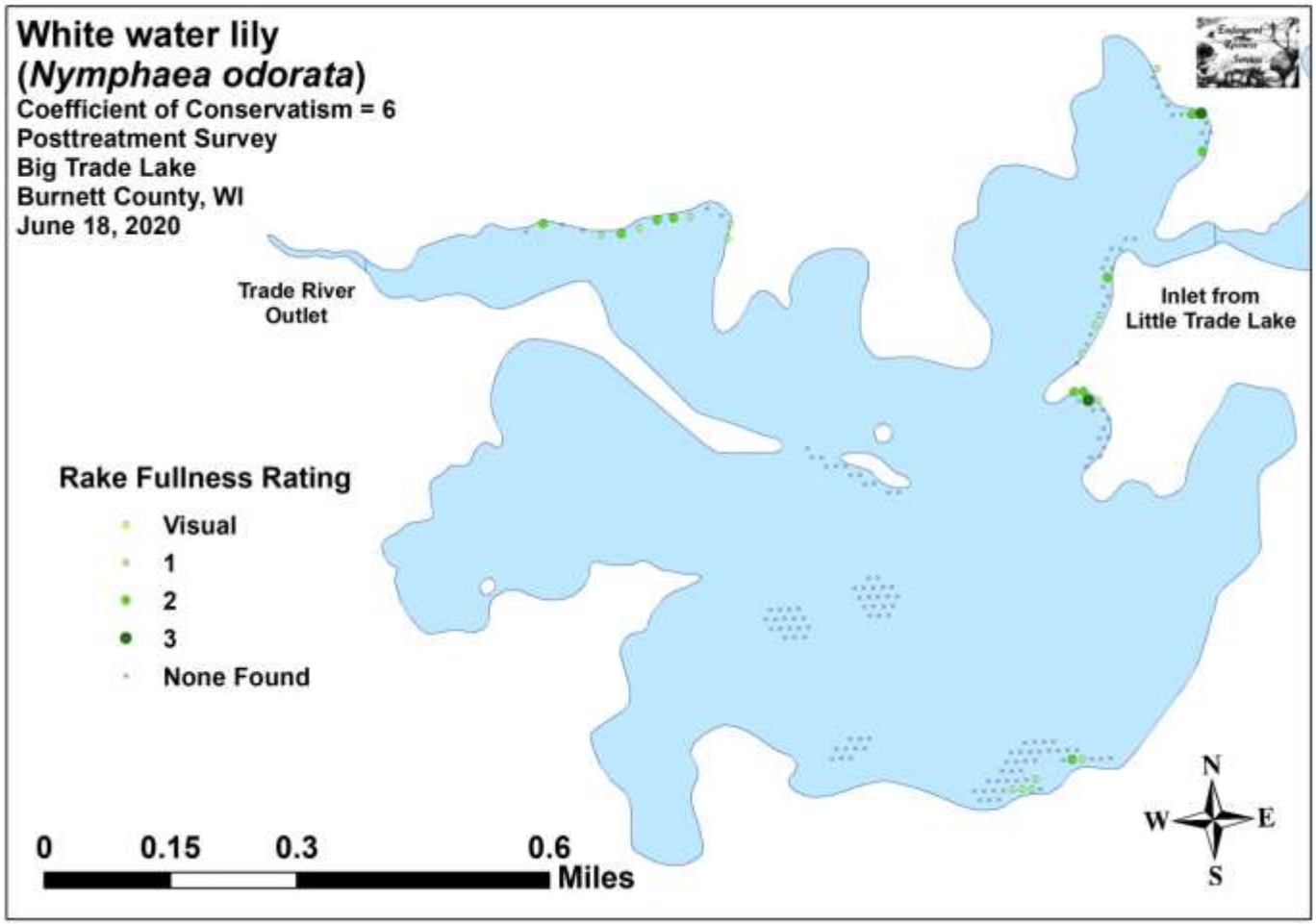
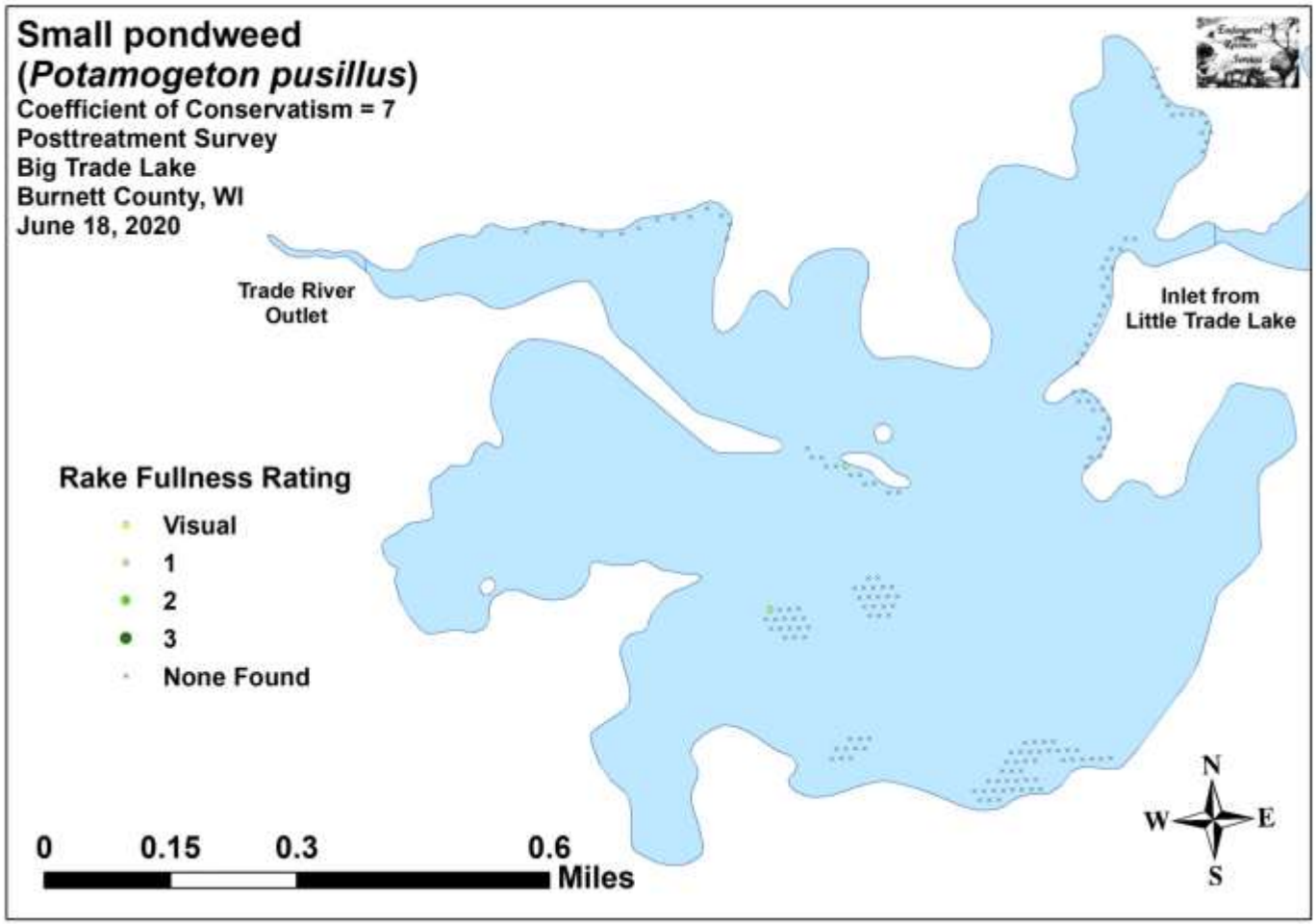
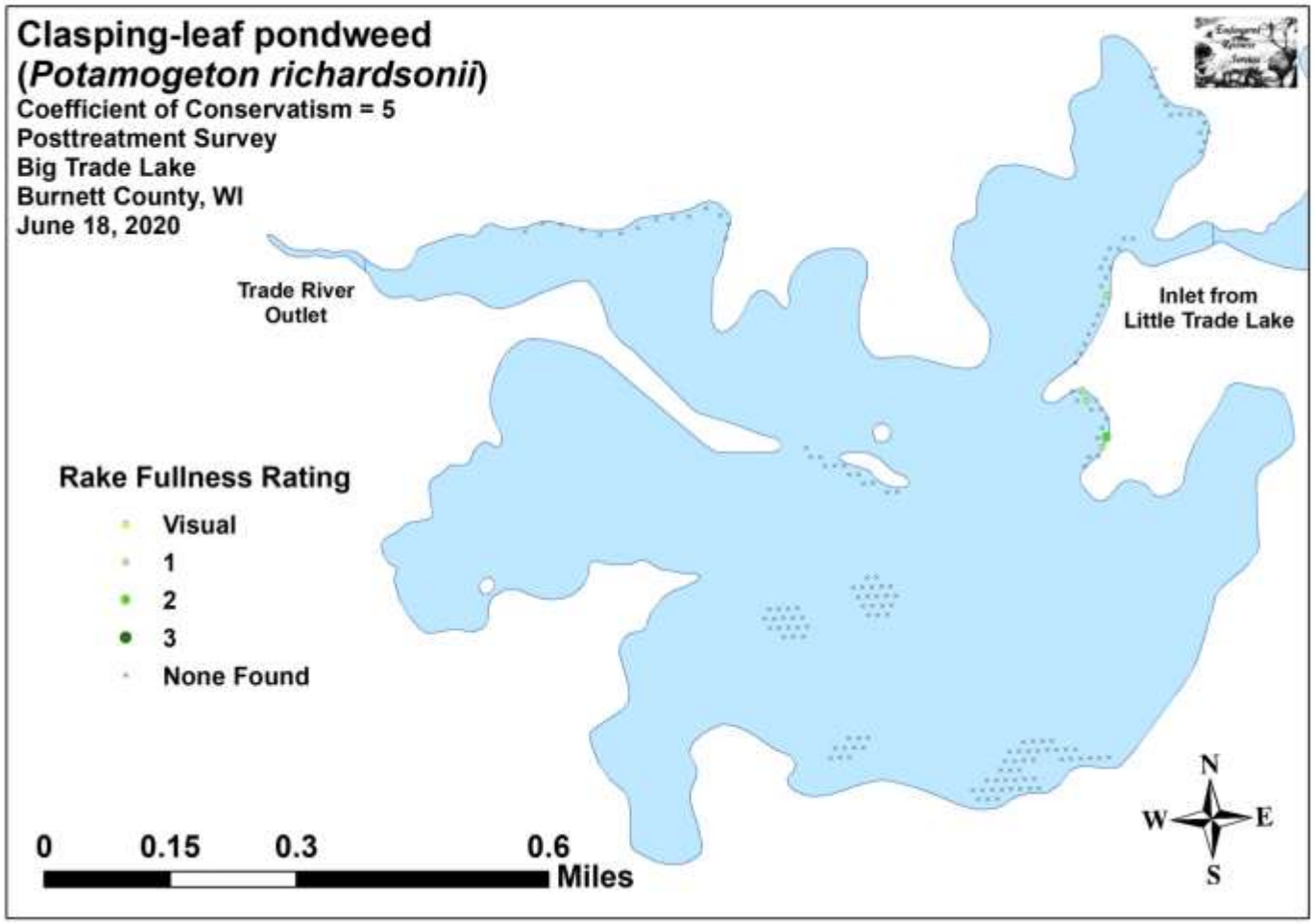
0.3
0.6
Miles
N
W
E
S

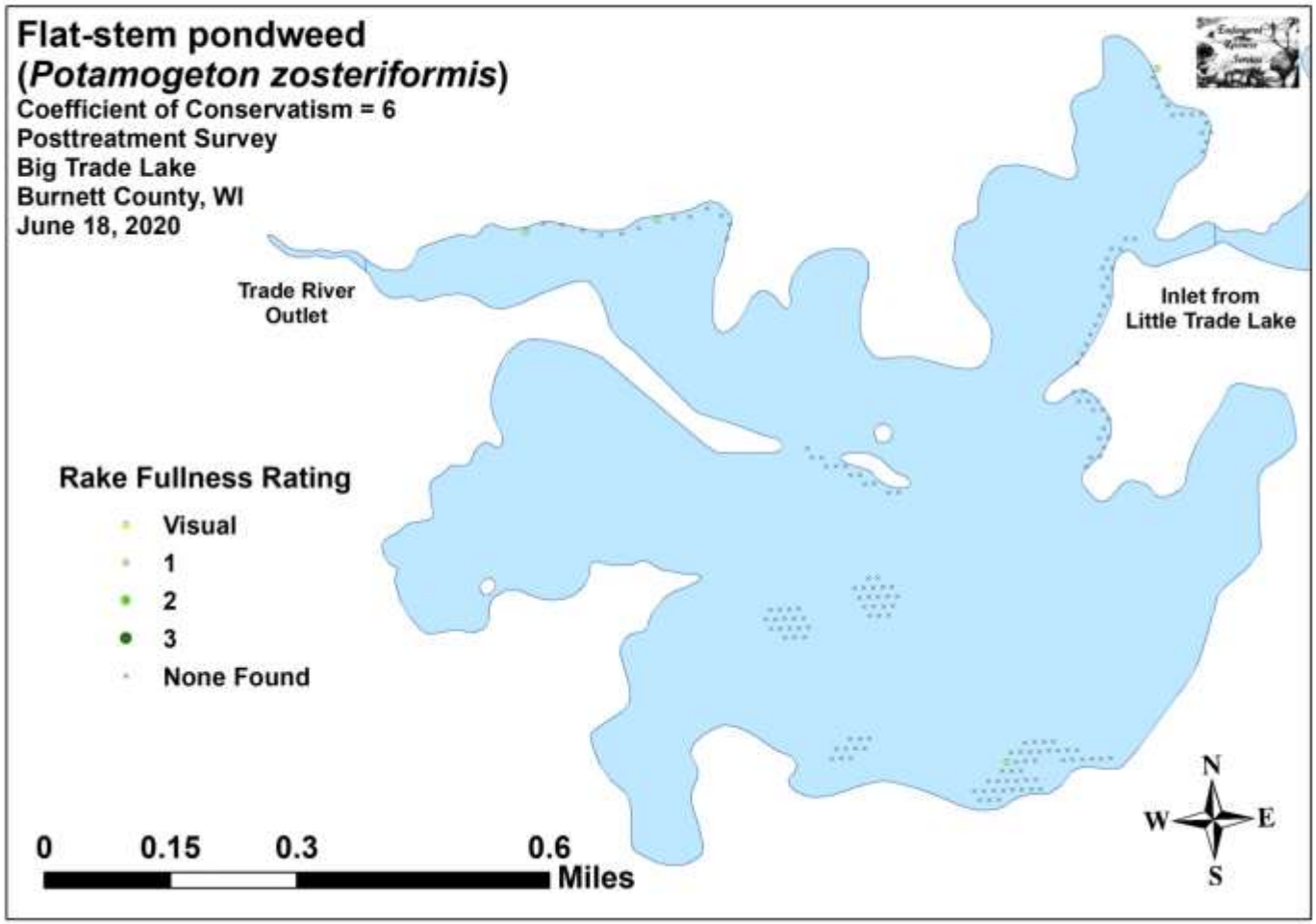

Northern water-milfoil
(Myriophyllum sibiricum)
Coefficient of Conservatism = 6
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

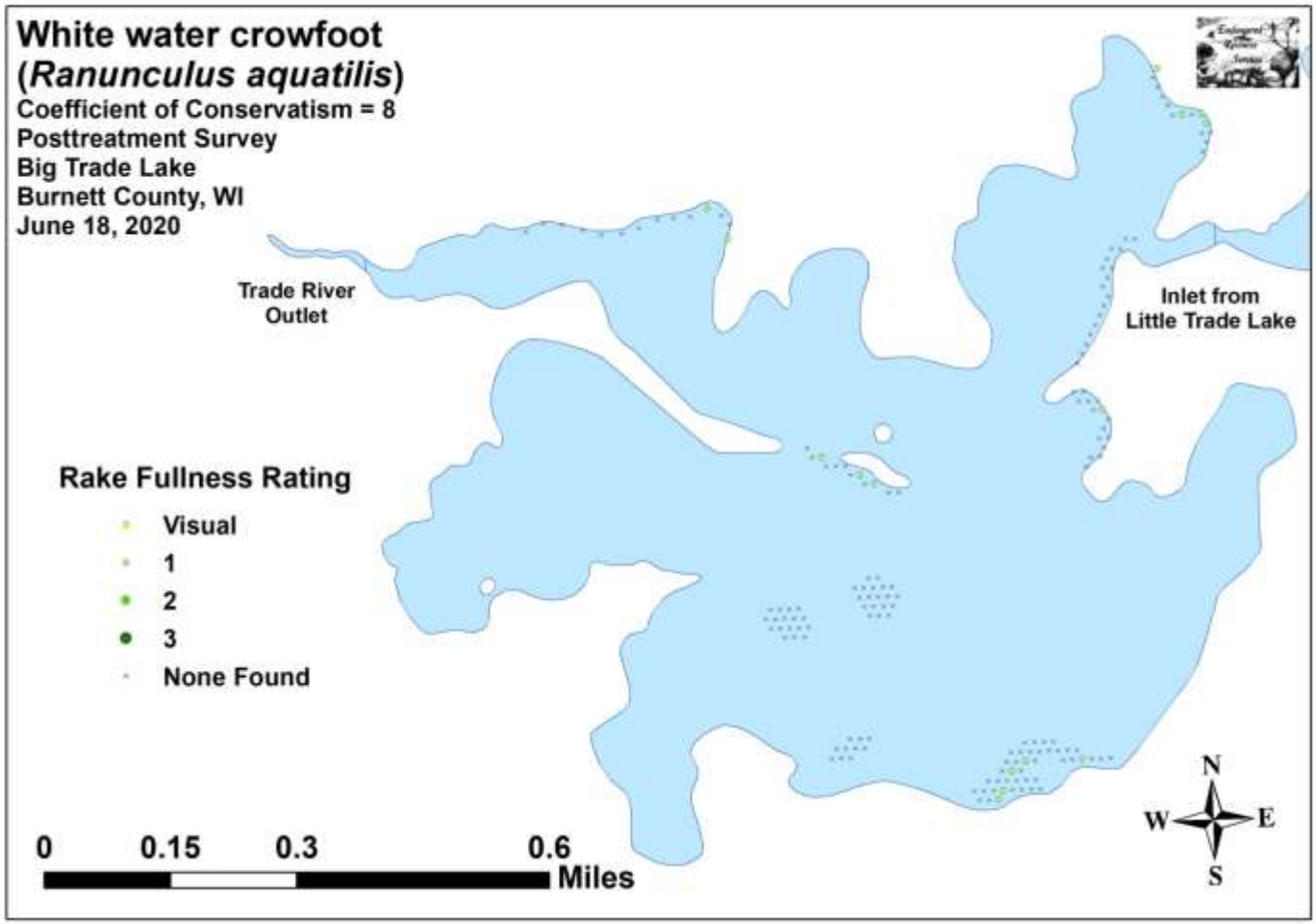

Spatterdock
(Nuphar variegata)
Coefficient of Conservatism = 6
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

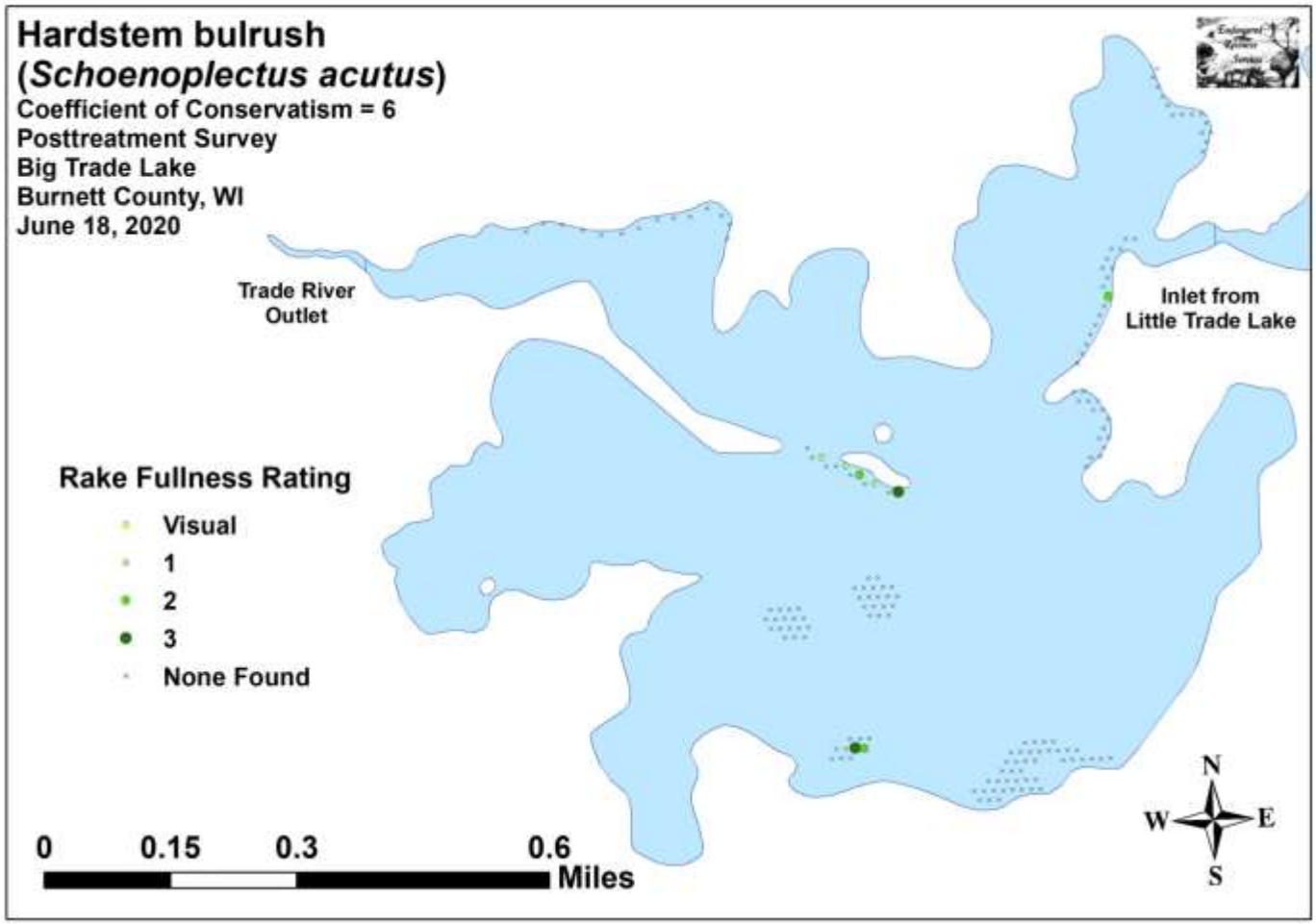

White water lily
(Nymphaea odorata)
Coefficient of Conservatism = 6
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

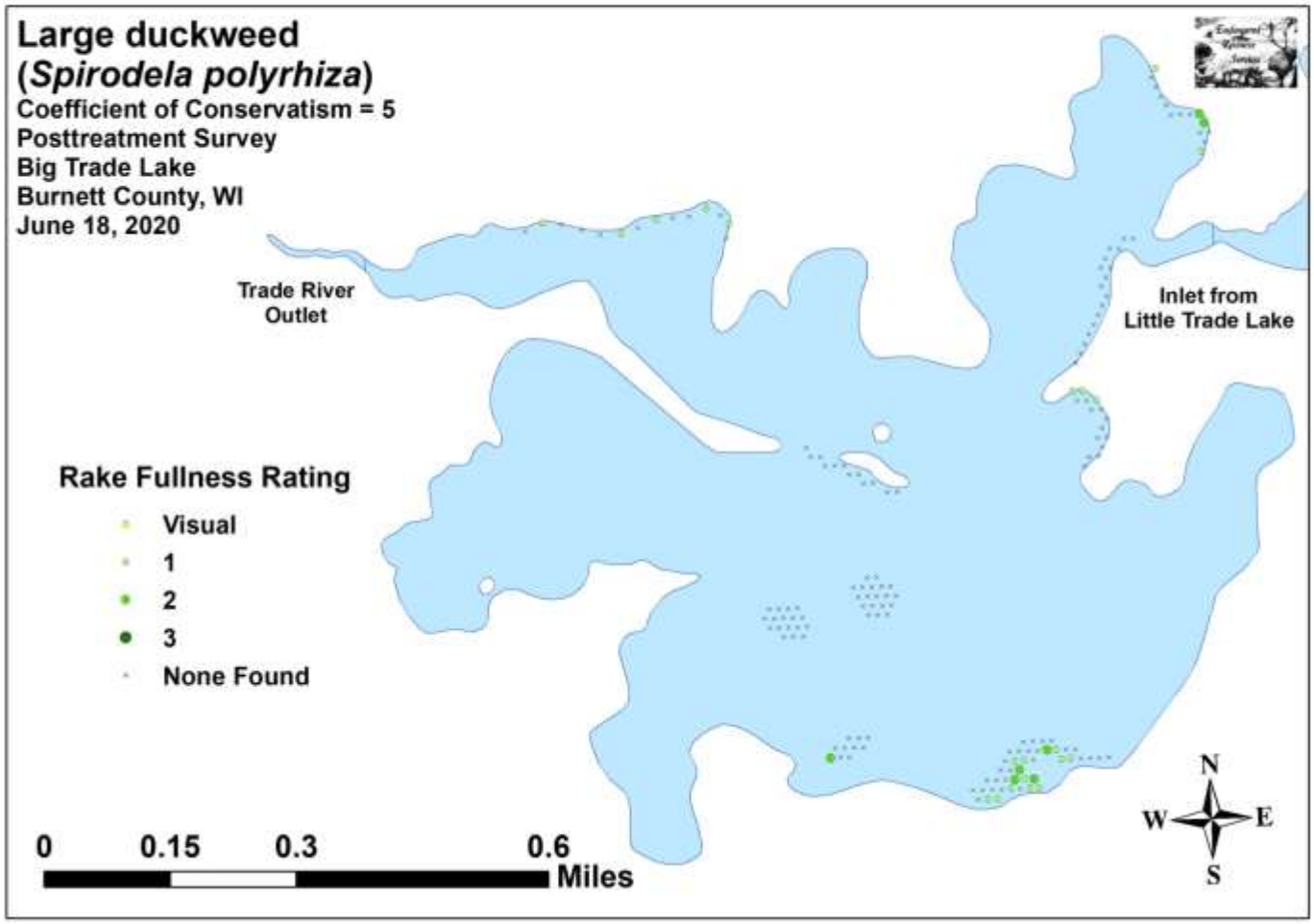

Small pondweed
(Potamogeton pusillus)
Coefficient of Conservatism = 7
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

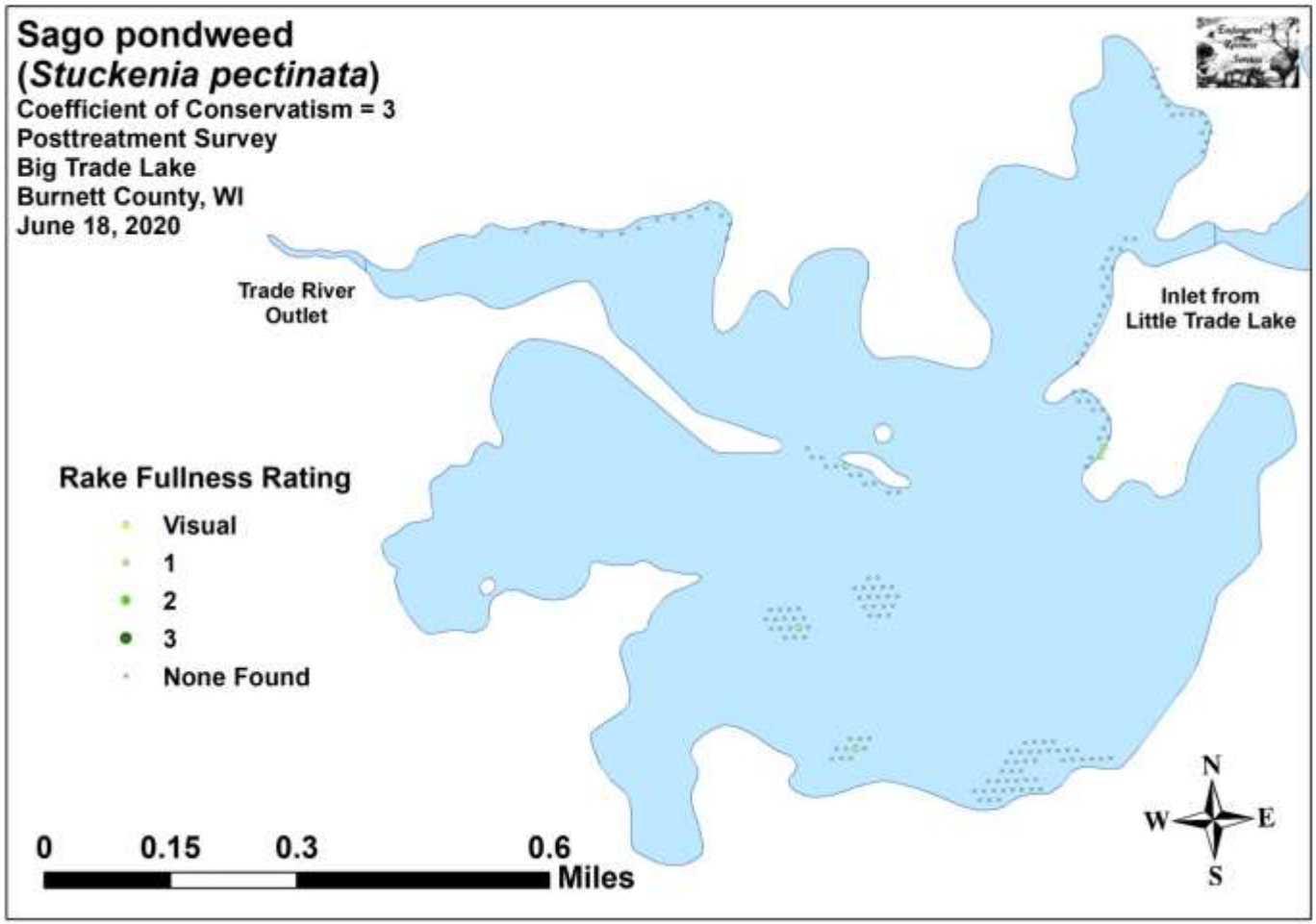

Clasping-leaf pondweed
(Potamogeton richardsonii)
Coefficient of Conservatism = 5
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

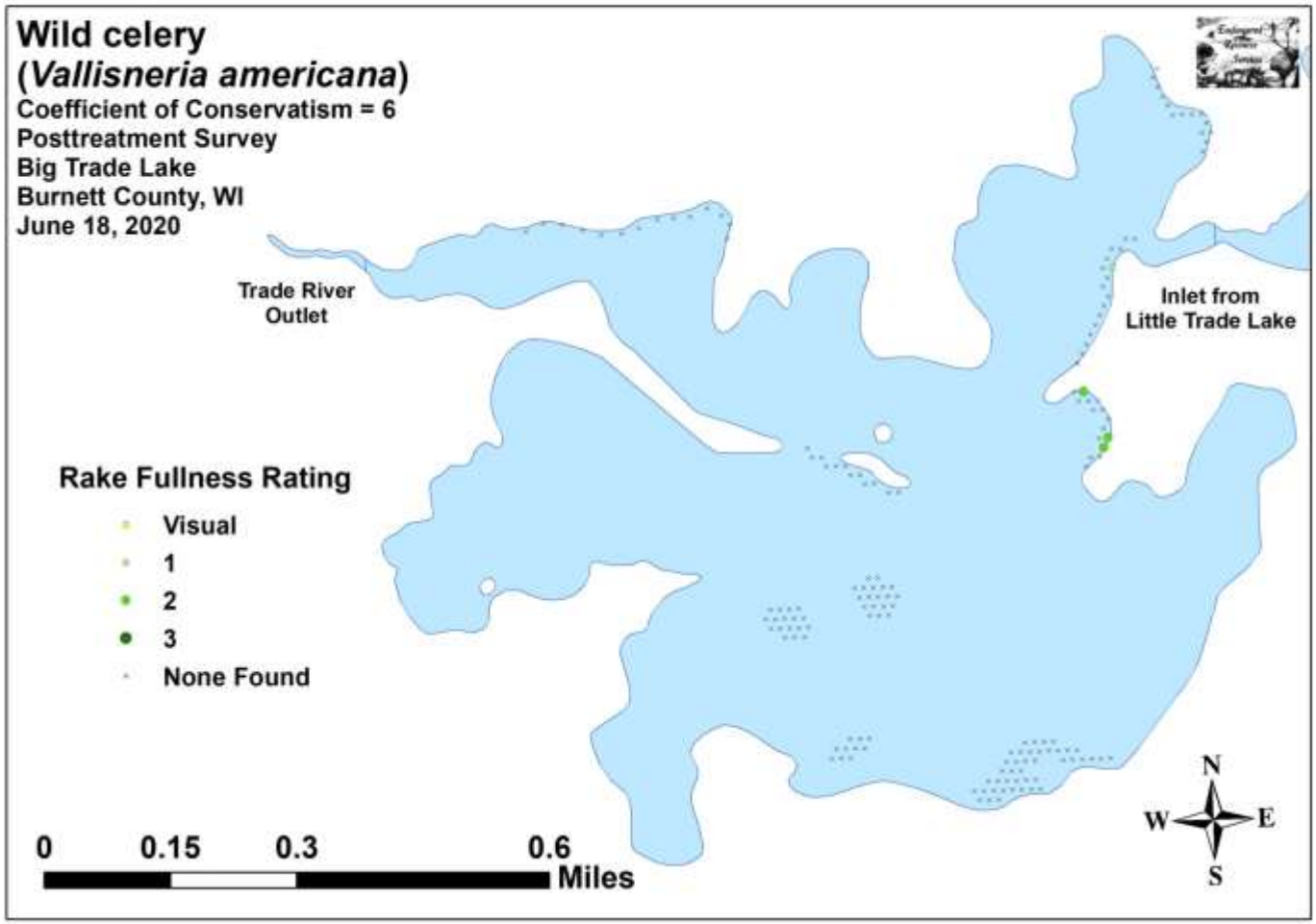

Flat-stem pondweed
(Potamogeton zosteriformis)
Coefficient of Conservatism = 6
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

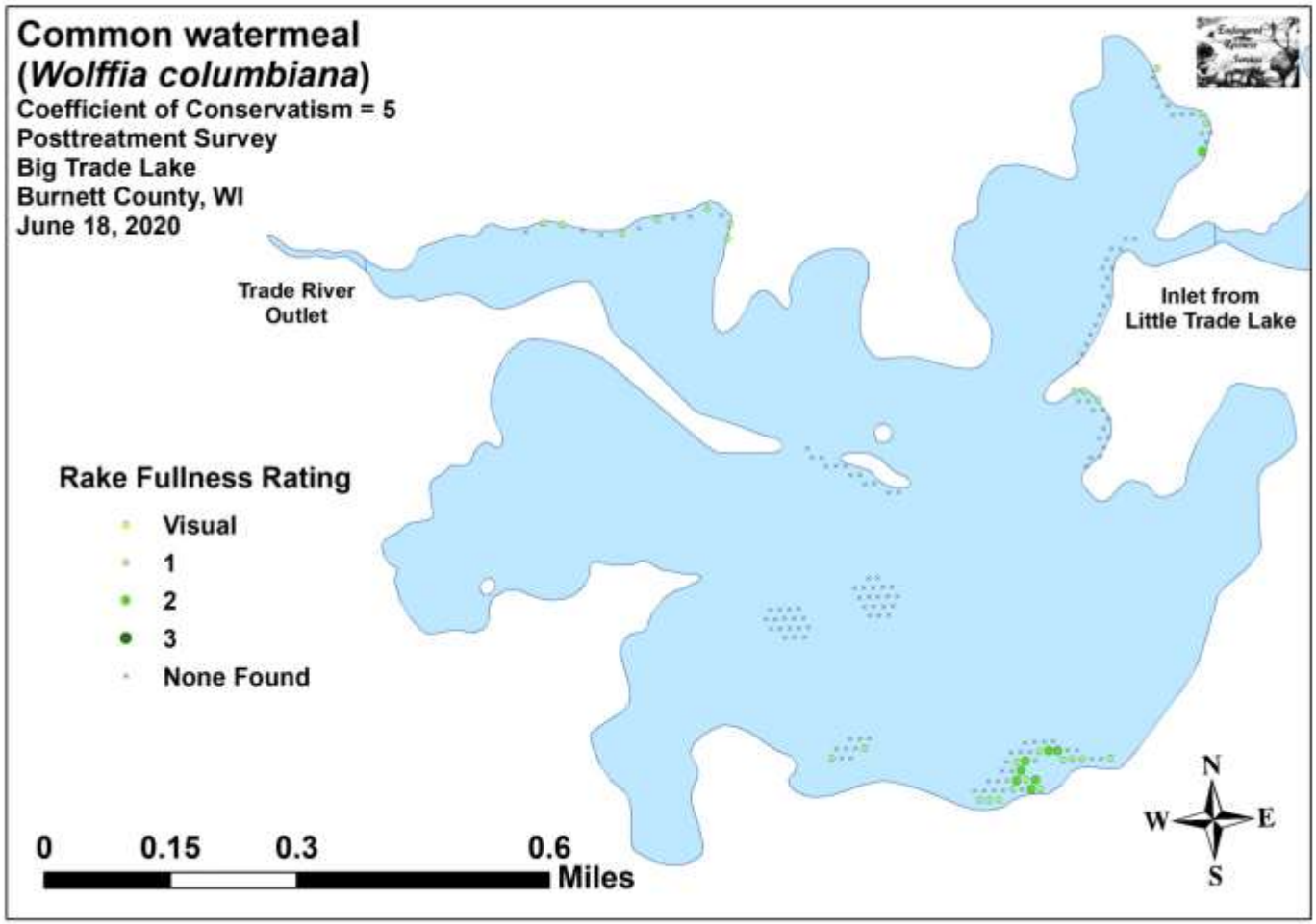

White water crowfoot
(Ranunculus aquatilis)
Coefficient of Conservatism = 8
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S


Hardstem bulrush
(Schoenoplectus acutus)
Coefficient of Conservatism = 6
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

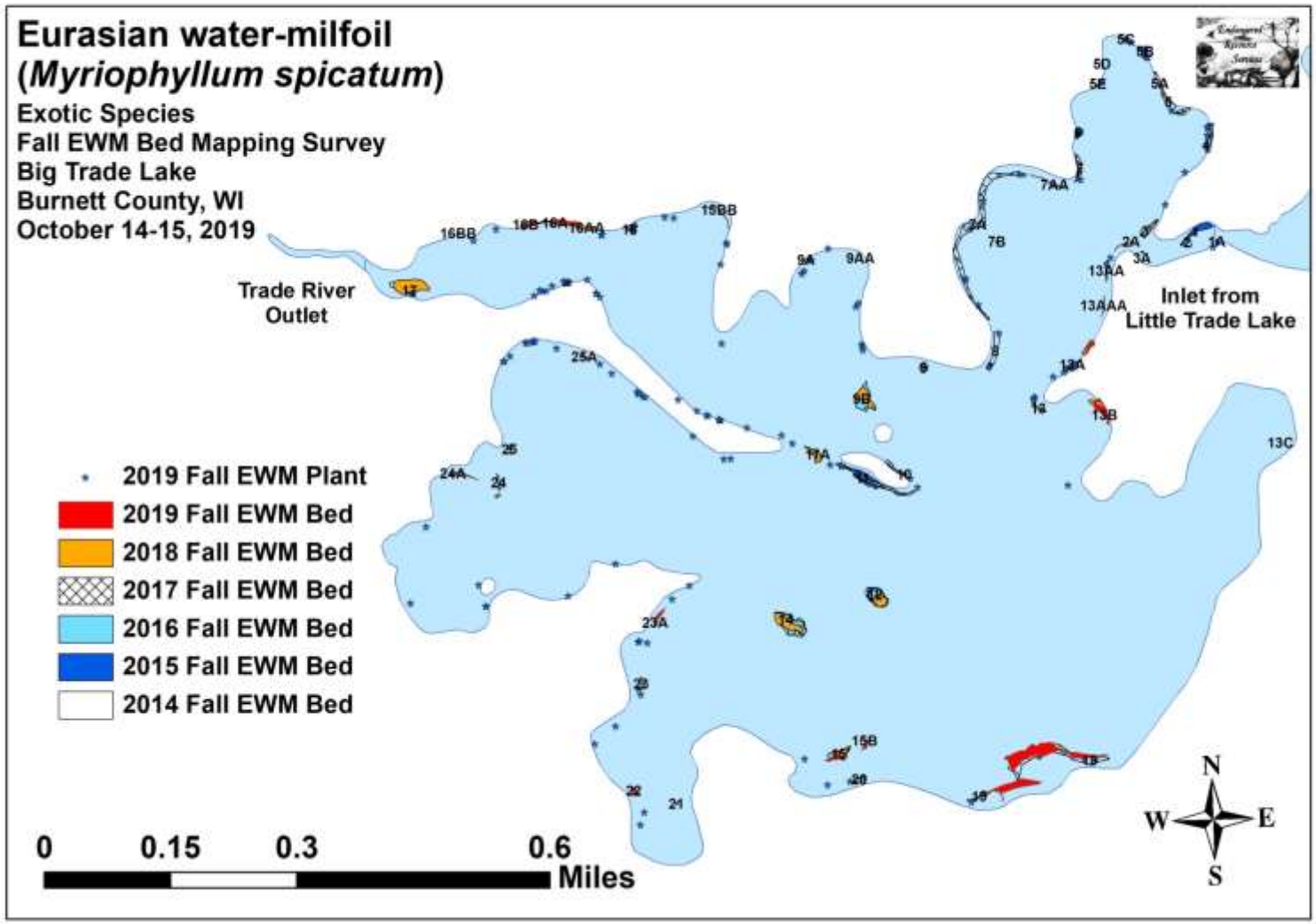

Large duckweed
(Spirodela polyrhiza)
Coefficient of Conservatism = 5
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

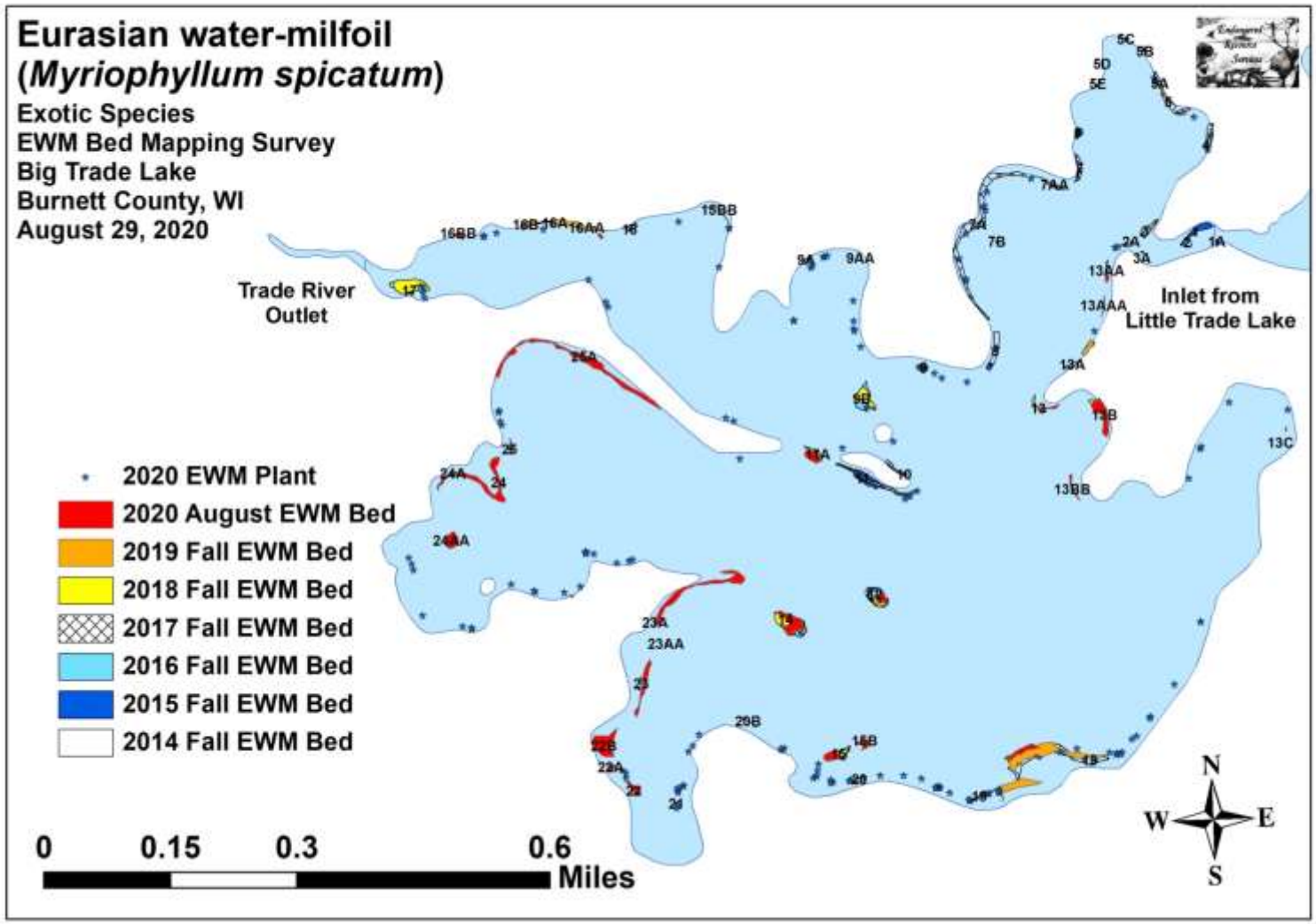

Sago pondweed
(Stuckenia pectinata)
Coefficient of Conservatism = 3
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S


Wild celery
(Vallisneria americana)
Coefficient of Conservatism = 6
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River Outlet
Inlet from Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S


Common watermeal
(Wolffia columbiana)
Coefficient of Conservatism = 5
Posttreatment Survey
Big Trade Lake
Burnett County, WI
June 18, 2020
Trade River
Outlet
Inlet from
Little Trade Lake
Rake Fullness Rating
Visual
1
2
3
None Found
0
0.15
0.3
0.6
Miles
N
W
E
S

Appendix VIII: Fall 2019 and Late Summer 2020 EWM Bed Maps


Eurasian water-milfoil
(Myriophyllum spicatum)
Exotic Species
Fall EWM Bed Mapping Survey
Big Trade Lake
Burnett County, WI
October 14-15, 2019
Trade River Outlet
Inlet from Little Trade Lake
2019 Fall EWM Plant
2019 Fall EWM Bed
2018 Fall EWM Bed
2017 Fall EWM Bed
2016 Fall EWM Bed
2015 Fall EWM Bed
2014 Fall EWM Bed
0
0.15
0.3
0.6
Miles
N
W
E
S


Eurasian water-milfoil
(Myriophyllum spicatum)
Exotic Species
EWM Bed Mapping Survey
Big Trade Lake
Burnett County, WI
August 29, 2020
Trade River Outlet
Inlet from Little Trade Lake
2020 EWM Plant
2020 August EWM Bed
2019 Fall EWM Bed
2018 Fall EWM Bed
2017 Fall EWM Bed
2016 Fall EWM Bed
2015 Fall EWM Bed
2014 Fall EWM Bed
0 0.15 0.3 0.6
Miles
N
W
E
S