Webster Lake

2018 Annual Management and Clipper Study Report

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2018 Annual Management and Clipper Study Report

Webster Lake
Webster, Massachusetts

Introduction

Webster Lake has been suffering from non-native and nuisance aquatic plant growth for at least several decades. Annual management has been performed on target areas within the three basins consistently since 2005; additionally, a specialized management study was initiated in the 2018 season in an effort to provide greater efficacy. In 2018, the Webster Lake Association contracted SŌLitude Lake Management (SŌLitude) to commence a five-year management study on variable watermilfoil (*Myriophyllum heterophyllum*) and fanwort (*Cabomba caroliniana*) through the use of Clipper herbicide**,** in addition to the continued monitoring and management of nuisance and non-native macrophyte growth in Webster Lake.

All work performed in 2018 was conducted in accordance with a License to Apply Chemicals from the MA DEP (#18240) and an Order of Conditions from the Webster Conservation Commission (#323-720).

The following report will discuss: methodology, program results, summary of findings, and management recommendations.

Program Schedule

- Early-Season Survey ..... May 22
- Received MA DEP License to Apply Chemicals ..... June 11
- Herbicide Treatments: Reward/Clipper herbicides ..... June 13
- Late-season Survey .....September 17
- Year-End Report ..... March 5

Methodology

Visual and point-intercept surveys were performed early- and late-season at Webster Lake. The visual technique was employed to document observed growth of target species within the littoral zone of the entire lake. The point-intercept surveys were used to track any changes within the Clipper Study areas, and will be duplicated for each of the five years of the Study. The pre-treatment surveys were completed approximately two weeks before expected treatment, and the post-treatment surveys occurred later season, in September.

Visual Target Species Survey

The understood littoral zone of the lake was systematically toured using a motorized boat early- and late-season, where any observed growth of variable milfoil and fanwort was documented through the use of a hand-held GPS unit. Visual technique was enhanced with on-board sonar (Lowrance or equivalent), throw-rake, or underwater camera in order to document areas of target growth too deep for observation from the surface, when applicable.

Point Intercept Macrophyte Mapping

The Point Intercept Method (PIM) of sampling macrophytes is designed to determine the extent of aquatic growth within an area of concern and can be used over multiple years and growing seasons to analyze changes in plant assemblage. A total of 79 sample sites were established across seven management areas (Figure 1); the sample sites were created by placing a georeferenced 55-m grid data layer over orthophotos of the chosen study areas in Webster Lake and placing data collection sites at each vertex. A handheld Garmin GPS unit was used to locate each data point in the field.

At each site the following parameters were collected: water depth, overall percent cover, overall biovolume, relative percent cover of each species, and any other pertinent field notes regarding the sample location (such as bottom substrate and nearby aquatic/emergent plant growth). Percentages and biovolume were determined through the use of an underwater camera, in addition to a rake toss for macrophyte identification confirmation as needed.

Macrophyte specimens not readily identifiable in the field were collected and bagged with corresponding sample site information. The collected vegetation samples were then transported to SŌLitude for further inspection and positive identification. Regionally appropriate taxonomic keys were used to identify the aquatic macrophytes to the lowest practical taxa – typically to species.

Results & Discussion

Annual Program

Early Season Survey

On May 22nd, a SŌLitude Biologist performed the pre-treatment survey, where the main objective was to document the presence of non-native species, variable watermilfoil and fanwort within the littoral zone of Webster Lake and determine potential management areas (Figure 2). Notable areas of target growth: outflow of Sucker Brook Cove, northern shoreline of Reid Smith Cove, the Sailing Association cove, the northeast cove of the South basin, Lower Cedar Cove, Bates Cove, and the shoreline west of Point Breeze/south of the three islands in the Middle basin (Figure 2).

Visually, the general native macrophyte assemblage remains relatively consistent with previous years. Non-target, native species previously identified include: various bladderwort species (*Utricularia*), stonewort (*Nitella* sp.), broad-leaf pondweeds such as large-leaf pondweed (*Potamogeton amplifolius*), thin-leaf pondweeds, spikerush (*Eleocharis* sp.), and floating-leaf species such as white and yellow waterlilies (*Nymphaea odorata* and *Nuphar variegata*).

Due to the early nature of the survey, variable watermilfoil was most common when compared to the fanwort distribution. While variable watermilfoil was found consistently throughout the three basins, fanwort was primarily found in the south basin and less so in the middle basin. A map depicting management areas for target species was created based off of the late 2017 and early 2018 surveys, considering that peak target species growth and any regrowth will occur late season. Focus (management) areas supported dense growth of target species primarily in high-use locations and developed shoreline sections (Figure 3).

Treatment Program Summary

The aquatic herbicide treatment at Webster Lake was conducted on June 13th. Treatment was conducted by two crews using an airboat and 18-foot Jon boat. Prior to treatment, the lake shoreline was posted with signs notifying the public of the treatment date and temporary water use restrictions. Notifications were also posted on the WLA's website and at the Town beach/boat launch.

All management areas (Figure 3) were systematically treated by SŌLitude's licensed applicators. Based on designated species present, areas were treated with Reward (diquat) and/or Clipper (flumioxazin). Concentrated products were diluted with lake water in the onboard mixing tank and applied subsurface using a calibrated application system and stern mounted, submersed spray boom.

Late-Season Survey

The late-season survey was performed on September 22nd by a SŌLitude Biologist.

The majority of targeted growth was greatly reduced and was lower in the water column – limiting spread via auto- and recreational-fragmentation of both target species. Variable watermilfoil remains more widespread than fanwort throughout the three basins, however fanwort appears to be most dominant in the Middle basin (Figure 4).

Control within the main high-use areas (marinas, primarily) was achieved, especially the areas applied with the combination of diquat and flumioxazin. Late-season recovery of these plants inside the treatment areas is also a potential since both diquat and flumioxazin are considered contact herbicides. Regarding Figure 4, the presence of both target species appears widespread; however, the biomass/height of the plants within the water column was minimal, where much of the growth was low or only a few inches tall. The abundance of growth within the treatment areas was also less than that outside the treatment zones. Any areas with substantial mature (flowering) target growth were observed outside of the treatment areas.

Interim Clipper Study Observations

The pre- and post-treatment surveys were completed by a SŌLitude Biologist on May 22nd and September 17th, 2018 respectively. Raw data tables can be found following the report. Considering the early nature in the five-year study period, comparison between the pre- and post-surveys with the same year is premature; general observations and initial trends can be made between the two surveys, however direct data comparison would likely be erroneous to the overall study as it is more meaningful to compare seasonal survey data from year to year.

Average percent cover for each species across Sections A-F and the Control area (Section X) are attached (Table 1, Figure 1). The Total Percent Cover is the average of the total percent coverage from each point in the relative section, not the average for each species in the row. The plant assemblage for each Section varies, where not all plants are present within all Sections. Overall, the Total Percent Cover appears to decrease from early- to late-season in the treatment areas, whereas the control plot increases (Table 1). Understandably, any management initially decreases overall percent cover, especially when target species growth is reduced.

Table 1. Species Average Percent Cover in Webster Lake Clipper Study

Common Name	Scientific Name	A		B		C		D		E		F		Control	
		Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Total Average Percent Cover		**43**	**31**	**72**	**39**	**22**	**14**	**77**	**19**	**23**	**22**	**31**	**29**	**20**	**50**
Watershield (Bs)	*Brasenia schreberi*	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Fanwort (Cc)	*Cabomba caroliniana*	0	0	17	7	16	0	10	5	10	11	23	7	5	50
Water Starwort (Cal)	*Callitriche sp.*	5	0	33	0	7	0	18	0	0	0	33	0	0	0
Spikerush (Ea)	*Eleocharis sp.*	7	6	0	9	5	6	0	0	0	0	0	35	1	0
Pipewort (Eq)	*Eriocaulon sp.*	0	0	0	0	0	0	0	0	0	0	0	20	6	10
Aquatic Moss (F)	*Fontinalis s.*	0	5	1	40	0	0	0	0	0	0	5	5	0	0
Variable Watermilfoil (Mh)	*Myriophyllum heterophyllum*	30	5	38	16	17	14	55	10	50	14	10	11	11	11
Low Watermilfoil (Mhum)	*Myriophyllum humile*	0	0	0	0	0	0	5	0	0	0	0	0	0	0
Whorled Watermilfoil (Mv)	*Myriophyllum verticillatum*	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Slender Naiad (Nf)	*Najas flexilis*	0	0	0	0	0	1	0	0	0	0	0	0	0	5
Southern Naiad (Ng)	*Najas guadalupensis*	0	0	0	0	3	0	0	0	1	0	0	0	22	39
Stonewort (Ni)	*Nitella sp.*	60	1	40	0	19	0	0	5	0	0	28	0	10	43
Yellow Waterlily (YL)	*Nuphar variegata*	5	0	0	0	5	0	0	5	0	5	1	5	0	0
White Waterlily (WL)	*Nymphaea ordorata*	0	10	5	15	10	7	0	8	25	8	10	43	0	10
Large-leaf Pondweed (Pa)	*Potamogeton amplifolius*	5	0	0	0	8	0	0	0	0	0	0	0	5	10
Alga-like Pondweed (Pcon)	*Potamogeton confervoides*	0	10	0	0	0	0	0	0	0	0	0	0	0	0
Ribbonleaf Pondweed (Pe)	*Potamogeton epihydrus*	0	0	0	0	0	0	35	0	0	0	0	0	0	0
Leafy Pondweed (Pf)	*Potamogeton foliosus*	0	0	10	0	0	0	5	0	0	0	15	0	0	4
Small Pondweed (Ppus)	*Potamogeton pusillus*	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Robbin's Pondweed (Pr)	*Potamogeton robbinsii*	0	0	0	0	0	5	0	0	8	0	0	5	0	5
Arrowhead Rosette (Sagg)	*Sagittaria sp.*	0	0	0	0	5	5	5	0	0	0	1	0	0	0
Creeping Bladderwort (Ug)	*Utricularia gibba*	0	15	0	3	1	8	0	1	10	3	0	5	0	5
Purple Bladderwort (Up)	*Utricularia purpurea*	5	7	15	8	7	0	1	0	5	40	8	8	0	7
Little Floating Bladderwort (Ur)	*Utricularia radiata*	5	7	1	5	1	5	5	0	0	0	1	0	3	8
Common Bladderwort (Uv)	*Utricularia vulgaris*	10	13	0	0	0	0	0	0	0	0	0	0	0	0
Tapegrass (V)	*Vallisneria sp.*	0	5	0	0	0	12	0	0	0	0	0	0	0	11
Filamentous Algae (Fa)	*Various sp.*	0	0	0	5	0	32	0	15	0	0	0	5	10	8

Initial results show an average reduction of fanwort and variable milfoil in each management section, when present. All sections supported growth of variable watermilfoil and all but Section A supported growth of fanwort. However, the lack of fanwort presence in Section A does not negate the potential growth of fanwort in other areas of that section. The Control section was the only area to show an increase or preservation of target species.

Overall, richness varied within the study sections and variable watermilfoil was among the most dominant plants (Table 2). Overall richness represents the number of species observed within an area, and can be averaged across the number of data point locations within the area.

Table 2. 2018 Clipper Study Sections Overall Richness with Dominant Species

Section	May 22nd			September 17th		
	Overall Richness	Average Richness	Dominant (Top 2)	Overall Richness	Average Richness	Dominant (Top 2)
A	9	3	Stonewort Variable watermilfoil	12	4	Creeping bladderwort Common bladderwort
B	9	3	Stonewort Variable watermilfoil	10	4	Aquatic moss Variable watermilfoil
C	13	2	Stonewort Variable watermilfoil	10	1	Filamentous algae Variable watermilfoil
D	9	3	Variable watermilfoil Ribbon-leaf Pondweed	7	2	Filamentous algae Variable watermilfoil
E	7	1	Variable watermilfoil White waterlily	6	2	Purple bladderwort Variable watermilfoil
F	11	2	Water starwort Stonewort	11	2	White waterlily Water starwort
Control	9	2	Southern naiad Variable watermilfoil	16	4	Fanwort Stonewort

A larger number of species may be documented in each section when compared to the average richness; not all species are found at each sample location. For example, 13 species were documented in Section C, but only an average of two species were found at each point. It is likely that stonewort and variable watermilfoil are often those two species, considering their dominance.

The Control section experienced dominance of Fanwort in the post-treatment survey, whereas all other sections supporting fanwort growth experienced an initial average decrease from pre- to post-treatment. Variable watermilfoil also trended less dominant from pre- to post-treatment surveys.

The future surveys planned as part of the Clipper Study will provide additional data and trends indicating the efficacy of management.

Summary of Findings

- During the 2018 season, the littoral zone of Webster Lake was systematically surveyed for growth of variable watermilfoil and fanwort.
- 2018 was the first of a 5-year monitoring/management program studying the efficacy of consecutive flumioxazin applications to control variable watermilfoil and fanwort.

- Management outside of the flumioxazin study areas was also performed, using diquat and/or flumioxazin.
- Target species growth was generally controlled within the management areas, where the combination of diquat and flumioxazin appeared to uphold the most short-term control. Some regrowth was present, but at visually low abundance and biomass.
- Conclusions from the flumioxazin study are preliminary; however, initial trends show an average reduction of both target species. Data regarding non-target species is insufficient to determine any trends.

Management Recommendations

Management Program

Based on the extent of non-native vegetation and regrowth in managed areas, we recommend that the Webster Lake Association budget for continued maintenance spot-treatments of invasive fanwort and variable watermilfoil growth, as well as for continuing the Clipper treatment study. Reward herbicide is still the recommended herbicide for variable watermilfoil control at this time, but a new herbicide, ProcellaCOR is pending registration at the State level and is likely to be a better option for future milfoil management. ProcellaCOR is a fast-acting, systemic herbicide that will provide multiple years of milfoil control, although at a significantly higher cost that diquat. Clipper and/or Sonar herbicide is recommended for continued spot-treatment of fanwort.

As with previous years, there continue to be state restrictions on the use of Clipper that only allow for a maximum of 25% of the waterbody to be treated during any year and requires rotating treatment areas within a four-year period. It should be manageable to rotate use of Clipper and Sonar herbicides for fanwort control under the current regulations and the 4-year cycle will allow for retreatment of areas previously treated in 2015 in the coming year. Through the current Clipper Study, MassDEPhas lifted these regulations for the study areas.

Ongoing monitoring (vegetation, water quality, sediment sampling, algae, etc.) is the life-blood of successful lake management and should therefore be a part of any responsible long-term management plan. Annual surveys for target species distribution should be maintained, in addition to the continuation of monitoring for the Clipper Study management areas.

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We hope you find this information helpful in making your pond management decisions. If you have any questions or need anything further, please contact our office.

Appendix A: Macrophyte Distribution Maps and Survey Data

Figure 3. 2018 Treatment Areas

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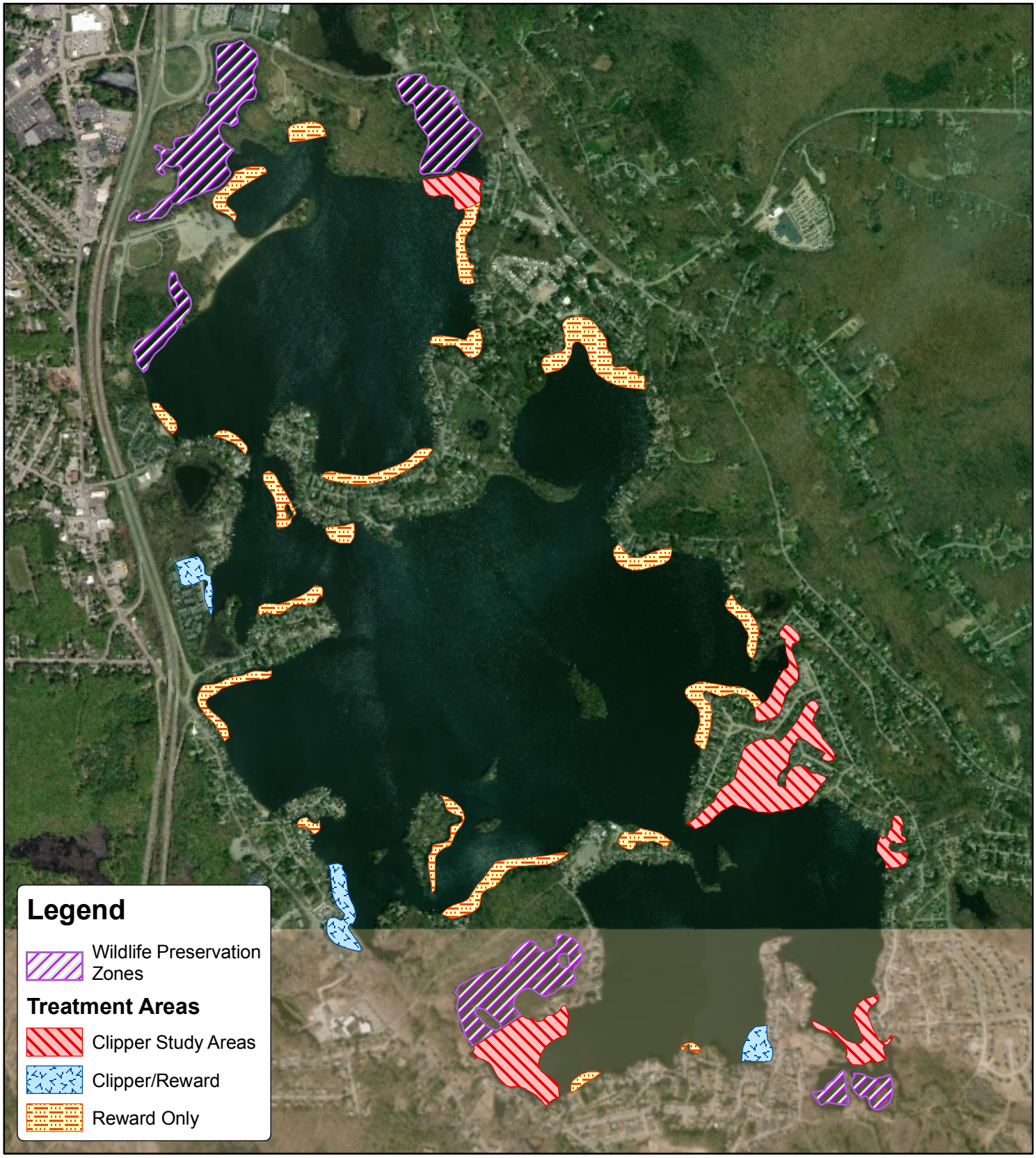

Webster Lake
Webster, MA
Worcester County

Webster Lake
0 1,300 2,600 Feet
1:20,000
N

Map Date: 06/06/18
Prepared by: MS
Office: SHREWSBURY, MA

Figure 2. Pre-treatment Target Species Survey
May 22, 2018

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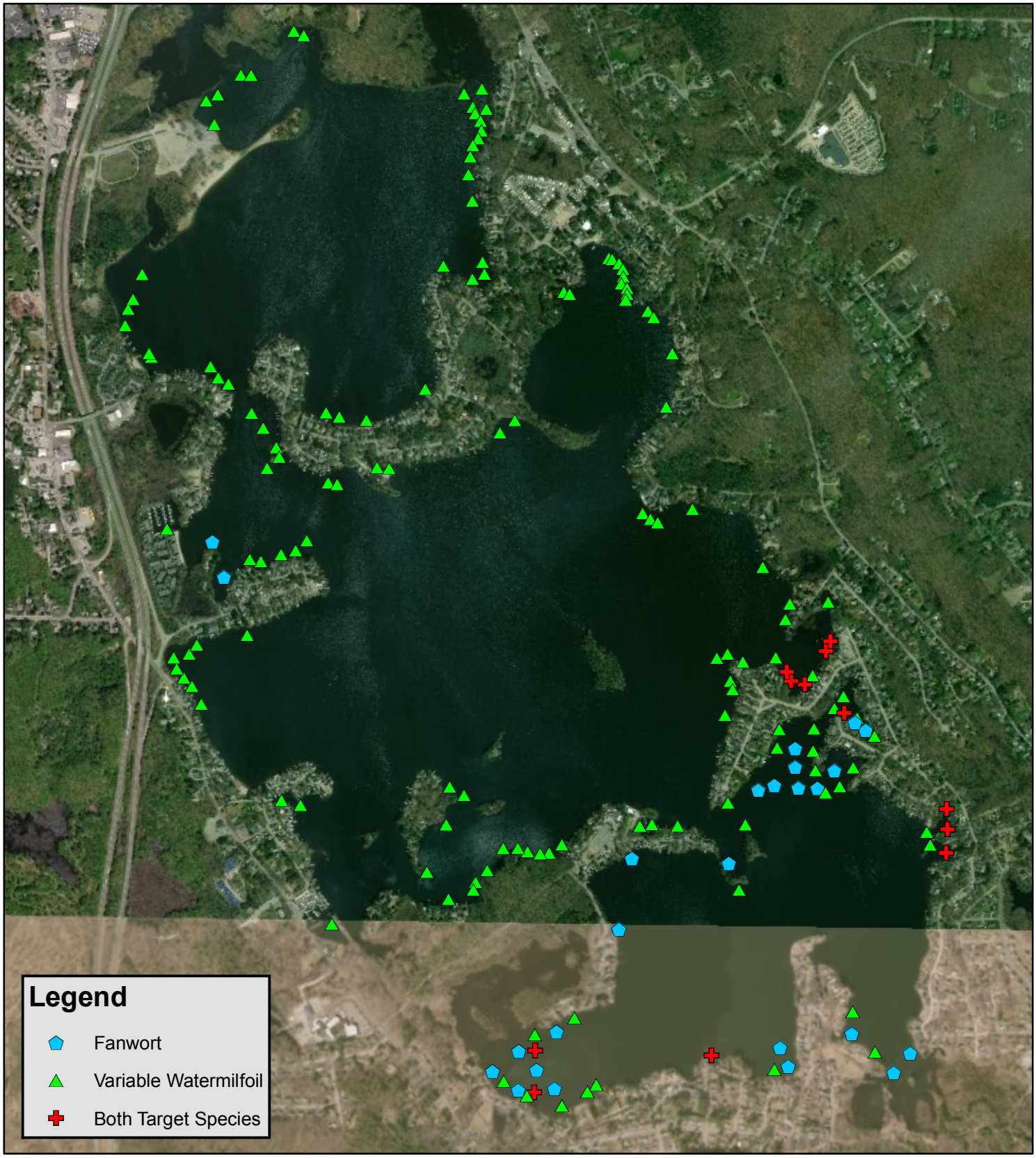

Webster Lake
Webster, MA
Worcester County

Webster Lake
0 1,500 3,000 Feet
1:18,000
N

Map Date: 2/10/19
Prepared by: BNA
Office: SHREWSBURY, MA

Figure 1. Clipper Study Point-Intercept Sections 2018-2022

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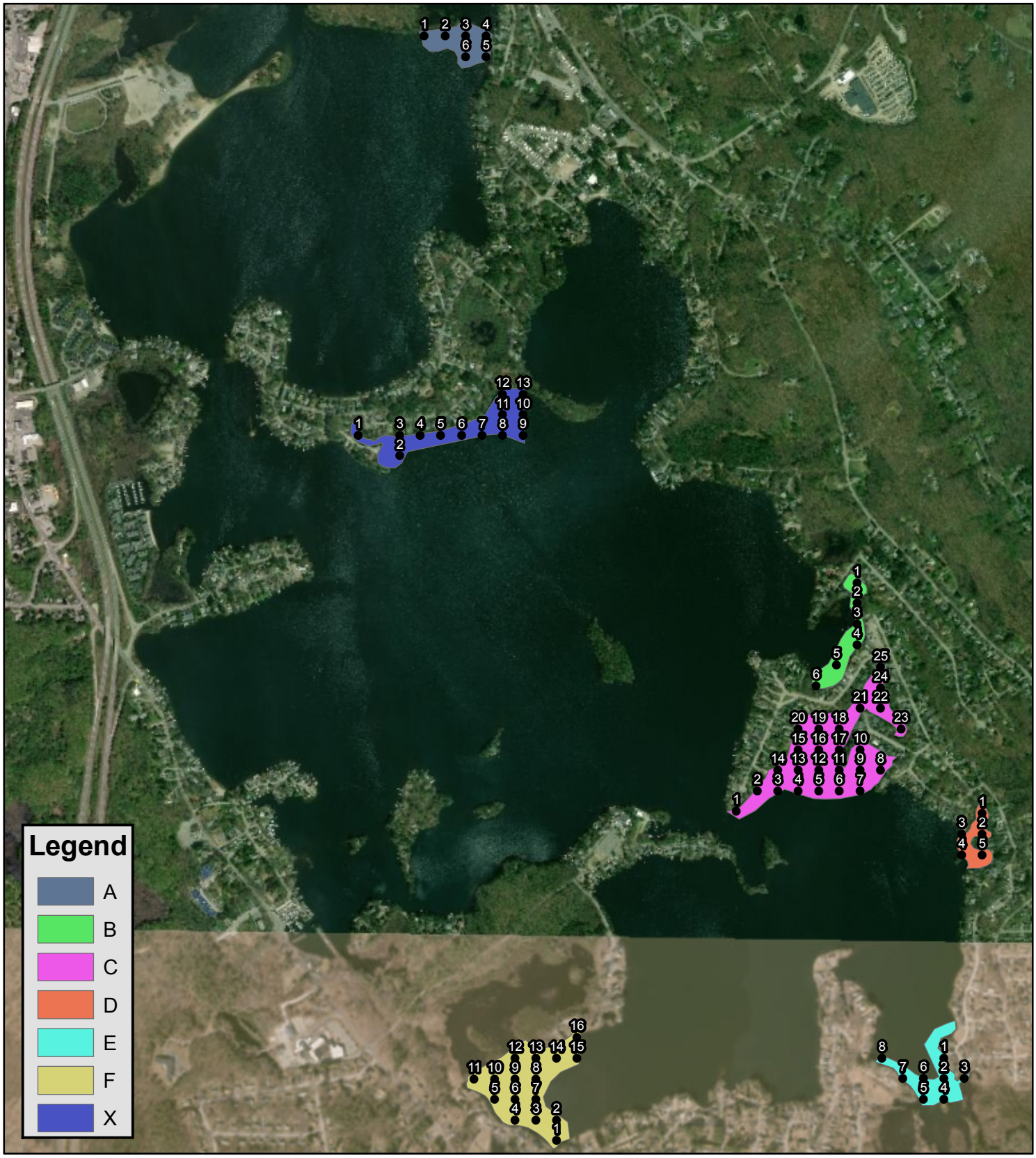

Webster Lake
Webster, MA
Worcester County

Webster Lake
0 1,400 2,800 Feet
N
1:16,600

Map Date: 5/20/18
Prepared by: BNA
Office: SHREWSBURY, MA

Figure 4. Post-treatment Target Species Survey
September 17, 2018

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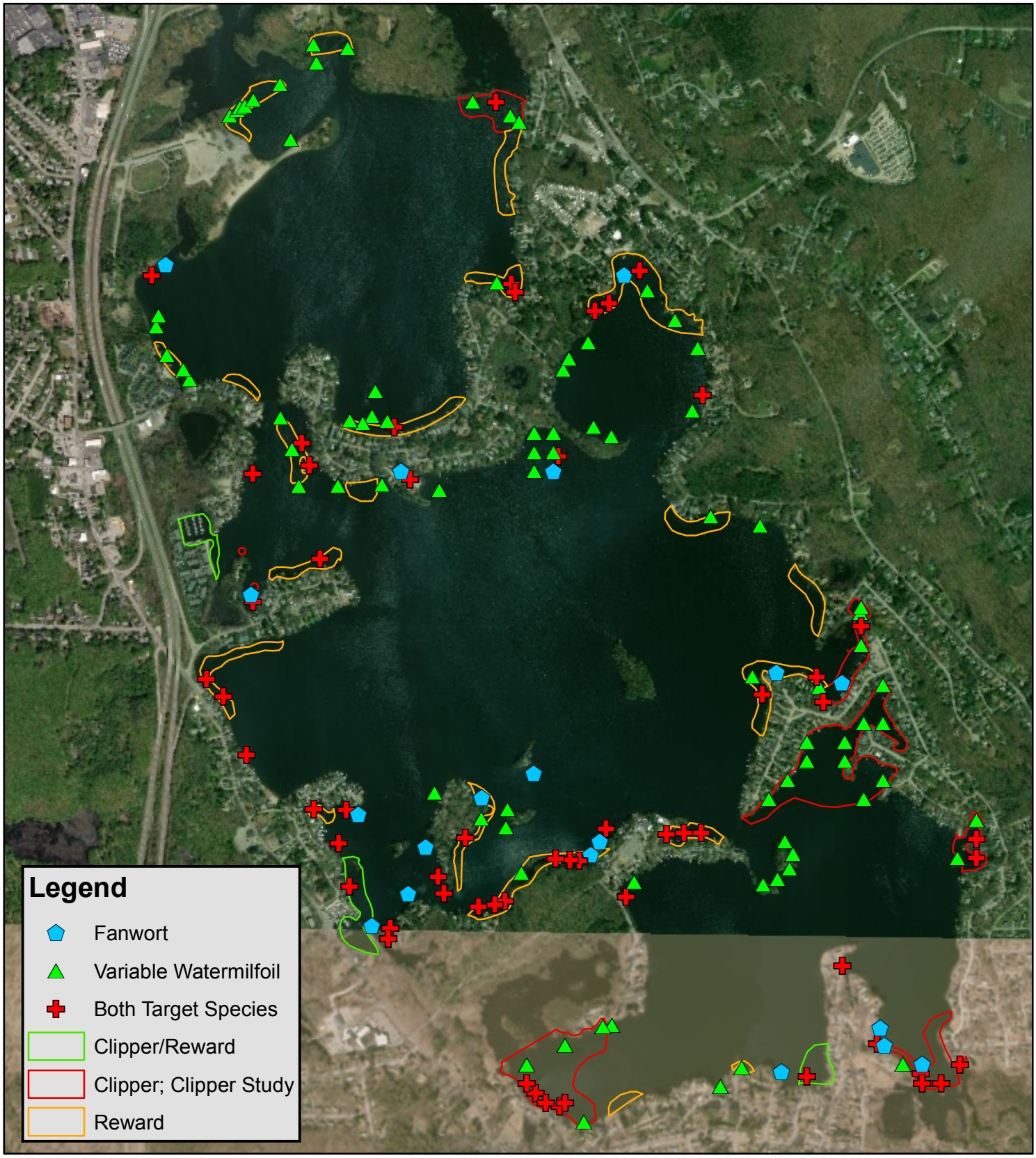

Webster Lake
Webster, MA
Worcester County

Webster Lake
0 1,600 3,200 Feet
N
1:18,000

Map Date: 2/10/19
Prepared by: BNA
Office: SHREWSBURY, MA

Pre-treatment Survey May 22 2018

Section	Station	Depth (ft)	Biovolume	Total Cover	Spikerush (Ea)	Tapegrass (V)	Stonewort (Ni)	Creeping Bladderwort (Ug)	Purple Bladderwort (Up)	Alga-like Pondweed (Pcon)	Little Floating Bladderwort (Ur)	White Waterlily (WL)	Common Bladderwort (Uv)	Variable Watermilfoil (Mh)	Aquatic Moss (F)	Whorled Watermilfoil (Mv)	Fanwort (Cc)	Filamentous Algae (Fa)	Southern Naiad (Ng)	Large-leaf Pondweed (Pa)	Pipewort (Eq)	Slender Naiad (Nf)	Small Pondweed (Ppus)	Leafy Pondweed (Pf)	Robbin's Pondweed (Pr)	Watershield (Bs)	Arrowhead Rosette (Sagg)	Yellow Waterlily (YL)	Water Starwort (Cal)	Low Watermilfoil (Mhum)	Ribbonleaf Pondweed (Pe)
A	1	3	1	65			60																					5			
A	2	2.8	1	5							5																				
A	3	5	3	75	10						5		5	50						5											
A	4	3	1	25	5				5				10	5																	
A	5	2.8	2	70									15	50															5		
A	6	4.2	2	20	5									15																	
X	1	1.8	1	15													5	10													
X	2	4.5	1	15			5							5						5											
X	3	0.5	0	0																											
X	4	2.2	1	5			5																								
X	5	3.6	1	11	1		5												5												
X	6	4.8	1	21			10				1										10										
X	7	7.1	1	15							5								10												
X	8	4.6	0	0																											
X	9	12.9	1	30			25												5												
X	10	7.4	1	80															80												
X	11	7.2	2	20										5			5		10												
X	12	3	2	20							5			15																	
X	13	5.2	2	22							1			20							1										
B	1	5	3	100										75										10					15		
B	2	4.3	3	100										50															50		
B	3	3.5	2	51							1	5		20			25														
B	4	7.4	1	81			40				1			25			15														
B	5	7.9	2	50					10					40																	
B	6	6.9	2	51					20					20	1		10														
C	1	8.6	2	25								10																5	10		
C	2	3.5	1	17			15	1											1												
C	3	11	1	10					5								5														
C	4	11.6	1	20					5								15														
C	5	11.3	1	15													15														
C	6	10.6	1	20			5										15														
C	7	4.5	3	20										20																	
C	8	5	3	55					5					45													5				
C	9	8.8	1	50	5				5								40														
C	10	4.2	2	45			15		5					20						5											
C	11	4	2	5										5																	
C	12	11.4	1	15													15														
C	13	10.2	1	70			40										15		5	10											
C	14	6.4	2	5																									5		
C	15	3.4	3	25										20															5		
C	16	10.2	1	11					5		1						5														
C	17	4.3	3	55										55																	
C	18	5	1	35					15					20																	
C	19	9.3	2	15					5					10																	
C	20	7.3	1	20					10					10																	
C	21	3.1	1	5										5																	
C	22	2.9	1	5										5																	
C	23	4.3	1	5										5																	
C	24	1.5	2	5										5																	
C	25	0.5	0	0																											
D	1	3.5	4	90										80			5													5	
D	2	2.5	4	35										30										5							
D	3	2.8	2	75							5			5													5		25		35
D	4	4.3	3	86					1					75															10		
D	5	5	3	100										85			15														
E	1	6.7	1	1															1												
E	2	10.4	1	20					5								10								5						
E	3	6.8	2	50								25		25																	
E	4	5.8	3	75										75																	
E	5	7.6	1	10													10														
E	6	9.6	0	0																											
E	7	10.1	0	0																											
E	8	8.9	1	30				10									10								10						
F	1	6	2	92					20		1			20													1		50		

Section	Station	Depth (ft)	Biovolume	Total Cover	Spikerush (Ea)	Tapegrass (V)	Stonewort (Ni)	Creeping Bladderwort (Ug)	Purple Bladderwort (Up)	Alga-like Pondweed (Pcon)	Little Floating Bladderwort (Ur)	White Waterlily (WL)	Common Bladderwort (Uv)	Variable Watermilfoil (Mh)	Aquatic Moss (F)	Whorled Watermilfoil (Mv)	Fanwort (Cc)	Filamentous Algae (Fa)	Southern Naiad (Ng)	Large-leaf Pondweed (Pa)	Pipewort (Eq)	Slender Naiad (Nf)	Small Pondweed (Ppus)	Leafy Pondweed (Pf)	Robbin's Pondweed (Pr)	Watershield (Bs)	Arrowhead Rosette (Sagg)	Yellow Waterlily (YL)	Water Starwort (Cal)	Low Watermilfoil (Mhum)	Ribbonleaf Pondweed (Pe)
F	2	10.4	1	50					5								45														
F	3	9.1	1	25										5			20														
F	4	5.7	1	80			15								5		45												15		
F	5	3	1	35					5						5		25														
F	6	9.4	1	25					5								20														
F	7	9.2	1	30					5								25														
F	8	9.2	2	20										5			15														
F	9	7.2	1	5													5														
F	10	2.2	1	16					15								1														
F	11	0.5	0	0																											
F	12	2	4	11								10																1			
F	13	4.2	1	11					1					10																	
F	14	8	1	80			40										25							15							
F	15	9.4	0	0																											
F	16	3.1	3	10										10																	

Post-treatment Survey September 17, 2018

Section	Station	Depth (ft)	Biovolume	Total Cover	Spikerush (Ea)	Tapegrass (V)	Stonewort (Ni)	Creeping Bladderwort (Ug)	Purple Bladderwort (Up)	Alga-like Pondweed (Pcon)	Little Floating Bladderwort (Ur)	White Waterlily (WL)	Common Bladderwort (Uv)	Variable Watermilfoil (Mh)	Aquatic Moss (F)	Whorled Watermilfoil (Mv)	Fanwort (Cc)	Filamentous Algae (Fa)	Southern Naiad (Ng)	Large-leaf Pondweed (Pa)	Pipewort (Eq)	Slender Naiad (Nf)	Small Pondweed (Ppus)	Leafy Pondweed (Pf)	Robbin's Pondweed (Pr)	Watershield (Bs)	Arrowhead Rosette (Sagg)	Yellow Waterlily (YL)
A	1	4.2	1	41	10	5	1	5	5	10				5														
A	2	3.5	1	25						10	15																	
A	3	2.8	4	55	5			25	10			10	5															
A	4	3.1	1	16	5						1			5	5													
A	5	3.3	2	15											10	5												
A	6	4.5	2	36	5				5		5		20		1													
X	1	5	4	100								10					85	5										
X	2	3.8	2	90		15	50		5					5					5	10								
X	3	1.8	1	30														10			10	5	5					
X	4	2	1	25		5					10							10										
X	5	2.5	1	45			35											5						5				
X	6	5	1	7							5								1					1				
X	7	5.8	1	20					10		5													5				
X	8	4.4	2	5										5														
X	9	11.9	3	25				5									15					5						
X	10	5.3	2	100		10		5						5				5	75									
X	11	6.5	2	100		10								15					75									
X	12	5.6	3	50		5					15			15				10							5			
X	13	3.5	3	50		20			5		5			20														
B	1	3	1	40										40														
B	2	3.5	4	40								20		10			10											
B	3	4.8	2	50	15				5		5	20		5														
B	4	7.1	1	6	1			5																				
B	5	7.6	2	35	10				10		5						5	5										
B	6	5.6	4	62				1				5		10	40		5									1		
C	1	8.9	4	40		30						10																
C	2	5.8	2	15										15														
C	3	10.4	0	0																								
C	4	11.5	0	0																								
C	5	11.3	0	0																								
C	6	11.4	0	0																								
C	7	5	1	10										5				5										
C	8	4.3	2	90		5								85														
C	9	9.1	0	0																								
C	10	5.8	1	20				10																	5		5	
C	11	3.3	1	50														50										
C	12	11.4	0	0																								
C	13	10.2	1	11				10														1						
C	14	4.8	2	6		1								5														
C	15	3.8	1	45										5				40										
C	16	9.6	0	0																								
C	17	1.9	4	25				10				5		10														
C	18	3.2	4	25	10							5		10														
C	19	9.6	0	0																								
C	20	7.2	2	10							5			5														
C	21	4.2	1	1										1														
C	22	2.8	1	6	1									5														
C	23	4.3	0	0																								
C	24	1.5	0	0																								
C	25	2.6	1	6				1						5														
D	1	2.1	4	20			5					10		5														
D	2	1.9	4	30								5		10				15										
D	3	3.3	4	15								10																5
D	4	3.2	2	11				1						10														
D	5	2.9	2	20										15			5											
E	1	6.5	0	0																								
E	2	8.8	0	0																								
E	3	1.9	4	30								10		15			5											
E	4	7.2	4	25										5			15											5

Section	Station	Depth (ft)	Biovolume	Total Cover	Spikerush (Ea)	Tapegrass (V)	Stonewort (Ni)	Creeping Bladderwort (Ug)	Purple Bladderwort (Up)	Alga-like Pondweed (Pcon)	Little Floating Bladderwort (Ur)	White Waterlily (WL)	Common Bladderwort (Uv)	Variable Watermilfoil (Mh)	Aquatic Moss (F)	Whorled Watermilfoil (Mv)	Fanwort (Cc)	Filamentous Algae (Fa)	Southern Naiad (Ng)	Large-leaf Pondweed (Pa)	Pipewort (Eq)	Slender Naiad (Nf)	Small Pondweed (Ppus)	Leafy Pondweed (Pf)	Robbin's Pondweed (Pr)	Watershield (Bs)	Arrowhead Rosette (Sagg)	Yellow Waterlily (YL)
E	5	6.6	4	75					40			5		10			20											
E	6	10.8	1	6				1									5											
E	7	8.8	2	30				5						25														
E	8	6.6	3	10													10											
F	1	6.5	2	5										5														
F	2	10.2	0	0																								
F	3	8.5	2	30				5						20			5											
F	4	5	3	35				5	10					10			5											5
F	5	3.9	2	36				5						20	1		10											
F	6	8.1	1	5																					5			
F	7	9.5	0	0																								
F	8	9.4	0	0																								
F	9	7.1	0	0																								
F	10	2.3	4	100	60				5			20		5	10													
F	11	0.5	4	100								100																
F	12	1.8	4	100	40							40									20							
F	13	4.6	4	30								10		10	5			5										
F	14	6.9	0	0																								
F	15	7.8	0	0																								
F	16	3.3	1	15	5			5						5														