Monitoring Report

Invasive Aquatic Plants

Candlewood Lake
Squantz Pond
Lake Lillinonah
Lake Zoar

2015

Bulletin 1046

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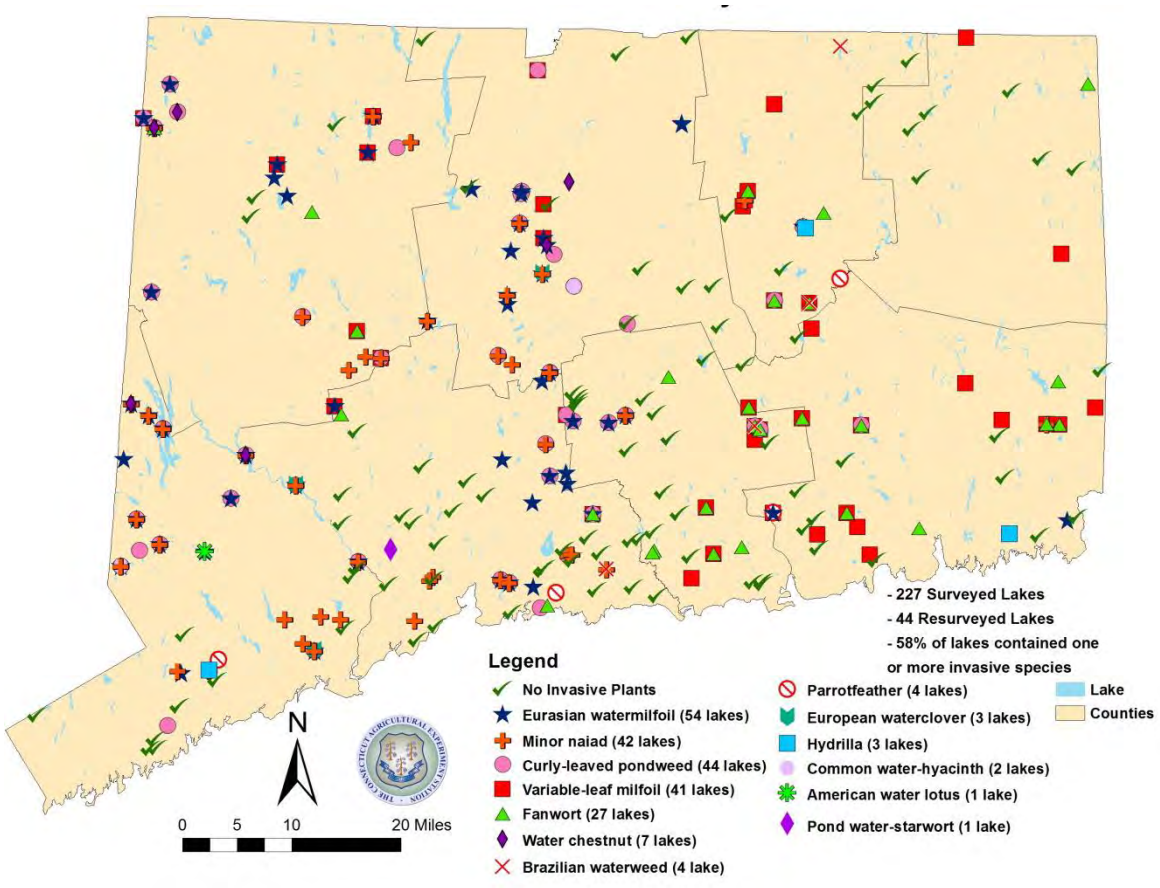

Figure 1. Locations of invasive aquatic plants found by CAES IAPP from 2004 to 2015.

Introduction

Lakes Candlewood, Lillinonah, Zoar and Squantz Pond are managed by FirstLight Power Resources Services, LLC (FLP) for the production of hydroelectric power. These impoundments offer diverse freshwater ecosystems and exceptional opportunities for fishing, boating and other outdoor activities. Invasive aquatic plants are a concern because they degrade native aquatic ecosystems (Barrett 1989, Les and Mehrhoff 1999), impede recreation, and reduce home values (Connecticut Aquatic Nuisance Species Working Group 2006, Fishman et al. 1998). These non-native plants have few natural enemies (Wilcove et al. 1998, Pimintel et al. 2000) to control their growth. Once invasive plants are established, long term and costly management programs are often needed. The Federal Energy Regulatory Commission (FERC) Article 409 requires FLP to provide invasive aquatic plant monitoring of Lakes Candlewood, Lillinonah and Zoar (Northeast Generating Company 2005). In 2015 FLP decide to also include the monitoring of nearby Squantz Pond.

Statewide surveys by The Connecticut Agricultural Experiment Station's (CAES) Invasive Aquatic Plant Program (IAPP) have found 14 invasive aquatic plant species inhabit nearly 60 percent of Connecticut's lakes and ponds (Figure 1) (CAES IAPP 2016). Eurasian watermilfoil (*Myriophyllum spicatum*) is the most common and the biggest problem in Lakes Candlewood, Lillinonah, Zoar and Squantz Pond. This plant has been present in Candlewood Lake since at least the early 1980's (Siver et al. 1986) when it was probably in Lakes Lillinonah, Zoar and Squantz Pond as well.

CAES IAPP has studied the plant communities in lakes Candlewood, Lillinonah and Zoar since 2005 and Squantz Pond since 2011. Their aquatic plant communities are similar probably because of their close proximity to one another (CAES IAPP 2016, Bugbee and Fanzutti 2014). As many as 18 plant species occur in the lakes with Eurasian watermilfoil, minor naiad (*Najas minor*), curlyleaf pondweed (*Potamogeton crispus*), European waterclover (*Marsilea quadrifolia*), and water chestnut (*Trapa natans*) being invasive. Water chestnut is found only in Lake Lillinonah and European waterclover is found only in Lake Zoar. Eurasian watermilfoil covers the largest area in the water bodies followed by minor naiad and curlyleaf pondweed. Curlyleaf pondweed may be underestimated, prior to the commencement of spring surveys in 2012, because it naturally dies back before the summer surveys (Catling and Dobson 1985). Although the plant communities are similar in all four water bodies, differences in the way invasive plants are managed and differences in the closed impoundment nature of Candlewood Lake versus the riverine systems of Lakes Lillinonah and Zoar result in dissimilarities in plant populations from year to year. Squantz Pond is connected to Candlewood Lake via flow under the Route 39 causeway and therefore would be likely to have a similar aquatic ecosystem.

Winter drawdown and occasional harvesting are used to manage Eurasian watermilfoil in Candlewood Lake (Tarsi 2006). The drawdown probably controls aquatic plants in Squantz Pond as well, however, we could not substantiate that the connection under the Route 39 causeway allows a similar drawdown depth. Deep winter drawdowns (3 m) with long exposure times have proven most effective (Bugbee and Fanzutti 2014). In 2008 and 2010, milfoil weevils (*Euhrychiopsis lecontei*) were introduced into Candlewood Lake to control Eurasian watermilfoil; however, their efficacy was minimal.

Figure 2. Mindy Barnett of CTDEEP releases grass carp into Candlewood Lake (left). Large contingent of interested citizens and FLP, Candlewood Lake Authority and government officials look on (right).

Grass carp (*Ctenopharyngodon idella*) were introduced into Lake Candlewood in June 2015 (Figure 2) and their efficacy will be monitored in this and future reports. Invasive vegetation is managed in Lake Zoar in the past with harvesting and more recently with the use of herbicides. Other than hand harvesting of water chestnut, minimal aquatic plant management occurs in Lake Lillinonah but passive control may be occurring from occasional low water levels and storm events that cause intense flow rates.

The following report represents the ninth year of CAES IAPP surveillance and mapping of invasive aquatic plants in Lakes Candlewood, Lillinonah and Zoar for FLP. Included in this report for the first time is surveillance of Squantz Pond. The report fulfills the requirements of FERC Article 409.

Objectives

Survey and map of invasive aquatic plants in Lakes Candlewood, Lillinonah, Zoar and Squantz Pond to fulfill the FERC nuisance plant monitoring requirement in Article 409. Document yearly changes in the plant community and relate to management activities. Provide the science necessary to better manage invasive aquatic vegetation, enhance native species, provide overall protection of the water bodies, and assure continuance of hydroelectric power generation.

Materials and Methods

Our 2015 aquatic vegetation surveys utilized methods established by CAES IAPP. We recorded locations of all invasive plants with Trimble GeoXT® or ProXT® global positioning systems (GPS) with sub-meter accuracy. In 2014, we added a Lowrance HDS® sonar system, with structure scan technology, to determine patches near the bottom that were not viewable from the surface. We circumnavigated the plant patches to form georeferenced polygons. Patches covering less than one square meter were recorded as a point and assigned an area of 0.0002 acres (1 m^2). We measured depth with a rake handle, drop line or digital depth finder and sediment type was estimated. Plant samples were obtained in shallow water with a rake and in deeper water with a grapple. We measured plant abundance using a visual scale of 1 to 5 (1 = single stem; 2 = few stems; 3 = common; 4 = abundant; 5 = extremely abundant). In Candlewood Lake, we recorded each area where Eurasian watermilfoil was at the surface and flowering with a point feature. When field identifications were questionable, we brought samples back to the lab for review using the taxonomy of Crow and Hellquist (2000*a*, 2000*b*). We post-processed the GPS data in Pathfinder® 5.30 (Trimble Navigation Limited, Sunnyvale, CA) and then imported it into ArcGIS® 10.3.1 (ESRI, Redlands, CA), where it was geo-corrected. Data were then overlaid onto 2010 United States Department of Agriculture - National Agricultural Inventory Program aerial imagery with 1 m resolution.

We collected occurrence and abundance plant information from ten transects per lake (five in Squantz Pond) with points positioned 0.5, 5, 10, 20, 30, 40, 50, 60, 70 and 80 m perpendicular to the shore. In Candlewood Lake these transects were a subset of the 105 laid out in 2005 (Bugbee et al. 2008) and contained at least one occurrence of each native and invasive plant species. In Lake Zoar, previously established transects were used, but not all species in the earlier surveys were present. In Lake Lillinonah, we decreased the number of transects from the 16 we surveyed in 2009 (Bugbee and Balfour 2009) to 10. In Squantz Pond, we decreased the number of transects from the 14 laid out in 2011 (CAES IAPP 2016) to five and renamed them 1 – 5. We selected transects formerly numbered 1, 5, 8 9, and 11 because they best depicted the diversity in the lake.

Significant differences in the frequency of occurrence of plant species between years along transects ($p < 0.05$) were determined using analysis of variance (ANOVA) followed by Tukey's post-hoc test. Significant differences in species richness per transect point were

determined by ± one standard error of the mean (SEM). We surveyed Candlewood Lake for curlyleaf pondweed on June 6 and all invasive plants from July 31 - August 27. This was the third consecutive year we performed the early curlyleaf pondweed survey to provide more thorough documentation of this plant prior to its summer senescence. When summertime curlyleaf patches overlapped spring patches, only the spring data is reported.

The Candlewood Lake transect data were obtained on August 27 and 30. We surveyed Lake Lillinonah for curlyleaf pondweed from June 5 - 8 and all invasive plants from August 18 - 27. Squantz Pond was surveyed for curlyleaf pondweed on June 4 and for all invasive plant species from August 6 - 13. We obtained transect data on Lake Lillinonah on September 1 and 2, on Lake Zoar on September 3 and on Squantz Pond on August 14. Detailed information regarding our "on-lake" time is located in the Appendix (Page 66). We obtained water samples from Candlewood Lake on September 1 and on Lakes Lillinonah and Zoar on September 4. We took water samples from Squantz Pond on August 14. We used a Secchi disk to measure transparency. Since algal blooms often restricted our ability to see vegetation, we also performed Secchi measurements most days we performed surveillance, we used an YSI® 58 meter (YSI Inc. Yellow Springs, Ohio) to measure water temperature and dissolved oxygen. Measurements occurred in deep areas of each lake at a depth of 0.5 m and at 1 m intervals until we reached the bottom. We collected water samples from 0.5 m below the surface and 0.5 m from the bottom. To assess the temperatures during the 2015 winter drawdown, we installed three Hobo® temperature monitoring stations (Onset Computer Corporation, Bourne, MA) at a site in northern Turtle Bay (Map 5, Page 26) on January 5, 2015. The stations were placed perpendicular to the shore at drawdown depths of 0.5 m, 1.0 m, and 2.0 m. We positioned temperature probes 0.5 m above the sediment to record air temperature and 5.0 cm into the sediment to record sediment temperatures. Data were logged at 15 minute intervals. To avoid the loggers being submerged by the refilling lake, we attempted to remove them on March 4. Deep snow and frozen ground allowed us to remove only the loggers from the 0.5 and 2 m depths. Removal of the 1.0 m depth logger was delayed until March 19.

Table 1. The frequency of occurrence of aquatic plants in Candlewood Lake on transects.

Scientific Name	Common Name	Frequency of Occurrence (percent *)								
		2005	2008	2009	2010	2011	2012	2013	2014	2015
Callitriche sp.	Water starwort	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Ceratophyllum demersum	Coontail	3.1	33.3	11.3	22.7	29.9	22.7	21.7	22.0	27.0
Elatine sp.	Waterwort	0.0	1.0	3.1	2.1	0.0	4.1	0.0	1.0	2.0
Eleocharis sp.	Spikerush	0.0	0.0	3.1	1.0	1.0	3.1	0.0	1.0	3.0
Elodea nuttallii	Waterweed	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lemna minor	Duckweed	2.1	6.3	1.0	4.1	7.2	4.1	0.0	3.0	0.0
Myriophyllum spicatum	**Eurasian watermilfoil**	**51.0**	**79.2**	**64.9**	**70.1**	**78.4**	**79.4**	**42.3**	**76.0**	**68.0**
Najas flexilis	Nodding waternymph	7.3	1.0	1.0	0.0	2.0	0.0	0.0	0.0	0.0
Najas minor	**Minor naiad**	**12.5**	**6.3**	**8.2**	**11.3**	**15.5**	**12.4**	**19.6**	**24.0**	**16.0**
Nymphaea odorata	White water lily	1.0	1.0	0.0	1.0	1.0	1.0	1.0	2.0	1.0
Potamogeton bicupulatus	Snailseed pondweed	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Potamogeton crispus	**Curlyleaf pondweed**	**13.5**	**1.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**
Potamogeton foliosus	Leafy pondweed	3.1	0.0	0.0	0.0	2.1	1.0	5.2	1.0	0.0
Potamogeton gramineus	Variable leaf pondweed	2.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Potamogeton perfoliatus	Clasping leaf pondweed	1.0	2.1	1.0	0.0	0.0	2.1	0.0	1.0	1.0
Potamogeton pusillus	Small Pondweed	3.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Spirodela polyrhiza	Great duckweed	1.0	0.0	0.0	1.0	5.2	0.0	0.0	0.0	1.0
Stuckenia pectinata	Sago pondweed	6.3	1.0	0.0	4.1	0.0	3.1	2.1	2.0	1.0
Vallisneria americana	Eel grass	2.1	2.1	4.1	4.1	3.1	4.0	4.1	6.0	4.0
Wolffia sp.	Spotless watermeal	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0
Zannichellia palustrus	Horned pondweed	11.5	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Invasive Species Richness		**3**	**3**	**2**	**2**	**2**	**2**	**2**	**2**	**2**
Total Native Species Richness		14.0	11.0	7.0	8.0	8.0	10.0	5.0	9.0	8.0
Total Species Richness		17.0	14.0	9.0	10.0	10.0	12.0	7.0	11.0	10.0

Invasive plant
* Percent occurrence on 97 points in 10 transects
**Not determined
Shaded columns indicate deep drawdown years

Results and Discussion

Candlewood Lake

Our invasive aquatic plant surveys of Candlewood Lake from 2007 to 2015 confirm that the deep winter drawdowns generally result in decreases in coverage, abundance and richness of invasive and native plant species (Table 1, Figure 3). In 2015, we found the same invasive plant species as in previous years; Eurasian watermilfoil, minor naiad and curlyleaf pondweed. We also found eight native species. Eurasian watermilfoil continued to be the most prevalent invasive aquatic plant covering 441 acres; this was the greatest coverage of any deep drawdown year. Minor naiad and curlyleaf pondweed covered 72 and 0.04 acres, respectively. The minor naiad acreage was more than double any previous year. The large increase in 2015 may be related to heavy snow cover insulating minor naiad seeds from harmful cold and dry conditions. There were 413 patches of Eurasian watermilfoil in 2015 which was the lowest of any deep drawdown year (Table 2). Patch number can decrease when small patches coalesce into large patches. The largest patches of Eurasian watermilfoil in 2015 were 21 acres in and around Echo Bay (Map 8, page 29), 19 acres between transects 5 and 6 (Map 5,

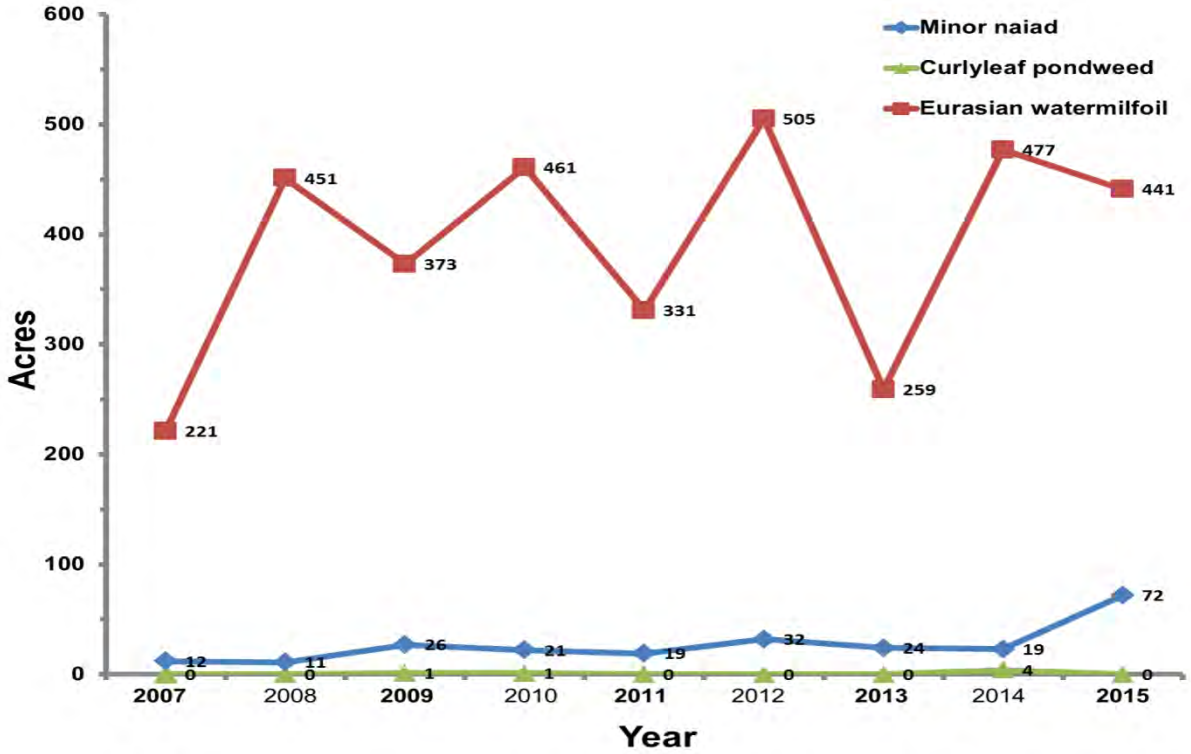

Figure 3. Yearly changes in in the acreage of invasive aquatic plants in Lake Candlewood (deep drawdown years in bold).

Table 2. Yearly comparisons of the number and size of invasive species patches in Candlewood Lake.

	Patch Number and Size (acres)*											
	Eurasian watermilfoil				Minor naid				Curlyleaf pondweed			
Year	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)
2015	413	0.0002	21.3	1.1	125	0.0002	12.3	0.6	1	0.04	0.04	0.04
2014	485	0.0002	46.5	1.0	137	0.0002	1.9	0.1	41	0.0002	3.4	0.1
2013	432	0.0002	14.9	0.6	79	0.0002	2.7	0.3	0	0	0	0
2012	637	0.0002	29.8	0.8	83	0.0002	4.0	0.4	0	0	0	0
2011	485	0.0002	13.5	0.7	46	0.0002	4.4	0.4	1	0.0002	0.0002	0.0002
2010	324	0.0002	35.6	1.6	47	0.0170	6.6	0.4	1	1.0	1.0	1.0
2009	489	0.0002	39.6	0.8	50	0.0002	7.9	0.5	1	0.7	0.7	0.7
2008	469	0.0002	28.1	1.0	26	0.0006	5.5	0.4	5	0.0002	0.1	0.0
2007	489	0.0002	24.9	0.4	31	0.0003	5.0	0.4	1	0.1	0.1	0.1

Table 3. Yearly comparisons of the abundance of invasive species in Candlewood Lake.

	Patch Abundance (1 = sparse - 5 = dense)								
	Eurasian watermilfoil			Minor naid			Curlyleaf pondweed		
Year	(min)	(max)	(mean)	(min)	(max)	(mean)	(min)	(max)	(mean)
2015	1	5	3.2	1	4	3.2	2	2	2
2014	1	5	3.1	1	4	2.1	1	5	2.9
2013	1	5	2.4	1	4	2.4	0	0	0
2012	1	5	3.1	2	5	2.6	0	0	0
2011	1	5	2.3	1	4	2.1	2	2	2.0
2010	1	5	3.3	2	3	2.1	1	1	1.0
2009	1	5	2.1	1	4	1.9	1	1	1.0
2008	1	5	3.0	2	4	1.5	1	1	1.0
2007	1	5	2.9	1	4	2.1	2	2	2.0

*Shaded rows indicate deep drawdown years

page 26) and 12 acres to the west of Great Neck (Map 3, page 24). It was common for patches at 2-4 m depths to be separated from adjacent patches at 0-2 m depths based on abundance. This was likely caused by drawdown induced lower abundance in the shallower depth. The mean abundance of Eurasian watermilfoil patches in Candlewood Lake (Table 3) was 3.2 in 2015. This was greater than in any year except 2010 when it was 3.3. The number of minor naiad patches was 125 in 2015. Although less than 2014 (137) this was considerably higher than any other year (range 26-83). Mean minor naiad patch size, however, increased to 0.6 acres (largest of any year) with the largest patch west of Great Neck (Map 3, page 24) encompassing 12.3 acres (also the largest of any year). The mean patch abundance of minor naiad in 2015 was 3.2 (Table 3) which the highest of any year (previous highest 2.6 in 2012). Minor naiad is likely less affected by drawdown than Eurasian watermilfoil because it propagates from potentially drawdown resistant seeds. The increase in 2015 may indicate that the insulating effects of snow cover may further enhance seed survival. Curlyleaf pondweed was found in only one small patch (0.04 acres) along the southeastern shoreline of Lattin's Cove (Map 9, Page 30). Curlyleaf pondweed does not seem to be increasing throughout our years of surveillance.

Depth preferences of invasive species in Candlewood Lake may change from year to year because of drawdowns, summer water levels and natural variation in plant communities. In 2015, Eurasian watermilfoil patches were distributed at depths from 0-4 m with 84 acres at a depth of 0-2 m and 354 acres at a depth of 2-4 m (Figure 4). Eurasian watermilfoil was more abundant at depths of 2-4 m (area weighted mean = 3.5) than at 0-2 m (area weighted mean = 2.8). The effects of the 2015 winter drawdown and the cumulative effects of past drawdowns probably account for watermilfoil being less abundant at the shallower depth. Water clarity and associated light restriction at depths of greater than 4 m is the likely cause for Eurasian watermilfoil to be absent at 5 m. As in past years, minor naiad was primarily limited to depths of 0-2 m.

In 2015, the frequency of occurrence (FO) of Eurasian watermilfoil on transects (Figure 5) was 68%. This was statistically similar to all previous years ($p \leq 0.05$) except the deep drawdown year of 2013 when the FO was 42%. The frequency of occurrence of minor

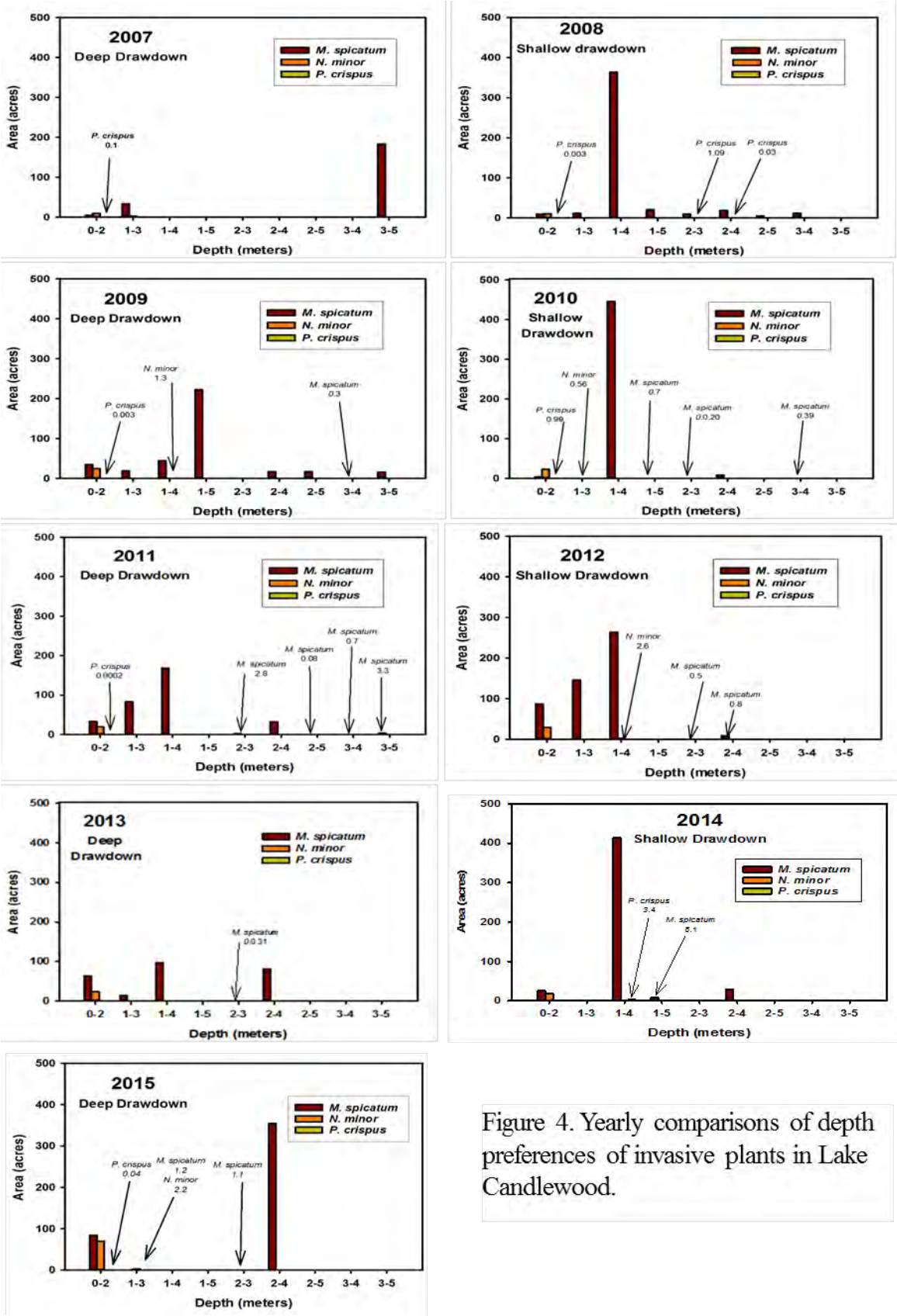

Figure 4. Yearly comparisons of depth preferences of invasive plants in Lake Candlewood.

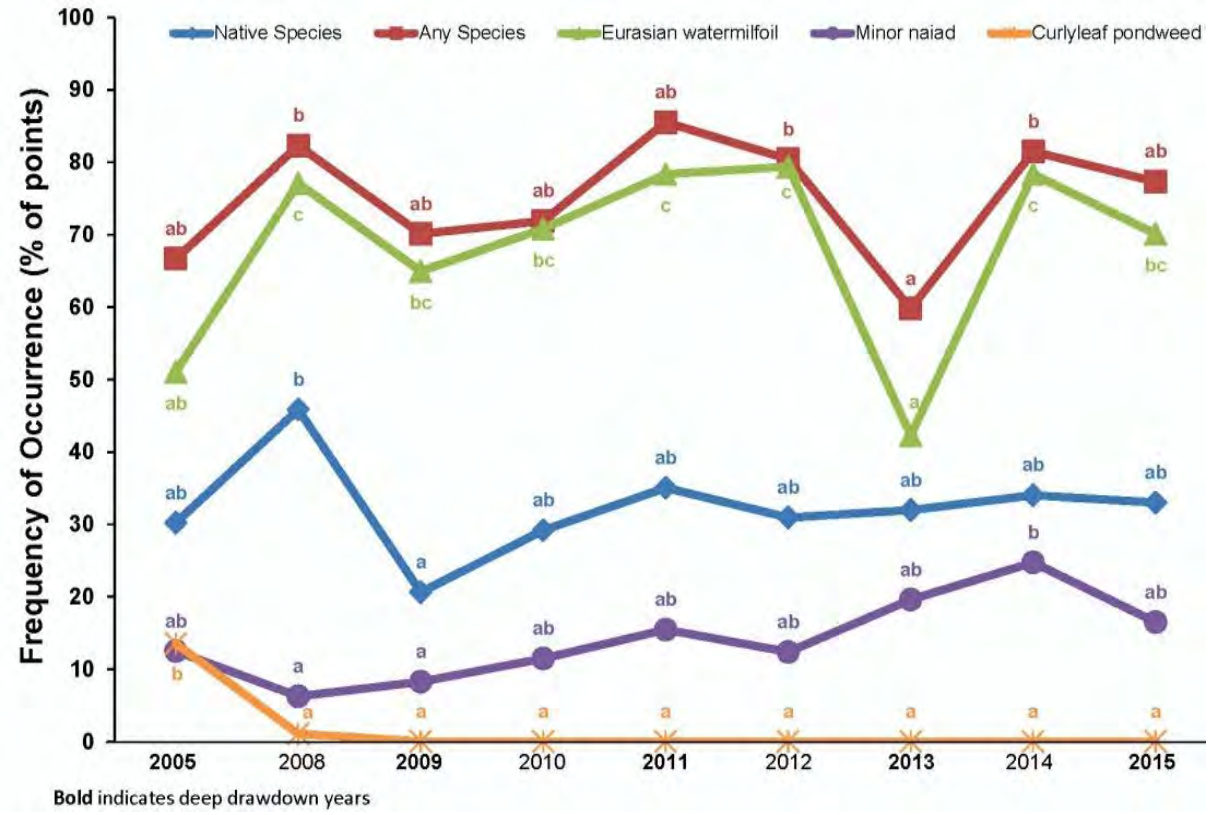

Figure 5. Yearly frequency of occurrence of aquatic vegetation on transects in Lake Candlewood. Points with the same letter within a species are not statistically different.

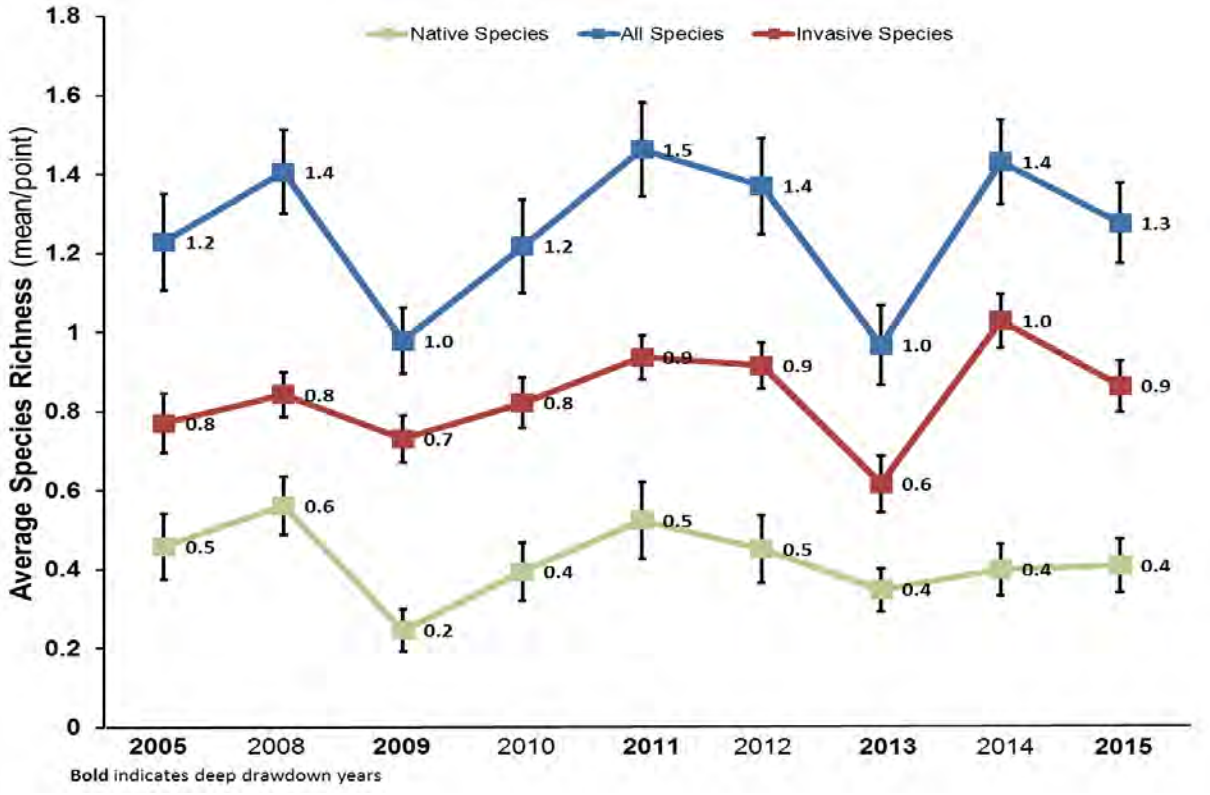

Figure 6. Yearly comparisons of average number of plant species per transect point in Lake Candlewood. Error bars equal +/- one standard error of the mean (SEM).

naiad was 16% and was statistically similar ($p \leq 0.05$) to all previous years (range 6%-24%). We did not find curlyleaf pondweed on transects in 2015 but a small patch was found just northeast of transect 10 (Lattin's Cove, Map 8, page 29). The mean invasive species richness (number of plant species) per transect point was 0.9 in 2015 (Figure 6) and was only statistically different ($p \leq 0.05$) from 2013 (0.6).

Diverse and abundant native species are an indicator of a healthy aquatic ecosystem. In addition, they may decrease the invasibility of non-native invasive species (Capers et al. 2007). The overall native species richness on transects in 2015 was 8, compared to a low of 5 in 2013 and a high of 14 in 2005 (Table 1). Some species rich Connecticut lakes contain over 30 native plant species (CAES IAPP 2016). For a large lake like Candlewood to have such a small number of plant species is unusual and is probably because of a decrease in shoreline species caused by the winter drawdown regime. We found no new native species in 2015 (Table 1). We found great duckweed in 2015 but not in 2014 while duckweed and leafy pondweed were present in 2014 but not 2015. Many species that were present in 2005 have not been found in recent years including; water starwort, waterweed, nodding waternymph, variable leaf pondweed, small pondweed, and horned pondweed. It is possible these plants have suffered because of the drawdown regime.

When frequency of occurrence and species richness is high, many consider biodiversity optimal. The FO of any species (native + invasive) on transect points in 2015 (Figure 5) was 77 and is not statistically different ($p \leq 0.05$) than any other year (range 60% - 86%). The FO of native species in 2015 was 33% which was also not statistically different ($p \leq 0.05$) from any previous year (range 21% - 46%). The average native species richness on transect points in 2015 was 0.4 (Figure 6) which is only statistically different (± 1 SEM) from 2008 (0.6) and 2009 (0.2). Eurasian watermilfoil exhibited a statistically similar ($p \leq 0.05$) FO (68%) to all years except to 2013 when the lowest FO of 42% occurred. The FO of minor naiad (17%) was not statistically different than any other year (range 6% - 25%). Curlyleaf pondweed has not been present on any transect points since 2008. These data suggest that although yearly changes in FO and species richness on transects are occurring they are generally small.

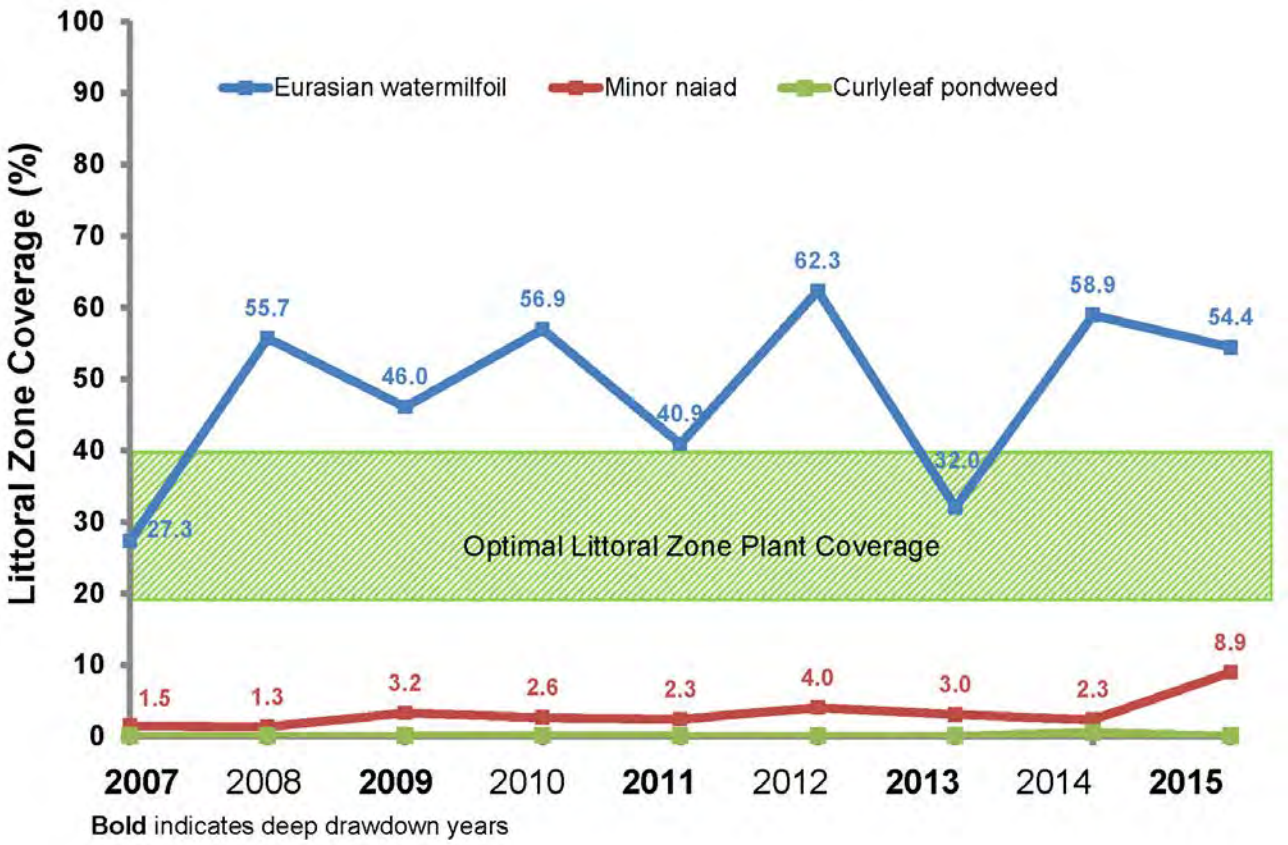

Figure 7. Yearly comparison of the coverage of invasive aquatic plants in Candlewood Lake's littoral zone (0-5m).

Coverage of the littoral zone by aquatic vegetation is sometimes used to infer whether optimum habitat is available for fish and other aquatic organisms. From 20% to 40% vegetative littoral zone coverage is considered optimal in Connecticut lakes (Jacobs and O'Donnell 2002). This range does not take into account whether the vegetation inhabits the entire water column, as is often the case with Eurasian watermilfoil, or whether it grows near the bottom as is common with many native plants. We used a depth of 5 m (16 feet) as the littoral zone limits in Candlewood Lake because it corresponds to the maximum depth where plants have been found. Candlewood Lake has a littoral zone of 810 acres or 16% of the total lake area (Bugbee, 2011). Eurasian watermilfoil occupied 54% of the littoral zone in 2015. Littoral zone coverage of Eurasian watermilfoil generally increases in shallow drawdown years (mean = 58%, range = 56 to 62%) and decreases in deep drawdown years (mean =40%, range = 27 to 54%) (Figure 7). Minor naiad covered 9 % of the littoral zone in 2015 repre-

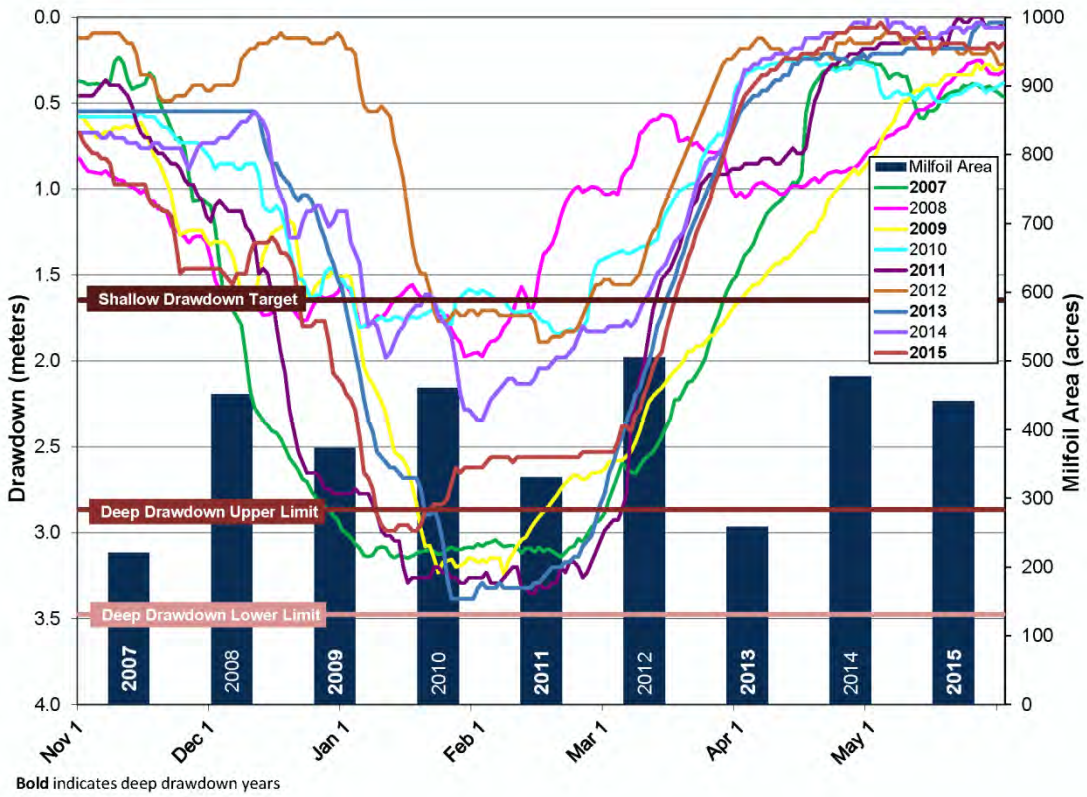

Figure 8. Candlewood Lake's drawdown depths and duration from 2007-2015. Bars with years in bold are deep drawdown years.

senting an all-time high and over double the previous high of 4% in 2012. Minor naiad showed little response to either a shallow (mean = 3%, range = 1 - 4%) or deep drawdown (mean = 4%, range = 2 - 9%). Curlyleaf pondweed coverage of the littoral zone was small in 2015 and all previous years (<0.01%). The total coverage of Candlewood Lake's littoral zone cannot be inferred by adding the acreage of various species as they often occur together. Eurasian watermilfoil alone, however, has satisfied and often exceeded (range 27%-62%) the 20 to 40% optimal littoral zone coverage, suggested by Jacobs and O'Donnell (2002).

2015 Drawdown

The deep winter drawdown of 2015 began in mid-December and reached its lowest level of 3.0 m in mid-January (Figure 8). After about two weeks the level rose to 2.5 m where it remained until final refilling began. Candlewood Lake was full by late April. Compared the other deep drawdowns where the level dropped to approximately 3.5 m this was the

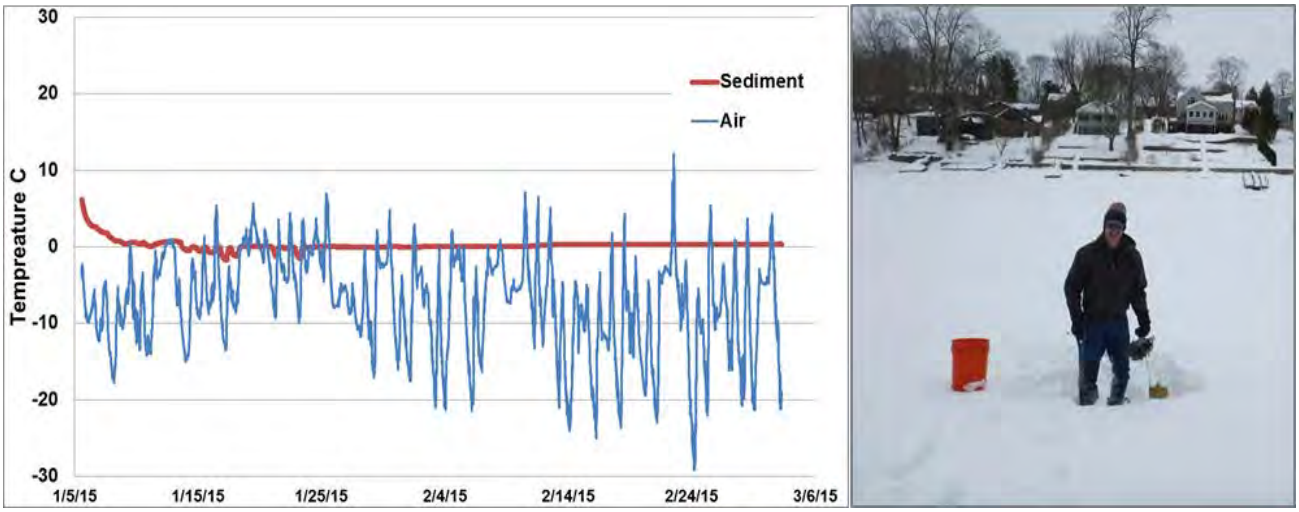

Figure 9. Air and sediment temperatures in Turtle Bay (left) at a 2 m lake depth. Author attempting to find and remove data loggers in deep snow on March 4, 2015 (right).

shallowest. Invasive aquatic plant control by the deep 2015 drawdown was likely hindered by the comparatively higher water level and the insulating effects (Figure 9, left) of the deep snow cover (Figure 9, right). Our data loggers showed air temperatures fell to below -20 C (-4 F) on multiple occasion while the sediment temperature remained at near 0 C (32 F). Work by (Lonergan et al. 2014) found Eurasian watermilfoil was killed by freezing at −5 C or desiccation at 4 C but plants would survive if covered with 10 cm of snow or submerged in water. We propose, therefore, that the insulating snow cover during the 2015 drawdown created less than favorable conditions for controlling Eurasian watermilfoil and possibly minor naiad. Large differences in the coverage of Eurasian watermilfoil as related shallow and deep drawdowns are evident in Allen's Cove (Figure 10). The rapid regrowth in the shallow drawdown years is typical throughout Candlewood Lake and has become reasonably predictable (Bugbee and Fanzutti 2014). Our yearly photograph of the outer west side of Lattin's Cove (Figure 11) showed that since 2010 little no Eurasian watermilfoil has reached the surface and the inconsistences of where these patches might occur.

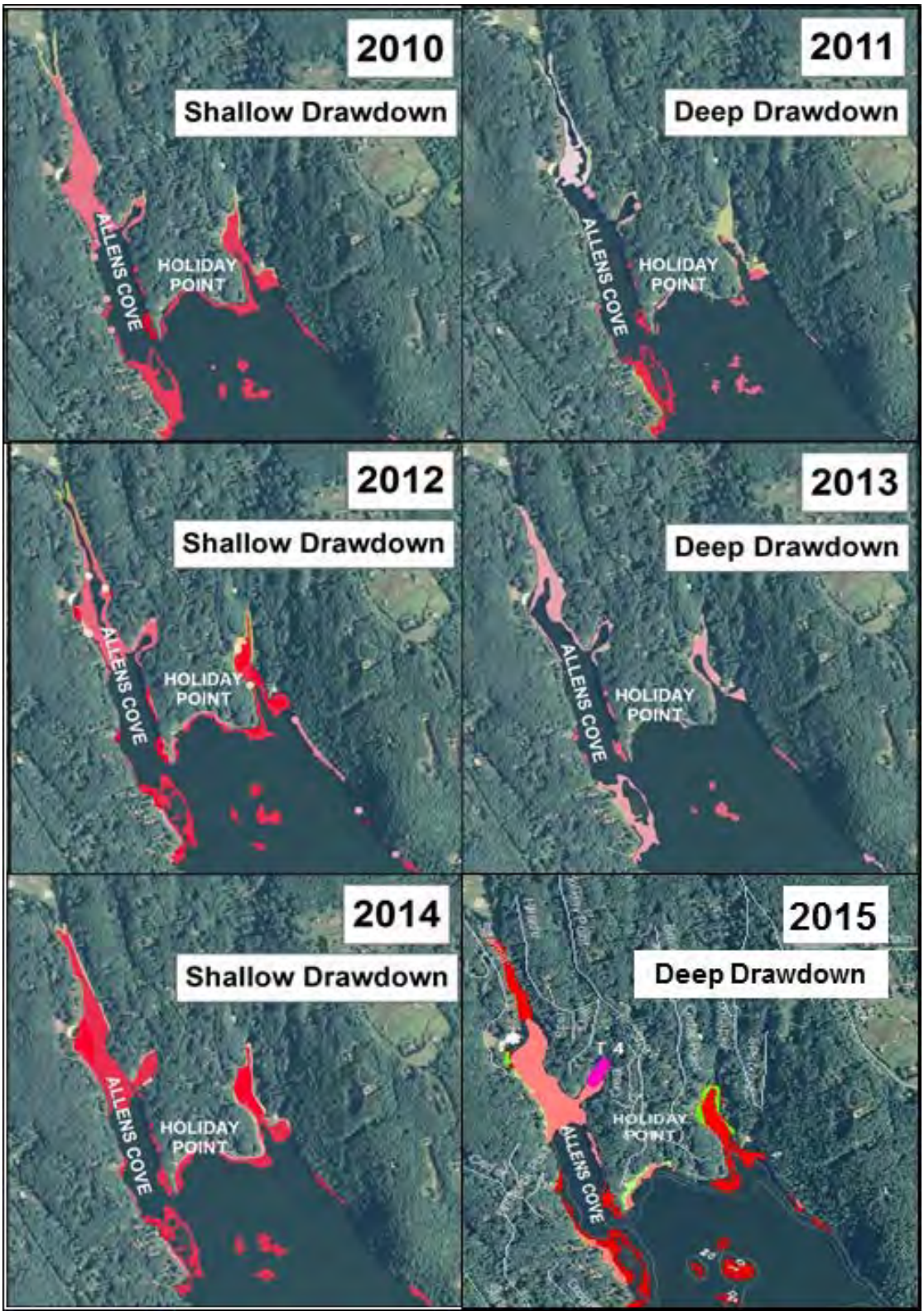

Figure 10. Comparison of the coverage and abundance of Eurasian watermilfoil in Allen's Cove from 2010 to 2015. Darker pink colors indicate greater abundance.

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Figure 11. Yearly comparison of Eurasian watermilfoil reaching the surface at reference site outside Lattin's Cove

Figure 12. Introduction of grass carp into Lake Candlewood in June 2015.

Grass Carp Introduction

On June 26, 2015 approximately 3800 triploid (sterile) grass carp were introduced at ten locations in Candlewood Lake. These fish consume aquatic plants and can control aquatic vegetation via their feeding activities (Pipalova 2006). CAES IAPP surveillance will be used to monitor their effects particularly on Eurasian watermilfoil. Because grass carp tend to graze on the terminal shoots of vegetation, milfoil control would likely first be noticed by a reduction in the plants reaching the surface and flowering. Since 2012 we have recorded the points where this has occurred (Figures 13 and 14). If these near-surface flowering points and other surface patches could be substantially reduced, most of nuisance milfoil would be eliminated. The remaining subsurface milfoil could serve as the fish habitat that is desired by anglers. The shallow drawdown years of 2012 and 2014 showed the highest number of surface flowering points with 1481 and 640, respectively. While in the deep drawdown years of 2013 and 2015 we recorded only 2 and 44 points, respectively. Thus grass carp feeding activity will have to be analyzed in conjunction with the shallow/deep drawdown affects to determine actual control.

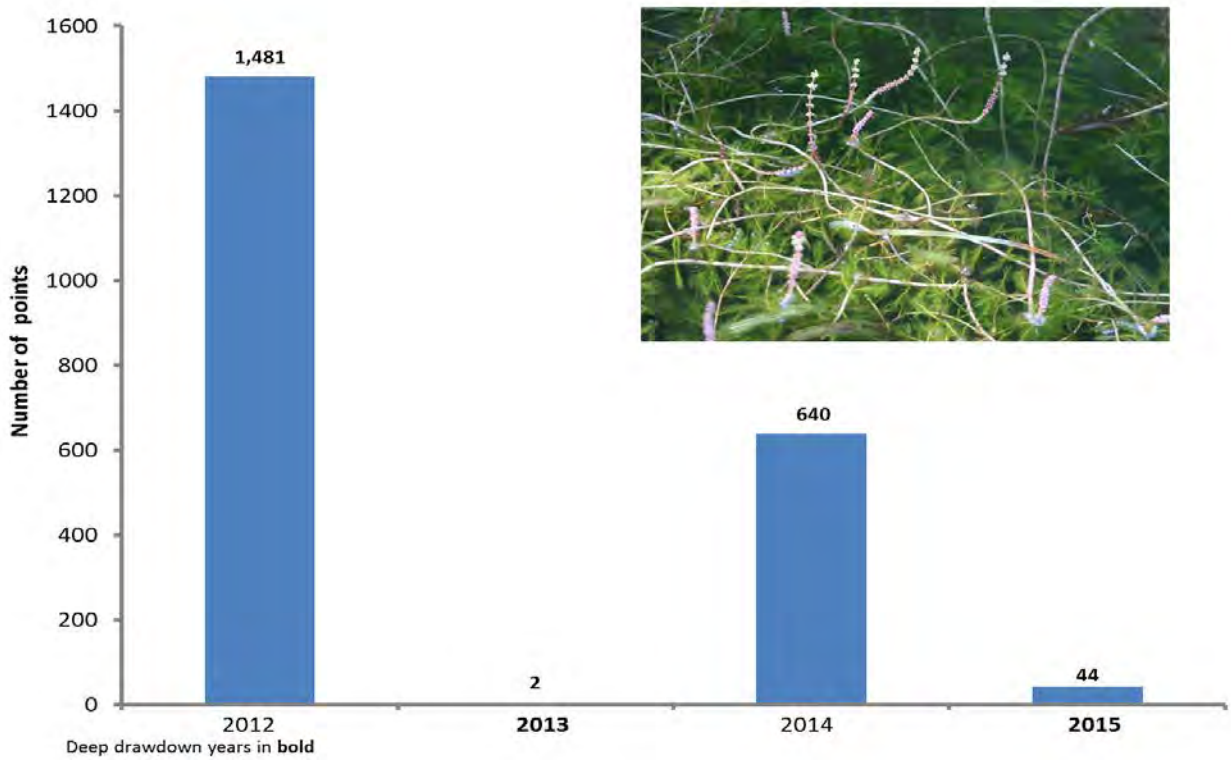


Figure 13. Number of points where Eurasian watermilfoil was flowering at the surface from 2012 to 2015.

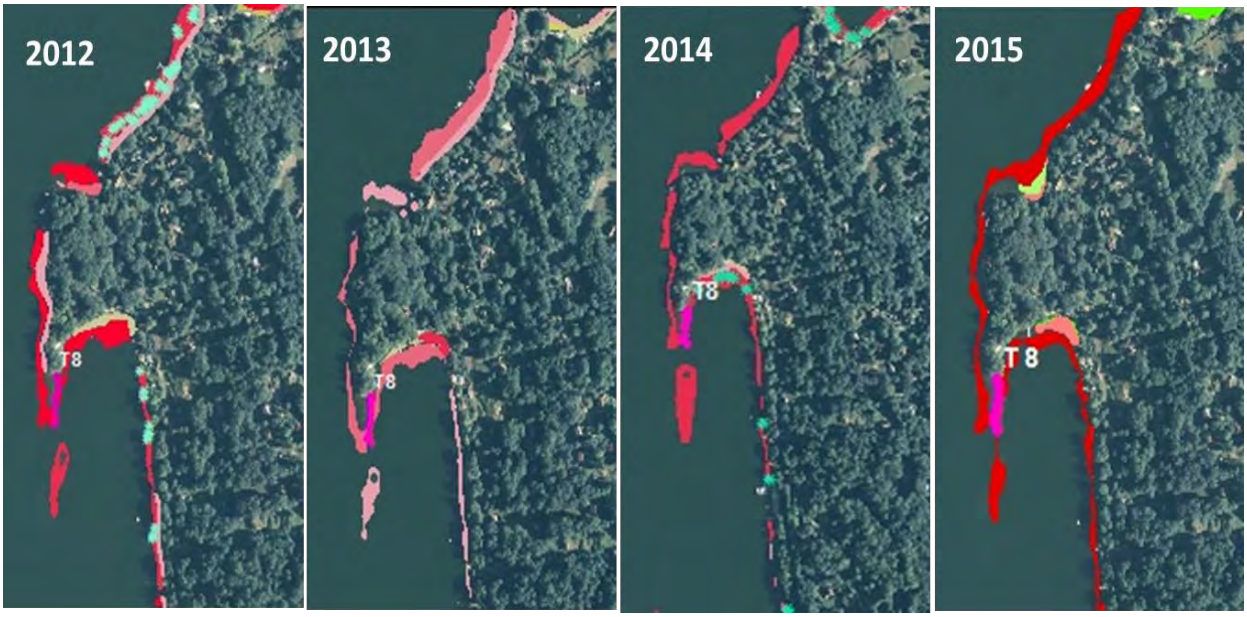
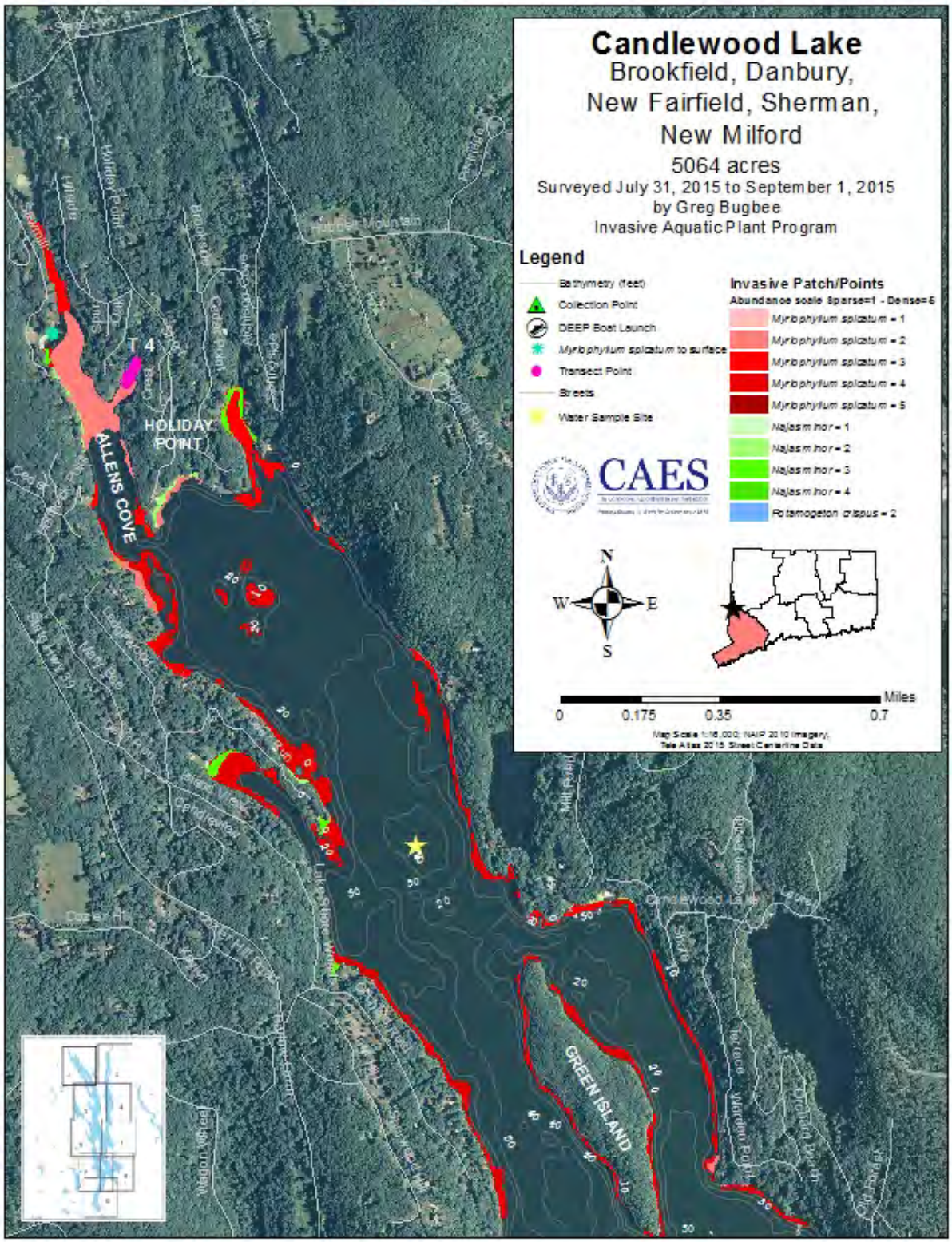


Figure 14. Subpatches of Eurasian watermilfoil marked with abundances of five (*) from 2012-2015 near transect eight in Lake Candlewood.


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed July 31, 2015 to September 1, 2015
by Greg Bugbee
Invasive Aquatic Plant Program
Legend
Bathymetry (feet)
Collection Point
DEEP Boat Launch
Myriophyllum spicatum to surface
Transect Point
Streets
Water Sample Site
Invasive Patch/Points
Abundance scale Sparse=1 - Dense=5
Myriophyllum spicatum = 1
Myriophyllum spicatum = 2
Myriophyllum spicatum = 3
Myriophyllum spicatum = 4
Myriophyllum spicatum = 5
Najas minor = 1
Najas minor = 2
Najas minor = 3
Najas minor = 4
Potamogeton crispus = 2
CAES
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W
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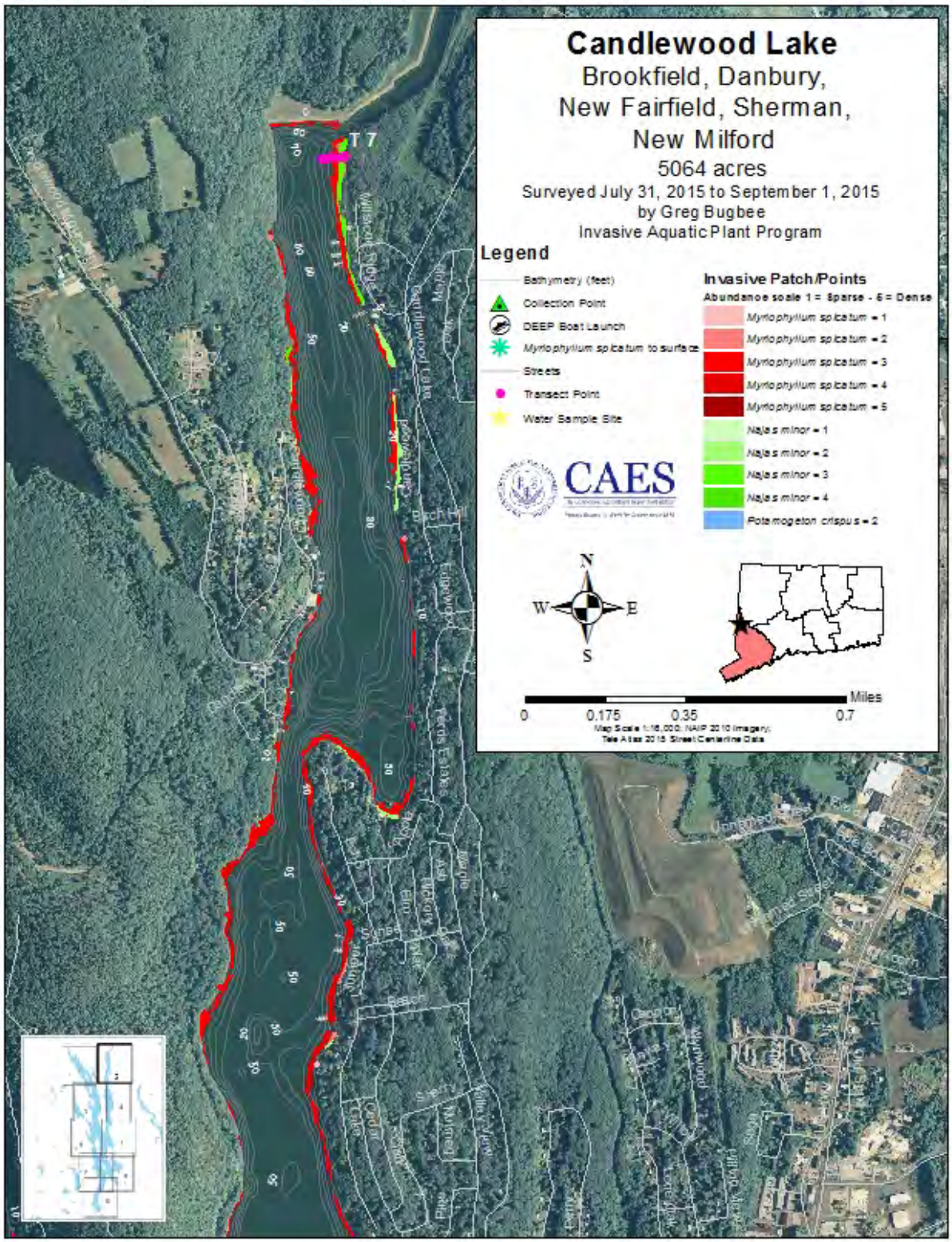
Miles
0
0.175
0.35
0.7
T 4
HOLIDAY POINT
ALLENS COVE
GREEN ISLAND


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed July 31, 2015 to September 1, 2015
by Greg Bugbee
Invasive Aquatic Plant Program
Legend
Bathymetry (feet)
Collection Point
DEEP Boat Launch
Myriophyllum spicatum to surface
Streets
Transect Point
Water Sample Site
Invasive Patch/Points
Abundance scale 1 = Sparse - 6 = Dense
Myriophyllum spicatum = 1
Myriophyllum spicatum = 2
Myriophyllum spicatum = 3
Myriophyllum spicatum = 4
Myriophyllum spicatum = 5
Najas minor = 1
Najas minor = 2
Najas minor = 3
Najas minor = 4
Potamogeton crispus = 2
CAES
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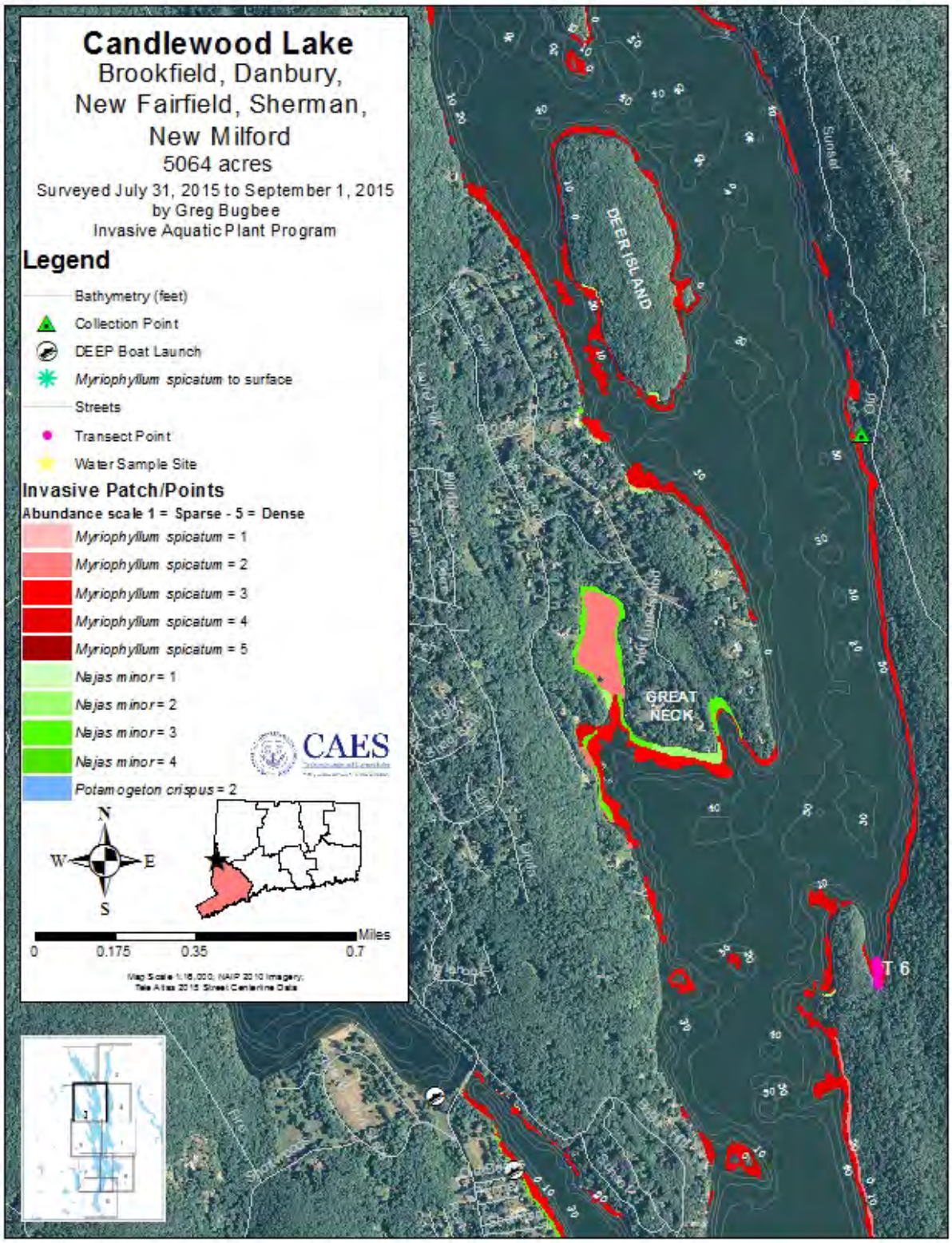
Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed July 31, 2015 to September 1, 2015
by Greg Bugbee
Invasive Aquatic Plant Program
Legend
Bathymetry (feet)
Collection Point
DEEP Boat Launch
Myriophyllum spicatum to surface
Streets
Transect Point
Water Sample Site
Invasive Patch/Points
Abundance scale 1 = Sparse - 5 = Dense
Myriophyllum spicatum = 1
Myriophyllum spicatum = 2
Myriophyllum spicatum = 3
Myriophyllum spicatum = 4
Myriophyllum spicatum = 5
Najas minor = 1
Najas minor = 2
Najas minor = 3
Najas minor = 4
Potamogeton crispus = 2
CAES
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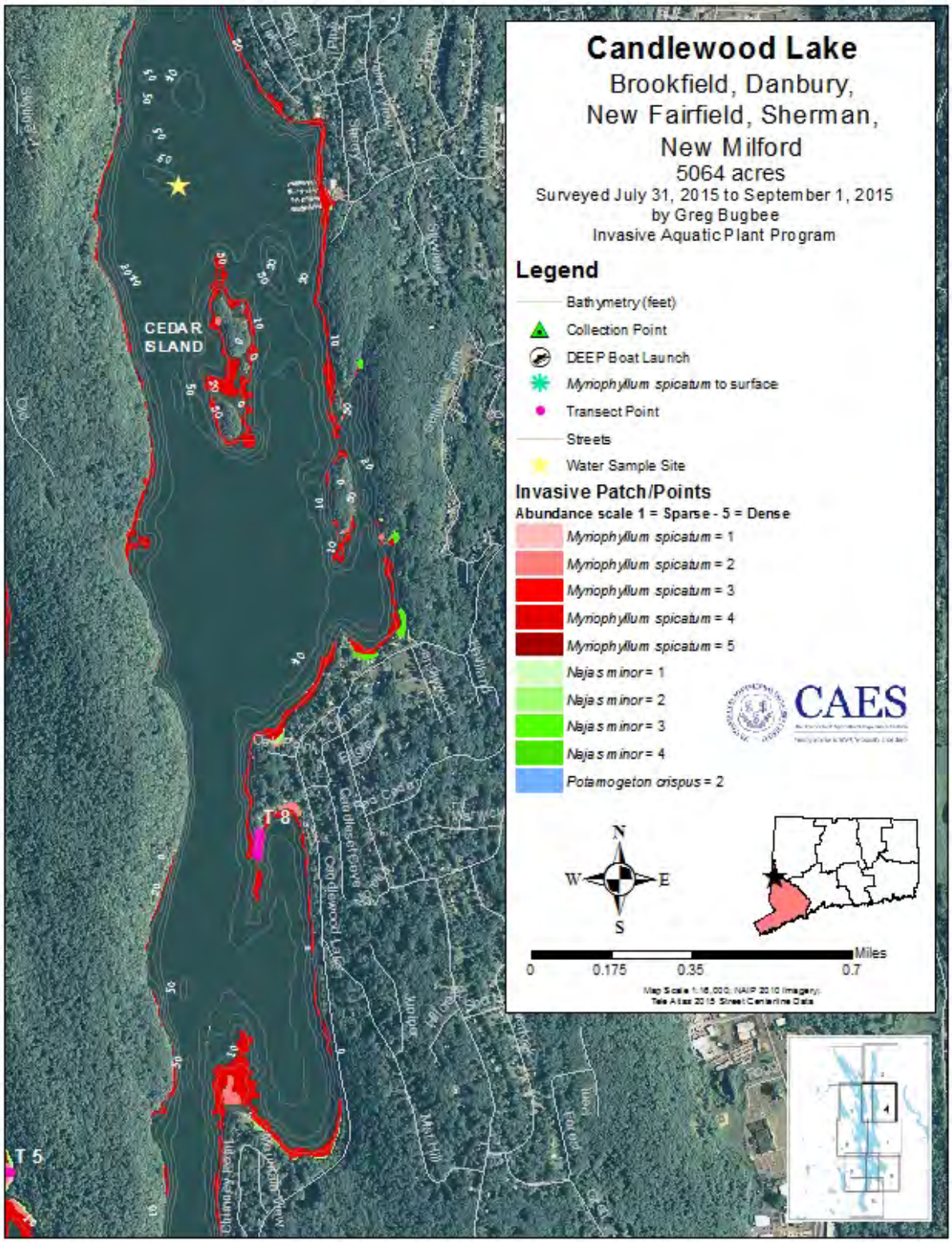
DEER ISLAND
GREAT NECK
T 6


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed July 31, 2015 to September 1, 2015
by Greg Bugbee
Invasive Aquatic Plant Program
Legend
Bathymetry (feet)
Collection Point
DEEP Boat Launch
Myriophyllum spicatum to surface
Transect Point
Streets
Water Sample Site
Invasive Patch/Points
Abundance scale 1 = Sparse - 5 = Dense
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Myriophyllum spicatum = 2
Myriophyllum spicatum = 3
Myriophyllum spicatum = 4
Myriophyllum spicatum = 5
Najas minor = 1
Najas minor = 2
Najas minor = 3
Najas minor = 4
Potamogeton crispus = 2
CAES
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CEDAR ISLAND
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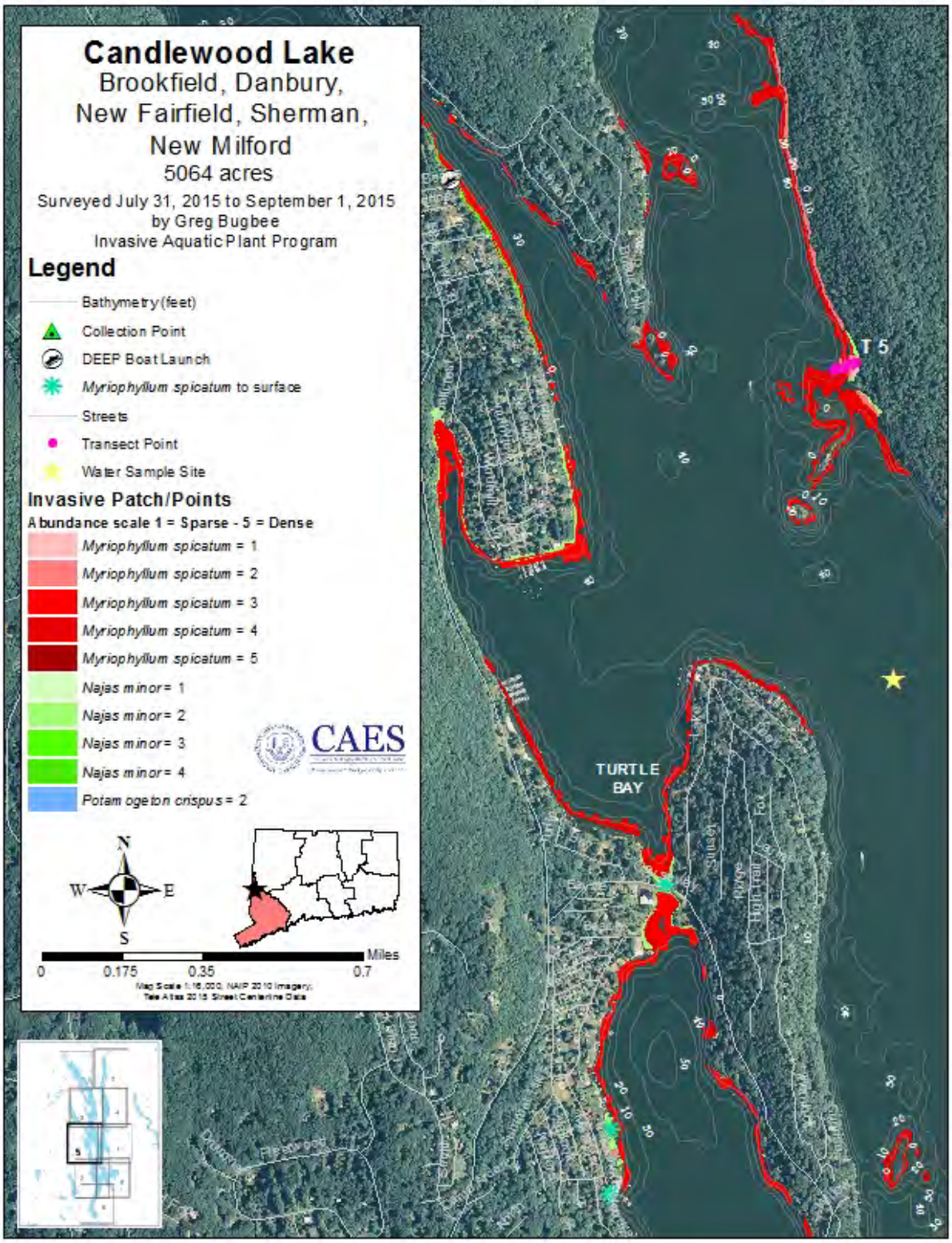
Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed July 31, 2015 to September 1, 2015
by Greg Bugbee
Invasive Aquatic Plant Program
Legend
Bathymetry (feet)
Collection Point
DEEP Boat Launch
Myriophyllum spicatum to surface
Streets
Transect Point
Water Sample Site
Invasive Patch/Points
Abundance scale 1 = Sparse - 5 = Dense
Myriophyllum spicatum = 1
Myriophyllum spicatum = 2
Myriophyllum spicatum = 3
Myriophyllum spicatum = 4
Myriophyllum spicatum = 5
Najas minor = 1
Najas minor = 2
Najas minor = 3
Najas minor = 4
Potamogeton crispus = 2
CAES
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T 5
TURTLE
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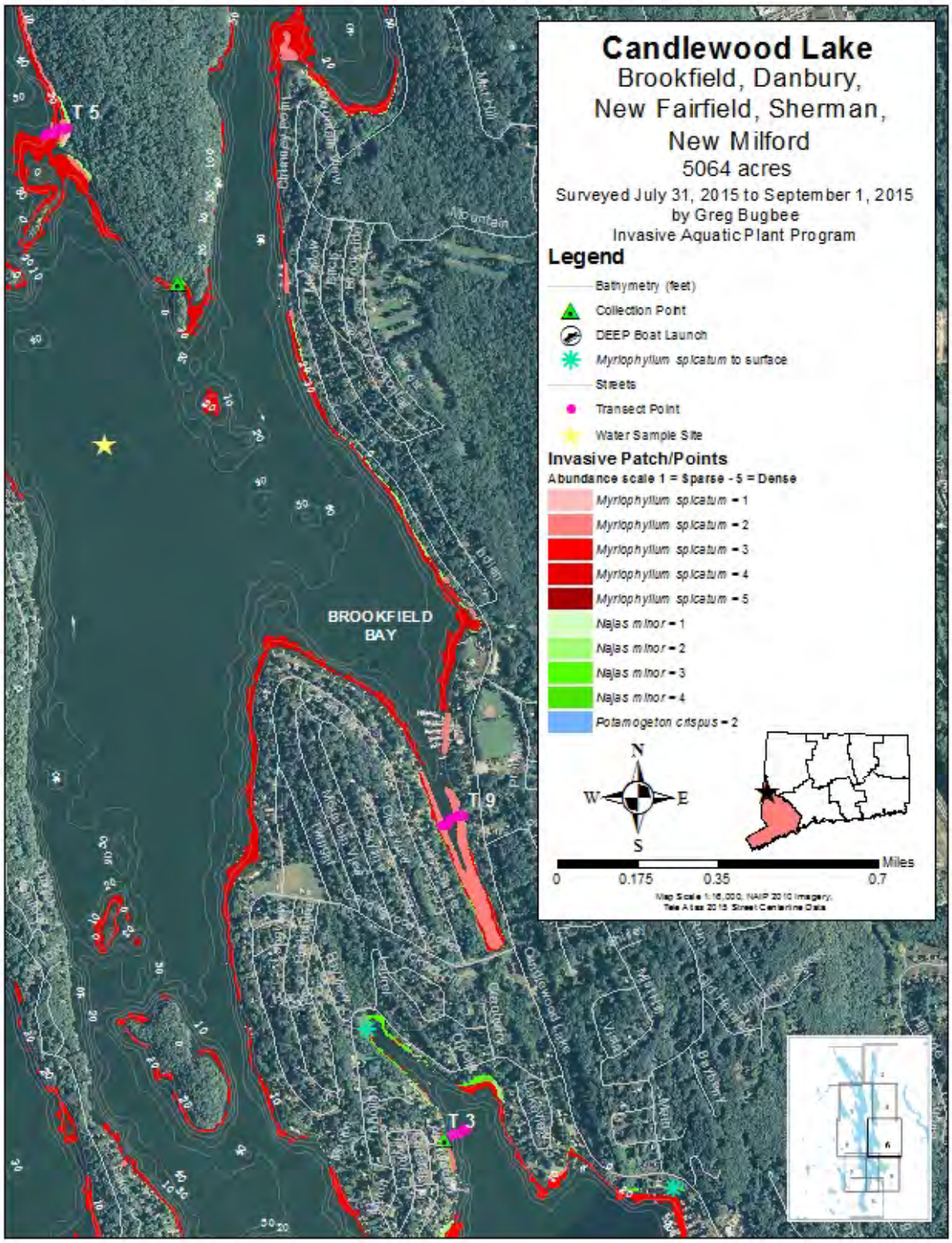
Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed July 31, 2015 to September 1, 2015
by Greg Bugbee
Invasive Aquatic Plant Program
Legend
Bathymetry (feet)
Collection Point
DEEP Boat Launch
Myriophyllum spicatum to surface
Streets
Transect Point
Water Sample Site
Invasive Patch/Points
Abundance scale 1 = Sparse - 5 = Dense
Myriophyllum spicatum = 1
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Myriophyllum spicatum = 3
Myriophyllum spicatum = 4
Myriophyllum spicatum = 5
Najas minor = 1
Najas minor = 2
Najas minor = 3
Najas minor = 4
Potamogeton crispus = 2
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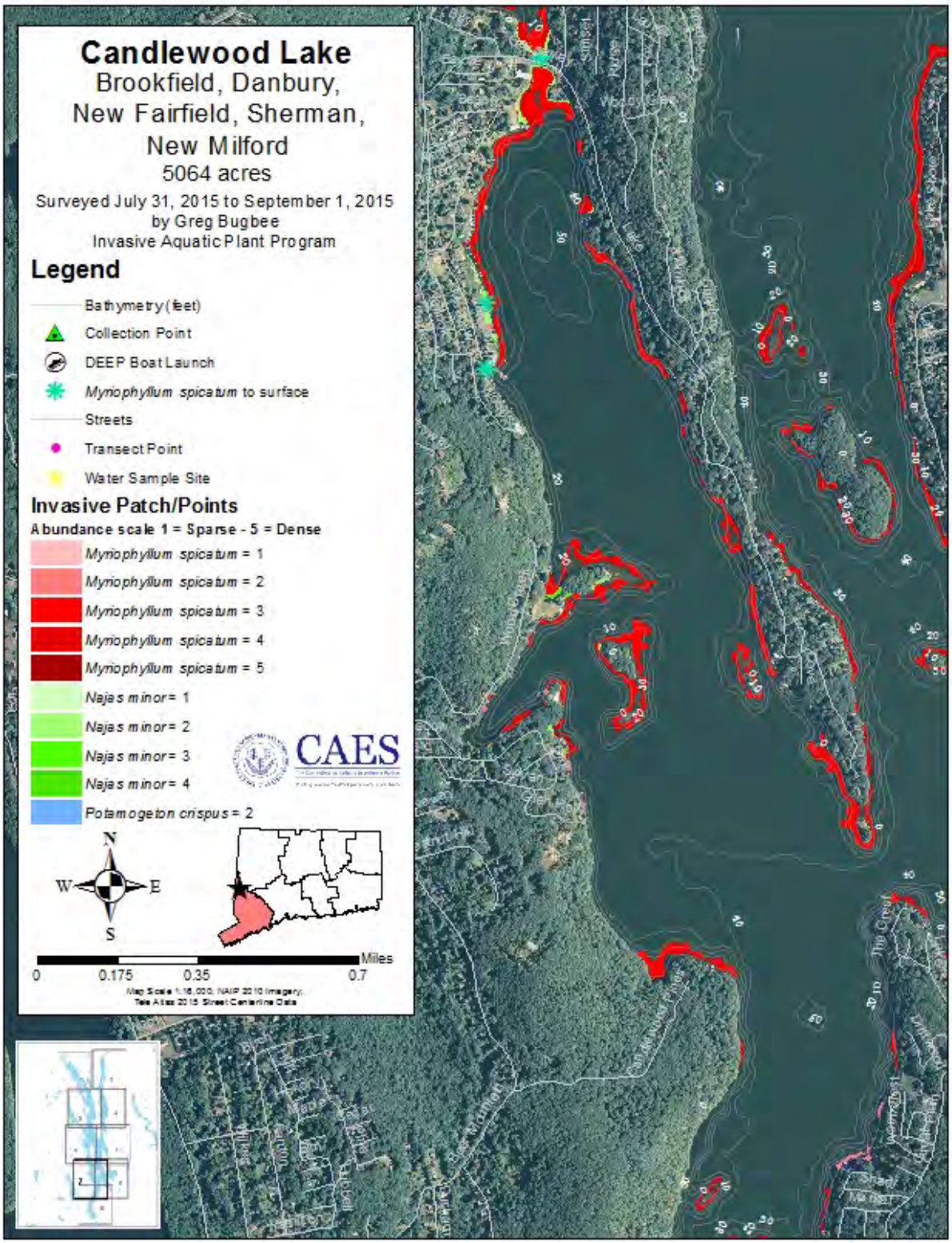
BROOKFIELD
BAY


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed July 31, 2015 to September 1, 2015
by Greg Bugbee
Invasive Aquatic Plant Program
Legend
Bathymetry (feet)
Collection Point
DEEP Boat Launch
Myriophyllum spicatum to surface
Streets
Transect Point
Water Sample Site
Invasive Patch/Points
Abundance scale 1 = Sparse - 5 = Dense
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Myriophyllum spicatum = 3
Myriophyllum spicatum = 4
Myriophyllum spicatum = 5
Najas minor = 1
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Najas minor = 3
Najas minor = 4
Potamogeton crispus = 2
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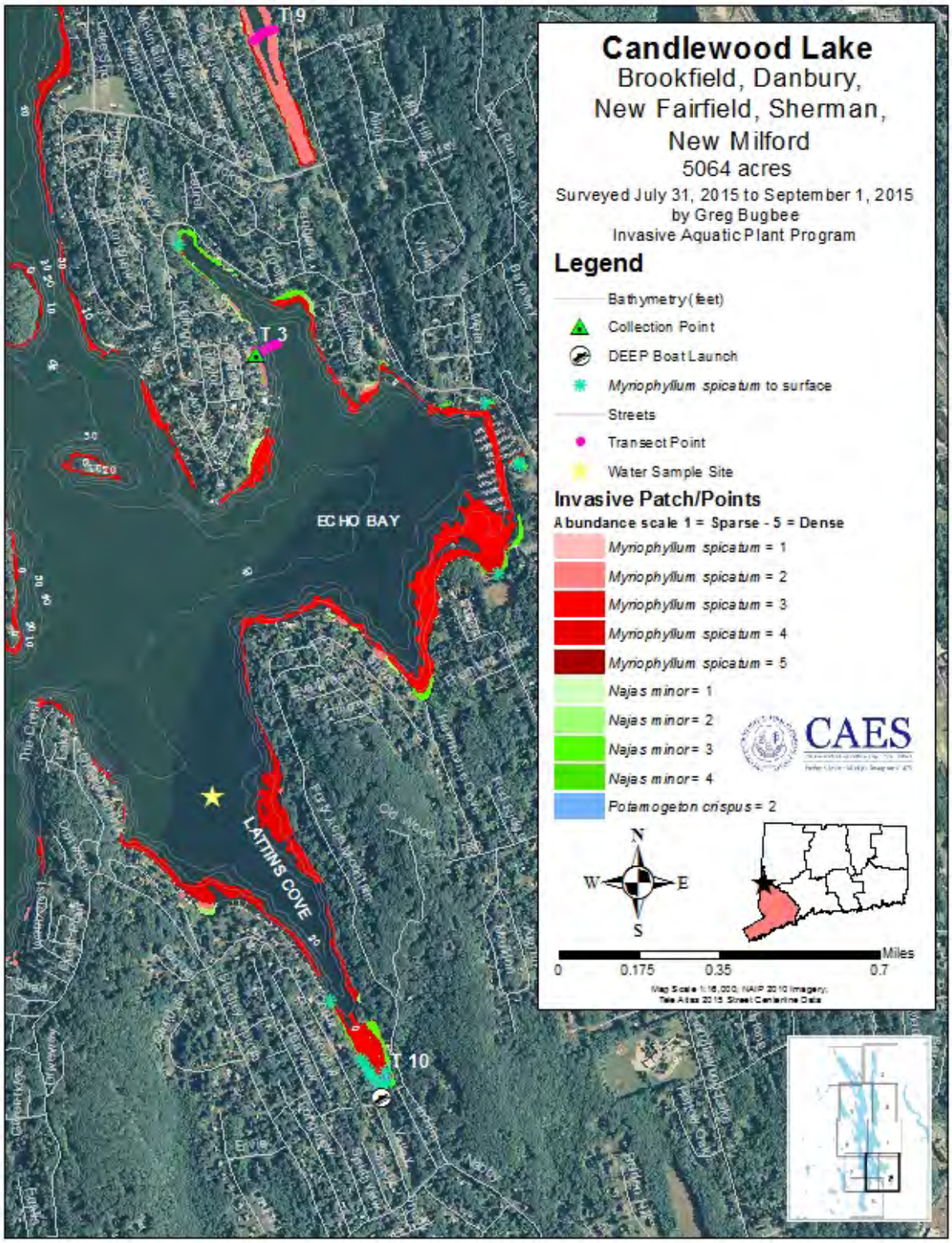
T 9
T 3
T 10
ECHO BAY
LATTINS COVE
Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed July 31, 2015 to September 1, 2015
by Greg Bugbee
Invasive Aquatic Plant Program
Legend
Bathymetry (feet)
Collection Point
DEEP Boat Launch
Myriophyllum spicatum to surface
Streets
Transect Point
Water Sample Site
Invasive Patch/Points
Abundance scale 1 = Sparse - 5 = Dense
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Myriophyllum spicatum = 2
Myriophyllum spicatum = 3
Myriophyllum spicatum = 4
Myriophyllum spicatum = 5
Najas minor = 1
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Najas minor = 3
Najas minor = 4
Potamogeton crispus = 2
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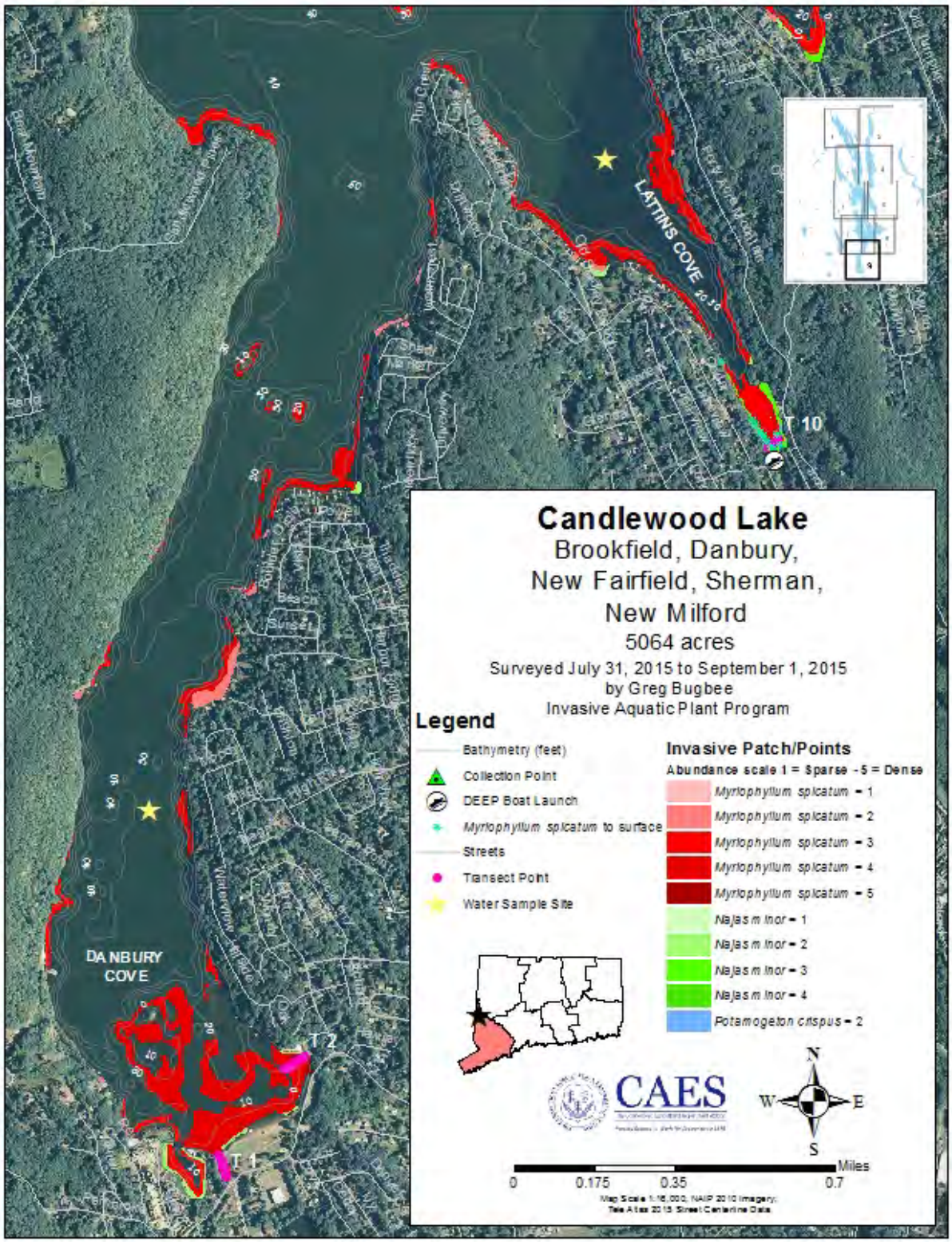
Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed July 31, 2015 to September 1, 2015
by Greg Bugbee
Invasive Aquatic Plant Program
Legend
Bathymetry (feet)
Collection Point
DEEP Boat Launch
Myriophyllum spicatum to surface
Streets
Transect Point
Water Sample Site
Invasive Patch/Points
Abundance scale 1 = Sparse - 5 = Dense
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Myriophyllum spicatum = 3
Myriophyllum spicatum = 4
Myriophyllum spicatum = 5
Najas minor = 1
Najas minor = 2
Najas minor = 3
Najas minor = 4
Potamogeton crispus = 2
CAES
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Miles
0
0.175
0.35
0.7
LATTINS COVE
DANBURY COVE
T 10
T 2
T 1

Table 4. Yearly comparisons of the frequency of occurrence on transects and total area of aquatic vegetation in Squantz Pond.

Scientific Name	Common Name	Frequency of Occurrence (percent*)				Area (acres)			
		2011	2015	2016	2017	2011	2015	2016	2017
Ceratophyllum demersum	Coontail	8	0	-	-	ND	ND	-	-
Elatine sp.	Waterwort	3	8	-	-	ND	ND	-	-
Eleocharis sp.	Spikerush	3	6	-	-	ND	ND	-	-
Elodea nuttallii	Western Waterweed	2	0	-	-	ND	ND	-	-
Myriophyllum spicatum	**Eurasian watermilfoil**	**12**	**62**	-	-	ND	**38**	-	-
Najas flexilis	Slender naiad	14	12	-	-	ND	ND	-	-
Najas minor	**Minor naiad**	**22**	**40**	-	-	ND	**15**	-	-
Pontederia cordata	Pickerelweed	0	4	-	-	ND	ND	-	-
Potamogeton bicupulatus	Snailseed pondweed	9	20	-	-	ND	ND	-	-
Potamogeton crispus	**Curlyleaf pondweed**	**0**	**0**	-	-	ND	**>0.1**	-	-
Potamogeton pusillus	Small pondweed	0	4	-	-	ND	ND	-	-
Sparganium species	Bur-reed	1	0	-	-	ND	ND	-	-
Total Invasive Species Richness		**2**	**2**	-	-				
Total Native Species Richness		7	6	-	-				
Total Species Richness		9	8	-	-				

Invasive plant (in bold)

* Percent occurrence on 50 points in 5 transects

** Not Determined

Squantz Pond

As requested by FirstLight Power Resources Services, LLC (FLP) we added a full invasive aquatic plant survey of Squantz Pond in 2015. Because Squantz Pond's water level rises, lowers and mixes with Candlewood Lake via the connection under the Route 39 causeway, we would expect similar plant communities. The Route 39 connection is adequate to allow for the drawdown of Squantz Pond to the same depth as Candlewood. We previously performed a full vegetative aquatic plant survey of Squantz Pond in 2011. We completed native and invasive aquatic plant identification and mapping, 14 transects, and water chemistry. We did not, however, use GPS to specifically determine the areas of invasive plant species. Our 2015 survey confirmed the presence of the invasive species Eurasian watermilfoil, minor naiad, and curlyleaf pondweed and six native species (Table 4). Eurasian watermilfoil and minor naiad were found on 62% and 40% of the transect points, respectively. Curlyleaf pondweed was only found in a small patch in the northern portion on the pond separate from any transects. Eurasian watermilfoil covered the largest area of Squantz Pond (38 acres) followed by minor naiad (15 acres) and curly leaf pondweed (<0.01 acres).

Native species found in both 2015 and 2011 included; waterwort, spikerush, nodding

Table 5. Yearly comparisons of the number and size of invasive patches in Squantz Pond.

	Patch Size (acres)											
	Eurasian watermilfoil				Minor Naiad				Curlyleaf pondweed			
Year	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)
2015	46	0.0002	10.2	0.83	13	0.2	4.1	1.2	1	0.004	0.004	0.004

Table 6. Yearly comparisons of the abundance of invasive plants in patches in Squantz Pond.

	Patch Abundance (1 = sparse - 5 = dense)								
	Eurasian watermilfoil			Minor Naiad			Curlyleaf pondweed		
Year	(min)	(max)	(mean)	(min)	(max)	(mean)	(min)	(max)	(mean)
2015	1	4	2.6	2	5	3.5	3	3	3

waternymph, and snailseed pondweed. Slender naiad had the highest frequency of occurrence of all native species found in 2015 (12%). Species found in 2015 and not in 2011 were pickerelweed and small pondweed.

We found 46 patches of Eurasian watermilfoil in our 2015 survey with the largest patch covering 10 acres on the eastern shoreline between transects 2 and 3 (Maps 1-2 Pages 36-37). The smallest patch of Eurasian watermilfoil was 0.0002 acres and the average patch size was 0.83 acres. The mean patch abundance was 2.6, the highest abundance was a 4 and the lowest abundance was a 1. We found 13 patches of minor naiad with the largest patch being 4.1 acres located between transect 2 and 3 (Maps 1-2, pages 36-37). Mean patch size was 1.2 acres and the smallest patch was 0.0002 acres. The mean patch abundance was 3.5 with a maximum patch size of 5 and a minimum patch size of 2. We only found one patch of curlyleaf pondweed totaling 0.004 acres with an abundance of 3.

The frequency of occurrence of native species, any species, and Eurasian watermilfoil on transects increased significantly from 2011 to 2015 ($p \leq 0.05$) while minor naiad and curlyleaf pondweed remained unchanged (Figure 15). Correspondingly, native, any and invasive species richness statistically increased in 2015 from 2011(± 1.0 SEM, Figure 16). Both 2011 and 2015 featured deep drawdowns for Candlewood Lake. If the water level in Squantz Pond was similar to Candlewood Lake, the 2015 increases may be explained by the shallower deep

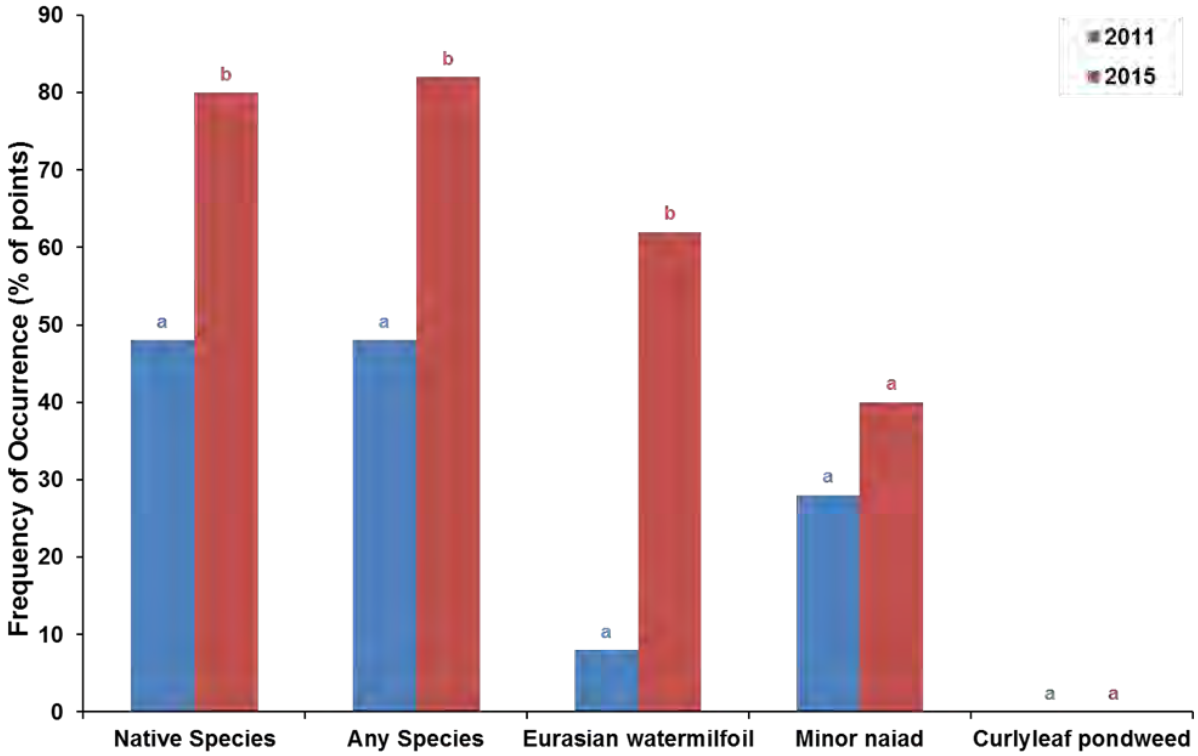


Figure 15. Yearly comparison of the frequency of occurrence of native and invasive species on transects in Squantz Pond. Bars with the same letter are not significantly different.

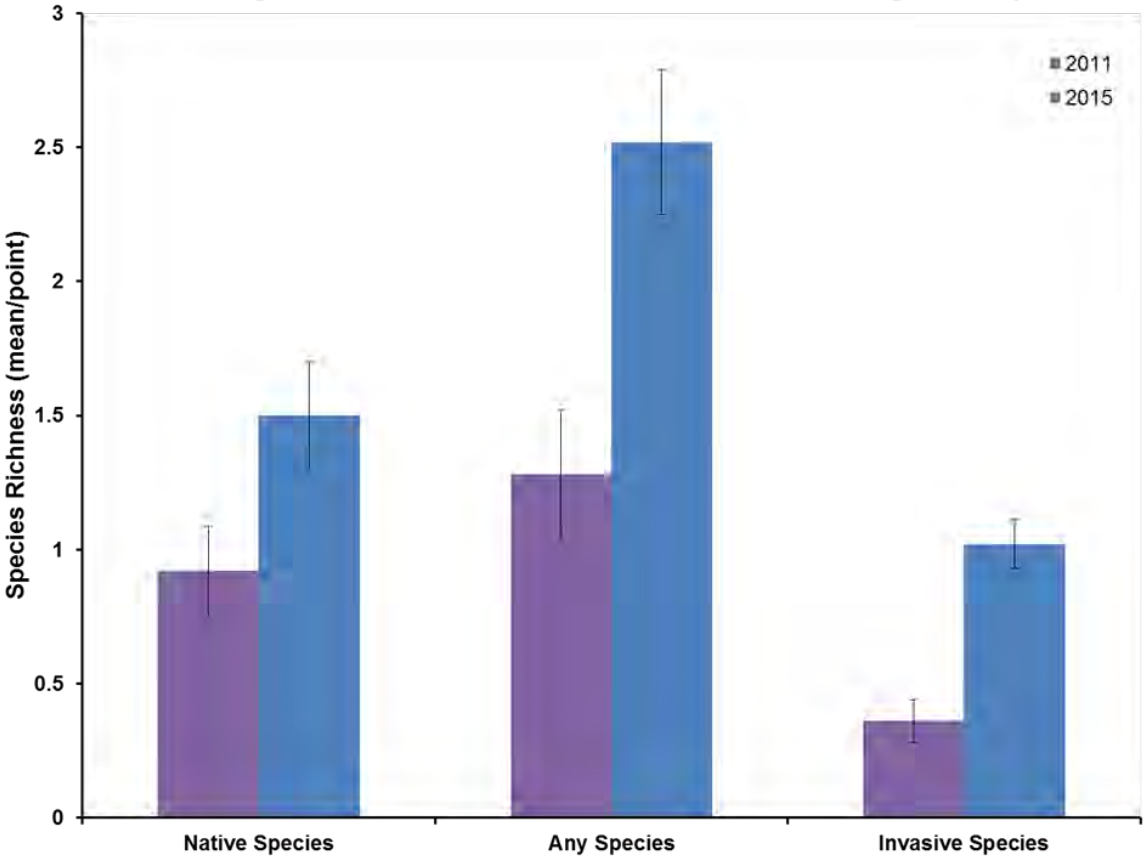


Figure 16. Yearly comparison of the average number of species per transect point in Squantz Pond. Error bars equal +/- one standard error of the mean.

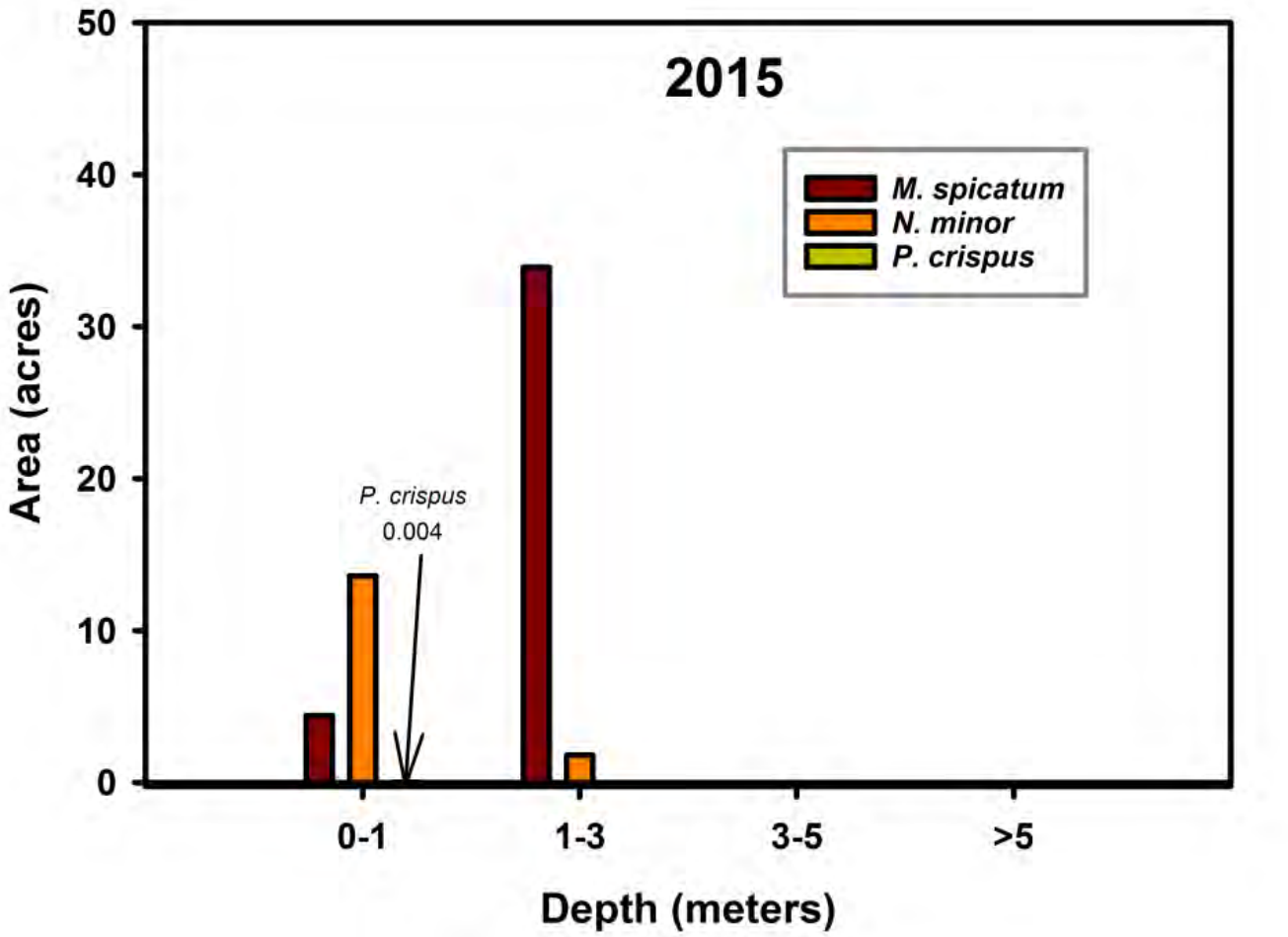


Figure 17. Comparisons of depth preferences of invasive plants in Squantz Pond.

drawdown (Figure 8, Page 16) or the insulating effects of the deep snow cover in 2015 (Figure 9, page 17).

Most Eurasian watermilfoil in Squantz Pond (34 acres) was located at a depth of 1–3 m with a small amount (4 acres) in a depth of 0-1 m (Figure 17). The reason for Eurasian watermilfoil not being found at 3-4 m depths, as in Candlewood Lake, is unclear. Most minor naiad was found at a 0-1 m depth (14 acres) with a smaller amount at a depth of 1-3 meters (2 acres). This is similar to Candlewood Lake. The only extremely small patch of curlyleaf pondweed (<0.01 acres) was found in 0-1 m of water.

Squantz Pond has a littoral zone of 111 acres or 42% of the ponds area. Eurasian watermilfoil covered 34% of the littoral zone, minor naiad covered 13.8% and curlyleaf pondweed

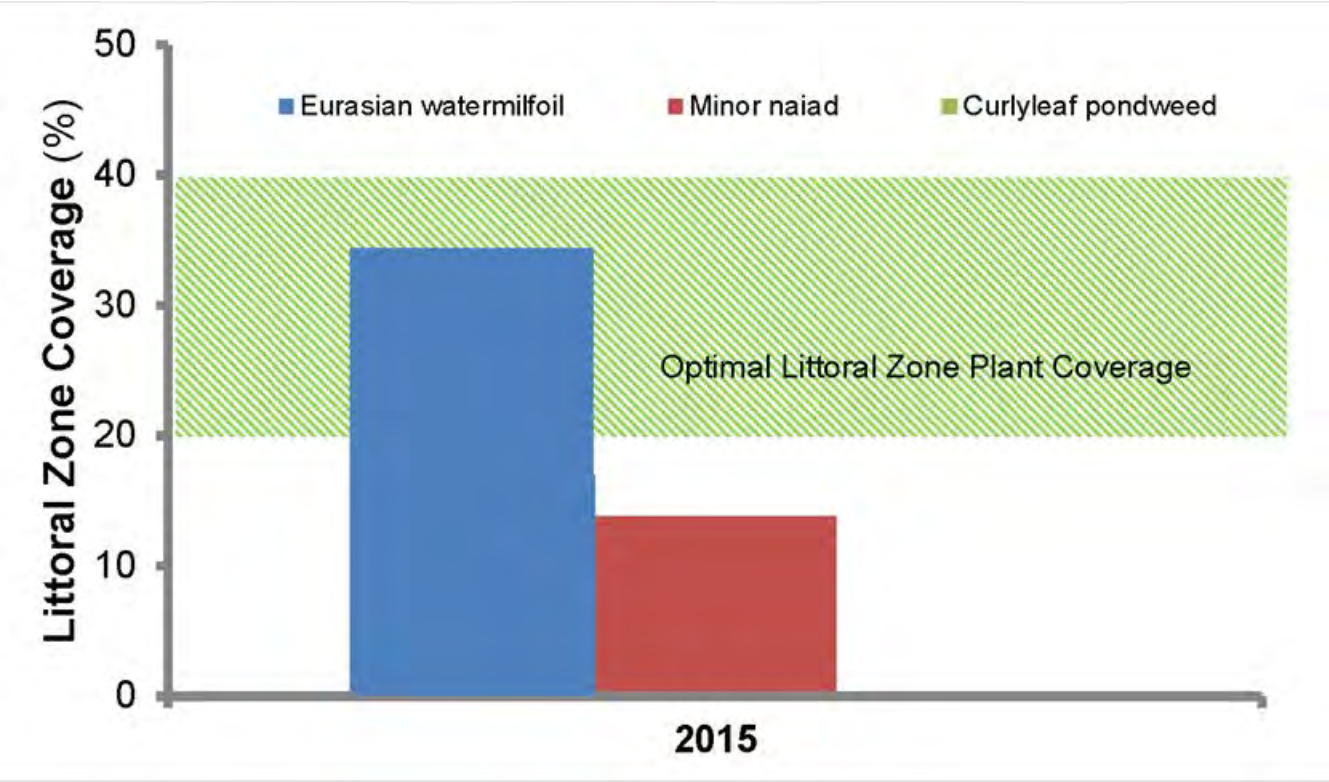
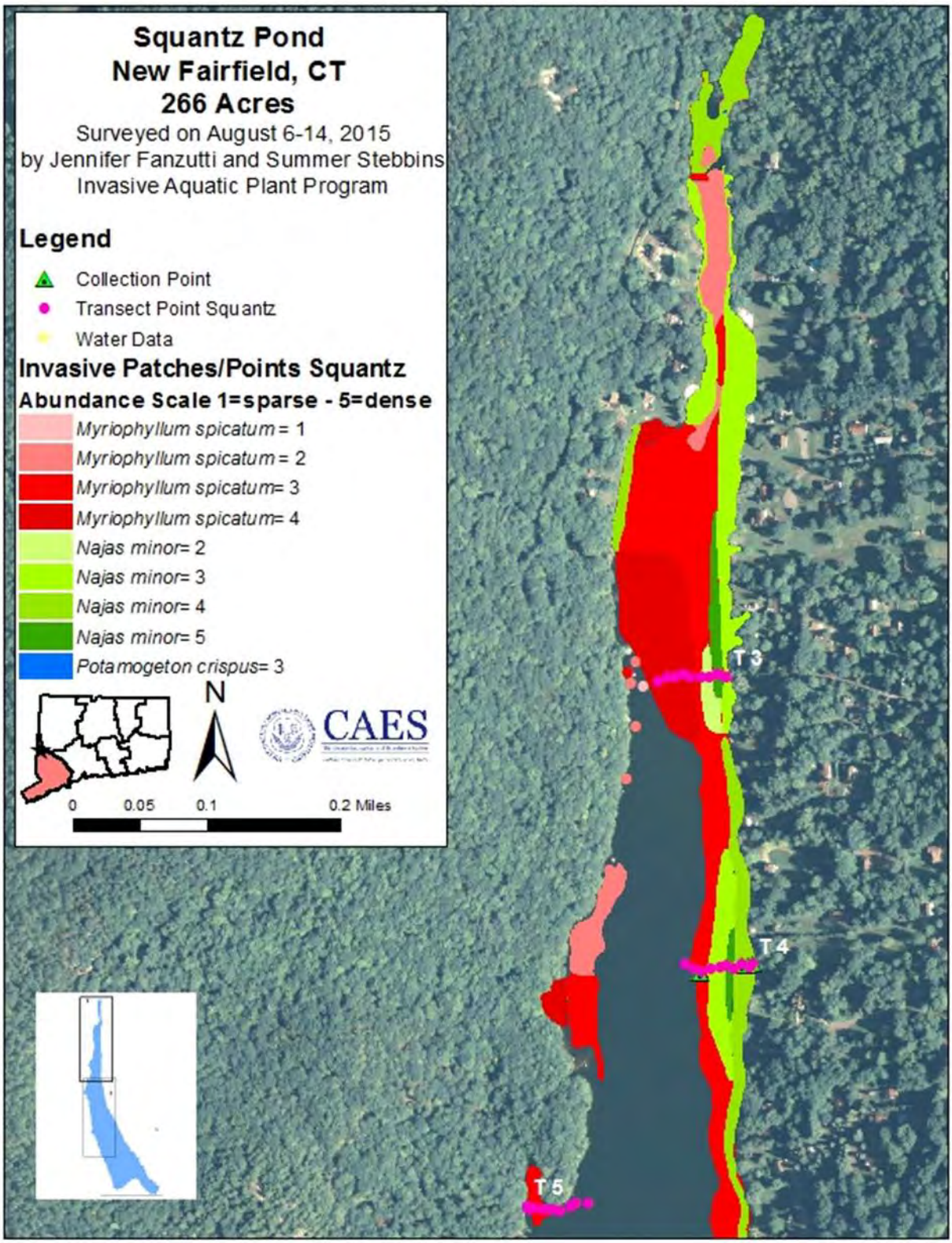


Figure 18, Comparisons of the coverage of invasive plants in Squantz Pond's littoral zone.

covered less than 0.1% (Figure 18). The optimal range littoral plant zone coverage of 20-40% is satisfied by Eurasian watermilfoil alone. The grass carp introduction into Lake Candlewood may reduce the littoral zone plant coverage in Squantz Pond as the connection under the Route 39 causeway offers no barriers to migration of the fish between waterbodies


Squantz Pond
New Fairfield, CT
266 Acres
Surveyed on August 6-14, 2015
by Jennifer Fanzutti and Summer Stebbins
Invasive Aquatic Plant Program
Legend
Collection Point
Transect Point Squantz
Water Data
Invasive Patches/Points Squantz
Abundance Scale 1=sparse - 5=dense
Myriophyllum spicatum = 1
Myriophyllum spicatum = 2
Myriophyllum spicatum= 3
Myriophyllum spicatum= 4
Najas minor= 2
Najas minor= 3
Najas minor= 4
Najas minor= 5
Potamogeton crispus= 3
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CAES
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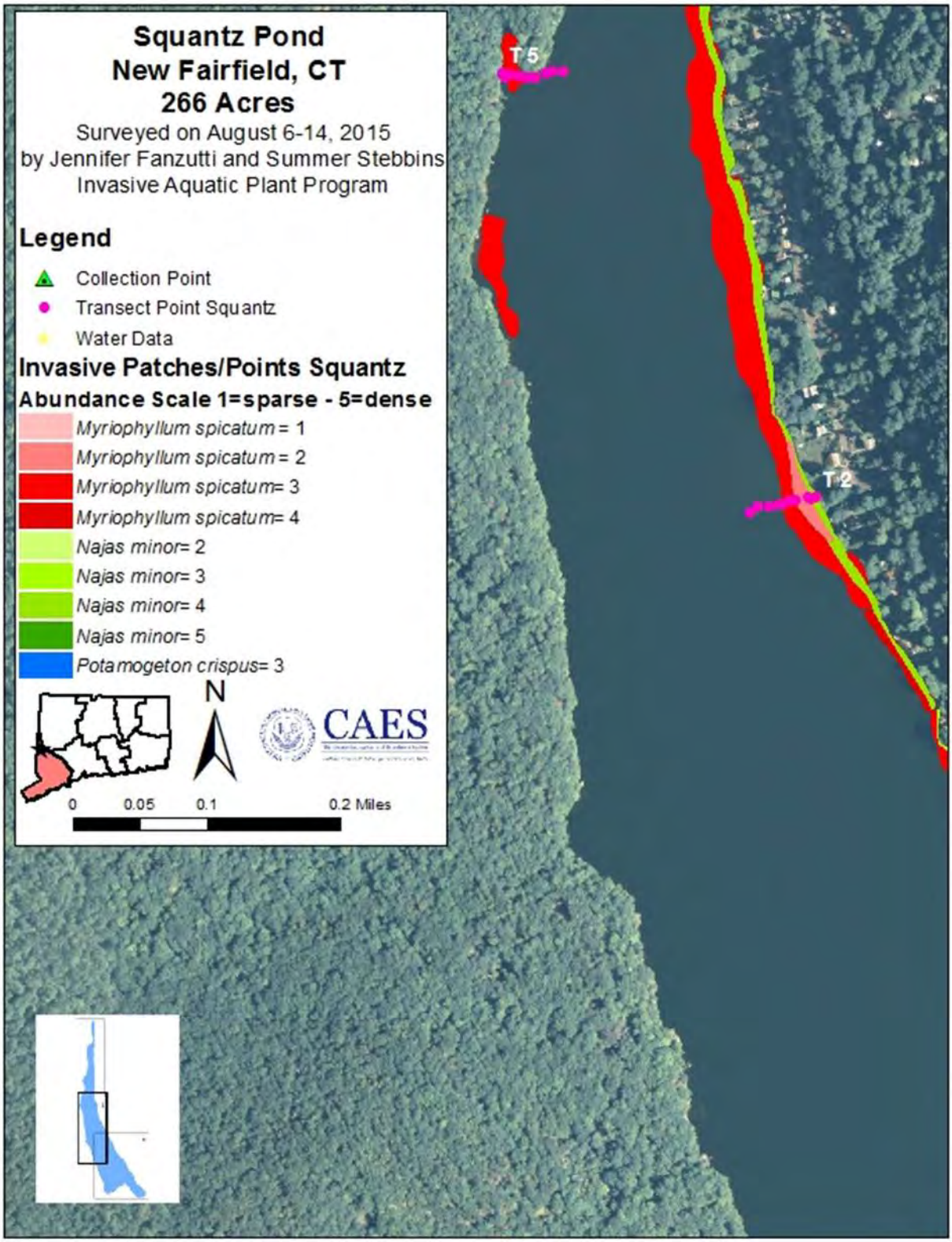
Squantz Pond
New Fairfield, CT
266 Acres
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Invasive Aquatic Plant Program
Legend
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Najas minor= 3
Najas minor= 4
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Potamogeton crispus= 3
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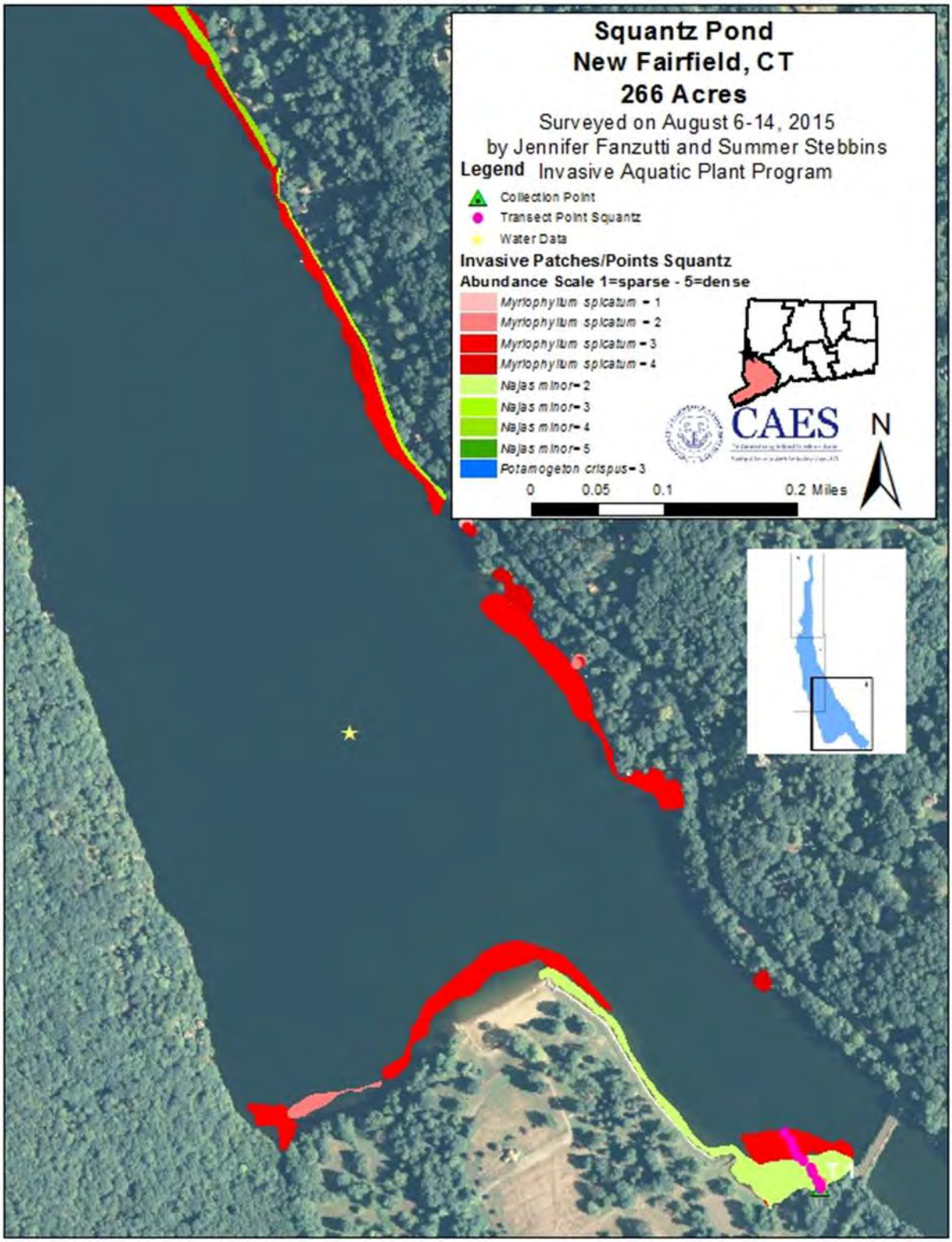
Squantz Pond
New Fairfield, CT
266 Acres
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Transect Point Squantz
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Najas minor - 4
Najas minor - 5
Potamogeton crispus - 3
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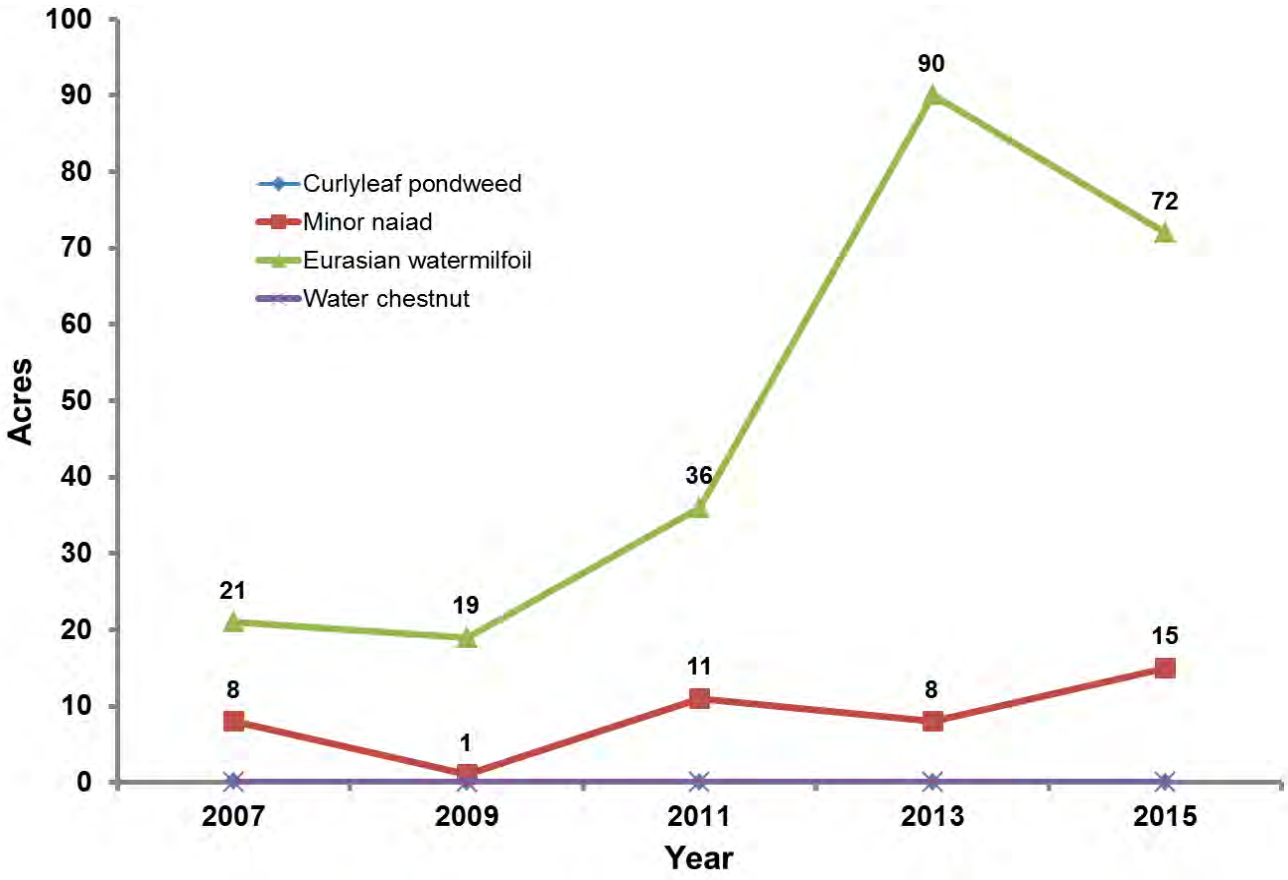


Figure 19. Yearly changes in in the acreage of invasive aquatic plants in Lake Lillinonah.

Lake Lillinonah

Our 2015 invasive aquatic plant survey of Lake Lillinonah confirmed the presence of Eurasian watermilfoil, curlyleaf pondweed, minor naiad, and water chestnut (Figure 19). These are the same invasive species found in previous years. Although the total acreage of Eurasian watermilfoil decreased to 72 acres in 2015, from an all-time high of 90 acres in 2013, it was still considerably more than found from 2007-2011 (range 19-36 acres). The total acreage of minor naiad reached an all-time high of 15 acres in 2015 (previous range 1-11acres) while the total acreages of curlyleaf pondweed and water chestnut stayed the same as past years (< 0.1 acres).

Our 2015 transect data showed the frequency of occurrence (FO) of Eurasian watermilfoil on transects increased to 31% in 2015 from 25% in 2014 (Table 7, Figure 20). Statistically this was only different ($p \leq 0.05$) from 2011 when an all-time low of 12 acres was observed. The FO of minor naiad was 14% in 2015 and was not statistically different ($p \leq 0.05$) than any

Table 7. The frequency of occurrence of aquatic plants in Lake Lillinonah.

Scientific Name	Common Name	Frequency of Occurrence (percent*) 2007	2009	2010	2011	2012	2013	2014	2015
Callitiche sp.	Water starwort	1	0	0	0	0	0	0	0
Ceratophyllum demersum	Coontail	0	1	3	5	2	4	10	6
Elatine sp.	Waterwort	0	0	2	1	0	4	2	2
Eleocharis sp.	Spikerush	2	4	4	4	0	3	4	3
Elodea nuttallii	Western waterweed	0	0	0	0	0	0	0	4
Eriocaulon aquaticum	Sevenangel pipewort	0	1	2	3	0	0	0	0
Gratiola aurea	Golden hedge-hyssop	0	1	0	0	0	0	0	0
Lemna minor	Duckweed	0	1	0	0	4	0	0	0
Ludwigia species	Primrose-willow	0	0	0	0	0	1	1	0
Myriophyllum spicatum	**Eurasian watermilfoil**	**16**	**15**	**25**	**12**	**39**	**35**	**25**	**31**
Najas minor	**Minor naiad**	**14**	**6**	**5**	**12**	**19**	**7**	**21**	**14**
Potamogeton bicupulatus	Snailseed pondweed	0	3	0	0	0	0	0	0
Potamogeton crispus	**Curlyleaf pondweed**	**3**	**0**	**1**	**5**	**4**	**1**	**3**	**2**
Potamogeton foliosus	Leafy pondweed	0	0	4	4	1	4	0	0
Potamogeton illinoensis	Illinois pondweed	2	2	0	0	0	0	0	0
Potamogeton nodosus	Longleaf pondweed	0	0	0	1	2	0	0	0
Potamogeton pusillus	Small pondweed	0	0	1	0	1	1	1	0
Sagittaria sp.	Arrowhead	0	0	1	0	0	5	4	2
Stuckenia pectinata	Sago pondweed	0	0	0	1	0	0	0	0
Trapa natans	**Water chestnut**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Zannichellia palustrus	Horned pondweed	1	0	4	1	0	3	3	2
Zosterella dubia	Water stargrass	4	0	0	0	0	0	0	2
Total Invasive Species Richness		**3**	**2**	**3**	**3**	**3**	**3**	**3**	**3**
Total Native Species Richness		5	7	8	8	5	8	7	7
Total Species Richness		8	9	11	11	8	11	10	10

Invasive plant (in bold)
* Percent occurrence on 100 points in 10 transects
** Not Determined

other year (range 5-21%). Curlyleaf pondweed FO in was 2% in 2015 and was similar ($p \leq 0.05$) to all previous years (range 0-4%). Because transects are only analyzed during the summer, after most curlyleaf pondweed has senesced, there is an inherent bias toward under-estimation of this species in our data.

We have found that the native aquatic plant community of Lake Lillinonah along transects varies slightly from year to year. The main differences between 2015 and 2014 were the presence of western waterweed, which was found for the first time, water stargrass, which was found in 2015 but not in 2014, and primrose-willow, which was not found in 2015 (Table 7). Coontail, waterwort, spikerush, arrowhead, and horned pondweed were found in 2015 and in most previous years. Coontail was the most frequently found native species in our 2015 survey with a 6% FO. The total species richness of any species (native or invasive) for Lake Lillinonah was 10 in 2015 which fell within the range of 8-11 of previous years (Table 7).

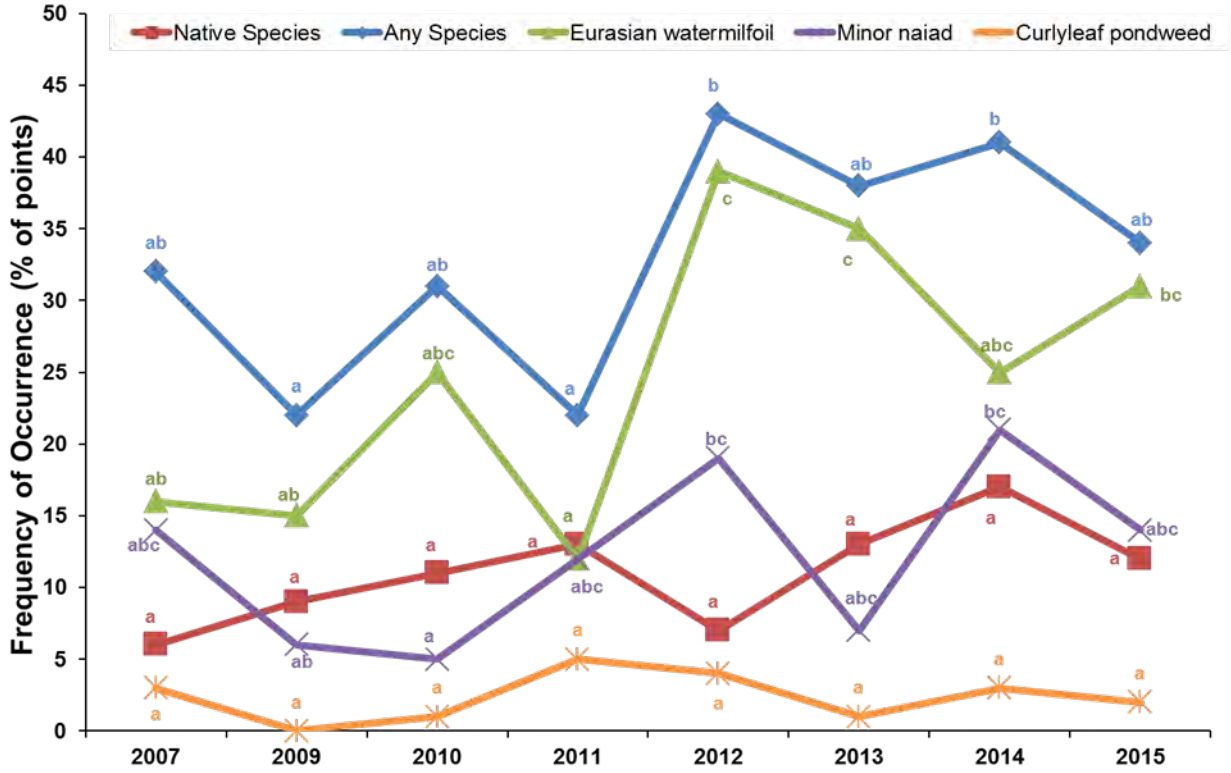


Figure 20. Yearly comparisons of the frequency of native and invasive plants on transects in Lake Lillinonah. Bars with the same letters are not significantly different

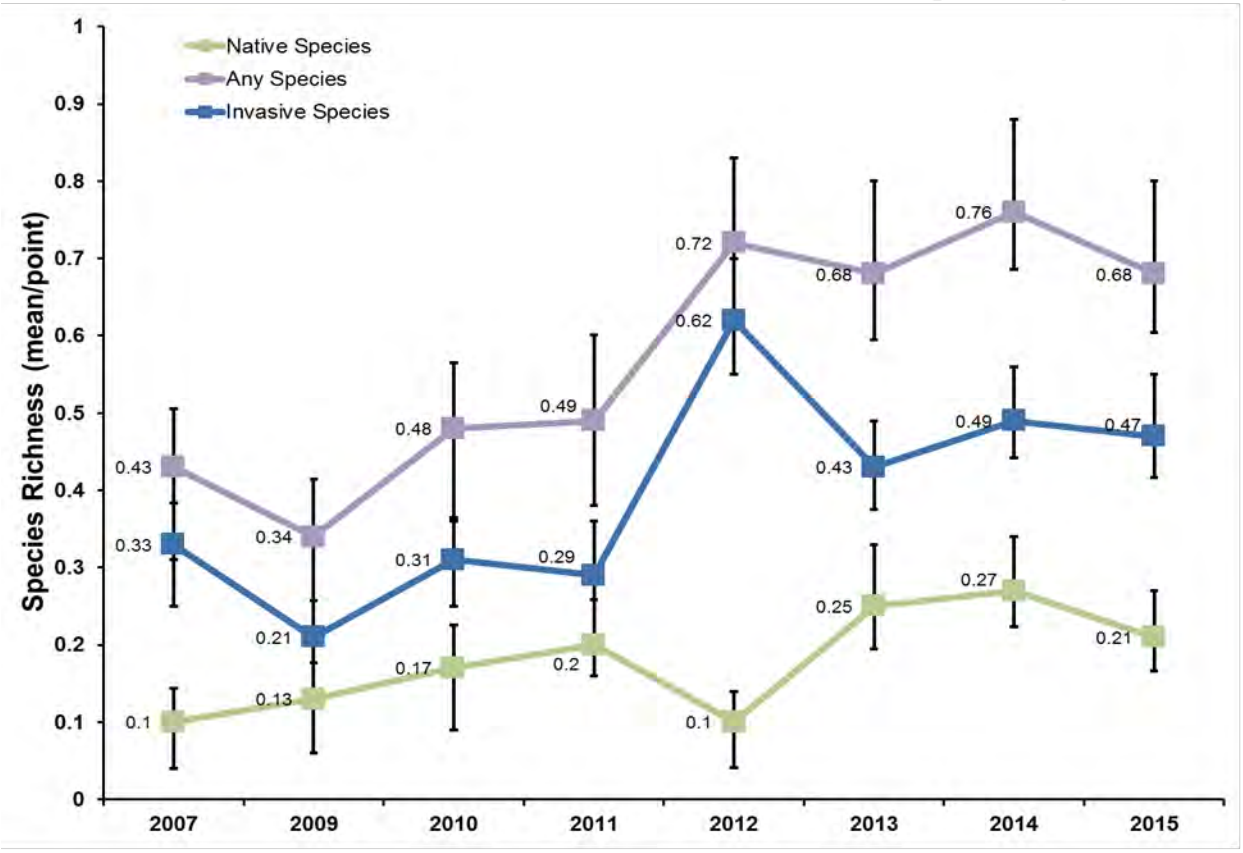


Figure 21. Yearly comparisons of the average number of species per transect point in Lake Lillinonah. Error bars +/- one standard error of the mean.

Table 8. Yearly comparison of the number and size of invasive patches and their sizes in Lake Lillinonah.

	Patch Size (acres)															
	Eurasian watermilfoil				Minor naiad				Curlyleaf pondweed				Water Chestnut			
Year	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)
2015	164	0.0002	5.4	0.4	48	0.0002	3.9	0.3	13	0.0002	0.0002	0.0002	8	0.0002	0.0002	0.0002
2013	245	0.0002	7.1	0.4	22	0.0002	2.7	0.4	4	0.0002	0.0002	0.0002	6	0.0002	0.0002	0.0002
2011	109	0.0002	4.8	0.3	83	0.0002	1.6	0.1	6	0.0002	0.0002	0.0002	5	0.0002	0.0002	0.0002
2009	131	0.0002	2.3	0.1	5	0.0400	0.3	0.1	1	0.0002	0.0002	0.0002	0	0.0	0.0	0.0
2007	249	0.0002	1.6	0.1	95	0.0002	1.5	0.1	10	0.0002	0.0002	0.0002	0	0.0	0.0	0.0

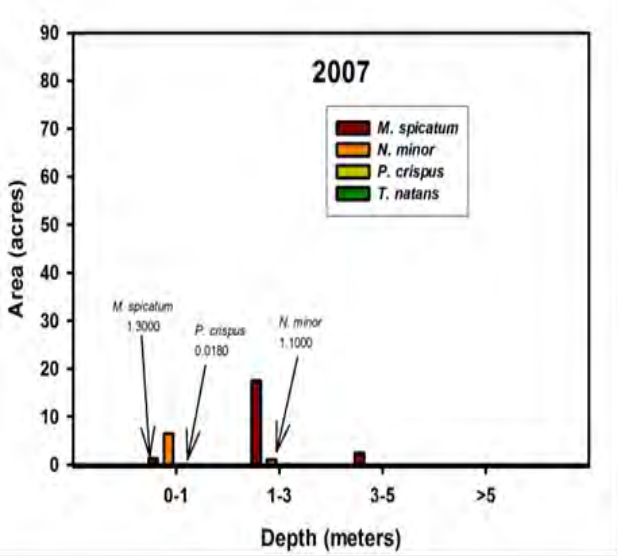
Table 9. Yearly comparison of the abundance of invasive patches in Lake Lillinonah.

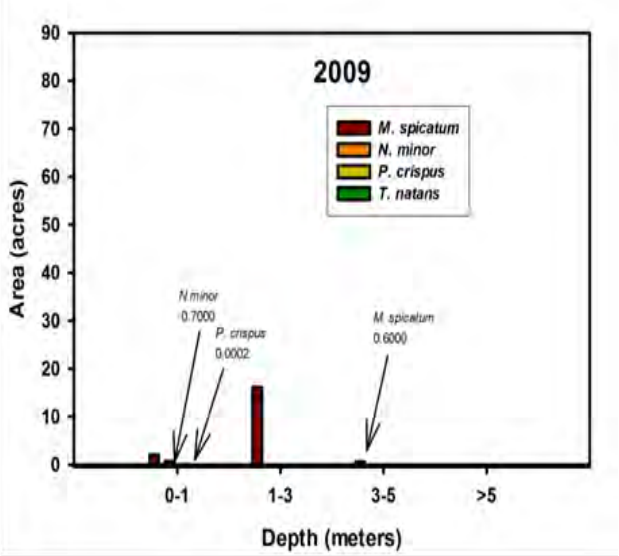
	Patch Abundance (1 = sparse - 5 = dense)											
	Eurasian watermilfoil			Minor naiad			Curlyleaf pondweed			Water chestnut		
Year	(min)	(max)	(mean)	(min)	(max)	(mean)	(min)	(max)	(mean)	(min)	(max)	(mean)
2015	1	5	2.2	1	5	3	1	5	3.4	2	5	3.6
2013	1	5	2.3	1	4	2.1	1	3	2.0	1	2	1.5
2011	1	5	2.4	1	5	2.9	1	3	2.0	2	3	2.6
2009	1	4	2.1	2	3	2.6	1	1	1.0	0	0	0.0
2007	1	4	1.9	1	5	3.6	1	4	2.7	0	0	0.0

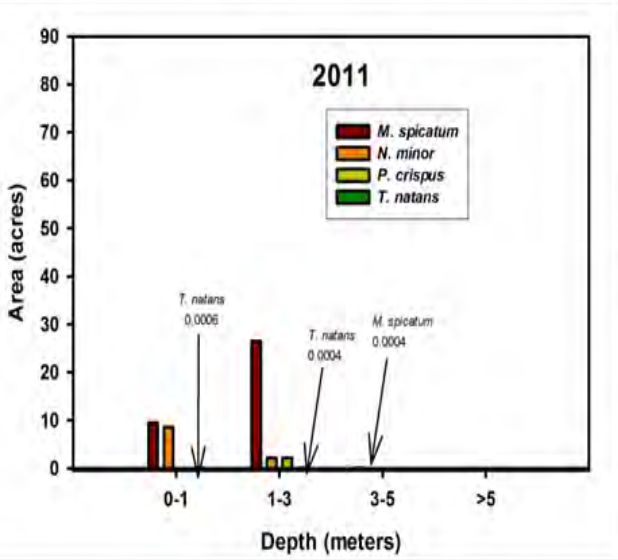
For such a large lake to have so few species is unusual but probably related to the fluctuating water levels associated with power generation and the riverine system.

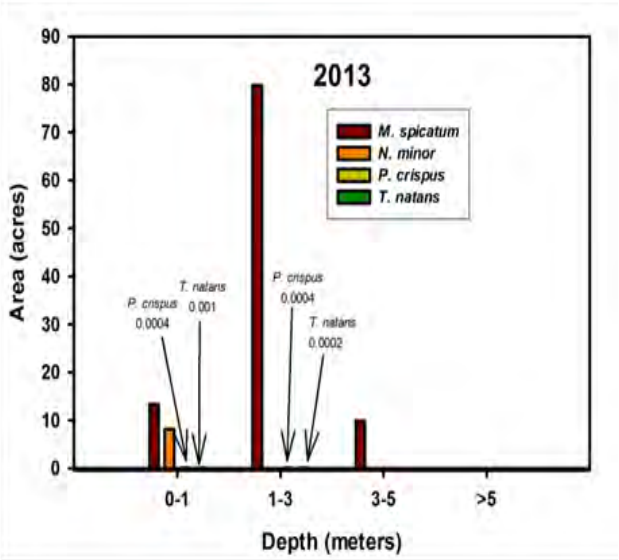
On transects, the FO of any species was 34% in 2015 which was not statistically different ($p \leq 0.05$) than any other year (Figure 20). The species richness of any species in 2015 was 0.7 (Figure 21) which was significantly greater (± 1 SEM) than 2007-2010. Invasive species richness in 2015 was 0.5. This was statistically greater (± 1 SEM) than 2007-2011 (0.2-0.3) but less than 2012 (0.6). The differences are largely due to the year to year changes in the FO of Eurasian water milfoil which in all years except 2011 is the most frequently found invasive plant on the transects. Changes in FO of the plant community along transects in Lake Lillinonah may be influenced by high and low water levels associated with its riverine system and changes needed for hydroelectric power generation.

We found 164 patches of Eurasian watermilfoil in our 2015 survey, which fell within the range of 109-245 present in our previous surveys (Table 8). The largest patches of Eurasian watermilfoil in 2015 were 5.4 acres north of transect 3 (Map 1, Page 46) and 5.3 acres south of transect 9 (Map 5, Page 50). These maximum patch sizes fell within the range of 1.6- 7.1









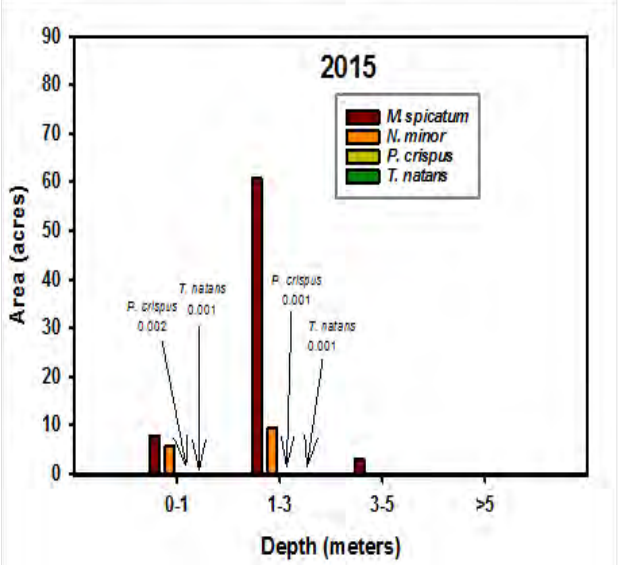


Figure 22. Yearly comparison of the depth preferences of invasive species in Lake Lillinonah

found in our previous surveys. Mean patch size remained at the all-time high of 0.4 acres (reached in 2014) and reflects an increasing trend from the low of 0.1 acres in 2007 and 2008. The mean patch abundance of Eurasian watermilfoil in 2015 was 2.2 and fell within the narrow range of 1.9 - 2.4 found in previous surveys (Table 9).

The number of minor naiad patches has fluctuated widely from year to year ranging from a minimum of 5 in 2009 to maximum of 95 in 2007 (Table 8). Minor naiad also had the third highest number of patches in 2015 (48). Our 2015 survey has the largest minor naiad patch recorded to date (3.9 acres) located near transect 9 (Map 5, Page 50). The mean patch size was the second largest among years (0.3) with a general increasing trend in recent years. The mean patch abundance of minor naiad was 3.0 in 2015 and was only exceeded by the 3.6 found in 2007 (Table 9).

There were 13 patches of curlyleaf pondweed in 2015 which is the most we have found in any year (range 1-10, Table 8). All patches are recorded as point features (0.0002 acres) indicating the sparse occurrence of the plant. The patch abundance of curlyleaf pondweed had ranged from 1-5. 2015 was the first year when the maximum abundance reached 5 (Table 9). The average abundance of curlyleaf pondweed was the highest recorded at 3.4 among all years.

Water chestnut also showed an increase in number of patches in our 2015 survey. The eight patches recorded are the most among years with a steady increase from none found in 2007 and 2009. The mean and maximum patch abundance of water chestnut also reached an all-time high with values of 3.6 and 5, respectively (Table 9). These results suggest that the water chestnut population is expanding despite the hand harvesting efforts.

The depth preference of Eurasian watermilfoil has been similar throughout all years with most occurring at depths of 1-3 m followed by a smaller amount at depths of 0-1 m and yet a smaller amount at depths of 3-5 m (Figure 22). Minor naiad prefers shallower depths with most at depths of 0-1 m in all years except 2015 when slightly more were at depths of 1-3 m. Curlyleaf pondweed and water chestnut had similar depth preferences with less than 0.1 acre growing at depths 0-1 m and 1-3 m.

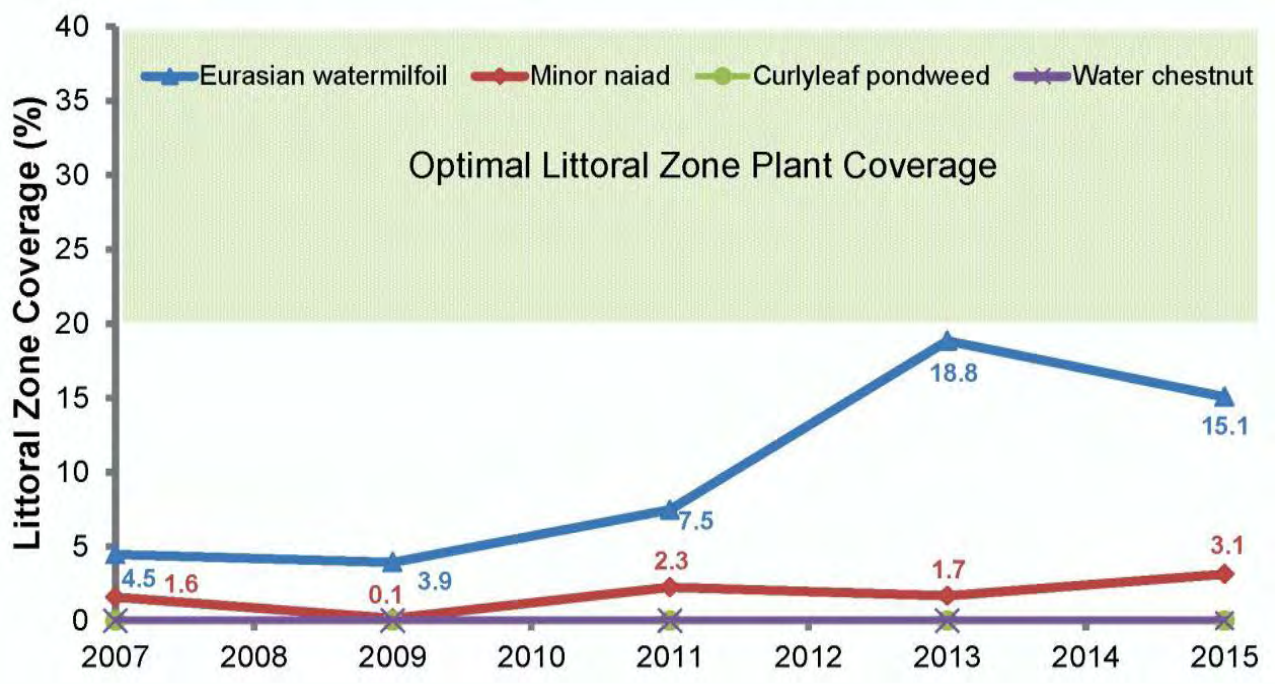
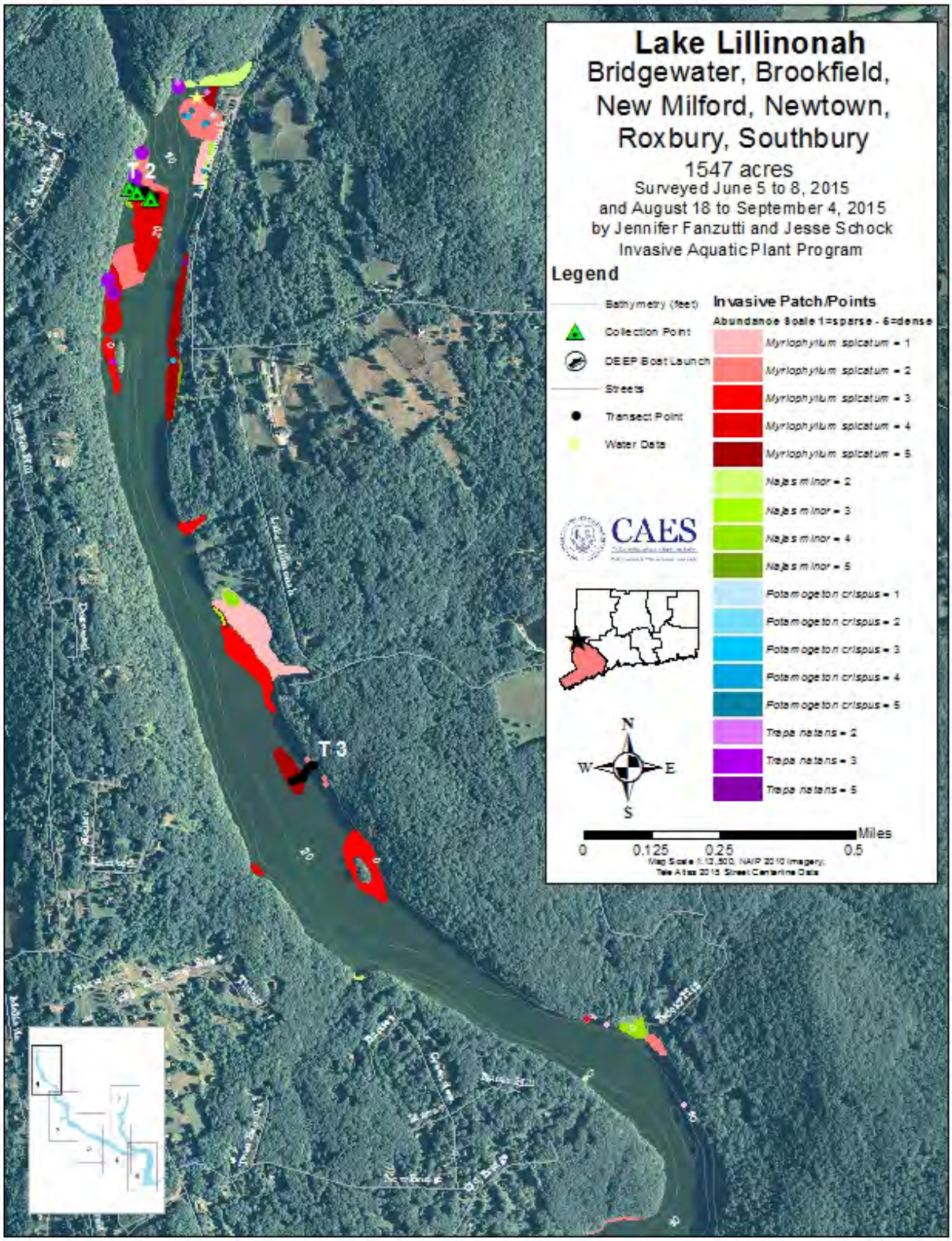


Figure 23. Yearly comparison of the coverage of the littoral zone by invasive species in Lake Lillinonah.

Lake Lillinonah's littoral zone is 478 acres or 31% of the lake's area. Eurasian watermilfoil decreased its littoral zone coverage to 15% in 2015 from 19% in 2013 (Figure 23). Minor naiad nearly doubled in percent of littoral zone coverage from 1.7 acres in 2013 to 3.1 acres in 2015. This is the highest littoral zone coverage of minor naiad found to date (previous range 0.1- 2.3 acres). Both curlyleaf pondweed and water chestnut had less than 0.1% littoral zone coverage in 2015 which is consistent with prevvious years. Lake Lillinonah's littoral zone coverage of Eurasian watermilfoil (15%) falls under the 20-40% range considered optimal for lakes (Jacobs and O'Donnell, 2002). Adding the other invasive species to the coverage could put the plants within the optimal range but species sharing the same area make calculating this value not straight forward. Low water levels and turbulence during flood events are likely to influence plant communities making it difficult to predict future trends.


Lake Lillinonah
Bridgewater, Brookfield,
New Milford, Newtown,
Roxbury, Southbury
1547 acres
Surveyed June 5 to 8, 2015
and August 18 to September 4, 2015
by Jennifer Fanzutti and Jesse Schock
Invasive Aquatic Plant Program
Legend
Bathymetry (feet)
Collection Point
DEEP Boat Launch
Streets
Transect Point
Water Data
Invasive Patch/Points
Abundance Scale 1=sparse - 5=dense
Myriophyllum spicatum = 1
Myriophyllum spicatum = 2
Myriophyllum spicatum = 3
Myriophyllum spicatum = 4
Myriophyllum spicatum = 5
Najas minor = 2
Najas minor = 3
Najas minor = 4
Najas minor = 5
Potamogeton crispus = 1
Potamogeton crispus = 2
Potamogeton crispus = 3
Potamogeton crispus = 4
Potamogeton crispus = 5
Trapa natans = 2
Trapa natans = 3
Trapa natans = 5
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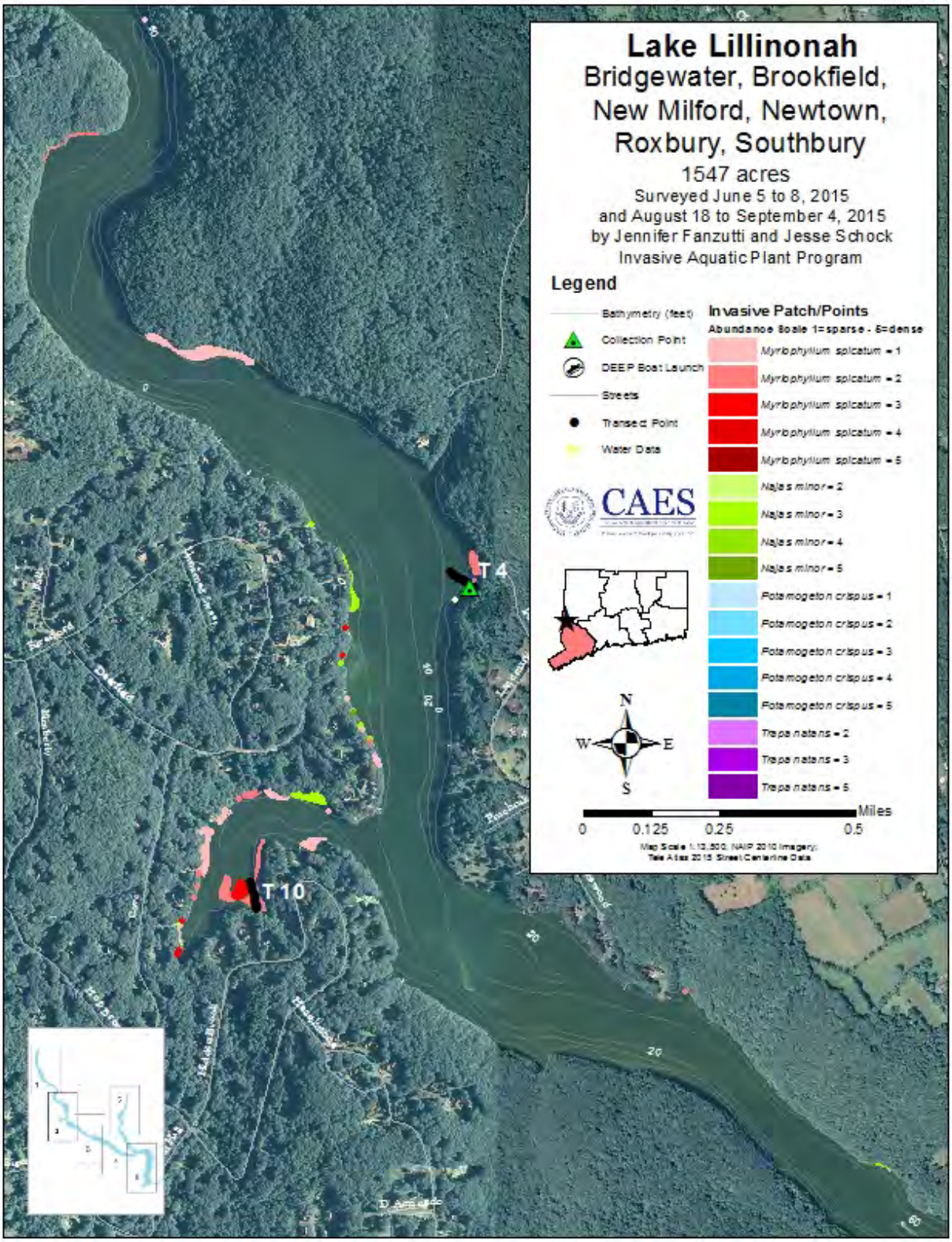
Lake Lillinonah
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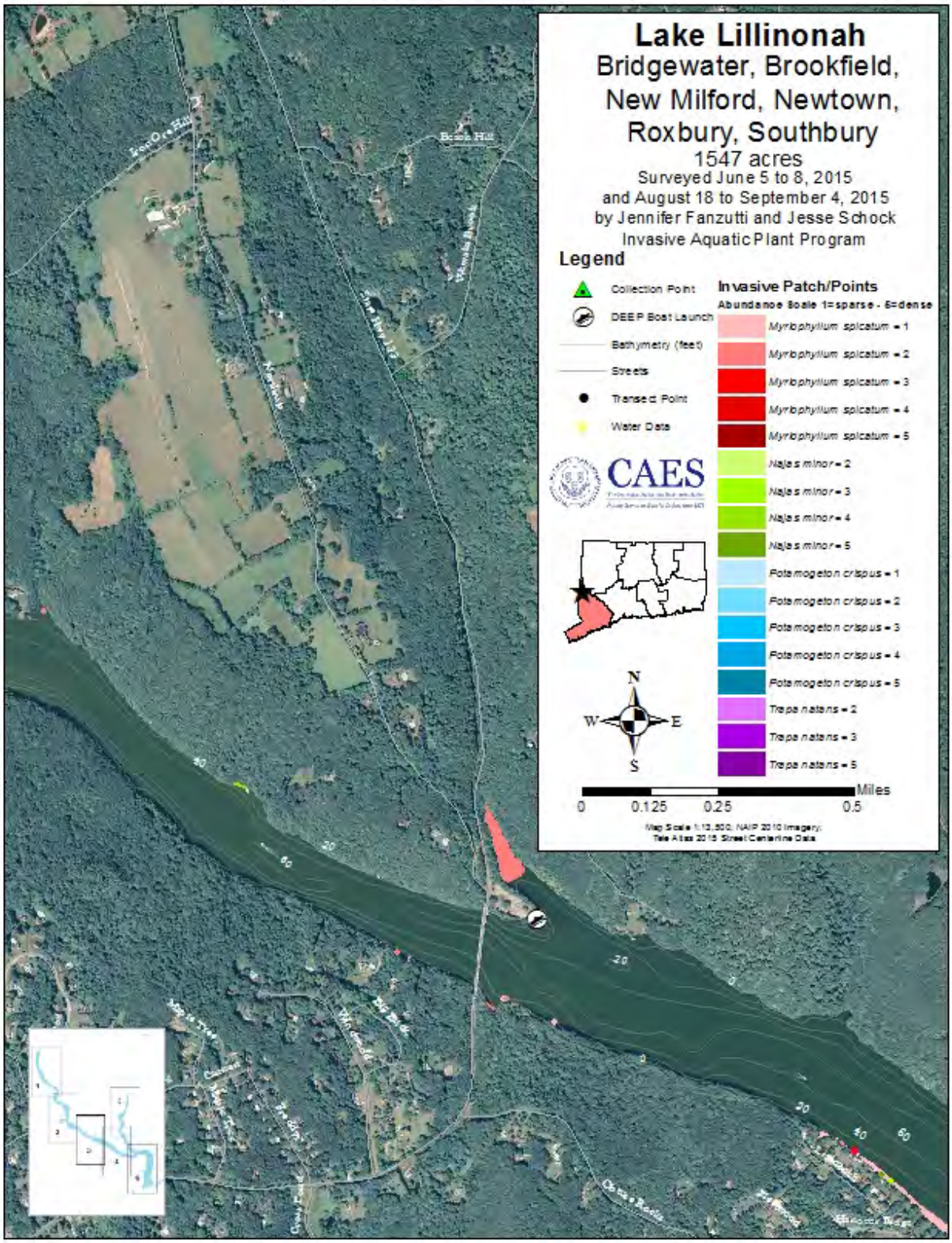
Lake Lillinonah
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Trapa natans = 2
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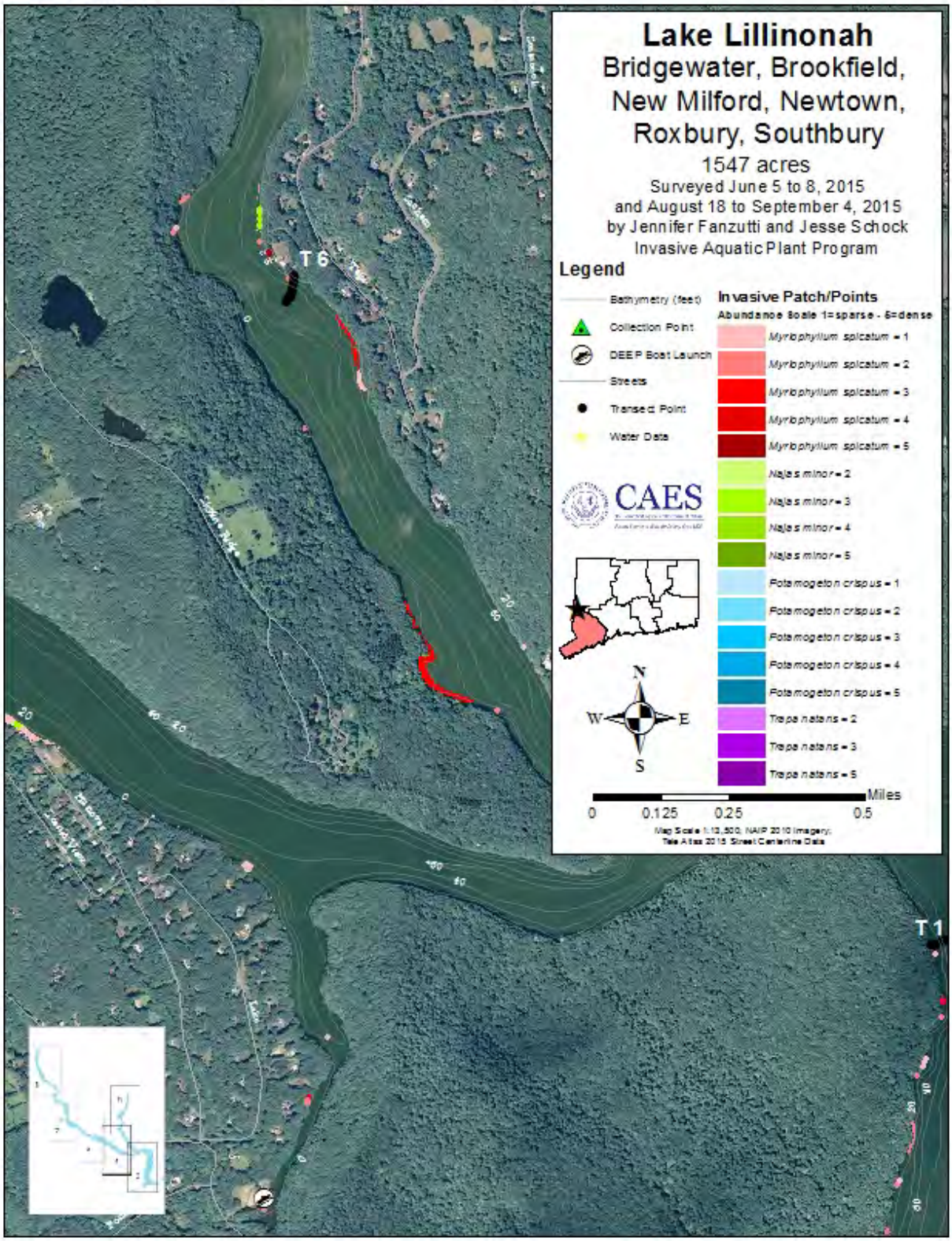
Map Scale 1:12,500; NAIP 2013 Imagery;
Tele Atlas 2015 Street Centerline Data


Lake Lillinonah
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Roxbury, Southbury
1547 acres
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Trapa natans = 2
Trapa natans = 3
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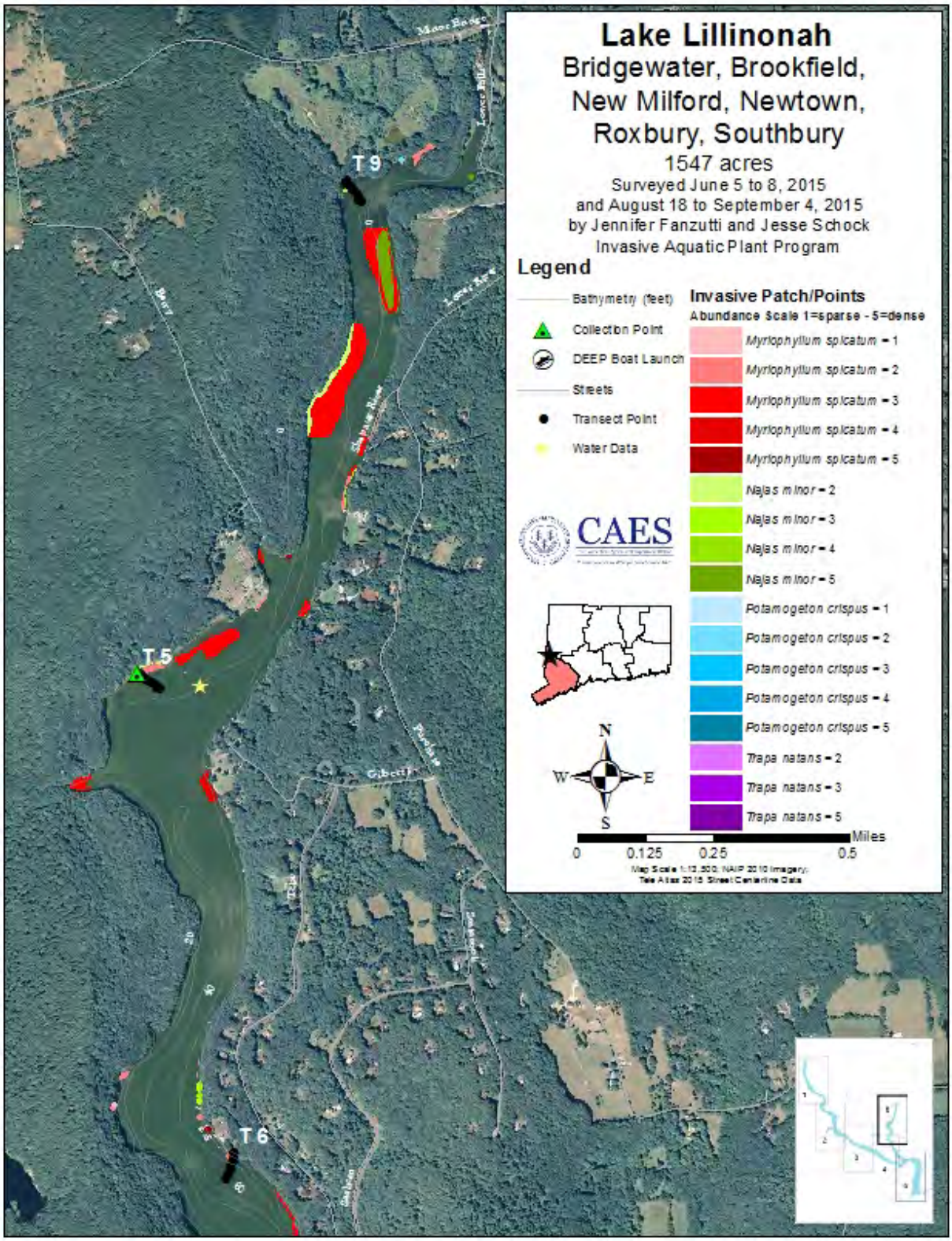
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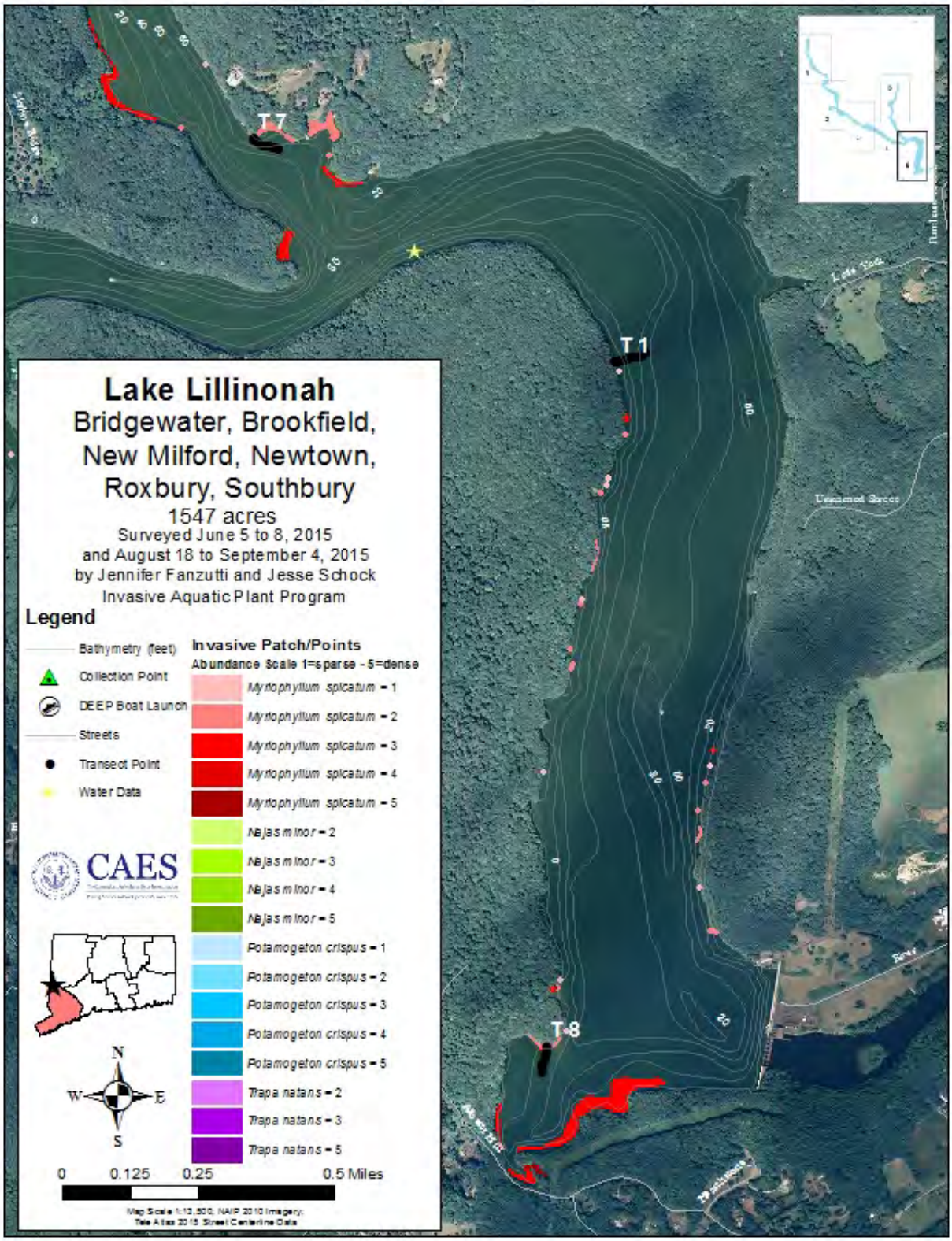
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New Milford, Newtown,
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1547 acres
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Trapa natans = 2
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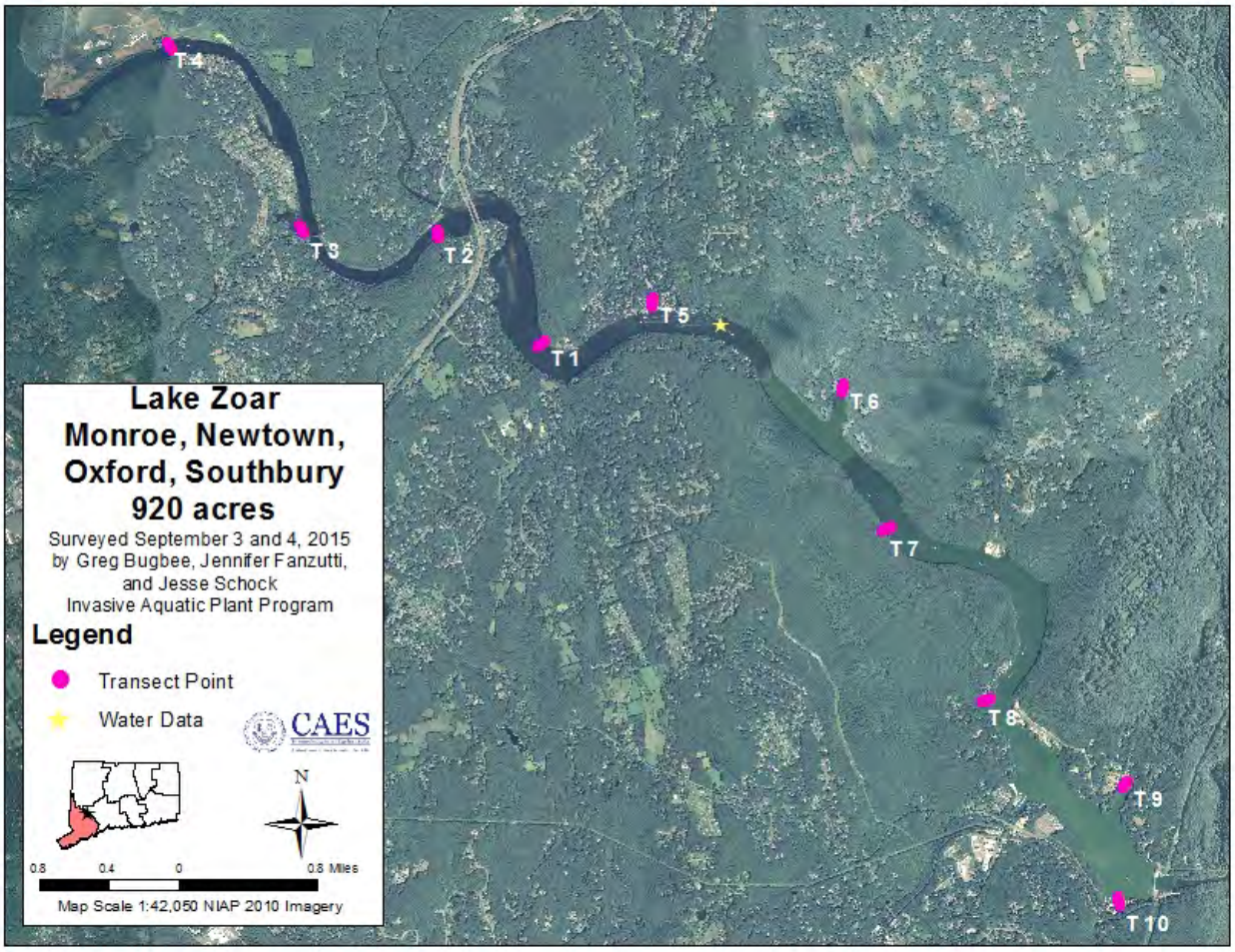

Figure 24. Locations of transects and water sampling sites in Lake Zoar.

Lake Zoar

Conforming to the FERC approved alternate year cycle of whole lake then transect only surveys for Lakes Lillinonah and Zoar, only transect and water data were obtained from Lake Zoar in 2015 (Figure 24). The invasive species found along Lake Zoar's transects were Eurasian watermilfoil, minor naiad and curlyleaf pondweed. These were the same invasive species found in our previous surveys. We found seven native plant species on Lake Zoar's transects in 2015, which is an increase from 5 in 2014, but falls within the range of 5–9 found previously (Table 10). Coontail was the most commonly found native species on transects. Eel grass was also common and has been found in all previous years. Other native species found in 2015, that were also present in previous years include; nodding waternymph, flatstem

Table 10. Yearly comparisons of the frequency of occurrence and total area of aquatic vegetation in Lake Zoar.

		Frequency of Occurrence (percent *)									Area (acres)				
Scientific Name	**Common Name**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2007**	**2008**	**2010**	**2012**	**2014**
Ceratophyllum demersum	Coontail	3	4	23	15	7	6	9	8	26	ND**	ND	ND	ND	ND
Elodea nuttallii	Waterweed	6	7	7	23	0	1	2	1	9	ND	ND	ND	ND	ND
Isoetes species	Quillwort	0	0	0	0	0	0	0	0	0	ND	ND	ND	ND	ND
Ludwigia species	Primrose-willow	0	0	0	0	1	0	1	0	0	ND	ND	ND	ND	ND
Marsilea quadrifolia	**European waterclover**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**<0.1**	**0.2**	**0.3**	**0.3**	**ND**
Myriophyllum spicatum	**Eurasian watermilfoil**	**35**	**37**	**33**	**49**	**18**	**15**	**49**	**24**	**24**	**63**	**70**	**85**	**85**	**33**
Najas flexilis	Nodding waternymph	2	1	4	2	2	0	0	0	2	ND	ND	ND	ND	ND
Najas minor	**Minor naiad**	**18**	**18**	**16**	**24**	**8**	**17**	**21**	**10**	**16**	**33**	**13**	**12**	**34**	**1.6**
Peltandra virginica	Green arrow arum	0	0	0	0	1	0	1	1	0	ND	ND	ND	ND	ND
Potamogeton crispus	**Curlyleaf pondweed**	**6**	**10**	**7**	**7**	**1**	**9**	**5**	**2**	**5**	**21**	**4**	**12**	**17**	**26**
Potamogeton epihyrdus	Ribbonleaf pondweed	0	0	2	0	0	0	0	0	0	ND	ND	ND	ND	ND
Potamogeton foliosus	Leafy pondweed	2	0	0	4	1	0	6	0	0	ND	ND	ND	ND	ND
Potamogeton natans	Floating leaf pondweed	0	0	0	0	0	0	0	0	0	ND	ND	ND	ND	ND
Potamogeton nodosus	Long leaf pondweed	0	0	0	0	0	0	0	0	0	ND	ND	ND	ND	ND
Potamogeton praelongus	White stem pondweed	0	0	1	1	0	0	0	0	0	ND	ND	ND	ND	ND
Potamogeton perfoliatus	Clasping leaf pondweed	0	0	0	0	0	0	0	0	0	ND	ND	ND	ND	ND
Potamogeton pusillus	Small Pondweed	0	0	0	0	0	0	0	0	0	ND	ND	ND	ND	ND
Potamogeton zosteriformis	Flatstem pondweed	0	0	0	3	2	0	0	0	2	ND	ND	ND	ND	ND
Sagittaria species	Arrowhead	0	0	0	0	0	0	1	0	1	ND	ND	ND	ND	ND
Stuckenia pectinata	Sago pondweed	3	0	0	0	0	0	12	0	2	ND	ND	ND	ND	ND
Vallisneria americana	Eel grass	8	6	15	6	9	11	2	13	12	ND	ND	ND	ND	ND
Zosterella dubia	Water stargrass	1	1	0	0	0	3	2	2	0	ND	ND	ND	ND	ND
Total Invasive Species Richness		**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**	**3**					
Total Native Species Richness		7	5	6	7	7	4	9	5	7					
Total Species Richness		10	8	9	10	10	7	12	8	10					

Invasive plant (in bold)

* Percent occurrence on 100 points in 10 transects

** Not Determined

pondweed, arrowhead, and sago pondweed.

Our transect data showed the frequency of occurrence (FO) of any species (native + invasive) was 50% in 2015 and was statistically similar ($p \leq 0.05$) to all years except 2011 and 2012 when the FO of any species declined to near 30% (Figure 25). The species richness of any species in 2015 was 1.0 which is in the middle of the range of previous years (0.5-1.3, Figure 26). Native species FO on transects was 37% in 2015 making the year statistically similar to the highest years of 2009, 2010, 2013 and 2014. Native species richness, however, was greater than invasive species richness for the first time probably due to the herbicide applications to infested areas (Figure 27). Accordingly, the FO of Eurasian watermilfoil, was 24% and amongst the lowest of any year (range 15-49%). Minor naiad's FO on transects in 2015 was 16% and not statistically different from any other year (Table 10, Figure 25). The FO of curlyleaf pondweed was 5% in 2015 and was also not statistically different than any other year (range 1-10%). Since curlyleaf pondweed grows primarily in the spring and senesces in summer, the plant may be underrepresented because the data was not collected during its

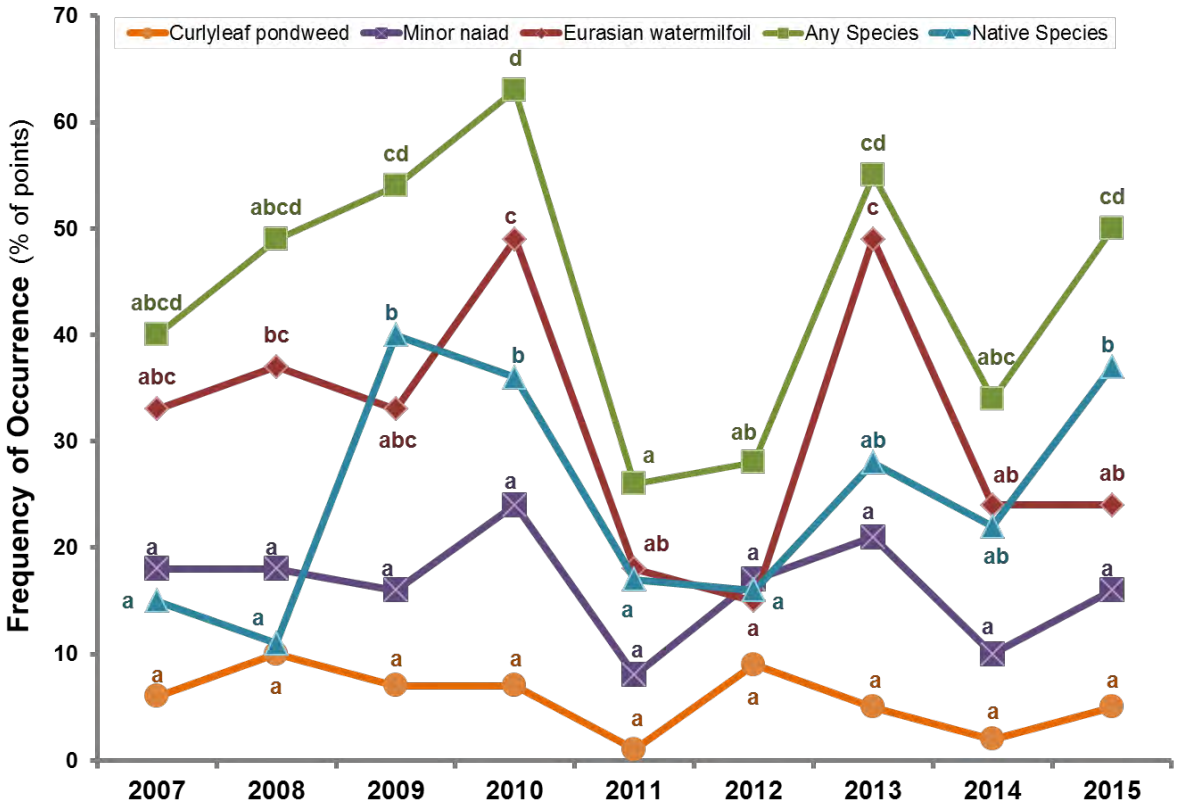

Figure 25. Yearly comparisons of the frequency of native and invasive plants on transects in Lake Zoar. Bars with the same letters are not significantly different

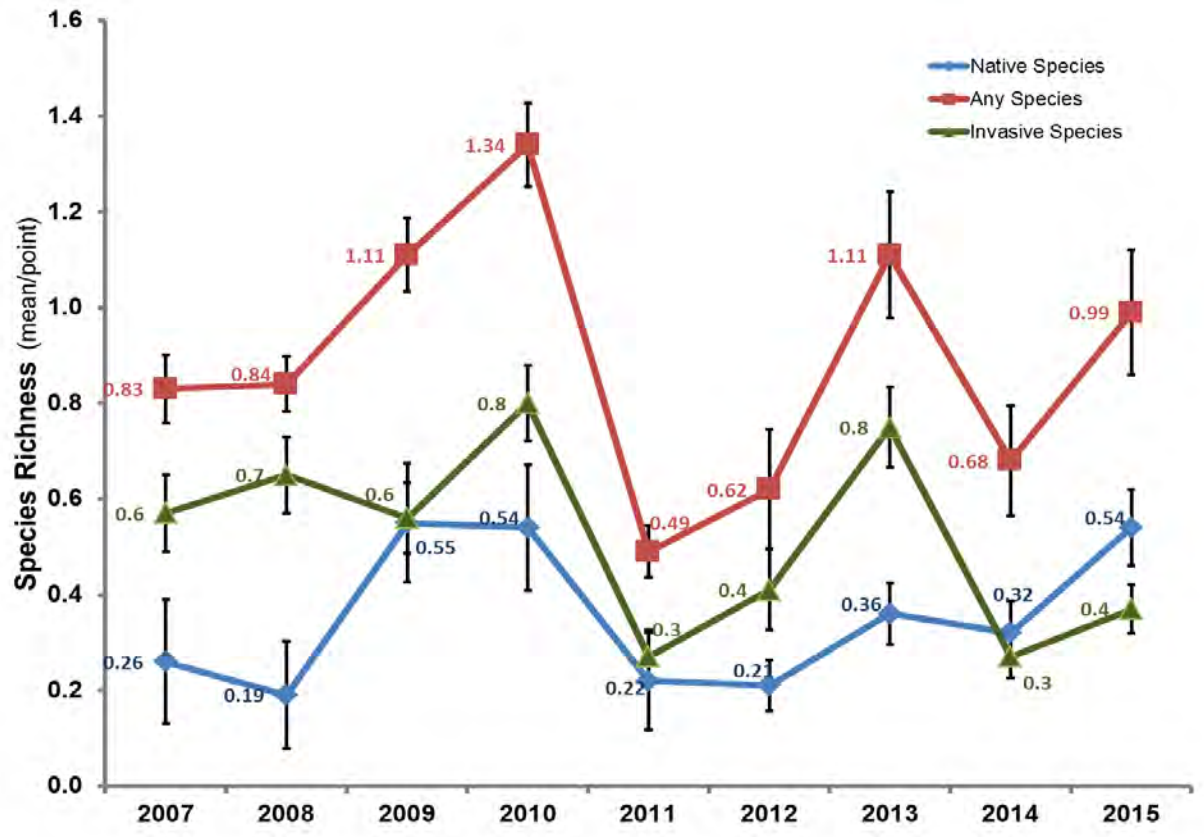

Figure 26. Yearly comparisons of number of species per transect point in Lake Zoar. Error bars equal +/- one standard error of the mean.

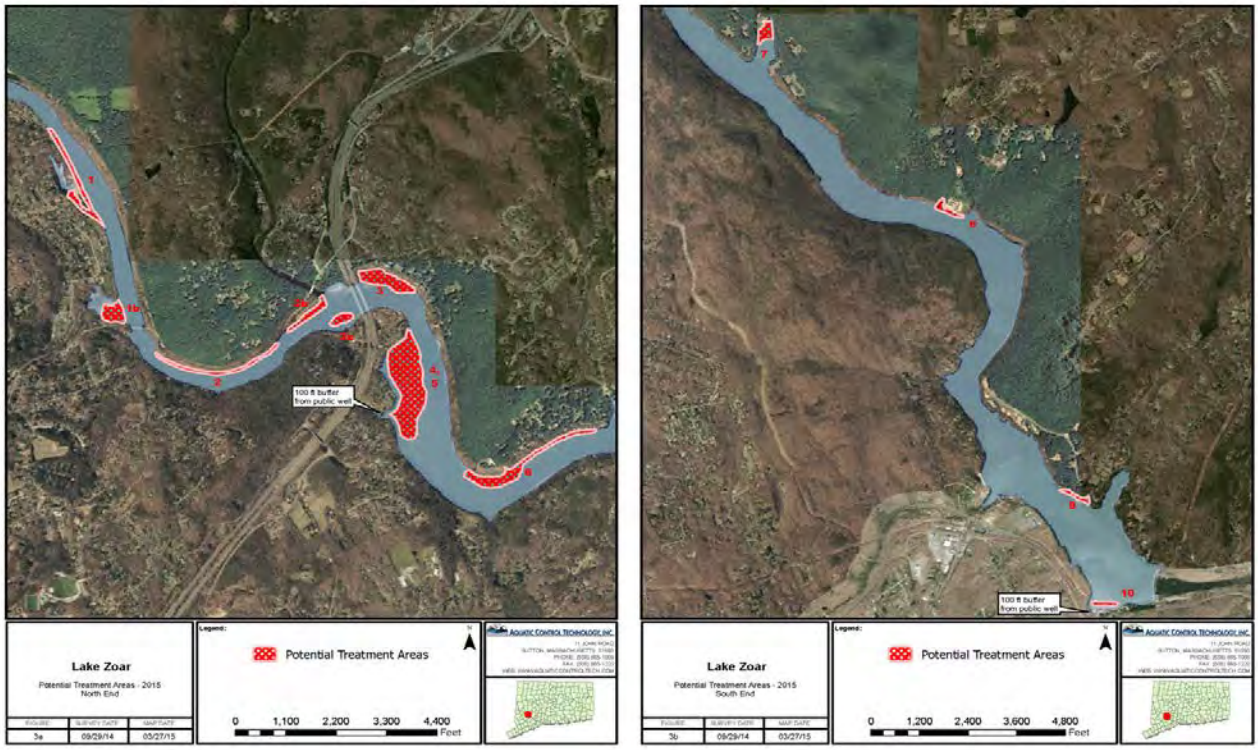

Figure 27. Areas of Lake Zoar treated with herbicide to control Eurasian watermilfoil. North end (left) South end (right). Maps courtesy of Aquatic Control Technologies LLC, Sutton MA.

Figure 28. Zebra mussels attached to minor naiad in Lake Zoar in 2015.

period of optimum growth. European waterclover was not found along any transects but is known to occur at other locations in the lake (Bugbee et al. 2013).

Dense stands of Eurasian watermilfoil were treated with the herbicide Reward® (diquat) by Aquatic Control Technologies, Sutton MA on July 15 (Figure 27). The application rate was 1-2 gallons per acre depending on depth and configuration of each treatment area. A total of 99 gallons of Reward® were applied. The treatment occurred in areas that contained transects T1, T3, T6, and T10 (Figure 24). Reward® is a nonselective contact herbicide that rapidly removes most vegetation from in and around treated areas. Because roots are not directly affected regrowth can begin within weeks. Our early September transect data likely reflected some regrowth but not the plant species richness and abundance that would have occurred without treatment. We also found zebra mussels (*Dreissena polymorpha*) attached to plants for first time in 2015 (Figure 28) that could be beginning to hinder plant growth.

Changes in the native aquatic plant community in Lake Zoar are likely caused by high and low water levels associated with its riverine system and the generation of hydroelectric power, aquatic herbicide applications and most recently the spread of zebra mussels.

Table 11. Water chemistry of Lakes Candlewood, Lillinonah, Zoar and Squantz Pond, 2015.

Lake	Site	Date	Latitude	Longitude	Depth (m)	Transparency Secchi (m)	Conductivity (µS/cm)	pH	Alkalinity (mg/L $CaCO_3$)	Total P (ug/L)
Candlewood	W1	9/1/2015	41.53341	-73.44476	0.5	2.0	217	8.1	49	8
					13.0		240	6.6	70	76
	W2	9/1/2015	41.49212	-73.44987	0.5	2.0	217	8.3	56	34
					12.0		234	6.6	68	113
	W3	9/1/2015	41.55594	-73.47643	0.5	1.7	253	6.5	77	18
					13.0		217	8.4	59	310
	W4	9/1/2015	41.43540	-73.45593	0.5	2.0	221	8.4	60	14
					10.0		230	6.8	65	59
	W5	9/1/2015	41.45615	-73.43696	0.5	2.0	218	8.4	56	14
					10.0		230	6.8	70	39
Lillinonah	W1	9/4/2015	41.49650	-73.32534	0.5	0.7	275	8.7	77	32
					5.0		270	8.2	74	25
	W2	9/4/2015	41.46920	-73.30841	0.5	0.7	285	8.7	77	25
					13.0		346	7.4	100	28
	W3	9/4/2015	41.54111	-73.40325	0.5	0.7	330	8.5	92	31
					2.0		329	8.1	97	75
Zoar	W1	9/4/2015	41.42980	-73.21988	0.5	1.8	324	7.8	92	28
					9.0		334	7.5	86	31
	W2	9/4/2015	41.38884	-73.17830	0.5	1.3	304	8.5	86	33
					13.0		304	7.2	83	41
	W3	9/4/2015	41.45328	-73.27955	0.5	3	335	7.4	101	31
					3.0		335	7.4	98	75
Squantz	W1	8/14/2015	41.51511	-73.47845	0.5	3.3	152	7.5	30	20
					13.0		165	6.3	41	76

Comparisons of Water Chemistry

Invasive aquatic plants may be favored by certain water chemistries and water chemistry may be altered when nutrients are utilized by plants to support growth. In addition, nutrients not used by plants can support the occurrence of nuisance algal blooms that sometimes are harmful to people, pets and wildlife. We obtain water transparency measurement most days we are surveying. At the conclusion of each lakes survey we perform water testing to compare conditions between lakes. Because these water tests are performed only once each year, they may not be indicative of conditions at other times. Invasive plants such as Eurasian watermilfoil, minor naiad and curlyleaf pondweed prefer water with a higher pH and alkalinity than invasive plants such as variable watermilfoil (*Myriophyllum heterophyllum*) and fanwort (*Cabomba caroliniana*) (June-Wells et al. 2013). On September 1, 2015 the transparency of Candlewood Lake averaged 1.9 m (Table 11). Over the course of our survey the transparency varied between 1.6 and 2.1 m (Figure 29). Although the number of sample years is small it appears that water clarity is nearly 1m less in deep drawdown years (2013 and 2015) than in the shallow drawdown year of 2014. This could be related to the filtering action of increased vegetation caused in the shallow drawdown year. In Lake Lillinonah and Lake Zoar we recorded a mean transparency of 0.7 m and 2.0 m, respectively (Table 11). The Lake Zoar values ranged from 1.3m to 3 m with the higher measurement at the northern part of the lake where the bottom water (and likely clearer water) is exiting Lake Lillinonah. Transparencies

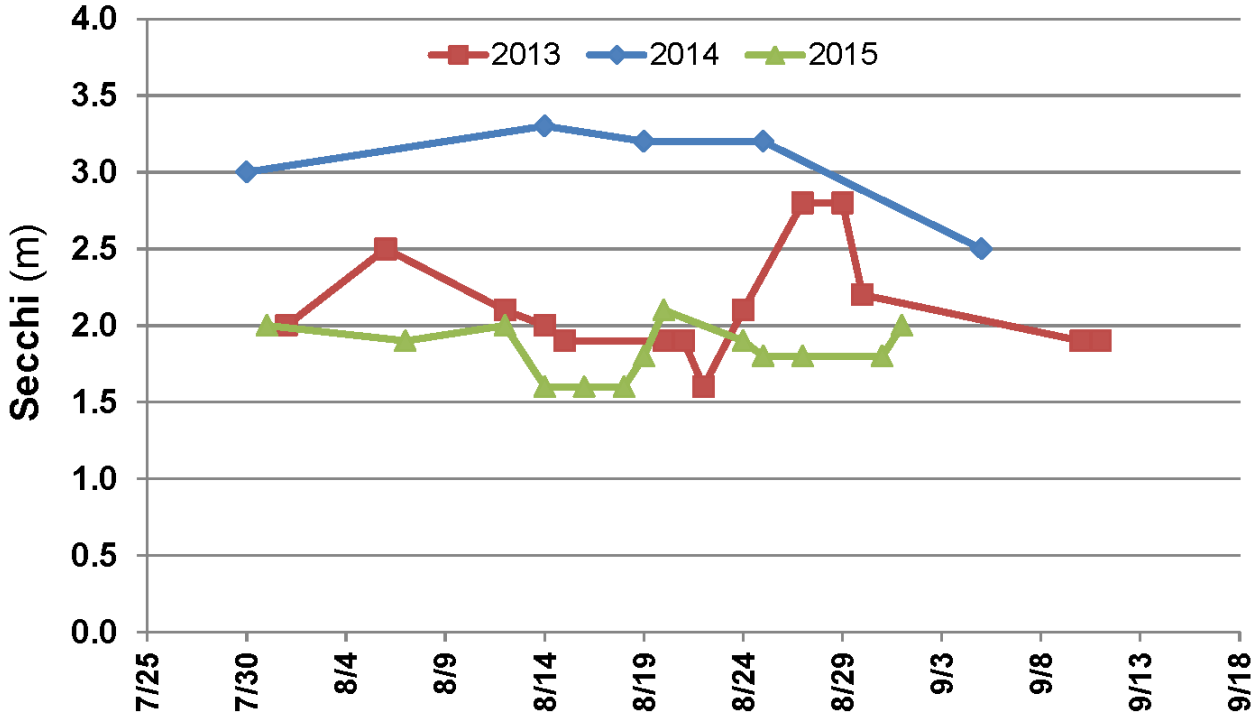

Figure 29. Water transparency in Candlewood Lake during our 2013, 2014 and 2015 surveys.

in Connecticut's lakes ranged from 0.3-10.2 m with an average of 2.3 m (CAES IAPP, 2014). Thus, the transparency of Candlewood, Lillinonah and Zoar all rank below Connecticut's average. Conductivity is an indicator of dissolved ions that come from natural and man-made sources (fertilizers, septic systems, road salts etc.). The conductivity of Candlewood Lake in 2015 ranged from 21-256 µS/cm with the highest levels in the bottom water (Table 11). This has likely increased from and the early 1990's when Candlewood Lake's conductivity ranged from 176-184 µS/cm (Canavan and Siver, 1995). The conductivity of Lake Lillinonah ranged from 270-346 µS/cm while Lake Zoar's conductivity range from 304-335 µS/cm. Squantz Pond's conductivity was 152 µS/cm at the surface and 165 µS/cm near the bottom. A trend toward increasing conductivity from the head waters at Squantz Pond, through Lake Candlewood and downstream from Lake Lillinonah to Lake Zoar was evident in 2015.

The pH of Candlewood Lake's water ranged from 6.5-8.4 with the highest levels in the surface water. Lake Lillinonah's water pH fell within the range of 7.0-7.9 while Lake Zoar's pH ranged from 7.4-8.7. Both lakes had minimal differences between the pH of the surface and bottom water. This is likely due to greater mixing in their riverine environment. The pH

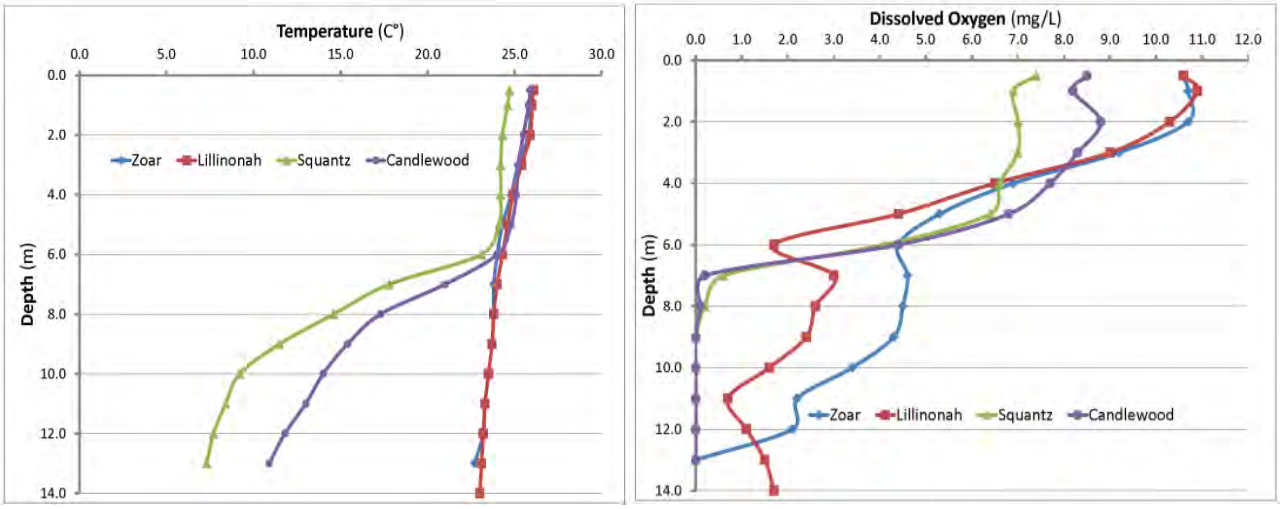

Figure 30. Temperature and dissolved oxygen profiles in Lakes Candlewood, Lillinonah, Zoar and Squantz Pond, 2015.

of Squantz Pond was 7.5 at the surface and 6.3 near the bottom. Alkalinities in the Connecticut's lakes range from near 0 to over 170 mg/L $CaCO_3$ (CAES IAPP, 2014, Canavan and Siver, 1995, Frink and Norvell, 1984). Candlewood Lake's surface water alkalinity ranged from 48 to 77 mg/L and bottom water ranged from 58-70 mg/L. Lake Lillinonah's surface water alkalinity ranged from 77- 92 mg/L and bottom water ranged from 73-100 mg/L. Lake Zoar's surface and bottom water fell within a similar alkalinity range of 82-100 mg/L. The alkalinity of Squantz Pond was 30 mg/L at the surface and 41 mg/L near the bottom. As with conductivity, an increasing trend in alkalinity occurred downstream throughout the lakes.

Phosphorus (P) concentrations are an indicator of a lake's trophic state. High levels of P can lead to nuisance or toxic algal blooms (Frink and Norvell, 1984, Wetzel, 2001). Rooted macrophytes are considered to be less dependent on P from the water column as they obtain a majority of their nutrients from the hydrosoil (Bristow and Whitcombe, 1971). Lakes with P levels from 0-10 µg/L are considered to be nutrient-poor or oligotrophic. When P concentrations reach 15-25 µg/L, lakes are classified as moderately fertile or mesotrophic. P levels from 30-50 µg/L characterize lakes as fertile or eutrophic (Frink and Norvell, 1984). The P concentration in Candlewood Lake's surface water ranged from 8-34 µg/L and bottom water ranged from 39-310 µg/L (Table 11). This partitioning of P between the surface and bottom water is common in the summer as anoxic conditions release P from the sediment (Norvell, 1974). We found the highest P levels at site W2 (Map 5, Page 26) and site W3 (Map 1, Page 22). The P concentration in Lake Lillinonah's surface water ranged from 28-33 µg/L and bottom water

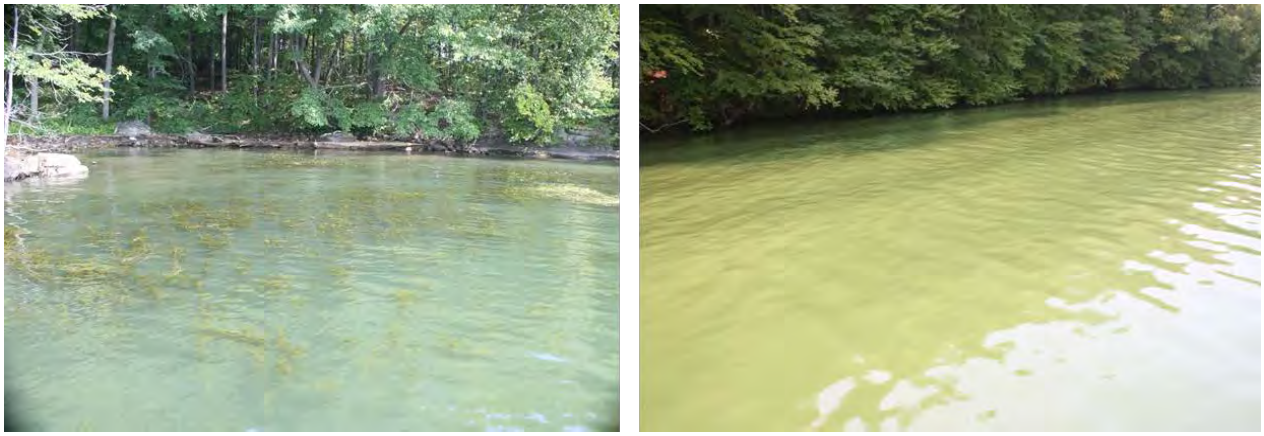

Figure 31. Algal bloom (Cyanobacteria) in progress in Lake Candlewood (left) and Lake Zoar (right) early September 2015.

ranged from 25-75 µg/L. Lake Zoar's surface water had P concentration from 28-33 µg/L and from 31-75 µg/L in its bottom water. Lake Lillinonah and Zoar's smaller difference in P concentrations between surface and bottom water, compared to Lake Candlewood is probably due to shallower depth and greater mixing. The P concentration in Squantz Pond was 20 µg/L at the surface and 76 µg/L at the bottom.

Summer dissolved oxygen profiles of the lakes showed well oxygenated conditions to a depth of approximately five meters (Figure 30). In Candlewood Lake and Squantz Pond severe anoxic (low dissolved oxygen) conditions occurred around 7 m while in Lake Lillinonah and Lake Zoar anoxic conditions were not as pronounced. Greater anoxia in Candlewood Lake and Squantz Pond is probably due to its greater depth and less vertical mixing.

Algal blooms cause green colored water and/or filamentous mats. In 2015, all the surveyed lakes had noticeable blooms (Figure 31). The mass balance of nutrients between rooted aquatic plants and algae is complex and likely varies throughout the season. When rooted aquatic plants are controlled nutrient uptake is reduced and when the vegetation degrades nutrients are released. This favors the growth of algae and the potential for harmful algal blooms.

Conclusion

Eurasian watermilfoil dominates the plant communities in Lakes Candlewood, Lillinonah Zoar, and Squantz Pond. The Eurasian watermilfoil acreage tends to decrease, in Candlewood Lake in the deep drawdown years; however, the 2015 deep drawdown yielded the greatest

coverage of any deep drawdown year (441 acres). This was likely because of the insulating effects of a deep snow cover and possibly the shallower than normal deep drawdown. Minor naiad showed dramatic increase in in coverage in Candlewood Lake in 2015 (72 acres vs previous high of 32 acres) suggesting this seed borne annual may also have been enhanced by the insulating snow cover. We found <0.01 acres of curlyleaf pondweed in Lake Candlewood during our 2015 spring survey. This invasive plant seems to be having difficulty gaining a foothold. The total number of plant species in Candlewood Lake (10) remains low for such a large lake and this is likely influenced by the winter drawdowns. Grass carp were introduced in Candlewood Lake in 2015 and our surveys will begin to determine their effectiveness.

Our 2015 invasive plant survey of Lake Lillinonah found Eurasian watermilfoil, minor naiad, curlyleaf pondweed, and water chestnut. Eurasian watermilfoil covered the largest area (72 acres) while minor naiad covered only 15 acres. Eurasian watermilfoil declined from a high of 90 acres in 2014 but was still higher than the 19-36 acres found previously. Water chestnut was found in 8 locations, compared to a high of 6 in previous years, and is not being contained by hand harvesting. Only 11 species were found in Lake Lillinonah which is low for such a large lake. Fluctuating water levels associated with droughts, floods, and power generation may be a factor.

The invasive species found along Lake Zoar's transects were Eurasian watermilfoil, minor naiad and curlyleaf pondweed. These were the same invasive species found in our previous surveys. The frequency of occurrence of Eurasian watermilfoil on Lake Zoar transects was reduced in 2015 probably because of herbicide treatments. Zebra mussels were found attached to plants for the first time in Lake Zoar and they could begin to reduce growth.

Squantz Pond was surveyed using FLP protocol for the first time in 2015. Eurasian watermilfoil covered the largest area of Squantz Pond (21 acres) followed by minor naiad (8 acres) and curly leaf pondweed (<0.01 acres). The direct connection with Candlewood Lake, under the Route 39 causeway, allows for invasive plant control via the Candlewood Lake drawdown and grass carp introduction.

All water bodies exhibited algal blooms in 2015 that have the potential to harm people, pets and wildlife.

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Appendix

2015 CAES IAPP On-Lake Time

Candlewood (Lead surveyor)	**Lillinonah** (Lead surveyor)	**Zoar** (Lead surveyor)	**Squantz** (Lead surveyor)
6/5/2015 (Bugbee)	6/5/2015 (Fanzutti)	9/3/2015 (Fanzutti)	6/4/2015 (Fanzutti)
7/31/2015 (Bugbee)	6/8/2015 (Fanzutti)	9/4/2015 (Fanzutti)	8/6/2015 (Fanzutti)
8/7/2015 (Bugbee)	8/18/2015 (Fanzutti)		8/12/2015 (Fanzutti)
8/12/2015 (Bugbee)	8/19/2015 (Fanzutti)		8/13/2015 (Fanzutti)
8/14/2015 (Bugbee)	8/20/2015 (Fanzutti)		8/14/2015 (Fanzutti)
8/16/2015 (Bugbee)	8/25/2015 (Fanzutti)		
8/18/2015 (Bugbee)	8/26/2015 (Fanzutti)		
8/19/2015 (Bugbee)	8/27/2015 (Fanzutti)		
8/20/2015 (Bugbee)	9/1/2015 (Fanzutti)		
8/24/2015 (Bugbee)	9/2/2015 (Fanzutti)		
8/25/2015 (Bugbee)	9/4/2015 (Fanzutti)		
8/27/2015 (Bugbee)			
8/31/2015 (Bugbee)			
9/1/2015 (Bugbee)			
14 days	**11 days**	**2 days**	**5 days**

Invasive Plant Descriptions

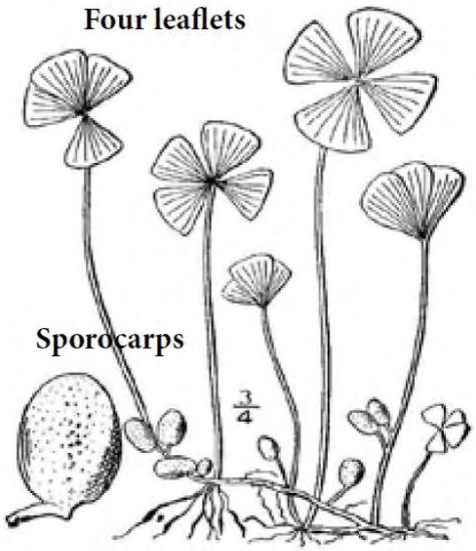
Marsilea quadrifolia

Common names:
European waterclover
Water shamrock

Origin:
Europe

Key features:
Floating leaf plant
Stems: Smooth petioles 2-12 inches (5-30 cm)
Leaves: Comprised of 4 fan-shaped leaflets (similar to a four-leaf clover)
Fruits/Seeds: 2 or 3 dark brown sporocarps 0.2 inches × 0.2 inches (4-5.5 mm × 3-4 mm)
Reproduction: Cloning and sporocarps

Easily confused species:
None



Britton, N.L., and A. Brown. 1913

Myriophyllum spicatum


Photo by CAES IAPP

Common name:
Eurasian watermilfoil

Origin:
Europe and Asia

Key features:
Plants are submersed

Stems: Stem diameter below the inflorescence is greater with reddish stem tips

Leaves: Leaves are rectangular with ≥ 12 pairs of leaflets per leaf and are dissected giving a feathery appearance, arranged in a whorl, whorls are 1 inch (2.5 cm) apart

Flowers: Small pinkish male flowers that occur on reddish spikes, female flowers lack petals and sepals and have 4 lobed pistil

Fruits/Seeds: Fruit are round 0.08-0.12 inches (2-3 mm) and contain 4 seeds

Reproduction: Fragmentation and seeds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Center forAquatic and Invasive Plants

Easily confused species:
Variable-leaf watermilfoil: *Myriophyllum heterophyllum*
Low watermilfoil: *Myriophyllum humile*
Northern watermilfoil: *Myriophyllum sibiricum*
Whorled watermilfoil: *Myriophyllum verticillatum*


Photo by
CAES IAPP


Photo by CAES IAPP


Photo by
CAES IAPP

Najas minor

Common names:
Minor naiad
Brittle waternymph
Spiny leaf naiad
Eutrophic waternymph

Origin:
Europe

Key features:
Plants are submersed

Stems: Branched stems can grow up to 4-8 inches (10-20 cm) long

Leaves: Opposite and lance shaped on branched stems with easily visible toothed leaf edges and leaves appear curled under, basal lobes of leaf are also serrated, 0.01-0.02 inches (0.3-0.5 mm)

Flowers: Monoecious (male and female flowers on same plant)

Fruits/Seeds: Fruits are purple-tinged and seeds measure 0.03-0.06 inches (1.5-3 mm)

Reproduction: Seeds and fragmentation

Easily confused species:
Other naiads (native): *Najas* spp.

Potamogeton crispus

Common names:
Curly leaf pondweed
Crispy-leaved pondweed
Crisped pondweed

Origin:
Asia, Africa, and Europe

Key features:
Plants are submersed

Stems: Stems are flattened, can form dense stands in water up to 15 feet (5 m) deep

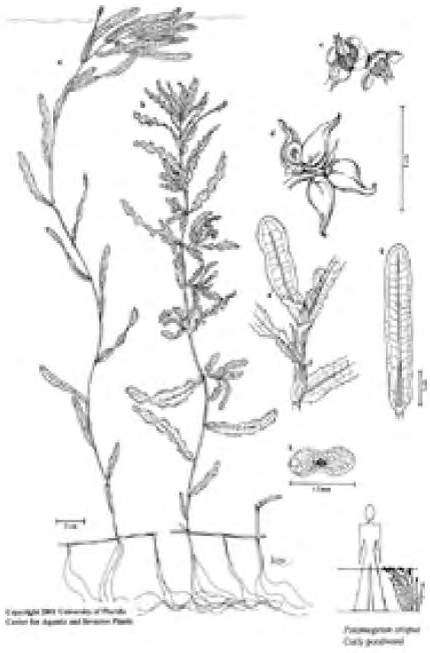
Leaves: Alternate leaves 0.3-1 inches (3-8 cm) wide with wavy edges (similar to lasagna) with a prominent mid-vein

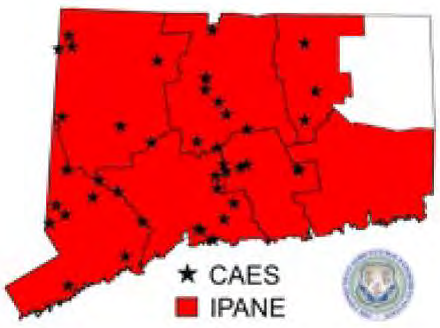
Flowers: Brown and inconspicuous

Fruits/Seeds: Fruit is oval 0.1 inches (3 mm) long

Reproduction: Turions (right) and seeds

Easily confused species:
None





Trapa natans

Common names:
Water chestnut
European water chestnut

Origin:
Asia and Europe

Key features:
Plants are rooted to substrate and float

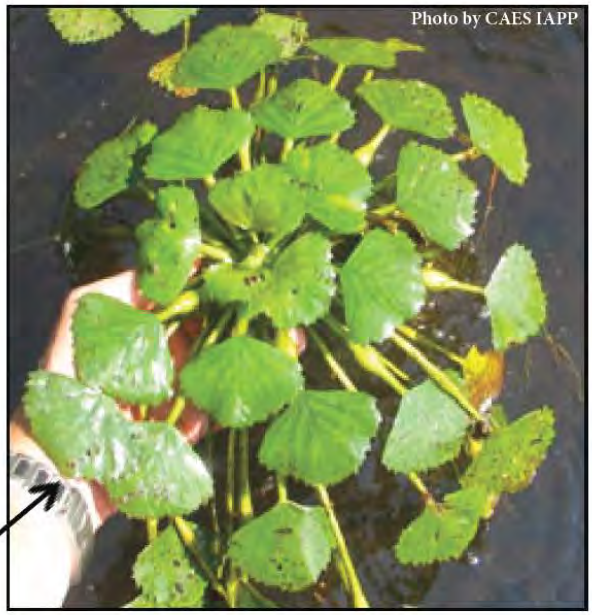
Stems: Stem is submersed, flaccid and can be up to 15 feet (5 m) long

Leaves: Leaves 0.8-0.16 inches (2-4 cm) long are triangular and toothed along the front edge with inflated petioles, leaves float in a rosette pattern

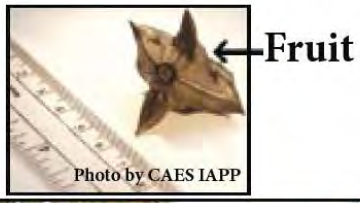
Flowers: Flowers are located in the center of the rosette and have four white petals

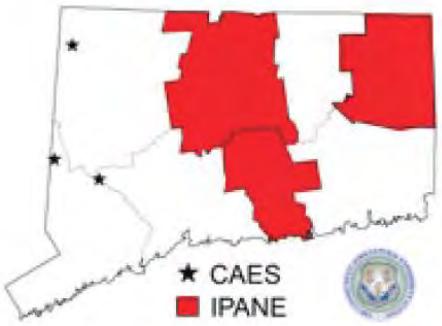
Fruits/Seeds: Fruit is hard and has four sharp spines

Reproduction: Seeds and fragmentation



Easily confused species:
None





Metadata

Metadata is data about data. This metadata gives background information on the content, quality, condition, legal liability and other appropriate characteristics of the data.

Metadata

Polygons and Points of Invasive Plants

Abstract This polygon and point data is of the invasive aquatic plant locations in Lakes Candlewood, Lillinonah, and Squantz Pond found during the 2015 aquatic plant survey. The invasive aquatic plants found during the survey were *Potamogeton crispus* (curlyleaf pondweed), *Najas minor* (minor naiad), *Myriophyllum spicatum* (Eurasian watermilfoil), and *Trapa natans* (water chestnut). Survey boats with Trimble GPS units traveled along the outside of each invasive patch to obtain the polygons. In the event that invasive aquatic plants species co-occurred, two separate polygons would be made or the occurrence would be noted in the notes field. If plants covered an area of less than 1 meter in diameter a point feature was recorded. Depth was at three different locations in patches and the average depth range was assigned. For points one depth measurement was recorded. Abundance of each species in the patch or point was ranked on a scale of 1-5 (1 = rare, a single stem; 2 = uncommon, few stems; 3 = common; 4 = abundant; 5 = extremely abundant or dominant).

Purpose To document and assess the invasive aquatic plant infestation on lakes Candlewood, Lillinonah, and Squantz Pond during 2015. This data will also be available to compare with future invasive aquatic plant survey data.

Access Constraints This data is public access data and can be freely distributed. The Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP) should be clearly cited as the author in any published works. The State of Connecticut shall not be held liable for improper or incorrect use of the data described and/or contained within this web site. These data and related graphics are not legal documents and are not intended to be used as such. The information contained in these data is dynamic and will change over time. The State of Connecticut gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data. It is the responsibility of the data user to use the data appropriately and consistent within these limitations. Although these data have been processed successfully on a computer system at the State of Connecticut, no warranty expressed or implied is made regarding the utility of the data on another system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data.

Use Constraints No restrictions or legal prerequisites for using the data. The data is suitable for use at appropriate scale, and is not intended for maps printed at scales greater or more detailed than 1:24,000 scale (1 inch = 2,000 feet). Although this data set has been used by the State of Connecticut, The Connecticut Agricultural Experiment Station, no warranty, expressed or implied, is made by the State of Connecticut, Connecticut Agricultural Experiment Station as to the accuracy of the data and or related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the State of Connecticut, Connecticut Agricultural Experiment Station in the use of these data or related materials. The user assumes the entire risk related to the use of these data. Once the data is distributed to the user, modifications made to the data by the user should be noted in the metadata. When printing this data on a map or using it

in a software application, analysis, or report, please acknowledge the Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP) as the source for this information.

Credit Gregory J. Bugbee and Jennifer Fanzutti, The Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP)

Accuracy Report All aquatic plants noted in this feature were confirmed in the lab using a dichotomous key and, when possible, molecular techniques. Collection specimens of each plant can be found at The Connecticut Agricultural Experiment Station herbarium. Abundance determinations were made by the surveyor based on the abundance guidelines listed in the abstract of this metadata.

GPS Accuracy Positions were acquired by using a Trimble GeoXT® or a Trimble ProXT® with TerraSync 2.40 or 5.02 (WAAS enabled). Data was post-processed in the lab with Pathfinder Office 5.10 with data from local base stations. Therefore, the average accuracy of the data is less than 1m.

Process Position data was obtained in the field using a Trimble GeoXT® or a Trimble ProXT® with TerraSync 2.40 or 5.02 (WAAS enabled). Data was post-processed in the lab with Pathfinder Office 5.10 with data from local base stations and then imported into ESRI ArcMap 10.2.1 for display and analysis.

Metadata

Transects

Abstract Quantitative abundance information on native and invasive aquatic plants were obtained by using the CAES IAPP transect method. We positioned transects perpendicular to the shoreline and recorded GPS location and the abundance of each plant species found within a 2 m² area at 0.5, 5, 10, 20, 30, 40, 50, 60, 70 and 80 m from the shore (a total of 10 samples on each transect unless impaired by rocks, land etc.). Ten transects were established for lakes Candlewood, Lillinonah, and Zoar and five transects were established for Squantz Pond. Transects were positioned using a random-representative method to account for all bottom types and plant conditions in Lakes Lillinonah and Zoar. In Lake Candlewood, the random-representative method was not used. Instead, transects were chosen that included at least one occurrence of each native and invasive plant species found by a more thorough set of transects done by CAES IAPP in 2005. Candlewood Lake transects, T2, T22, T25, T57, T52, T58, T62, T74, T86, and T105, from the CAES IAPP 2005 survey were chosen and renamed T1 - T10 respectively. These transects do not represent the overall conditions of Candlewood Lake as the frequency of native species will be over-estimated. We used the same method when selecting transects on Squantz Pond by selecting 5 of the 14 transects established in 2011. Squantz Pond transects, T1, T11, T9, T8, and T5 were chosen and renamed T1 – T5 respectively. We ranked abundance of each species, at each transect point, on a scale of 1–5 (1 = rare, a single stem; 2 = uncommon, few stems; 3 = common; 4 = abundant; 5 = extremely abundant or dominant). Depth was measured at each transect point.

Purpose To document and assess the native and invasive aquatic plant community in Lakes Candlewood, Lillinonah, Zoar, and Squantz Pond during 2015. This data will also be available to compare with future aquatic plant survey data.

Access Constraints This data is public access data and can be freely distributed. The Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP) should be clearly cited as the author in any published works. The State of Connecticut shall not be held liable for improper or incorrect use of the data described and/or contained within this web site. These data and related graphics are not legal documents and are not intended to be used as such. The information contained in these data is dynamic and will change over time. The State of Connecticut gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data. It is the responsibility of the data user to use the data appropriately and consistent within these limitations. Although these data have been processed successfully on a computer system at the State of Connecticut, no warranty expressed or implied is made regarding the utility of the data on another system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data.

Use Constraints No restrictions or legal prerequisites for using the data. The data is suitable for use at appropriate scale, and is not intended for maps printed at scales greater or more detailed than 1:24,000 scale (1 inch = 2,000 feet). Although this data set has been used

by the State of Connecticut, The Connecticut Agricultural Experiment Station, no warranty, expressed or implied, is made by the State of Connecticut, Connecticut Agricultural Experiment Station as to the accuracy of the data and or related materials. The act of distribution shall not constitute any such warranty, and no responsibility is assumed by the State of Connecticut, Connecticut Agricultural Experiment Station in the use of these data or related materials. The user assumes the entire risk related to the use of these data. Once the data is distributed to the user, modifications made to the data by the user should be noted in the metadata. When printing this data on a map or using it in a software application, analysis, or report, please acknowledge the Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP) as the source for this information.

Credit Gregory J. Bugbee and Jennifer Fanzutti, The Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP)

Accuracy Report All aquatic plants noted in this feature were confirmed in the lab using a dichotomous key and, when possible, molecular techniques. Abundance determinations were made by the surveyor based on the abundance guidelines listed in the abstract of this metadata.

GPS Accuracy Positions were acquired by using a Trimble GeoXT® or a Trimble ProXT® with TerraSync 2.40 or 5.02 (WAAS enabled). Data was post-processed in the lab with Pathfinder Office 5.10 with data from local base stations. Therefore, the average accuracy of the data is less than 1m.

Process Position data was obtained in the field using a Trimble GeoXT® or a Trimble ProXT® with TerraSync 2.40 or 5.02 (WAAS enabled). Data was post-processed in the lab with Pathfinder Office 5.10 with data from local base stations and then imported into ESRI ArcMap 10.2.1 for display and analysis.

Metadata

Water Testing

Abstract Water data is taken by The Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP) in order to document and analyze the water conditions of surveyed aquatic plants in Lakes Candlewood, Lillinonah, Zoar, and Squantz Pond. Five sample locations were chosen in Candlewood Lake, three locations in Lakes Lillinonah and Zoar, and one location in Squantz Pond. At least one sample location is chosen in the deepest part of the lake and the other are spread out to account for diverse conditions. The depth (meters) and Secchi measurement (transparency; meters) are taken at each location, along with dissolved oxygen (mg/L) and temperature (◦C) at 0.5 meters from the surface and one-meter intervals to the bottom. Water samples are also taken at the sample location at 0.5-meter from the surface and near the water-body bottom. Water samples are assessed in the lab for conductivity (µs/cm), pH, alkalinity (expressed as mg/L $CaCO_3$) and phosphorous (µg/L).

Purpose Water data was taken by The Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP) in order to document and analyze the water conditions in Lakes Candlewood, Lillinonah and Zoar and correlate with surveyed aquatic plants.

Access Constraints This data is public access data and can be freely distributed. The Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP) should be clearly cited as the author in any published works. The State of Connecticut shall not be held liable for improper or incorrect use of the data described and/or contained within this web site. These data and related graphics are not legal documents and are not for use as such. The information contained in these data is dynamic and will change over time. The State of Connecticut gives no warranty, expressed or implied, as to the accuracy, reliability, or completeness of these data. It is the responsibility of the data user to use the data appropriately and consistent within these limitations. Although these data have been processed successfully on a computer system used by the State of Connecticut, no warranty expressed or implied is made regarding the utility of the data on another system or for general or scientific purposes, nor shall the act of distribution constitute any such warranty. This disclaimer applies both to individual use of the data and aggregate use with other data.

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Credit Gregory J. Bugbee and Jennifer Fanzutti, The Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP)

Accuracy Report Secchi measurements were taken in the field with a Secchi disk with measurement markers (meters), using the same method each time. Dissolved oxygen and temperature were taken in the field with a YSI 58 meter (YSI Incorporated, Yellow Springs, Ohio, USA) that was calibrated every time it was used. Water samples were stored at 3˚ C until analyzed for pH, alkalinity, conductivity and total phosphorus. Conductivity and pH were measured with a Fisher-Accumet AR20 meter (Fisher Scientific International Incorporated, Hampton, New Hampshire, USA), which was calibrated each time it was used. Alkalinity was quantified by titration and expressed as milligrams of $CaCO_3$ per liter (titrant was 0.08 mol/L H_2SO_4 with an end point of pH 4.5). The total phosphorus analysis was conducted on samples that were acidified with three drops of concentrated H_2SO_4, and consisted of the ascorbic acid method and potassium persulfate digestion outlined by the American Public Health Association (Standard Methods of the Examination of Water and Waste Water, 1995).

GPS Accuracy Positions were acquired by using a Trimble GeoXT® or a Trimble ProXT® with TerraSync 2.40 or 5.02 (WAAS enabled). Data was post-processed in the lab with Pathfinder Office 5.10 with data from local base stations. Therefore, the average accuracy of the data is less than 1m.

Process Description Position data was obtained in the field using a Trimble GeoXT® or a Trimble ProXT® with TerraSync 2.40 or 5.02 (WAAS enabled). Data was post-processed in the lab with Pathfinder Office 5.10 with data from local base stations and then imported into ESRI ArcMap 10.2.1 for display and analysis.

Invasive Aquatic Plant Location Data

Appendix Lake Candlewood Invasive Plant Location Data (1 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
457	MyrSpi		Patch	7/31/2015	01:00:50pm	-73.45530	41.42790	2-4	4	11.51282
458	MyrSpi		Patch	7/31/2015	01:23:41pm	-73.45220	41.42700	2-4	4	6.77651
459	MyrSpi		Patch	7/31/2015	01:34:11pm	-73.45160	41.42610	2-4	4	7.98145
460	MyrSpi	With minor naiad	Patch	7/31/2015	01:55:40pm	-73.45420	41.42400	2-4	3	2.17234
461	MyrSpi		Patch	7/31/2015	02:12:12pm	-73.45540	41.42540	2-4	3	0.95810
462	MyrSpi		Patch	7/31/2015	02:18:51pm	-73.45690	41.42600	2-4	3	0.17068
463	MyrSpi		Patch	7/31/2015	02:22:16pm	-73.45780	41.42690	2-4	3	0.01116
38	MyrSpi		Point	7/31/2015	02:24:22pm	-73.45784	41.42684	1-3	2	0.00020
464	MyrSpi		Patch	7/31/2015	02:30:56pm	-73.46020	41.43010	2-4	2	0.04466
465	MyrSpi		Patch	7/31/2015	02:33:53pm	-73.45990	41.43190	2-4	3	1.38540
466	MyrSpi		Patch	7/31/2015	02:43:57pm	-73.45930	41.43400	2-4	3	0.04230
467	MyrSpi		Patch	7/31/2015	02:45:25pm	-73.45920	41.43440	2-4	3	0.03998
468	MyrSpi		Patch	7/31/2015	02:51:17pm	-73.45890	41.43910	0-2	2	0.18715
469	MyrSpi		Patch	7/31/2015	02:53:29pm	-73.45790	41.44000	2-4	3	0.48059
470	MyrSpi		Patch	7/31/2015	03:00:38pm	-73.45590	41.44340	2-4	4	0.03465
471	MyrSpi		Patch	7/31/2015	03:03:25pm	-73.45550	41.44380	2-4	4	0.07804
472	MyrSpi		Patch	7/31/2015	03:05:02pm	-73.45520	41.44450	2-4	4	0.04137
473	MyrSpi		Patch	7/31/2015	03:14:14pm	-73.45060	41.45410	2-4	4	0.20197
474	MyrSpi		Patch	7/31/2015	03:19:04pm	-73.45310	41.45710	2-4	3	2.50079
475	MyrSpi	Patches with abundance of 4 within	Patch	7/31/2015	03:29:19pm	-73.45420	41.45660	0-2	3	0.40221
431	MyrSpi		Patch	7/31/2015	09:14:55am	-73.43680	41.45310	2-4	4	6.07507
432	MyrSpi	With minor naiad	Patch	7/31/2015	09:52:50am	-73.43720	41.45260	0-2	2	0.51415
36	MyrSpi		Point	7/31/2015	09:58:25am	-73.43816	41.45304	0-1	2	0.00020
433	MyrSpi		Patch	7/31/2015	10:07:36am	-73.44070	41.45560	2-4	3	0.10692
434	MyrSpi		Patch	7/31/2015	10:13:30am	-73.44150	41.45690	2-4	3	0.27932
435	MyrSpi		Patch	7/31/2015	10:17:14am	-73.44360	41.45890	2-4	3	0.57634
436	MyrSpi		Patch	7/31/2015	10:28:21am	-73.44420	41.45430	2-4	3	0.34083
437	MyrSpi		Patch	7/31/2015	10:35:30am	-73.44470	41.45240	2-4	2	0.11317
438	MyrSpi		Patch	7/31/2015	10:39:02am	-73.44600	41.45080	2-4	2	0.39991
37	MyrSpi		Point	7/31/2015	10:45:00am	-73.44525	41.45086	0-1	2	0.00020
439	MyrSpi		Patch	7/31/2015	10:56:24am	-73.44840	41.44640	2-4	4	4.18176
440	MyrSpi		Patch	7/31/2015	11:10:35am	-73.45140	41.44440	2-4	4	0.37792

Appendix Lake Candlewood Invasive Plant Location Data (2 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
441	MyrSpi		Patch	7/31/2015	11:12:37am	-73.45130	41.44530	2-4	4	0.09938
442	MyrSpi		Patch	7/31/2015	11:14:24am	-73.45110	41.44600	2-4	4	0.37155
443	MyrSpi	With minor naiad	Patch	7/31/2015	11:20:22am	-73.44730	41.44560	0-2	3	0.16189
444	MyrSpi		Patch	7/31/2015	11:27:17am	-73.44980	41.44810	2-4	4	0.51948
445	MyrSpi		Patch	7/31/2015	11:30:54am	-73.45100	41.44820	2-4	4	0.19034
446	MyrSpi		Patch	7/31/2015	11:34:25am	-73.45200	41.44970	2-4	4	0.66356
447	MyrSpi		Patch	7/31/2015	11:47:21am	-73.45110	41.44420	2-4	2	0.04959
448	MyrSpi		Patch	7/31/2015	11:50:07am	-73.45180	41.44250	2-4	3	0.10384
449	MyrSpi		Patch	7/31/2015	11:58:52am	-73.45240	41.44240	2-4	2	0.09597
478	MyrSpi		Patch	7/31/2015	12:00:00am	-73.45170	41.44240	0-1	2	0.20809
479	MyrSpi	Plotted from notes	Patch	7/31/2015	12:00:00am	-73.45430	41.42390	0-1	3	1.12467
450	MyrSpi		Patch	7/31/2015	12:02:51pm	-73.45350	41.43950	2-4	4	2.57030
451	MyrSpi	With minor naiad	Patch	7/31/2015	12:17:23pm	-73.45310	41.43940	0-2	2	2.22671
452	MyrSpi		Patch	7/31/2015	12:35:20pm	-73.45440	41.43520	2-4	4	1.04028
453	MyrSpi		Patch	7/31/2015	12:45:48pm	-73.45350	41.43100	2-4	3	0.08859
454	MyrSpi		Patch	7/31/2015	12:47:59pm	-73.45320	41.43030	2-4	3	0.45001
455	MyrSpi		Patch	7/31/2015	12:57:37pm	-73.45340	41.42990	2-4	4	0.08258
456	MyrSpi		Patch	7/31/2015	12:58:58pm	-73.45350	41.42950	2-4	4	0.10706
5	MyrSpi		Point	8/7/2015	01:01:28pm	-73.46141	41.47707	0-1	2	0.00020
10	MyrSpi		Point	8/7/2015	01:06:20pm	-73.46154	41.47780	0-1	5	0.00020
23	MyrSpi		Patch	8/7/2015	01:15:27pm	-73.46260	41.47970	0-1	3	0.01742
24	MyrSpi		Patch	8/7/2015	01:19:59pm	-73.46160	41.48190	0-2	3	0.10466
25	MyrSpi	With minor naiad	Patch	8/7/2015	01:24:22pm	-73.46110	41.48310	0-1	3	0.03681
26	MyrSpi	With minor naiad	Patch	8/7/2015	01:31:06pm	-73.45980	41.48420	0-2	4	1.68343
27	MyrSpi		Patch	8/7/2015	01:48:37pm	-73.45770	41.48280	2-4	3	0.17544
28	MyrSpi		Patch	8/7/2015	01:52:31pm	-73.45750	41.48090	2-4	4	0.47097
29	MyrSpi	With minor naiad	Patch	8/7/2015	01:55:20pm	-73.45730	41.48080	2-4	3	0.06416
30	MyrSpi		Patch	8/7/2015	01:57:45pm	-73.45570	41.47770	2-4	3	2.37582
31	MyrSpi		Patch	8/7/2015	02:14:30pm	-73.45330	41.47470	2-4	4	0.26005
32	MyrSpi		Patch	8/7/2015	02:17:34pm	-73.45330	41.47380	2-4	4	0.10269
33	MyrSpi		Patch	8/7/2015	02:19:35pm	-73.45280	41.47290	2-4	4	0.03535
34	MyrSpi		Patch	8/7/2015	02:20:47pm	-73.45240	41.47220	2-4	4	0.04855

Appendix Lake Candlewood Invasive Plant Location Data (3 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
35	MyrSpi		Patch	8/7/2015	02:21:49pm	-73.45170	41.47150	2-4	3	0.26036
36	MyrSpi		Patch	8/7/2015	02:24:04pm	-73.45160	41.47170	0-2	3	0.02849
37	MyrSpi		Patch	8/7/2015	02:26:29pm	-73.45120	41.47060	2-4	3	1.02630
38	MyrSpi		Patch	8/7/2015	02:34:15pm	-73.45000	41.46750	2-4	3	1.48833
39	MyrSpi		Patch	8/7/2015	02:45:12pm	-73.44630	41.46240	2-4	3	4.12017
1	MyrSpi		Point	8/7/2015	09:25:49am	-73.45737	41.46198	2-3	2	0.00020
1	MyrSpi		Patch	8/7/2015	09:28:21am	-73.45790	41.46320	2-4	2	0.03938
2	MyrSpi		Patch	8/7/2015	09:30:04am	-73.45810	41.46410	2-4	4	0.67594
4	MyrSpi	With minor naiad	Patch	8/7/2015	09:39:05am	-73.45870	41.46430	0-2	2	0.09633
5	MyrSpi		Patch	8/7/2015	09:44:11am	-73.45840	41.46560	2-4	3	0.52522
2	MyrSpi		Point	8/7/2015	09:52:23am	-73.45897	41.46553	1-3	2	0.00020
6	MyrSpi		Patch	8/7/2015	09:53:59am	-73.45900	41.46510	0-1	3	0.01744
7	MyrSpi		Patch	8/7/2015	09:56:01am	-73.46020	41.46460	2-4	3	0.46040
8	MyrSpi	With minor naiad	Patch	8/7/2015	10:01:29am	-73.46130	41.46380	0-2	3	0.02500
9	MyrSpi		Patch	8/7/2015	10:05:15am	-73.46220	41.46390	0-2	2	0.03234
10	MyrSpi	With minor naiad	Patch	8/7/2015	10:08:08am	-73.46220	41.46440	0-2	2	0.03730
3	MyrSpi		Point	8/7/2015	10:12:15am	-73.46158	41.46496	1-3	2	0.00020
11	MyrSpi		Patch	8/7/2015	10:13:37am	-73.46130	41.46530	0-2	3	0.03848
12	MyrSpi		Patch	8/7/2015	10:18:18am	-73.45960	41.46710	2-4	3	0.12543
13	MyrSpi		Patch	8/7/2015	10:20:17am	-73.45830	41.46810	2-4	3	0.86878
14	MyrSpi	With minor naiad	Patch	8/7/2015	10:28:48am	-73.45810	41.46860	0-2	3	0.03006
15	MyrSpi		Patch	8/7/2015	10:31:35am	-73.45690	41.46930	2-4	3	4.20467
16	MyrSpi	With minor naiad	Patch	8/7/2015	10:47:12am	-73.45670	41.46900	0-2	3	0.15773
17	MyrSpi		Patch	8/7/2015	10:58:54am	-73.45540	41.46620	2-4	3	4.74634
19	MyrSpi		Patch	8/7/2015	11:59:52am	-73.45050	41.46630	2-4	3	1.39966
20	MyrSpi	With minor naiad	Patch	8/7/2015	12:11:31pm	-73.45860	41.46860	0-2	2	0.17690
21	MyrSpi		Patch	8/7/2015	12:22:02pm	-73.46140	41.47570	0-2	4	0.06164
75	MyrSpi		Patch	8/7/2015	12:27:00pm	-73.46130	41.47580	0-1	4	0.04791
22	MyrSpi		Patch	8/7/2015	12:28:50pm	-73.46040	41.48200	2-4	3	8.25752
338	MyrSpi		Patch	8/12/2015	01:26:25pm	-73.47020	41.50990	2-4	4	0.56371
339	MyrSpi	With minor naiad	Patch	8/12/2015	01:30:48pm	-73.47080	41.51020	0-2	4	0.04981
340	MyrSpi	With minor naiad	Patch	8/12/2015	01:36:57pm	-73.47020	41.51080	2-4	3	0.08449

Appendix Lake Candlewood Invasive Plant Location Data (4 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
341	MyrSpi	With minor naiad	Patch	8/12/2015	01:42:29pm	-73.46920	41.51030	0-2	3	0.07820
342	MyrSpi	With minor naiad	Patch	8/12/2015	01:47:37pm	-73.46860	41.50980	0-2	3	0.04554
343	MyrSpi		Patch	8/12/2015	01:49:07pm	-73.46810	41.50930	2-4	3	0.42943
344	MyrSpi		Patch	8/12/2015	01:58:30pm	-73.46690	41.50870	0-2	3	0.04004
345	MyrSpi		Patch	8/12/2015	02:00:38pm	-73.46640	41.50850	0-2	3	0.01977
346	MyrSpi		Patch	8/12/2015	02:05:08pm	-73.46630	41.50800	2-4	3	0.17754
347	MyrSpi		Patch	8/12/2015	02:09:06pm	-73.46490	41.50680	2-4	4	0.60427
348	MyrSpi		Patch	8/12/2015	02:16:09pm	-73.46300	41.50520	2-4	4	0.79563
349	MyrSpi		Patch	8/12/2015	02:20:35pm	-73.46220	41.50420	2-4	3	0.10489
323	MyrSpi	With minor naiad	Patch	8/12/2015	09:03:51am	-73.44540	41.46370	2-4	4	0.50049
324	MyrSpi		Patch	8/12/2015	09:10:19am	-73.44590	41.46510	2-4	4	0.11635
325	MyrSpi		Patch	8/12/2015	09:12:54am	-73.44700	41.46790	2-4	4	1.52256
326	MyrSpi		Patch	8/12/2015	09:38:01am	-73.44660	41.46760	0-2	3	0.02170
26	MyrSpi		Point	8/12/2015	09:42:14am	-73.44879	41.46936	0-1	2	0.00020
327	MyrSpi		Patch	8/12/2015	09:45:34am	-73.44920	41.47020	2-4	3	0.34206
328	MyrSpi		Patch	8/12/2015	10:06:10am	-73.45580	41.49190	2-4	4	2.01136
329	MyrSpi		Patch	8/12/2015	10:25:11am	-73.45850	41.49130	2-4	3	0.39576
330	MyrSpi	With minor naiad	Patch	8/12/2015	10:27:45am	-73.45930	41.48770	2-4	3	2.64100
331	MyrSpi		Patch	8/12/2015	10:49:06am	-73.46360	41.48880	2-4	4	3.69097
332	MyrSpi		Patch	8/12/2015	11:57:56am	-73.46690	41.49250	2-4	4	0.23295
414	MyrSpi	Plotted from notes	Patch	8/12/2015	12:00:00am	-73.46690	41.50580	0-2	3	2.14066
418	MyrSpi	Plotted from notes	Patch	8/12/2015	12:00:00am	-73.47010	41.51080	0-2	3	0.07421
427	MyrSpi	Plotted from notes	Patch	8/12/2015	12:00:00am	-73.44540	41.46320	0-2	3	0.06638
429	MyrSpi	Plotted from notes	Patch	8/12/2015	12:00:00am	-73.46690	41.49790	0-2	3	3.07531
412	MyrSpi	Plotted from notes	Patch	8/12/2015	12:00:00am	-73.45970	41.48610	0-1	4	1.50477
333	MyrSpi	With minor naiad	Patch	8/12/2015	12:03:54pm	-73.46630	41.49740	2-4	3	7.35429
334	MyrSpi		Patch	8/12/2015	12:50:43pm	-73.46420	41.50090	2-4	3	0.10655
335	MyrSpi		Patch	8/12/2015	12:51:49pm	-73.46430	41.50130	2-4	3	0.09262
336	MyrSpi		Patch	8/12/2015	12:52:38pm	-73.46450	41.50200	2-4	3	0.28928
337	MyrSpi	With minor naiad	Patch	8/12/2015	12:54:41pm	-73.46710	41.50610	2-4	3	2.72490
367	MyrSpi		Patch	8/14/2015	01:31:32pm	-73.45880	41.52550	2-4	4	0.17711
368	MyrSpi		Patch	8/14/2015	01:33:28pm	-73.46210	41.52900	2-4	4	3.70375

Appendix Lake Candlewood Invasive Plant Location Data (5 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
369	MyrSpi		Patch	8/14/2015	01:58:33pm	-73.46530	41.53580	2-4	4	6.71251
370	MyrSpi		Patch	8/14/2015	02:34:29pm	-73.46690	41.53560	2-4	4	0.73206
371	MyrSpi	With minor naiad	Patch	8/14/2015	02:41:24pm	-73.46570	41.53570	0-2	3	0.30343
372	MyrSpi	With minor naiad	Patch	8/14/2015	02:47:19pm	-73.46300	41.53240	0-2	3	0.16370
373	MyrSpi	With minor naiad	Patch	8/14/2015	02:51:55pm	-73.46370	41.52950	0-2	2	0.32539
350	MyrSpi		Patch	8/14/2015	09:16:04am	-73.43420	41.45570	2-4	4	5.83683
351	MyrSpi		Patch	8/14/2015	09:37:53am	-73.44230	41.46660	2-4	4	1.27968
352	MyrSpi		Patch	8/14/2015	09:50:15am	-73.44830	41.47640	2-4	4	0.16722
353	MyrSpi		Patch	8/14/2015	09:53:30am	-73.44870	41.47710	2-4	4	0.10649
354	MyrSpi		Patch	8/14/2015	09:57:48am	-73.44960	41.47690	2-4	4	1.86280
355	MyrSpi		Patch	8/14/2015	10:12:32am	-73.45380	41.49740	2-4	3	0.81204
356	MyrSpi		Patch	8/14/2015	10:18:47am	-73.45340	41.50530	2-4	4	18.77968
357	MyrSpi		Patch	8/14/2015	11:14:49am	-73.45450	41.50120	2-4	3	0.48525
358	MyrSpi		Patch	8/14/2015	11:26:20am	-73.45910	41.50820	2-4	4	1.90852
359	MyrSpi		Patch	8/14/2015	11:44:11am	-73.45990	41.50250	2-4	4	2.32443
360	MyrSpi		Patch	8/14/2015	11:54:03am	-73.46040	41.50700	2-4	4	0.15209
361	MyrSpi		Patch	8/14/2015	11:59:44am	-73.46050	41.50860	2-4	4	0.67538
131	MyrSpi	Plotted from notes	Patch	8/14/2015	12:00:00am	-73.46520	41.52450	0-2	2	9.93240
490	MyrSpi	Plotted from notes	Patch	8/14/2015	12:00:00am	-73.46490	41.51910	1-2	2	0.11784
492	MyrSpi	Plotted from notes	Patch	8/14/2015	12:00:00am	-73.46570	41.52090	1-2	2	0.35374
491	MyrSpi	Plotted from notes	Patch	8/14/2015	12:00:00am	-73.46580	41.52170	1-2	4	0.76988
362	MyrSpi		Patch	8/14/2015	12:04:02pm	-73.46150	41.50970	2-4	3	0.12547
363	MyrSpi		Patch	8/14/2015	12:08:39pm	-73.46160	41.51380	2-4	3	0.93230
364	MyrSpi		Patch	8/14/2015	12:13:38pm	-73.45940	41.51450	2-4	4	0.39553
365	MyrSpi		Patch	8/14/2015	12:16:45pm	-73.46280	41.51620	2-4	3	1.06469
366	MyrSpi	Abundance variable	Patch	8/14/2015	12:23:19pm	-73.46280	41.52100	2-4	3	11.95506
27	MyrSpi		Point	8/14/2015	12:51:39pm	-73.46392	41.51816	0-1	2	0.00020
406	MyrSpi		Patch	8/16/2015	01:01:42pm	-73.44580	41.50940	2-4	4	0.05485
407	MyrSpi		Patch	8/16/2015	01:04:01pm	-73.44530	41.50730	2-4	4	0.14594
408	MyrSpi		Patch	8/16/2015	01:07:37pm	-73.44490	41.50470	2-4	4	0.69222
409	MyrSpi		Patch	8/16/2015	01:15:54pm	-73.44500	41.50190	2-4	4	0.24447
410	MyrSpi		Patch	8/16/2015	01:19:44pm	-73.44530	41.49950	2-4	3	0.00926

Appendix Lake Candlewood Invasive Plant Location Data (6 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
411	MyrSpi		Patch	8/16/2015	01:23:14pm	-73.44620	41.49650	2-4	4	2.06905
501	MyrSpi		Patch	8/16/2015	01:35:23pm	-73.44650	41.49710	0-1	3	0.38450
35	MyrSpi		Point	8/16/2015	01:38:01pm	-73.44762	41.49736	0-2	3	0.00020
374	MyrSpi		Patch	8/16/2015	08:24:16am	-73.44530	41.47150	2-4	4	1.51297
375	MyrSpi		Patch	8/16/2015	08:37:22am	-73.44730	41.47220	2-4	4	0.35842
376	MyrSpi		Patch	8/16/2015	08:40:47am	-73.44690	41.47220	0-2	3	0.06275
377	MyrSpi		Patch	8/16/2015	08:46:09am	-73.44840	41.47370	2-4	3	0.80263
378	MyrSpi		Patch	8/16/2015	08:55:36am	-73.44710	41.47460	2-4	3	0.07334
379	MyrSpi		Patch	8/16/2015	09:05:30am	-73.44540	41.49350	2-5	4	1.00276
380	MyrSpi		Patch	8/16/2015	09:19:58am	-73.43770	41.52220	2-4	4	0.91967
381	MyrSpi		Patch	8/16/2015	09:29:27am	-73.43760	41.52250	0-2	2	0.06724
382	MyrSpi		Patch	8/16/2015	09:32:42am	-73.43840	41.52420	2-4	4	0.14649
383	MyrSpi		Patch	8/16/2015	09:34:01am	-73.43790	41.52490	2-4	4	0.28389
384	MyrSpi		Patch	8/16/2015	09:38:51am	-73.43740	41.52370	2-4	3	0.03443
385	MyrSpi		Patch	8/16/2015	09:39:48am	-73.43730	41.52330	2-4	3	0.00872
386	MyrSpi		Patch	8/16/2015	09:44:52am	-73.44250	41.52780	2-4	4	7.86525
28	MyrSpi		Point	8/16/2015	10:22:02am	-73.44303	41.52906	0-2	2	0.00020
29	MyrSpi		Point	8/16/2015	10:22:53am	-73.44309	41.52914	0-2	2	0.00020
387	MyrSpi		Patch	8/16/2015	11:12:11am	-73.44530	41.55260	2-4	3	0.16506
388	MyrSpi		Patch	8/16/2015	11:14:55am	-73.44540	41.55290	0-2	3	0.04972
389	MyrSpi		Patch	8/16/2015	11:17:32am	-73.44670	41.54890	2-4	4	2.32900
500	MyrSpi		Patch	8/16/2015	11:32:24am	-73.44600	41.55030	0-2	3	0.54578
390	MyrSpi		Patch	8/16/2015	11:33:52am	-73.44760	41.54890	0-2	3	0.10252
30	MyrSpi		Point	8/16/2015	11:36:56am	-73.44740	41.54745	0-1	3	0.00020
31	MyrSpi		Point	8/16/2015	11:37:05am	-73.44737	41.54744	0-2	3	0.00020
32	MyrSpi		Point	8/16/2015	11:39:22am	-73.44767	41.54516	0-2	3	0.00020
33	MyrSpi		Point	8/16/2015	11:39:35am	-73.44766	41.54514	0-2	3	0.00020
391	MyrSpi		Patch	8/16/2015	11:41:04am	-73.44840	41.54430	0-2	3	0.15582
392	MyrSpi		Patch	8/16/2015	11:42:39am	-73.44800	41.54430	2-4	3	1.05814
393	MyrSpi		Patch	8/16/2015	11:49:51am	-73.44720	41.54120	2-4	3	0.08393
394	MyrSpi		Patch	8/16/2015	11:51:57am	-73.44680	41.54020	2-4	3	0.06314
395	MyrSpi		Patch	8/16/2015	11:54:34am	-73.44700	41.53790	2-4	4	0.21743

Appendix Lake Candlewood Invasive Plant Location Data (7 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
396	MyrSpi		Patch	8/16/2015	11:59:25am	-73.44730	41.53620	2-4	3	0.07715
397	MyrSpi		Patch	8/16/2015	12:02:09pm	-73.44770	41.53160	2-4	4	1.48692
398	MyrSpi		Patch	8/16/2015	12:18:01pm	-73.44640	41.52730	2-4	4	0.13925
399	MyrSpi		Patch	8/16/2015	12:21:01pm	-73.44600	41.52600	2-4	4	0.03929
400	MyrSpi		Patch	8/16/2015	12:28:11pm	-73.44610	41.52640	2-4	4	0.03777
401	MyrSpi		Patch	8/16/2015	12:30:11pm	-73.44630	41.52310	2-4	4	1.54442
34	MyrSpi		Point	8/16/2015	12:40:33pm	-73.44606	41.52402	0-2	3	0.00020
402	MyrSpi		Patch	8/16/2015	12:43:49pm	-73.44680	41.52240	0-2	3	0.03933
403	MyrSpi		Patch	8/16/2015	12:46:04pm	-73.44610	41.52210	2-4	4	0.29552
404	MyrSpi		Patch	8/16/2015	12:49:59pm	-73.44550	41.51820	2-4	4	0.05998
405	MyrSpi		Patch	8/16/2015	12:55:52pm	-73.44510	41.51130	2-4	4	0.28079
232	MyrSpi		Patch	8/18/2015	01:00:28pm	-73.49200	41.57200	0-2	4	0.01928
233	MyrSpi		Patch	8/18/2015	01:13:36pm	-73.48870	41.56810	2-4	2	0.35660
234	MyrSpi		Patch	8/18/2015	01:18:30pm	-73.48810	41.56620	2-4	3	0.79016
235	MyrSpi		Patch	8/18/2015	01:23:00pm	-73.48790	41.56640	0-2	3	0.02296
236	MyrSpi		Patch	8/18/2015	01:24:52pm	-73.48780	41.56600	0-2	3	0.01125
237	MyrSpi		Patch	8/18/2015	01:26:42pm	-73.48680	41.56690	2-4	2	0.88216
238	MyrSpi	With minor naiad	Patch	8/18/2015	01:38:27pm	-73.48360	41.56830	2-4	3	4.65555
239	MyrSpi		Patch	8/18/2015	01:52:15pm	-73.48080	41.56620	2-4	3	0.18226
240	MyrSpi		Patch	8/18/2015	01:54:40pm	-73.48070	41.56620	0-2	2	0.06088
241	MyrSpi		Patch	8/18/2015	01:56:00pm	-73.47990	41.56550	0-2	3	0.20964
242	MyrSpi		Patch	8/18/2015	02:06:19pm	-73.48310	41.56380	2-5	4	1.45787
243	MyrSpi		Patch	8/18/2015	02:13:03pm	-73.48370	41.56470	2-5	4	0.30351
244	MyrSpi		Patch	8/18/2015	02:18:34pm	-73.48350	41.56270	2-5	4	0.36748
245	MyrSpi		Patch	8/18/2015	02:21:33pm	-73.48460	41.56380	2-5	4	0.29616
246	MyrSpi		Patch	8/18/2015	02:25:35pm	-73.47740	41.56260	2-4	3	0.04453
247	MyrSpi		Patch	8/18/2015	02:26:49pm	-73.47600	41.56160	2-4	3	0.56885
248	MyrSpi		Patch	8/18/2015	02:31:33pm	-73.47610	41.56190	0-2	2	0.08386
249	MyrSpi		Patch	8/18/2015	02:34:14pm	-73.47620	41.56040	2-5	4	1.01007
250	MyrSpi		Patch	8/18/2015	02:37:46pm	-73.47480	41.55850	2-4	4	1.33320
251	MyrSpi		Patch	8/18/2015	02:47:55pm	-73.47340	41.55530	2-4	4	1.34150
252	MyrSpi		Patch	8/18/2015	02:56:35pm	-73.47240	41.55520	0-2	3	0.08095

Appendix Lake Candlewood Invasive Plant Location Data (8 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
253	MyrSpi		Patch	8/18/2015	02:59:24pm	-73.47210	41.55440	2-4	3	0.07289
210	MyrSpi		Patch	8/18/2015	08:30:20am	-73.46540	41.53130	2-4	3	0.92024
211	MyrSpi	With minor naiad	Patch	8/18/2015	08:35:23am	-73.46550	41.53100	0-2	2	0.11110
212	MyrSpi	With minor naiad	Patch	8/18/2015	08:38:19am	-73.46600	41.53150	0-2	3	0.06624
16	MyrSpi		Point	8/18/2015	08:40:31am	-73.46614	41.53190	0-1	3	0.00020
17	MyrSpi		Point	8/18/2015	08:40:47am	-73.46612	41.53193	0-2	3	0.00020
213	MyrSpi		Patch	8/18/2015	08:42:18am	-73.46860	41.53660	2-4	4	3.55020
214	MyrSpi		Patch	8/18/2015	08:59:21am	-73.47120	41.53930	2-4	3	0.05704
215	MyrSpi		Patch	8/18/2015	09:00:40am	-73.47170	41.54050	2-4	3	0.06529
216	MyrSpi		Patch	8/18/2015	09:01:38am	-73.47190	41.54110	2-4	3	0.05424
217	MyrSpi		Patch	8/18/2015	09:05:43am	-73.47540	41.54870	2-4	4	5.71222
218	MyrSpi		Patch	8/18/2015	09:24:51am	-73.46220	41.53700	2-4	4	2.17080
219	MyrSpi		Patch	8/18/2015	09:46:09am	-73.46650	41.54290	2-4	4	0.85599
220	MyrSpi		Patch	8/18/2015	09:53:17am	-73.46620	41.54540	2-4	4	1.43958
221	MyrSpi		Patch	8/18/2015	10:05:02am	-73.46650	41.54700	0-2	3	0.05927
222	MyrSpi		Patch	8/18/2015	10:08:21am	-73.46860	41.54990	2-4	4	2.29931
223	MyrSpi		Patch	8/18/2015	10:16:43am	-73.47050	41.54870	2-4	4	2.44858
224	MyrSpi		Patch	8/18/2015	10:34:56am	-73.46980	41.54760	0-2	4	0.02684
225	MyrSpi	With minor naiad	Patch	8/18/2015	11:15:11am	-73.48370	41.55810	2-4	4	3.91571
226	MyrSpi		Patch	8/18/2015	11:27:23am	-73.47990	41.55610	0-2	4	1.98733
19	MyrSpi		Point	8/18/2015	11:34:37am	-73.48072	41.55652	0-2	3	0.00020
227	MyrSpi		Patch	8/18/2015	11:42:47am	-73.48130	41.55860	2-4	4	4.65721
298	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.48480	41.55850	0-2	3	0.93626
300	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.48420	41.56970	0-2	3	1.53528
100	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.48820	41.56420	0-2	2	1.22832
106	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.48700	41.56700	0-2	2	0.72945
89	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.46200	41.53550	0-2	3	0.51984
91	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.48030	41.55660	0-2	3	0.28991
93	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.48120	41.55800	0-2	3	0.16581
96	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.48640	41.56140	0-2	3	0.21701
98	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.48740	41.56230	0-2	3	0.45530
105	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.49200	41.57410	0-2	3	2.72092

Appendix Lake Candlewood Invasive Plant Location Data (9 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
115	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.42760	41.46240	0-2	3	3.58960
102	MyrSpi	Plotted from notes	Patch	8/18/2015	12:00:00am	-73.49210	41.57130	0-2	4	0.33710
228	MyrSpi		Patch	8/18/2015	12:01:43pm	-73.48470	41.56110	2-4	3	0.12538
229	MyrSpi		Patch	8/18/2015	12:04:12pm	-73.48750	41.56370	2-4	4	4.39875
230	MyrSpi		Patch	8/18/2015	12:33:28pm	-73.49010	41.56690	2-4	3	0.34317
231	MyrSpi		Patch	8/18/2015	12:38:45pm	-73.49040	41.57040	2-4	2	11.72824
20	MyrSpi		Point	8/18/2015	12:54:57pm	-73.49114	41.56997	0-1	2	0.00020
255	MyrSpi		Patch	8/19/2015	01:12:38pm	-73.44430	41.57250	2-4	3	0.59358
21	MyrSpi		Point	8/19/2015	01:21:45pm	-73.44583	41.56890	0-2	2	0.00020
256	MyrSpi		Patch	8/19/2015	01:22:05pm	-73.44580	41.56910	2-4	4	0.05745
257	MyrSpi		Patch	8/19/2015	01:22:48pm	-73.44530	41.56820	2-4	3	0.26640
258	MyrSpi		Patch	8/19/2015	01:28:54pm	-73.44440	41.56290	2-4	3	3.59293
259	MyrSpi	With minor naiad	Patch	8/19/2015	01:43:38pm	-73.44500	41.56520	0-2	3	0.26910
260	MyrSpi	With minor naiad	Patch	8/19/2015	01:47:42pm	-73.44490	41.56420	0-2	3	0.11908
261	MyrSpi	With minor naiad	Patch	8/19/2015	01:51:09pm	-73.44460	41.56230	0-2	3	0.08622
262	MyrSpi	With minor naiad	Patch	8/19/2015	01:55:05pm	-73.44400	41.56020	0-2	2	0.01207
263	MyrSpi		Patch	8/19/2015	01:58:30pm	-73.44460	41.55510	2-4	3	1.01029
22	MyrSpi		Point	8/19/2015	02:09:01pm	-73.44398	41.55689	0-1	2	0.00020
23	MyrSpi		Point	8/19/2015	02:09:11pm	-73.44398	41.55689	0-1	2	0.00020
264	MyrSpi		Patch	8/19/2015	02:12:39pm	-73.44190	41.55220	2-4	3	2.14004
265	MyrSpi	With minor naiad	Patch	8/19/2015	02:26:10pm	-73.44250	41.55260	0-2	3	0.16063
266	MyrSpi	With minor naiad	Patch	8/19/2015	02:30:21pm	-73.44070	41.55070	0-2	3	0.48401
267	MyrSpi		Patch	8/19/2015	02:35:22pm	-73.43970	41.55350	2-4	3	0.05200
268	MyrSpi		Patch	8/19/2015	02:37:29pm	-73.43980	41.55400	2-4	4	0.02906
269	MyrSpi		Patch	8/19/2015	02:39:45pm	-73.43960	41.55610	2-4	3	0.23044
270	MyrSpi		Patch	8/19/2015	02:42:49pm	-73.43970	41.55730	2-4	3	0.03645
271	MyrSpi		Patch	8/19/2015	02:45:28pm	-73.44010	41.55900	2-4	3	0.20532
24	MyrSpi		Point	8/19/2015	02:48:55pm	-73.44004	41.55939	0-1	2	0.00020
272	MyrSpi	With minor naiad	Patch	8/19/2015	02:55:34pm	-73.44050	41.56270	2-4	3	1.28177
273	MyrSpi	With minor naiad	Patch	8/19/2015	02:59:47pm	-73.44110	41.56540	2-4	3	0.41886
302	MyrSpi		Patch	8/19/2015	12:00:00a	-73.44270	41.56990	0-2	2	2.07655
108	MyrSpi		Patch	8/19/2015	12:00:00am	-73.44040	41.56090	0-2	2	0.39313

Appendix Lake Candlewood Invasive Plant Location Data (10 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
254	MyrSpi	With minor naiad	Patch	8/19/2015	12:58:03pm	-73.44290	41.56970	2-4	3	2.24507
294	MyrSpi		Patch	8/20/2015	01:01:05pm	-73.44270	41.47150	2-4	3	1.34764
295	MyrSpi		Patch	8/20/2015	01:13:18pm	-73.44230	41.48190	2-4	4	9.55130
274	MyrSpi	With minor naiad	Patch	8/20/2015	09:07:21am	-73.43060	41.44850	2-4	3	2.26068
275	MyrSpi		Patch	8/20/2015	09:17:12am	-73.43150	41.45100	2-4	4	1.18324
276	MyrSpi	With minor naiad	Patch	8/20/2015	09:27:58am	-73.43070	41.44980	0-2	3	0.05520
277	MyrSpi		Patch	8/20/2015	09:34:43am	-73.43280	41.45400	0-2	3	0.56893
278	MyrSpi		Patch	8/20/2015	09:39:34am	-73.43380	41.45540	0-2	3	0.24473
279	MyrSpi		Patch	8/20/2015	09:42:07am	-73.43410	41.45640	0-2	2	0.05843
280	MyrSpi		Patch	8/20/2015	09:44:37am	-73.43490	41.45830	2-4	3	0.12348
281	MyrSpi	With minor naiad	Patch	8/20/2015	09:49:52am	-73.42830	41.46490	2-4	3	21.26691
282	MyrSpi	With minor naiad	Patch	8/20/2015	11:23:00am	-73.42810	41.45970	0-2	3	0.96773
283	MyrSpi	With minor naiad	Patch	8/20/2015	11:35:44am	-73.42530	41.46370	0-2	4	2.06741
284	MyrSpi	With minor naiad	Patch	8/20/2015	11:50:37am	-73.42550	41.46870	0-1	4	0.14967
285	MyrSpi	With minor naiad	Patch	8/20/2015	11:53:41am	-73.42730	41.46860	0-1	4	0.06899
286	MyrSpi	With minor naiad	Patch	8/20/2015	11:58:05am	-73.43000	41.46990	0-1	4	0.08542
312	MyrSpi	Plotted from notes	Patch	8/20/2015	12:00:00am	-73.43010	41.44810	0-2	4	3.76780
110	MyrSpi	Plotted from notes	Patch	8/20/2015	12:00:00am	-73.43160	41.46180	0-2	2	0.18922
112	MyrSpi	Plotted from notes	Patch	8/20/2015	12:00:00am	-73.42990	41.46070	0-2	2	0.23487
119	MyrSpi	Plotted from notes	Patch	8/20/2015	12:00:00am	-73.43050	41.46910	0-2	2	0.23917
120	MyrSpi	Plotted from notes	Patch	8/20/2015	12:00:00am	-73.43310	41.47180	0-2	2	0.28512
126	MyrSpi	Plotted from notes	Patch	8/20/2015	12:00:00am	-73.43650	41.47280	0-2	2	0.07120
116	MyrSpi	Plotted from notes	Patch	8/20/2015	12:00:00am	-73.42420	41.46690	0-2	3	0.45302
121	MyrSpi	Plotted from notes	Patch	8/20/2015	12:00:00am	-73.43390	41.47210	0-2	3	0.47481
124	MyrSpi	Plotted from notes	Patch	8/20/2015	12:00:00am	-73.43610	41.47270	0-2	3	0.02253
128	MyrSpi	Plotted from notes	Patch	8/20/2015	12:00:00am	-73.43760	41.47350	0-2	3	0.48114
287	MyrSpi	With minor naiad	Patch	8/20/2015	12:19:11pm	-73.43840	41.47350	0-1	4	0.23977
288	MyrSpi	With minor naiad	Patch	8/20/2015	12:23:33pm	-73.43750	41.47260	0-1	3	0.16556
289	MyrSpi	With minor naiad	Patch	8/20/2015	12:26:34pm	-73.43620	41.47170	0-2	2	0.27403
290	MyrSpi	With minor naiad	Patch	8/20/2015	12:29:08pm	-73.43550	41.47090	0-2	2	0.08496
291	MyrSpi	With minor naiad	Patch	8/20/2015	12:38:14pm	-73.43530	41.46700	0-2	3	0.78335
292	MyrSpi		Patch	8/20/2015	12:40:57pm	-73.43520	41.46660	2-4	3	2.30489

Appendix Lake Candlewood Invasive Plant Location Data (11 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
293	MyrSpi		Patch	8/20/2015	12:48:42pm	-73.43920	41.46780	2-4	3	1.80710
25	MyrSpi		Point	8/20/2015	12:57:42pm	-73.43898	41.46786	0-2	4	0.00020
158	MyrSpi		Patch	8/24/2015	01:16:21pm	-73.43880	41.50950	0-2	3	0.01713
159	MyrSpi		Patch	8/24/2015	01:19:12pm	-73.43910	41.51210	0-2	3	0.03780
160	MyrSpi		Patch	8/24/2015	01:20:51pm	-73.43920	41.51270	0-2	3	0.01461
161	MyrSpi	With minor naiad	Patch	8/24/2015	01:24:25pm	-73.43980	41.51370	0-1	2	0.43268
162	MyrSpi		Patch	8/24/2015	01:32:13pm	-73.44140	41.51390	0-2	2	0.00498
163	MyrSpi		Patch	8/24/2015	01:35:17pm	-73.44140	41.51530	0-2	2	0.01271
164	MyrSpi	With minor naiad	Patch	8/24/2015	01:41:36pm	-73.43690	41.51880	2-4	3	0.52198
165	MyrSpi	With minor naiad	Patch	8/24/2015	01:47:00pm	-73.43570	41.52020	2-4	4	1.32365
166	MyrSpi	With minor naiad	Patch	8/24/2015	01:55:37pm	-73.43570	41.52220	2-4	4	0.08807
167	MyrSpi		Patch	8/24/2015	01:57:40pm	-73.43620	41.52240	2-3	3	0.11880
14	MyrSpi		Point	8/24/2015	02:01:06pm	-73.43607	41.52230	0-2	2	0.00020
168	MyrSpi	With minor naiad	Patch	8/24/2015	02:02:50pm	-73.43620	41.52280	0-2	4	0.03244
169	MyrSpi	With minor naiad	Patch	8/24/2015	02:10:23pm	-73.43720	41.52750	2-4	3	0.07678
170	MyrSpi		Patch	8/24/2015	02:14:03pm	-73.43780	41.52660	2-4	3	0.04097
171	MyrSpi		Patch	8/24/2015	02:15:29pm	-73.43920	41.53200	2-4	4	6.46330
134	MyrSpi	With minor naiad	Patch	8/24/2015	09:29:50am	-73.43440	41.47880	0-2	2	7.46415
135	MyrSpi	With minor naiad	Patch	8/24/2015	09:49:33am	-73.43630	41.48150	0-1	3	0.13186
136	MyrSpi	With minor naiad	Patch	8/24/2015	09:51:47am	-73.43590	41.48050	0-1	3	0.26412
137	MyrSpi	With minor naiad	Patch	8/24/2015	09:55:46am	-73.43500	41.47890	0-1	4	0.53650
138	MyrSpi	With minor naiad	Patch	8/24/2015	09:59:10am	-73.43420	41.47760	0-1	3	0.03988
139	MyrSpi	With minor naiad	Patch	8/24/2015	10:00:40am	-73.43360	41.47660	0-1	4	0.39236
140	MyrSpi	With minor naiad	Patch	8/24/2015	10:10:08am	-73.43330	41.47720	0-1	4	0.58440
141	MyrSpi	With minor naiad	Patch	8/24/2015	10:24:49am	-73.43540	41.48300	0-2	2	0.71840
142	MyrSpi	With minor naiad	Patch	8/24/2015	10:28:57am	-73.43730	41.48900	2-4	4	7.18048
143	MyrSpi	With minor naiad	Patch	8/24/2015	10:55:28am	-73.43410	41.48650	0-2	4	0.26813
144	MyrSpi		Patch	8/24/2015	10:59:19am	-73.43430	41.48690	0-1	2	0.12945
145	MyrSpi		Patch	8/24/2015	11:01:43am	-73.43510	41.48750	0-2	3	0.27687
13	MyrSpi		Point	8/24/2015	11:03:47am	-73.43542	41.48788	0-1	2	0.00020
146	MyrSpi		Patch	8/24/2015	11:04:52am	-73.43590	41.48840	0-2	3	0.11310
147	MyrSpi		Patch	8/24/2015	11:09:32am	-73.43890	41.49170	0-2	3	0.03022

Appendix Lake Candlewood Invasive Plant Location Data (12 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
148	MyrSpi		Patch	8/24/2015	11:10:51am	-73.43940	41.49220	0-2	3	0.01548
149	MyrSpi		Patch	8/24/2015	11:13:49am	-73.44110	41.49410	0-2	3	0.04495
150	MyrSpi		Patch	8/24/2015	11:16:15am	-73.44170	41.49520	0-2	3	0.01775
151	MyrSpi	With minor naiad	Patch	8/24/2015	11:17:55am	-73.44200	41.49630	0-2	2	0.10506
152	MyrSpi	With minor naiad	Patch	8/24/2015	11:20:20am	-73.44230	41.49740	0-2	2	0.24579
153	MyrSpi		Patch	8/24/2015	11:22:40am	-73.44170	41.50390	2-4	4	8.54598
82	MyrSpi	Plotted from notes	Patch	8/24/2015	12:00:00am	-73.44230	41.50470	0-2	2	0.95639
83	MyrSpi	Plotted from notes	Patch	8/24/2015	12:00:00am	-73.44030	41.51590	0-1	2	0.34590
85	MyrSpi	Plotted from notes	Patch	8/24/2015	12:00:00am	-73.45380	41.50740	0-2	2	2.47184
87	MyrSpi	Plotted from notes	Patch	8/24/2015	12:00:00am	-73.43840	41.53300	0-2	3	0.17413
209	MyrSpi	Plotted from notes	Patch	8/24/2015	12:00:00am	-73.43420	41.47900	0-1	3	0.22111
202	MyrSpi	Plotted from notes	Patch	8/24/2015	12:00:00am	-73.43960	41.51710	2-4	4	2.62915
154	MyrSpi	With minor naiad	Patch	8/24/2015	12:16:34pm	-73.43960	41.50310	0-2	3	1.26445
155	MyrSpi		Patch	8/24/2015	12:33:09pm	-73.43850	41.50730	2-4	4	0.56731
156	MyrSpi		Patch	8/24/2015	12:39:58pm	-73.43820	41.50660	0-2	4	0.10190
157	MyrSpi		Patch	8/24/2015	12:44:29pm	-73.44070	41.51260	2-4	4	3.50412
195	MyrSpi		Patch	8/25/2015	01:00:21pm	-73.46380	41.54670	2-4	4	0.94130
196	MyrSpi		Patch	8/25/2015	01:14:02pm	-73.46380	41.54590	0-2	2	0.25305
197	MyrSpi		Patch	8/25/2015	01:18:31pm	-73.46810	41.55390	2-4	3	1.05779
198	MyrSpi	With minor naiad	Patch	8/25/2015	01:26:09pm	-73.46750	41.55420	0-2	4	0.22527
199	MyrSpi	With minor naiad	Patch	8/25/2015	01:32:17pm	-73.46930	41.55410	0-2	3	0.26840
200	MyrSpi		Patch	8/25/2015	01:35:30pm	-73.47100	41.55360	2-4	3	0.41703
201	MyrSpi	With minor naiad	Patch	8/25/2015	01:39:57pm	-73.47120	41.55390	0-2	4	0.06752
172	MyrSpi	With minor naiad	Patch	8/25/2015	09:22:42am	-73.43890	41.53550	0-2	4	0.12752
173	MyrSpi		Patch	8/25/2015	09:33:26am	-73.44350	41.54180	2-4	4	1.92495
15	MyrSpi		Point	8/25/2015	09:47:45am	-73.44357	41.54272	0-1	1	0.00020
174	MyrSpi	With minor naiad	Patch	8/25/2015	09:49:46am	-73.44300	41.54360	0-2	2	0.11881
175	MyrSpi		Patch	8/25/2015	09:52:18am	-73.44260	41.54570	2-4	4	1.75807
176	MyrSpi	With minor naiad	Patch	8/25/2015	10:02:15am	-73.44250	41.54570	0-2	2	0.20035
177	MyrSpi		Patch	8/25/2015	10:07:27am	-73.44370	41.55030	2-4	4	1.46656
178	MyrSpi	With minor naiad	Patch	8/25/2015	10:45:23am	-73.45110	41.50090	0-2	2	0.39566
179	MyrSpi	With minor naiad	Patch	8/25/2015	10:49:01am	-73.45170	41.50210	0-2	2	0.39445

Appendix Lake Candlewood Invasive Plant Location Data (13 of 13)

FID	Invasive Plant Name	Notes	Type	Date	Time	Longitude	Latitude	Depth (m)	Abundance	Area (acres)
180	MyrSpi	With minor naiad	Patch	8/25/2015	10:51:20am	-73.45190	41.50280	0-2	3	0.24189
181	MyrSpi	With minor naiad	Patch	8/25/2015	10:59:56am	-73.45510	41.51230	5-7	4	0.04026
182	MyrSpi		Patch	8/25/2015	11:05:55am	-73.45330	41.52390	2-4	3	7.34516
183	MyrSpi		Patch	8/25/2015	11:41:25am	-73.45340	41.51390	0-1	3	0.10403
184	MyrSpi		Patch	8/25/2015	11:53:42am	-73.45370	41.52970	0-2	3	0.18787
185	MyrSpi	With minor naiad	Patch	8/25/2015	11:59:18am	-73.45420	41.53110	0-2	3	0.14298
203	MyrSpi	Plotted from notes	Patch	8/25/2015	12:00:00am	-73.46500	41.55040	2-4	4	1.79290
186	MyrSpi		Patch	8/25/2015	12:06:01pm	-73.45450	41.53250	0-2	3	0.24767
187	MyrSpi		Patch	8/25/2015	12:10:29pm	-73.45560	41.53490	2-4	3	0.13160
188	MyrSpi		Patch	8/25/2015	12:29:41pm	-73.45600	41.53670	2-4	4	0.52176
189	MyrSpi		Patch	8/25/2015	12:33:14pm	-73.45690	41.53910	2-4	4	0.03458
190	MyrSpi		Patch	8/25/2015	12:34:48pm	-73.45750	41.54040	2-4	3	0.62987
191	MyrSpi		Patch	8/25/2015	12:40:12pm	-73.45860	41.54280	2-4	4	0.32787
192	MyrSpi		Patch	8/25/2015	12:45:08pm	-73.45840	41.54250	0-2	4	0.02240
193	MyrSpi		Patch	8/25/2015	12:48:11pm	-73.46130	41.54460	2-3	4	0.96391
194	MyrSpi		Patch	8/25/2015	12:54:46pm	-73.46220	41.54520	0-2	3	0.30512
132	MyrSpi	With minor naiad	Patch	8/31/2015	10:28:51am	-73.45540	41.51360	0-2	3	0.11421
78	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.45160	41.50200	0-1	1	0.29116
205	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.45340	41.51440	2-4	2	0.11313
207	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.44120	41.51290	0-2	2	0.01141
425	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.45220	41.50210	2-4	2	0.16990
483	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.43510	41.46980	0-2	2	0.47619
424	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.45190	41.50200	0-2	3	0.13752
486	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.44980	41.42770	0-2	3	0.25188
488	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.45680	41.42540	0-1	3	0.06228
204	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.45330	41.51410	0-2	4	0.26570
481	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.45250	41.42500	0-2	4	3.57304
482	MyrSpi	Plotted from notes	Patch	8/31/2015	12:00:00am	-73.44930	41.42740	0-2	5	0.37092

Appendix Lake Candlewood Eurasian watermilfoil to surface locations (1 of 1)

FID	Surveyor	Invasive Plant Name	Type	Notes	Date	Time	Latitude	Longitude
1	Greg Bugbee	MyrSpi	Point		8/7/2015	01:06:15pm	41.47780	-73.46153
2	Greg Bugbee	MyrSpi	Point		8/7/2015	01:06:15pm	41.47780	-73.46153
3	Greg Bugbee	MyrSpi	Point		8/7/2015	01:06:20pm	41.47780	-73.46154
4	Greg Bugbee	MyrSpi	Point		8/7/2015	12:21:11pm	41.47574	-73.46156
5	Greg Bugbee	MyrSpi	Point	Depth = 1 meter	8/7/2015	12:21:11pm	41.47574	-73.46156
6	Greg Bugbee	MyrSpi	Point		8/12/2015	10:46:43am	41.48559	-73.45935
7	Greg Bugbee	MyrSpi	Point		8/12/2015	10:46:43am	41.48559	-73.45935
8	Greg Bugbee	MyrSpi	Point		8/18/2015	01:00:24pm	41.57208	-73.49192
9	Greg Bugbee	MyrSpi	Point		8/18/2015	12:59:37pm	41.57205	-73.49197
10	Greg Bugbee	MyrSpi	Point		8/18/2015	12:59:53pm	41.57200	-73.49194
11	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	08:54:28am	41.44716	-73.42947
12	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	08:55:30am	41.44698	-73.42975
13	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	08:56:42am	41.44711	-73.42984
14	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	08:58:30am	41.44750	-73.42958
15	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	08:59:28am	41.44729	-73.43004
16	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	09:00:12am	41.44742	-73.43019
17	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	09:02:25am	41.44755	-73.43028
18	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	09:03:15am	41.44778	-73.43050
19	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	09:03:59am	41.44791	-73.43059
20	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	09:15:15am	41.44977	-73.43195
21	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	11:39:28am	41.46330	-73.42502
22	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	11:46:15am	41.46676	-73.42411
23	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	11:46:38am	41.46686	-73.42415
24	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	11:50:02am	41.46869	-73.42559
25	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/20/2015	12:21:36pm	41.47364	-73.43854
26	Greg Bugbee	MyrSpi	Point	Depth = 1-2 meters	8/24/2015	02:04:04pm	41.52278	-73.43618
27	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/24/2015	10:08:06am	41.47673	-73.43379
28	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/24/2015	10:08:47am	41.47651	-73.43366
29	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/24/2015	10:09:30am	41.47630	-73.43293
30	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/24/2015	10:16:21am	41.47678	-73.43300
31	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/24/2015	10:16:58am	41.47707	-73.43321
32	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/24/2015	10:58:02am	41.48662	-73.43398
33	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/24/2015	12:30:38pm	41.50378	-73.43766
34	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/25/2015	01:29:30pm	41.55424	-73.46728
35	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/25/2015	01:29:38pm	41.55427	-73.46736
36	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/25/2015	01:41:45pm	41.55392	-73.47129
37	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/25/2015	09:26:42am	41.53556	-73.43877
38	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/25/2015	09:27:59am	41.53553	-73.43912
39	Greg Bugbee	MyrSpi	Point	Depth = 2 meters	8/25/2015	11:01:12am	41.51225	-73.45518
40	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/25/2015	11:01:21am	41.51232	-73.45523
41	Greg Bugbee	MyrSpi	Point	Depth = 1 meter	8/25/2015	11:48:51am	41.51403	-73.45330
42	Greg Bugbee	MyrSpi	Point	Depth = 1 meter	8/25/2015	11:57:04am	41.52960	-73.45363
43	Greg Bugbee	MyrSpi	Point	Depth = 2.5 meters	8/25/2015	12:44:33pm	41.54226	-73.45822
44	Greg Bugbee	MyrSpi	Point	Depth = 0-1 meter	8/25/2015	12:58:39pm	41.54506	-73.46179

Appendix Lake Lillinonah Invasive Plant Location Data (1 of 6)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
1	TraNat		Point	6/8/2015	12:20:55pm	41.53880	-73.40544	0-2	2	0.0002
2	TraNat		Point	6/8/2015	12:21:35pm	41.53903	-73.40540	0-2	2	0.0002
3	TraNat		Point	6/8/2015	12:25:29pm	41.53869	-73.40535	0-2	3	0.0002
4	TraNat		Point	6/8/2015	12:27:23pm	41.53871	-73.40550	0-2	2	0.0002
5	TraNat		Point	6/8/2015	12:29:26pm	41.53880	-73.40545	0-2	2	0.0002
6	TraNat		Point	6/8/2015	12:30:16pm	41.53857	-73.40552	0-2	2	0.0002
7	TraNat		Point	6/8/2015	12:33:17pm	41.53621	-73.40636	0-2	5	0.0002
8	TraNat		Point	6/8/2015	12:41:54pm	41.53587	-73.40612	0-2	3	0.0002
9	MyrSpi		Patch	8/18/2015	01:04:58pm	41.48120	-73.32100	0-1	1	0.21633
10	MyrSpi		Patch	8/18/2015	01:07:51pm	41.48220	-73.32200	3-5	3	0.35940
11	MyrSpi		Point	8/18/2015	01:18:04pm	41.48395	-73.32424	0-1	2	0.0002
12	MyrSpi		Point	8/18/2015	01:20:49pm	41.48463	-73.32499	1-3	5	0.0002
13	MyrSpi		Point	8/18/2015	01:21:01pm	41.48465	-73.32500	0-1	5	0.0002
14	MyrSpi		Point	8/18/2015	01:21:51pm	41.48496	-73.32529	1-3	2	0.0002
15	NajMin		Point	8/18/2015	01:23:45pm	41.48556	-73.32533	0-1	3	0.0002
16	NajMin		Point	8/18/2015	01:23:45pm	41.48573	-73.32533	0-1	3	0.0002
17	NajMin		Point	8/18/2015	01:23:45pm	41.48582	-73.32533	0-1	3	0.0002
18	NajMin		Point	8/18/2015	01:23:45pm	41.48580	-73.32533	0-1	3	0.0002
19	NajMin		Point	8/18/2015	01:23:45pm	41.48543	-73.32532	0-1	3	0.0002
20	NajMin		Point	8/18/2015	01:23:45pm	41.48539	-73.32533	0-1	3	0.0002
21	MyrSpi	With minor naiad	Patch	8/18/2015	01:23:49pm	41.48550	-73.32500	0-1	2	0.02677
22	MyrSpi		Patch	8/18/2015	01:26:55pm	41.48630	-73.32500	0-1	2	0.04759
23	MyrSpi		Patch	8/18/2015	01:38:25pm	41.49370	-73.32500	3-5	4	0.56970
24	MyrSpi		Patch	8/18/2015	01:48:11pm	41.49860	-73.32100	0-1	3	0.25975
25	NajMin		Patch	8/18/2015	01:48:11pm	41.49850	-73.32100	0-1	4	0.12779
26	MyrSpi		Patch	8/18/2015	02:00:14pm	41.50170	-73.32000	0-1	2	0.20566
27	NajMin		Patch	8/18/2015	02:00:14pm	41.50170	-73.32000	0-1	3	0.21064
28	MyrSpi		Patch	8/18/2015	02:02:47pm	41.50220	-73.32000	1-3	3	0.07255
29	MyrSpi		Point	8/18/2015	08:33:36am	41.46369	-73.32270	1-3	1	0.0002
30	MyrSpi		Point	8/18/2015	09:02:50am	41.46603	-73.30113	1-3	1	0.0002
31	MyrSpi		Point	8/18/2015	09:05:37am	41.46481	-73.30085	1-3	3	0.0002
32	MyrSpi		Point	8/18/2015	09:05:48am	41.46477	-73.30085	0-1	3	0.0002
33	MyrSpi		Point	8/18/2015	09:07:35am	41.46434	-73.30090	1-3	2	0.0002
34	MyrSpi		Point	8/18/2015	09:09:34am	41.46315	-73.30149	0-1	1	0.0002
35	MyrSpi		Point	8/18/2015	09:09:49am	41.46321	-73.30146	0-1	1	0.0002
36	MyrSpi		Point	8/18/2015	09:10:17am	41.46300	-73.30153	0-1	1	0.0002
37	MyrSpi		Point	8/18/2015	09:11:37am	41.46278	-73.30177	0-1	2	0.0002
38	MyrSpi		Patch	8/18/2015	09:18:12am	41.46110	-73.30100	0-1	2	0.17296
39	MyrSpi		Point	8/18/2015	09:23:22am	41.45995	-73.30237	0-1	1	0.0002
40	MyrSpi		Point	8/18/2015	09:23:34am	41.45983	-73.30247	1-3	2	0.0002
41	MyrSpi		Patch	8/18/2015	09:26:31am	41.45860	-73.30200	1-3	2	0.06221
42	MyrSpi		Point	8/18/2015	09:27:37am	41.45819	-73.30269	0-1	2	0.0002

Appendix Lake Lillinonah Invasive Plant Location Data (2 of 6)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
43	MyrSpi		Point	8/18/2015	09:28:21am	41.45810	-73.30274	0-1	2	0.0002
44	MyrSpi		Point	8/18/2015	09:28:29am	41.45809	-73.30274	0-1	2	0.0002
45	MyrSpi		Point	8/18/2015	09:28:37am	41.45808	-73.30275	0-1	2	0.0002
46	MyrSpi		Point	8/18/2015	09:29:41am	41.45819	-73.30271	0-1	2	0.0002
47	MyrSpi		Point	8/18/2015	09:35:12am	41.45529	-73.30370	0-1	1	0.0002
48	MyrSpi		Point	8/18/2015	09:43:38am	41.44975	-73.30308	1-3	1	0.0002
49	MyrSpi		Point	8/18/2015	09:44:07am	41.44956	-73.30317	1-3	2	0.0002
50	MyrSpi		Point	8/18/2015	09:44:30am	41.44955	-73.30328	1-3	5	0.0002
51	MyrSpi		Point	8/18/2015	09:44:41am	41.44956	-73.30328	1-3	5	0.0002
52	MyrSpi		Point	8/18/2015	09:45:07am	41.44951	-73.30334	0-1	3	0.0002
53	MyrSpi		Point	8/18/2015	09:48:00am	41.44841	-73.30284	0-1	1	0.0002
54	MyrSpi		Patch	8/18/2015	09:49:29am	41.44800	-73.30300	1-3	2	0.25485
55	MyrSpi		Patch	8/18/2015	10:02:20am	41.44580	-73.30500	1-3	3	0.35987
56	MyrSpi		Patch	8/18/2015	10:14:58am	41.44450	-73.30400	0-1	3	0.41616
57	MyrSpi		Patch	8/18/2015	10:21:36am	41.44460	-73.30300	1-3	5	0.21196
58	MyrSpi		Patch	8/18/2015	10:29:43am	41.44630	-73.30100	1-3	3	4.11071
59	MyrSpi		Point	8/18/2015	11:37:57am	41.45104	-73.29755	0-1	2	0.0002
60	MyrSpi		Point	8/18/2015	11:38:10am	41.45105	-73.29757	0-1	2	0.0002
61	MyrSpi		Point	8/18/2015	11:38:35am	41.45110	-73.29766	0-1	2	0.0002
62	MyrSpi		Point	8/18/2015	11:38:44am	41.45112	-73.29775	3-5	2	0.0002
63	MyrSpi		Point	8/18/2015	11:40:44am	41.45223	-73.29815	1-3	1	0.0002
64	MyrSpi		Patch	8/18/2015	11:44:08am	41.45360	-73.29800	1-3	2	0.14062
65	MyrSpi		Point	8/18/2015	11:48:02am	41.45432	-73.29821	0-1	2	0.0002
66	MyrSpi		Point	8/18/2015	11:49:19am	41.45506	-73.29795	0-1	2	0.0002
67	MyrSpi		Point	8/18/2015	11:50:19am	41.45549	-73.29778	1-3	1	0.0002
68	MyrSpi		Point	8/18/2015	11:51:20am	41.45593	-73.29771	1-3	3	0.0002
69	MyrSpi		Patch	8/18/2015	12:00:00am	41.44780	-73.30300	0-2	3	0.05896
70	MyrSpi		Patch	8/18/2015	12:32:24pm	41.47110	-73.31100	3-5	3	0.43904
71	MyrSpi		Point	8/18/2015	12:36:45pm	41.47176	-73.31147	0-1	2	0.0002
72	MyrSpi		Patch	8/18/2015	12:37:35pm	41.47250	-73.31100	1-3	2	0.93860
73	MyrSpi		Point	8/18/2015	12:42:59pm	41.47218	-73.31282	1-3	2	0.0002
74	MyrSpi		Point	8/18/2015	12:43:11pm	41.47226	-73.31295	1-3	2	0.0002
75	MyrSpi		Patch	8/18/2015	12:43:27pm	41.47240	-73.31300	1-3	2	0.44840
76	MyrSpi		Point	8/18/2015	12:52:00pm	41.47418	-73.31586	0-1	1	0.0002
77	MyrSpi		Patch	8/19/2015	01:07:22pm	41.52060	-73.39700	1-3	3	3.23544
78	MyrSpi		Point	8/19/2015	01:17:45pm	41.52277	-73.39850	0-1	2	0.0002
79	MyrSpi		Point	8/19/2015	01:19:01pm	41.52293	-73.39855	1-3	2	0.0002
80	MyrSpi		Point	8/19/2015	01:20:06pm	41.52341	-73.39916	0-1	2	0.0002
81	MyrSpi		Patch	8/19/2015	01:20:55pm	41.52310	-73.39900	1-3	5	1.63169
82	MyrSpi		Patch	8/19/2015	08:22:39am	41.50300	-73.31900	1-3	3	0.27737
83	MyrSpi	With minor naiad	Patch	8/19/2015	09:03:14am	41.50770	-73.31800	1-3	2	1.78145
84	MyrSpi		Patch	8/19/2015	10:39:12am	41.48210	-73.34900	1-3	2	2.43577

Appendix Lake Lillinonah Invasive Plant Location Data (3 of 6)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
85	NajMin		Patch	8/19/2015	10:50:45am	41.50770	-73.31800	1-3	5	3.97015
86	MyrSpi		Patch	8/19/2015	10:56:01am	41.48360	-73.35800	0-1	1	0.01882
87	NajMin		Patch	8/19/2015	10:56:01am	41.48360	-73.35800	0-1	2	0.02379
88	NajMin		Patch	8/19/2015	10:57:47am	41.48380	-73.35900	0-1	4	0.07979
89	MyrSpi		Point	8/19/2015	11:31:59am	41.48841	-73.36625	0-1	2	0.0002
90	MyrSpi		Patch	8/19/2015	11:49:30am	41.49900	-73.37400	0-1	2	0.05796
91	NajMin		Patch	8/19/2015	11:49:30am	41.49900	-73.37400	0-1	2	0.03963
92	NajMin		Point	8/19/2015	11:52:32am	41.49881	-73.37454	0-1	1	0.0002
93	MyrSpi		Patch	8/19/2015	12:00:00am	41.49930	-73.37300	0-2	2	0.09412
94	NajMin		Patch	8/19/2015	12:00:00am	41.49920	-73.37400	0-2	2	0.03857
95	NajMin		Patch	8/19/2015	12:00:00am	41.49970	-73.37300	0-2	2	0.13683
96	MyrSpi		Patch	8/19/2015	12:00:00am	41.49980	-73.37300	0-2	2	0.46450
97	MyrSpi		Patch	8/19/2015	12:00:00am	41.51000	-73.32000	0-1	2	0.01782
98	MyrSpi		Patch	8/19/2015	12:00:00am	41.50980	-73.32000	0-2	3	0.01902
99	MyrSpi		Patch	8/19/2015	12:00:00am	41.50970	-73.32000	0-2	1	0.02283
100	NajMin		Patch	8/19/2015	12:00:00am	41.50980	-73.32000	0-2	3	0.09226
101	MyrSpi		Patch	8/19/2015	12:03:58pm	41.50540	-73.38300	0-1	1	2.02304
102	MyrSpi		Point	8/19/2015	12:25:15pm	41.51427	-73.38571	1-3	1	0.0002
103	NajMin		Patch	8/19/2015	12:32:11pm	41.51620	-73.38700	1-3	4	0.77207
104	MyrSpi	With minor naiad	Patch	8/19/2015	12:32:11pm	41.51610	-73.38700	1-3	2	1.22475
105	MyrSpi		Point	8/19/2015	12:41:29pm	41.51640	-73.38844	1-3	1	0.0002
106	MyrSpi		Patch	8/19/2015	12:43:00pm	41.51650	-73.38800	1-3	1	0.05859
107	MyrSpi		Point	8/19/2015	12:45:16pm	41.51652	-73.38917	1-3	2	0.0002
108	MyrSpi		Point	8/19/2015	12:45:26pm	41.51654	-73.38915	1-3	3	0.0002
109	MyrSpi		Patch	8/20/2015	01:00:04pm	41.49380	-73.32900	1-3	3	0.43525
110	NajMin		Patch	8/20/2015	01:16:24pm	41.49710	-73.32600	0-1	2	0.05328
111	NajMin		Patch	8/20/2015	01:16:24pm	41.49690	-73.32700	0-1	2	0.03212
112	MyrSpi	With minor naiad	Patch	8/20/2015	01:16:24pm	41.49690	-73.32700	0-1	2	0.40257
113	MyrSpi		Patch	8/20/2015	08:24:53am	41.47790	-73.35000	1-3	2	0.06017
114	MyrSpi		Point	8/20/2015	08:30:19am	41.47816	-73.34981	1-3	1	0.0002
115	MyrSpi		Point	8/20/2015	08:31:10am	41.47813	-73.34971	0-1	2	0.0002
116	MyrSpi		Point	8/20/2015	08:38:08am	41.47756	-73.34803	1-3	1	0.0002
117	MyrSpi		Patch	8/20/2015	08:57:06am	41.47430	-73.33700	1-3	2	0.02951
118	MyrSpi		Patch	8/20/2015	09:01:03am	41.47410	-73.33700	1-3	3	0.11203
119	MyrSpi		Patch	8/20/2015	09:05:22am	41.47450	-73.33800	0-1	1	0.08943
120	NajMin		Point	8/20/2015	09:09:14am	41.47354	-73.33635	1-3	5	0.0002
121	NajMin		Point	8/20/2015	09:12:49am	41.47336	-73.33601	1-3	3	0.0002
122	NajMin		Point	8/20/2015	09:23:11am	41.47201	-73.33385	1-3	3	0.0002
123	NajMin		Point	8/20/2015	09:24:50am	41.47196	-73.33372	1-3	3	0.0002
124	MyrSpi		Patch	8/20/2015	09:28:52am	41.47250	-73.33400	1-3	1	1.63134
125	NajMin		Patch	8/20/2015	10:05:59am	41.46810	-73.32500	1-3	2	0.01671
126	MyrSpi	With minor naiad	Patch	8/20/2015	10:05:59am	41.46820	-73.32500	1-3	1	0.17860

Appendix Lake Lillinonah Invasive Plant Location Data (4 of 6)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
127	MyrSpi		Point	8/20/2015	10:21:14am	41.46210	-73.32334	1-3	3	0.0002
128	MyrSpi		Point	8/20/2015	10:21:48am	41.46202	-73.32339	1-3	2	0.0002
129	MyrSpi		Point	8/20/2015	10:22:00am	41.46193	-73.32343	1-3	2	0.0002
130	NajMin		Patch	8/20/2015	10:30:31am	41.45990	-73.32400	0-1	4	0.04384
131	MyrSpi		Point	8/20/2015	10:36:41am	41.45909	-73.32490	0-1	2	0.0002
132	MyrSpi		Patch	8/20/2015	10:57:21am	41.46930	-73.31300	1-3	3	0.64816
133	MyrSpi		Point	8/20/2015	11:39:27am	41.47246	-73.31676	1-3	2	0.0002
134	MyrSpi		Patch	8/20/2015	11:51:17am	41.47350	-73.31900	1-3	3	1.33598
135	MyrSpi		Patch	8/20/2015	12:22:45pm	41.47990	-73.32300	0-1	2	0.04236
136	MyrSpi		Point	8/20/2015	12:36:18pm	41.48520	-73.32837	0-1	2	0.0002
137	MyrSpi		Point	8/20/2015	12:37:03pm	41.48529	-73.32829	0-1	1	0.0002
138	MyrSpi		Patch	8/20/2015	12:39:28pm	41.48600	-73.32800	1-3	2	0.12597
139	MyrSpi		Point	8/25/2015	01:20:38pm	41.48934	-73.38428	0-1	3	0.0002
140	MyrSpi		Point	8/25/2015	01:20:38pm	41.48928	-73.38433	0-1	3	0.0002
141	MyrSpi		Point	8/25/2015	01:20:38pm	41.48936	-73.38426	0-1	3	0.0002
142	MyrSpi		Point	8/25/2015	01:20:38pm	41.48940	-73.38424	0-1	3	0.0002
143	NajMin		Patch	8/25/2015	01:20:38pm	41.48930	-73.38400	0-1	3	0.02843
144	MyrSpi	With minor naiad	Patch	8/25/2015	01:27:40pm	41.48990	-73.38400	1-3	1	0.17893
145	MyrSpi		Patch	8/25/2015	08:59:50am	41.49750	-73.32400	3-5	3	1.72194
146	MyrSpi		Patch	8/25/2015	09:10:56am	41.49870	-73.32300	1-3	2	0.09292
147	MyrSpi		Patch	8/25/2015	09:21:18am	41.49990	-73.32300	1-3	4	0.12963
148	MyrSpi		Patch	8/25/2015	09:30:14am	41.49990	-73.32200	1-3	5	0.04127
149	NajMin		Patch	8/25/2015	10:02:04am	41.50470	-73.32000	1-3	2	0.96804
150	MyrSpi	With minor naiad	Patch	8/25/2015	10:02:04am	41.50450	-73.32000	1-3	3	5.34767
151	MyrSpi		Patch	8/25/2015	10:32:33am	41.50780	-73.31900	0-1	3	2.02336
152	MyrSpi		Point	8/25/2015	12:03:44pm	41.47938	-73.35364	0-1	2	0.0002
153	MyrSpi		Patch	8/26/2015	01:04:27pm	41.51100	-73.38800	1-3	2	0.32430
154	NajMin		Point	8/26/2015	01:22:02pm	41.51494	-73.38919	1-3	2	0.0002
155	MyrSpi		Patch	8/26/2015	08:48:59am	41.49230	-73.37900	0-1	1	0.43615
156	MyrSpi		Patch	8/26/2015	09:03:29am	41.49110	-73.38100	1-3	2	1.72330
157	NajMin		Patch	8/26/2015	09:08:44am	41.49000	-73.38400	1-3	2	0.09222
158	MyrSpi		Patch	8/26/2015	09:08:44am	41.49100	-73.38200	1-3	3	0.56237
159	MyrSpi		Point	8/26/2015	09:14:23am	41.49021	-73.38417	0-1	3	0.0002
160	MyrSpi		Patch	8/26/2015	09:15:40am	41.49000	-73.38400	0-1	2	0.01487
161	MyrSpi		Point	8/26/2015	09:18:58am	41.49081	-73.38373	0-1	2	0.0002
162	MyrSpi		Point	8/26/2015	09:19:39am	41.49112	-73.38362	1-3	2	0.0002
163	MyrSpi		Point	8/26/2015	09:20:23am	41.49143	-73.38355	1-3	2	0.0002
164	MyrSpi		Point	8/26/2015	09:20:34am	41.49147	-73.38355	1-3	2	0.0002
165	MyrSpi		Patch	8/26/2015	09:25:39am	41.49210	-73.38300	1-3	1	0.90313
166	MyrSpi		Patch	8/26/2015	09:39:36am	41.49300	-73.38200	1-3	1	0.26540
167	MyrSpi		Point	8/26/2015	09:45:50am	41.49345	-73.38214	0-1	2	0.0002
168	MyrSpi		Patch	8/26/2015	09:48:47am	41.49350	-73.38100	1-3	2	0.24873

Appendix Lake Lillinonah Invasive Plant Location Data (5 of 6)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
169	MyrSpi		Patch	8/26/2015	10:00:52am	41.49350	-73.38000	1-3	1	0.32900
170	NajMin		Patch	8/26/2015	10:04:12am	41.49350	-73.37900	0-1	3	0.60474
171	MyrSpi		Point	8/26/2015	10:08:28am	41.49314	-73.37897	0-1	1	0.0002
172	MyrSpi		Point	8/26/2015	10:47:13am	41.49616	-73.37836	1-3	1	0.0002
173	MyrSpi		Point	8/26/2015	11:46:02am	41.49464	-73.37732	1-3	1	0.0002
174	MyrSpi		Point	8/26/2015	11:46:02am	41.49453	-73.37727	1-3	1	0.0002
175	MyrSpi		Point	8/26/2015	11:46:02am	41.49446	-73.37722	1-3	1	0.0002
176	MyrSpi		Point	8/26/2015	11:46:02am	41.49439	-73.37719	1-3	1	0.0002
177	MyrSpi		Point	8/26/2015	11:46:02am	41.49451	-73.37722	1-3	1	0.0002
178	NajMin		Patch	8/26/2015	11:46:02am	41.49450	-73.37700	1-3	3	0.06172
179	NajMin		Point	8/26/2015	11:54:00am	41.49548	-73.37784	1-3	3	0.0002
180	NajMin		Point	8/26/2015	11:54:27am	41.49538	-73.37784	0-1	3	0.0002
181	MyrSpi		Point	8/26/2015	11:54:36am	41.49537	-73.37779	0-1	1	0.0002
182	NajMin		Point	8/26/2015	11:55:54am	41.49510	-73.37753	1-3	3	0.0002
183	MyrSpi		Point	8/26/2015	11:56:09am	41.49502	-73.37749	1-3	2	0.0002
184	MyrSpi		Point	8/26/2015	12:00:00am	41.49053	-73.38149	0-1	3	0.0002
185	MyrSpi		Point	8/26/2015	12:00:00am	41.48399	-73.32411	0-1	2	0.0002
186	MyrSpi		Point	8/26/2015	12:02:23pm	41.49582	-73.37813	1-3	1	0.0002
187	NajMin		Point	8/26/2015	12:02:33pm	41.49582	-73.37813	1-3	5	0.0002
188	NajMin		Point	8/26/2015	12:08:36pm	41.49713	-73.37858	1-3	3	0.0002
189	MyrSpi		Point	8/26/2015	12:09:18pm	41.49733	-73.37854	1-3	3	0.0002
190	MyrSpi		Point	8/26/2015	12:14:35pm	41.49808	-73.37844	0-1	3	0.0002
191	NajMin		Patch	8/26/2015	12:21:14pm	41.49900	-73.37800	1-3	3	0.46275
192	NajMin		Point	8/26/2015	12:35:05pm	41.50082	-73.37964	1-3	3	0.0002
193	MyrSpi		Patch	8/27/2015	01:14:37pm	41.52600	-73.40100	1-3	3	3.18806
194	MyrSpi	With minor naiad	Patch	8/27/2015	01:28:40pm	41.52720	-73.40200	1-3	5	0.28425
195	NajMin		Patch	8/27/2015	08:30:26am	41.51760	-73.39700	1-3	2	0.09134
196	MyrSpi	With minor naiad	Patch	8/27/2015	08:30:26am	41.51760	-73.39700	1-3	2	0.10918
197	MyrSpi		Patch	8/27/2015	08:42:29am	41.52040	-73.40000	1-3	4	0.19590
198	MyrSpi		Patch	8/27/2015	09:20:41am	41.53550	-73.40600	1-3	4	2.07495
199	TraNat		Point	8/27/2015	09:27:13am	41.53587	-73.40617	1-3	5	0.0002
200	TraNat		Point	8/27/2015	09:34:14am	41.53631	-73.40626	1-3	3	0.0002
201	NajMin		Patch	8/27/2015	09:40:04am	41.53860	-73.40500	0-1	4	2.75405
202	MyrSpi		Patch	8/27/2015	09:40:44am	41.53900	-73.40500	0-1	2	1.17277
203	MyrSpi		Patch	8/27/2015	09:53:22am	41.53770	-73.40500	1-3	4	4.96101
204	NajMin		Patch	8/27/2015	1:28:40pm	41.52720	-73.40200	1-3	3	0.12126
205	MyrSpi		Patch	8/27/2015	10:09:46am	41.53650	-73.40500	1-3	2	1.99731
206	TraNat		Point	8/27/2015	10:20:40am	41.54149	-73.40395	1-3	2	0.0002
207	MyrSpi	With minor naiad	Patch	8/27/2015	10:30:38am	41.54160	-73.40200	1-3	4	1.17301
208	PotCri		Point	8/27/2015	10:48:28am	41.54060	-73.40354	1-3	3	0.0002
209	PotCri		Point	8/27/2015	10:49:32am	41.54076	-73.40343	1-3	5	0.0002
201	NajMin		Patch	8/27/2015	10:52:12am	41.54160	-73.40200	1-3	2	1.59466

Appendix Lake Lillinonah Invasive Plant Location Data (6 of 6)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
211	MyrSpi		Patch	8/27/2015	10:52:12am	41.54110	-73.40200	1-3	5	0.49397
212	TraNat		Point	8/27/2015	10:54:40am	41.54123	-73.40290	1-3	2	0.0002
213	PotCri		Point	8/27/2015	11:35:57am	41.54044	-73.40290	1-3	5	0.0002
214	NajMin		Patch	8/27/2015	11:37:21am	41.54040	-73.40200	1-3	5	0.20923
215	MyrSpi		Patch	8/27/2015	11:40:13am	41.54050	-73.40300	1-3	2	3.06264
216	PotCri		Point	8/27/2015	11:49:23am	41.54064	-73.40270	0-1	1	0.0002
217	PotCri		Point	8/27/2015	11:53:50am	41.54064	-73.40374	1-3	5	0.0002
218	PotCri		Point	8/27/2015	11:54:03am	41.54061	-73.40373	1-3	5	0.0002
219	PotCri		Point	8/27/2015	11:56:00am	41.54039	-73.40300	1-3	4	0.0002
220	PotCri		Point	8/27/2015	12:00:00am	41.53869	-73.40566	0-1	1	0.0002
221	PotCri		Point	8/27/2015	12:00:00am	41.53844	-73.40487	1-3	1	0.0002
222	NajMin		Patch	8/27/2015	12:00:52pm	41.53930	-73.40200	1-3	3	0.37642
223	MyrSpi	With minor naiad	Patch	8/27/2015	12:00:52pm	41.53930	-73.40300	1-3	1	1.02951
224	PotCri		Point	8/27/2015	12:02:21pm	41.53914	-73.40301	1-3	5	0.0002
225	PotCri		Point	8/27/2015	12:03:41pm	41.53873	-73.40303	1-3	5	0.0002
226	TraNat		Point	8/27/2015	12:09:43pm	41.53672	-73.40362	0-1	5	0.0002
227	TraNat		Point	8/27/2015	12:09:53pm	41.53670	-73.40363	0-1	5	0.0002
228	NajMin		Patch	8/27/2015	12:11:20pm	41.53460	-73.40300	0-1	5	1.30995
229	MyrSpi		Patch	8/27/2015	12:25:18pm	41.53610	-73.40300	1-3	5	0.71150
230	MyrSpi	With minor naiad	Patch	8/27/2015	12:30:11pm	41.53390	-73.40400	1-3	5	2.45609
231	PotCri		Point	8/27/2015	12:40:03pm	41.53408	-73.40406	1-3	3	0.0002
232	MyrSpi		Patch	8/27/2015	12:47:07pm	41.52960	-73.40300	1-3	3	0.56980
233	NajMin		Patch	8/27/2015	12:58:54pm	41.52770	-73.40100	1-3	4	0.41836
234	MyrSpi	With minor naiad	Patch	8/27/2015	12:58:54pm	41.52680	-73.40100	1-3	1	5.37137
235	TraNat		Point	9/1/2015	11:36:43am	41.53401	-73.40619	0-1	3	0.0002
236	MyrSpi		Patch	9/1/2015	11:38:59am	41.53400	-73.40600	1-3	3	1.12527
237	PotCri		Point	9/2/2015	11:44:52am	41.51060	-73.31835	0-1	2	0.0002
238	MyrSpi		Patch	9/2/2015	11:45:00am	41.51070	-73.31700	0-1	2	0.29569
239	NajMin		Patch	9/2/2015	11:48:01am	41.51080	-73.31700	0-1	3	0.22345
240	NajMin		Point	9/2/2015	12:00:08pm	41.51017	-73.31587	0-1	5	0.0002
241	TraNat		Point	9/4/2015	01:04:32pm	41.56808	-73.40980	0-1	4	0.0002

Appendix Squantz Pond Invasive Plant Location Data (1 of 2)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
1	MyrSpi		Patch	8/6/2015	01:02:35pm	41.51060	-73.47200	1-3	3	1.0002
2	NajMin		Patch	8/6/2015	01:28:25pm	41.51070	-73.47200	0-1	2	2.1423
3	MyrSpi	With minor naiad	Patch	8/6/2015	09:20:44am	41.54030	-73.48300	0-1	2	1.0248
4	MyrSpi	With minor naiad	Patch	8/6/2015	09:31:02am	41.53990	-73.48300	0-1	3	0.4442
5	MyrSpi	With minor naiad	Patch	8/6/2015	09:43:20am	41.53860	-73.48300	0-1	2	1.6546
6	MyrSpi	With minor naiad	Patch	8/6/2015	10:12:57am	41.53740	-73.48300	1-3	3	1.1137
7	MyrSpi	With minor naiad	Patch	8/6/2015	10:37:15am	41.53690	-73.48300	1-3	2	0.7403
8	NajMin	Plotted from notes	Patch	8/6/2015	12:00:00am	41.54020	-73.48300	0-1	4	1.4148
9	NajMin	Plotted from notes	Patch	8/6/2015	12:00:00am	41.53760	-73.48300	0-1	3	0.8801
10	NajMin	Plotted from notes	Patch	8/6/2015	12:00:00am	41.53620	-73.48300	0-1	3	3.0314
11	NajMin	Plotted from notes	Patch	8/6/2015	12:00:00am	41.53590	-73.48400	0-1	4	0.4060
12	NajMin	Plotted from notes	Patch	8/6/2015	12:00:00am	41.52790	-73.48200	0-1	4	4.0458
13	NajMin	Plotted from notes	Patch	8/6/2015	12:00:00am	41.51920	-73.47800	0-1	3	0.4666
14	MyrSpi	Plotted from notes	Patch	8/6/2015	12:00:00am	41.51020	-73.47100	0-1	2	0.0215
15	MyrSpi	Plotted from notes	Patch	8/6/2015	12:00:00am	41.53030	-73.48500	0-1	4	0.3255
16	MyrSpi	Plotted from notes	Patch	8/6/2015	12:00:00am	41.51020	-73.47100	0-1	1	0.0149
17	NajMin	Plotted from notes	Patch	8/6/2015	12:00:00am	41.53460	-73.48300	0-1	5	0.6182
18	MyrSpi	With minor naiad	Patch	8/6/2015	12:28:05pm	41.51020	-73.47200	0-1	3	0.1823
19	NajMin	Plotted from notes	Patch	8/7/2015	12:00:00am	41.53370	-73.48300	1-3	2	0.4155
20	MyrSpi	Plotted from notes	Patch	8/8/2015	12:00:00am	41.53430	-73.48400	1-3	4	3.7634
21	NajMin	Plotted from notes	Patch	8/9/2015	12:00:00am	41.53060	-73.48300	0-1	5	0.2260
22	NajMin	Plotted from notes	Patch	8/10/2015	12:00:00am	41.53080	-73.48300	1-3	3	1.4115
23	MyrSpi	Plotted from notes	Patch	8/11/2015	12:00:00am	41.53070	-73.48200	0-1	1	0.0179
24	MyrSpi		Patch	8/12/2015	01:05:46pm	41.51060	-73.47900	1-3	3	0.3947
25	MyrSpi		Patch	8/12/2015	01:17:47pm	41.51100	-73.47800	1-3	2	0.2983
26	MyrSpi		Point	8/12/2015	09:12:08am	41.53380	-73.48400	1-3	1	0.0002
27	MyrSpi		Point	8/12/2015	09:12:43am	41.53400	-73.48400	1-3	2	0.0002
28	MyrSpi	With minor naiad by shore	Patch	8/12/2015	09:13:30am	41.53540	-73.48300	1-3	3	7.1671
29	MyrSpi	With minor naiad	Patch	8/12/2015	09:43:09am	41.53650	-73.48400	0-1	4	0.3040
30	MyrSpi	With minor naiad by shore	Patch	8/12/2015	10:00:33am	41.52790	-73.48200	1-3	3	10.2470
31	MyrSpi		Point	8/12/2015	10:54:23am	41.53390	-73.48400	1-3	3	0.0002
32	MyrSpi		Point	8/12/2015	10:54:44am	41.53380	-73.48400	1-3	2	0.0002
33	MyrSpi		Point	8/12/2015	10:55:34am	41.53330	-73.48400	1-3	2	0.0002
34	MyrSpi		Point	8/12/2015	10:56:29am	41.53280	-73.48400	1-3	2	0.0002
35	MyrSpi		Point	8/12/2015	10:58:40am	41.53180	-73.48400	0-1	2	0.0002
36	MyrSpi		Patch	8/12/2015	11:07:33am	41.53120	-73.48400	1-3	2	0.9692
37	NajMin		Patch	8/12/2015	11:47:57am	41.53030	-73.48500	0-1	4	0.2298
38	MyrSpi		Patch	8/12/2015	11:52:58am	41.53020	-73.48500	1-3	3	0.8274
39	MyrSpi	Plotted from notes	Patch	8/12/2015	12:00:00am	41.52350	-73.48100	0-1	2	0.3911
40	MyrSpi		Patch	8/12/2015	12:05:59pm	41.52820	-73.48500	1-3	3	0.3169

Appendix Squantz Pond Invasive Plant Location Data (2 of 2)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
41	MyrSpi		Patch	8/12/2015	12:25:48pm	41.52600	-73.48600	1-3	3	0.7789
42	MyrSpi		Patch	8/13/2015	08:13:48am	41.51230	-73.47600	1-3	3	1.7296
43	MyrSpi	With minor naiad	Patch	8/13/2015	08:46:26am	41.52180	-73.48000	1-3	4	0.4544
44	MyrSpi	With minor naiad by shore	Patch	8/13/2015	08:55:21am	41.51910	-73.47800	1-3	3	1.5070
45	MyrSpi		Patch	8/13/2015	09:20:40am	41.51910	-73.47800	1-3	4	0.2375
46	NajMin		Patch	8/13/2015	09:29:28am	41.51670	-73.47600	0-1	4	0.1494
47	MyrSpi		Patch	8/13/2015	09:34:32am	41.51660	-73.47600	1-3	4	0.2914
48	MyrSpi		Point	8/13/2015	09:41:15am	41.51740	-73.47600	0-1	1	0.0002
49	MyrSpi		Point	8/13/2015	09:41:33am	41.51740	-73.47600	0-1	1	0.0002
50	MyrSpi		Point	8/13/2015	09:41:59am	41.51730	-73.47600	1-3	2	0.0002
51	MyrSpi		Point	8/13/2015	09:42:09am	41.51730	-73.47600	1-3	3	0.0002
52	MyrSpi		Point	8/13/2015	09:42:43am	41.51730	-73.47600	0-1	4	0.0002
53	MyrSpi		Patch	8/13/2015	09:49:49am	41.51600	-73.47500	1-3	3	1.3410
54	MyrSpi		Point	8/13/2015	09:57:24am	41.51590	-73.47500	0-1	2	0.0002
55	MyrSpi		Point	8/13/2015	09:57:44am	41.51590	-73.47500	0-1	2	0.0002
56	MyrSpi		Point	8/13/2015	09:57:56am	41.51590	-73.47500	0-1	3	0.0002
57	MyrSpi		Point	8/13/2015	09:58:19am	41.51580	-73.47500	0-1	2	0.0002
58	MyrSpi		Patch	8/13/2015	10:07:44am	41.51460	-73.47400	1-3	3	0.6384
59	MyrSpi		Patch	8/13/2015	10:20:36am	41.51240	-73.47200	1-3	4	0.1012
60	PotCri	Plotted from notes	Patch	8/13/2015	12:00:00am	41.54000	-73.48300	0-1	3	0.0039

Transect Data

Appendix Lake Candlewood Transect data (1 of 3)

Transect	Point	Distance from shore(m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	ElaSp	EleSp	MyrSpi	NajMin	NymOdo	PotPer	SpiPol	StuPec	ValAme
1	1	0.5	Greg Bugbee	41.42380	-73.45257	8/31/2015	0.20	Muck		2	0	0	4	2	0	0	0	0	0
1	2	5	Greg Bugbee	41.42384	-73.45257	8/31/2015	0.40	Sand		3	0	0	4	0	0	0	0	0	0
1	3	10	Greg Bugbee	41.42388	-73.45259	8/31/2015	0.80	Muck		4	0	0	4	0	0	0	2	0	0
1	4	20	Greg Bugbee	41.42398	-73.45265	8/31/2015	1.30	Muck		3	0	0	4	0	0	0	0	0	0
1	5	30	Greg Bugbee	41.42407	-73.45266	8/31/2015	1.60	Sand		2	0	0	4	0	0	0	0	0	0
1	6	40	Greg Bugbee	41.42414	-73.45271	8/31/2015	1.80	Sand		2	0	0	4	0	0	0	0	0	0
1	7	50	Greg Bugbee	41.42425	-73.45273	8/31/2015	2.00	Sand		0	0	0	4	0	0	0	0	0	0
1	8	60	Greg Bugbee	41.42431	-73.45280	8/31/2015	2.00	Sand		0	0	0	4	0	0	0	0	0	0
1	9	70	Greg Bugbee	41.42442	-73.45284	8/31/2015	2.10	Silt		0	0	0	4	0	0	0	0	0	0
1	10	80	Greg Bugbee	41.42448	-73.45291	8/31/2015	2.10	Silt		0	0	0	4	0	0	0	0	0	0
2	1	0.5	Greg Bugbee	41.42763	-73.44930	8/31/2015	0.20	Gravel		3	0	0	5	0	0	0	0	0	0
2	2	5	Greg Bugbee	41.42760	-73.44935	8/31/2015	1.30	Gravel		3	0	0	5	0	0	0	0	0	0
2	3	10	Greg Bugbee	41.42756	-73.44936	8/31/2015	2.00	Sand		3	0	0	4	0	0	0	0	0	0
2	4	20	Greg Bugbee	41.42751	-73.44948	8/31/2015	2.50	Sand		4	0	0	0	0	0	0	0	0	0
2	5	30	Greg Bugbee	41.42746	-73.44960	8/31/2015	2.80	Silt		3	0	0	4	0	0	0	0	0	0
2	6	40	Greg Bugbee	41.42743	-73.44971	8/31/2015	1.50	Gravel		2	0	0	4	0	0	0	0	0	0
2	7	50	Greg Bugbee	41.42736	-73.44979	8/31/2015	1.40	Gravel	Nothing	0	0	0	0	0	0	0	0	0	0
2	8	60	Greg Bugbee	41.42733	-73.44987	8/31/2015	2.30	Silt		0	0	0	4	0	0	0	0	0	0
2	9	70	Greg Bugbee	41.42726	-73.44997	8/31/2015	2.60	Silt		0	0	0	4	0	0	0	0	0	0
2	10	80	Greg Bugbee	41.42722	-73.45013	8/31/2015	2.30	Silt		0	0	0	4	0	0	0	0	0	0
3	1	0.5	Greg Bugbee	41.47027	-73.43532	8/27/2015	0.20	Sand		0	1	2	2	0	0	0	0	4	0
3	2	5	Greg Bugbee	41.47026	-73.43526	8/27/2015	0.80	Sand		0	0	0	2	3	0	0	0	0	0
3	3	10	Greg Bugbee	41.47027	-73.43518	8/27/2015	2.00	Sand	Nothing	0	0	0	0	0	0	0	0	0	0
3	4	20	Greg Bugbee	41.47027	-73.43508	8/27/2015	4.50	Sand	Nothing	0	0	0	0	0	0	0	0	0	0
3	5	30	Greg Bugbee	41.47034	-73.43495	8/27/2015	8.00	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
3	6	40	Greg Bugbee	41.47034	-73.43484	8/27/2015	9.00	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
3	7	50	Greg Bugbee	41.47038	-73.43471	8/27/2015	9.20	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
3	8	60	Greg Bugbee	41.47043	-73.43462	8/27/2015	9.20	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
3	9	70	Greg Bugbee	41.47051	-73.43452	8/27/2015	9.20	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
3	10	80	Greg Bugbee	41.47052	-73.43440	8/27/2015	9.20	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
4	1	0.5	Greg Bugbee	41.57120	-73.48834	8/31/2015	0.20	Muck		2	0	0	2	0	0	0	0	0	0
4	2	5	Greg Bugbee	41.57115	-73.48839	8/31/2015	0.50	Muck		2	0	0	2	0	0	0	0	0	0
4	3	10	Greg Bugbee	41.57112	-73.48838	8/31/2015	0.80	Muck		2	0	0	2	0	0	0	0	0	0
4	4	20	Greg Bugbee	41.57102	-73.48845	8/31/2015	1.50	Muck		2	0	0	2	0	3	0	0	0	0
4	5	30	Greg Bugbee	41.57094	-73.48848	8/31/2015	1.60	Muck		0	0	0	2	0	0	0	0	0	0
4	6	40	Greg Bugbee	41.57089	-73.48854	8/31/2015	2.00	Muck		0	0	0	2	0	0	0	0	0	0
4	7	50	Greg Bugbee	41.57078	-73.48866	8/31/2015	2.50	Muck		0	0	0	2	0	0	0	0	0	0
4	8	60	Greg Bugbee	41.57067	-73.48863	8/31/2015	3.00	Sand		3	0	0	2	0	0	0	0	0	0
4	9	70	Greg Bugbee	41.57063	-73.48873	8/31/2015	3.00	Silt		0	0	0	2	0	0	0	0	0	0
4	10	80	Greg Bugbee	41.57052	-73.48875	8/31/2015	3.10	Sand		2	0	0	0	0	0	0	0	0	0
5	1	0.5	Greg Bugbee	41.50211	-73.45153	8/31/2015	0.20	Sand		0	0	0	1	2	0	0	0	0	0
5	2	5	Greg Bugbee	41.50212	-73.45160	8/31/2015	0.80	Sand		0	0	0	2	3	0	0	0	0	0
5	3	10	Greg Bugbee	41.50208	-73.45165	8/31/2015	1.00	Sand		0	0	0	2	3	0	0	0	0	0
5	4	20	Greg Bugbee	41.50208	-73.45177	8/31/2015	1.40	Sand		0	0	0	2	2	0	0	0	0	0
5	5	30	Greg Bugbee	41.50210	-73.45190	8/31/2015	1.80	Sand		0	0	0	3	0	0	0	0	0	0
5	6	40	Greg Bugbee	41.50199	-73.45202	8/31/2015	2.70	Silt		0	0	0	4	0	0	0	0	0	0

Appendix Lake Candlewood Transect data (2 of 3)

Transect	Point	Distance from shore(m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	ElaSp	EleSp	MyrSpi	NajMin	NymOdo	PotPer	SpiPol	StuPec	ValAme
5	7	50	Greg Bugbee	41.50193	-73.45214	8/31/2015	2.80	Silt		0	0	0	4	0	0	0	0	0	0
5	8	60	Greg Bugbee	41.50195	-73.45226	8/31/2015	4.00	Silt		0	0	0	2	0	0	0	0	0	0
5	9	70	Greg Bugbee	41.50196	-73.45237	8/31/2015	4.50	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
5	10	80	Greg Bugbee	41.50188	-73.45251	8/31/2015	4.10	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
6	1	0.5	Greg Bugbee	41.51382	-73.45339	8/31/2015	0.20	Muck		0	0	0	0	0	0	0	0	0	0
6	2	5	Greg Bugbee	41.51385	-73.45338	8/31/2015	0.40	Muck		0	0	0	3	0	0	0	0	0	0
6	3	10	Greg Bugbee	41.51393	-73.45339	8/31/2015	0.80	Muck		0	0	0	3	0	0	0	0	0	0
6	4	20	Greg Bugbee	41.51405	-73.45337	8/31/2015	1.20	Muck		0	0	0	4	0	0	0	0	0	0
6	5	30	Greg Bugbee	41.51420	-73.45337	8/31/2015	1.60	Muck		0	0	0	3	0	0	0	0	0	0
6	6	40	Greg Bugbee	41.51422	-73.45334	8/31/2015	1.80	Muck		0	0	0	3	0	0	0	0	0	0
6	7	50	Greg Bugbee	41.51429	-73.45340	8/31/2015	2.00	Muck		0	0	0	3	0	0	0	0	0	0
6	8	60	Greg Bugbee	41.51438	-73.45347	8/31/2015	2.70	Silt		0	0	0	2	0	0	0	0	0	0
6	9	70	Greg Bugbee	41.51448	-73.45346	8/31/2015	4.00	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
6	10	80	Greg Bugbee	41.51456	-73.45348	8/31/2015	4.70	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
7	1	0.5	Greg Bugbee	41.57148	-73.44272	8/27/2015	0.20	Gravel		1	0	0	2	0	0	0	0	0	0
7	2	5	Greg Bugbee	41.57146	-73.44277	8/27/2015	1.00	Gravel		0	0	0	2	3	0	0	0	0	0
7	3	10	Greg Bugbee	41.57147	-73.44285	8/27/2015	1.00	Sand		0	0	0	2	3	0	0	0	0	0
7	4	20	Greg Bugbee	41.57146	-73.44298	8/27/2015	1.80	Sand		0	0	0	2	0	0	0	0	0	0
7	5	30	Greg Bugbee	41.57148	-73.44307	8/27/2015	2.50	Sand		0	0	0	3	0	0	0	0	0	0
7	6	40	Greg Bugbee	41.57146	-73.44321	8/27/2015	3.50	Silt		0	0	0	3	0	0	0	0	0	0
7	7	50	Greg Bugbee	41.57147	-73.44336	8/27/2015	4.60	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
7	8	60	Greg Bugbee	41.57142	-73.44346	8/27/2015	5.30	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
7	9	70	Greg Bugbee	41.57141	-73.44357	8/27/2015	5.90	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
7	10	80	Greg Bugbee	41.57140	-73.44368	8/27/2015	6.70	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
8	1	0.5	Greg Bugbee	41.51293	-73.44120	8/27/2015	0.50	Gravel	Collected PotFol	0	0	2	0	3	0	0	0	0	0
8	2	5	Greg Bugbee	41.51288	-73.44116	8/27/2015	1.20	Sand		0	0	0	2	3	0	0	0	0	0
8	3	10	Greg Bugbee	41.51283	-73.44117	8/27/2015	1.50	Sand		0	0	0	0	3	0	0	0	0	0
8	4	20	Greg Bugbee	41.51277	-73.44115	8/27/2015	2.00	Sand		0	0	0	4	0	0	0	0	0	0
8	5	30	Greg Bugbee	41.51264	-73.44118	8/27/2015	2.00	Sand		0	0	0	4	0	0	0	0	0	0
8	6	40	Greg Bugbee	41.51253	-73.44119	8/27/2015	2.00	Sand		0	0	0	4	0	0	0	0	0	0
8	7	50	Greg Bugbee	41.51247	-73.44119	8/27/2015	2.00	Sand		0	0	0	4	0	0	0	0	0	0
8	8	60	Greg Bugbee	41.51238	-73.44123	8/27/2015	3.00	Rock		0	0	0	4	0	0	0	0	0	0
8	9	70	Greg Bugbee	41.51228	-73.44124	8/27/2015	3.60	Sand		0	0	0	4	0	0	0	0	0	0
8	10	80	Greg Bugbee	41.51218	-73.44119	8/27/2015	4.30	Silt	Nothing	0	0	0	0	0	0	0	0	0	0
9	1	0.5	Greg Bugbee	41.48044	-73.43462	8/27/2015	0.20	Sand	Collected PotPer MyrSpi	0	2	2	2	3	0	2	0	0	0
9	2	5	Greg Bugbee	41.48045	-73.43469	8/27/2015	0.80	Sand		0	0	0	2	3	0	0	0	0	0
9	3	10	Greg Bugbee	41.48048	-73.43472	8/27/2015	1.00	Sand		0	0	0	2	3	0	0	0	0	0
9	4	20	Greg Bugbee	41.48043	-73.43486	8/27/2015	1.50	Sand		0	0	0	2	0	0	0	0	0	0
9	5	30	Greg Bugbee	41.48040	-73.43496	8/27/2015	1.70	Sand	Nothing	0	0	0	0	0	0	0	0	0	0
9	6	40	Greg Bugbee	41.48036	-73.43508	8/27/2015	2.00	Sand	Nothing	0	0	0	0	0	0	0	0	0	0
9	7	50	Greg Bugbee	41.48032	-73.43521	8/27/2015	2.10	Sand		2	0	0	0	0	0	0	0	0	0
9	8	60	Greg Bugbee	41.48023	-73.43526	8/27/2015	1.90	Sand		2	0	0	0	0	0	0	0	0	0
9	9	70	Greg Bugbee	41.48014	-73.43534	8/27/2015	1.70	Sand	Nothing	0	0	0	0	0	0	0	0	0	0
9	10	80	Greg Bugbee	41.48013	-73.43551	8/27/2015	1.40	Sand		2	0	0	2	3	0	0	0	0	0
10	1	0.5	Greg Bugbee	41.44731	-73.42951	9/1/2015	0.20	Sand		2	0	0	3	0	0	0	0	0	0
10	2	5	Greg Bugbee	41.44729	-73.42956	9/1/2015	0.60	Sand		3	0	0	2	0	0	0	0	0	0

Appendix Lake Candlewood Transect data (3 of 3)

Transect	Point	Distance from shore(m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	ElaSp	EleSp	MyrSpi	NajMin	NymOdo	PotPer	SpiPol	StuPec	ValAme
10	3	10	Greg Bugbee	41.44728	-73.42962	9/1/2015	1.00	Sand		2	0	0	2	0	0	0	0	0	2
10	4	20	Greg Bugbee	41.44719	-73.42971	9/1/2015	1.30	Sand		0	0	0	2	0	0	0	0	0	2
10	5	30	Greg Bugbee	41.44714	-73.42980	9/1/2015	1.00	Sand		0	0	0	0	0	0	0	0	0	4
10	6	40	Greg Bugbee	41.44709	-73.42989	9/1/2015	0.40	Sand		3	0	0	3	0	0	0	0	0	3
10	7	50	Greg Bugbee	41.44706	-73.42997	9/1/2015	0.10	Muck	Actually 47.5m	2	0	0	3	2	0	0	0	0	0

Appendix Lake Lillinonah Transect Data (1 of 3)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	ElaSp	EleSp	EloNut	MyrSpi	NajMin	PotCri	SagSp	ZanPal	ZosDub
1	1	0.5	Jennifer Fanzutti	41.46629	-73.30129	9/2/2015	0.30	Gravel		0	0	0	0	0	0	0	0	0	0
1	2	5	Jennifer Fanzutti	41.46629	-73.30117	9/2/2015	4.90	Silt		0	0	0	0	0	0	0	0	0	0
1	3	10	Jennifer Fanzutti	41.46634	-73.30106	9/2/2015	8.40	Silt		0	0	0	0	0	0	0	0	0	0
1	4	20	Jennifer Fanzutti	41.46635	-73.30090	9/2/2015	10.00	Silt		0	0	0	0	0	0	0	0	0	0
1	5	30	Jennifer Fanzutti	41.46639	-73.30080	9/2/2015	11.30	Silt		0	0	0	0	0	0	0	0	0	0
1	6	40	Jennifer Fanzutti	41.46641	-73.30071	9/2/2015	11.50	Silt		0	0	0	0	0	0	0	0	0	0
1	7	50	Jennifer Fanzutti	41.46642	-73.30056	9/2/2015	11.99	Silt		0	0	0	0	0	0	0	0	0	0
1	8	60	Jennifer Fanzutti	41.46644	-73.30044	9/2/2015	12.00	Silt		0	0	0	0	0	0	0	0	0	0
1	9	70	Jennifer Fanzutti	41.46644	-73.30032	9/2/2015	14.10	Silt		0	0	0	0	0	0	0	0	0	0
1	10	80	Jennifer Fanzutti	41.46653	-73.30019	9/2/2015	16.00	Silt		0	0	0	0	0	0	0	0	0	0
2	1	0.5	Jennifer Fanzutti	41.53869	-73.40566	9/1/2015	1.00	Bedrock		2	0	0	0	4	4	1	0	0	0
2	2	5	Jennifer Fanzutti	41.53868	-73.40559	9/1/2015	1.10	Silt		0	0	0	0	4	4	0	0	0	0
2	3	10	Jennifer Fanzutti	41.53866	-73.40557	9/1/2015	1.00	Silt		0	0	0	0	4	4	0	0	0	0
2	4	20	Jennifer Fanzutti	41.53859	-73.40548	9/1/2015	1.00	Silt		0	0	0	0	4	4	0	0	0	0
2	5	30	Jennifer Fanzutti	41.53857	-73.40534	9/1/2015	1.00	Silt		0	0	0	0	4	4	0	0	2	0
2	6	40	Jennifer Fanzutti	41.53858	-73.40522	9/1/2015	0.40	Silt		0	0	0	1	4	4	0	0	3	0
2	7	40	Jennifer Fanzutti	41.53860	-73.40507	9/1/2015	0.40	Silt		2	0	0	0	4	4	0	0	0	0
2	8	60	Jennifer Fanzutti	41.53847	-73.40500	9/1/2015	0.40	Silt		2	0	0	2	4	4	0	0	0	0
2	9	70	Jennifer Fanzutti	41.53844	-73.40487	9/1/2015	0.40	Silt		0	0	0	4	4	4	1	0	0	3
2	10	80	Jennifer Fanzutti	41.53843	-73.40475	9/1/2015	0.40	Silt		4	0	0	4	4	4	0	0	0	4
3	1	0.5	Jennifer Fanzutti	41.52327	-73.39896	9/1/2015	1.50	Gravel		0	0	0	0	0	0	0	0	0	0
3	2	5	Jennifer Fanzutti	41.52327	-73.39899	9/1/2015	2.50	Gravel		0	0	0	0	0	0	0	0	0	0
3	3	10	Jennifer Fanzutti	41.52327	-73.39905	9/1/2015	2.80	Silt		0	0	0	0	0	0	0	0	0	0
3	4	20	Jennifer Fanzutti	41.52319	-73.39916	9/1/2015	3.10	Silt		0	0	0	0	0	0	0	0	0	0
3	5	30	Jennifer Fanzutti	41.52309	-73.39924	9/1/2015	3.00	Silt		0	0	0	0	0	0	0	0	0	0
3	6	40	Jennifer Fanzutti	41.52303	-73.39930	9/1/2015	2.50	Silt		0	0	0	0	0	0	0	0	0	0
3	7	50	Jennifer Fanzutti	41.52294	-73.39934	9/1/2015	2.40	Silt		0	0	0	0	5	0	0	0	0	0
3	8	60	Jennifer Fanzutti	41.52292	-73.39951	9/1/2015	2.10	Silt		0	0	0	0	5	0	0	0	0	0
3	9	70	Jennifer Fanzutti	41.52288	-73.39962	9/1/2015	1.50	Silt		0	0	0	0	5	0	0	0	0	0
3	10	80	Jennifer Fanzutti	41.52285	-73.39970	9/1/2015	1.80	Silt		0	0	0	0	5	0	0	0	0	0
4	1	0.5	Jennifer Fanzutti	41.49916	-73.37390	9/1/2015	0.20	Sand	algae	0	0	0	0	0	0	0	0	0	0
4	2	5	Jennifer Fanzutti	41.49916	-73.37396	9/1/2015	0.30	Sand		0	0	0	0	2	2	0	0	0	0
4	3	10	Jennifer Fanzutti	41.49919	-73.37401	9/1/2015	0.30	Sand		0	0	0	0	0	0	0	0	0	0
4	4	20	Jennifer Fanzutti	41.49927	-73.37408	9/1/2015	0.70	Sand		0	0	0	0	0	1	0	0	0	0
4	5	30	Jennifer Fanzutti	41.49931	-73.37420	9/1/2015	2.50	Silt		0	0	0	0	2	2	0	0	0	0
4	6	40	Jennifer Fanzutti	41.49936	-73.37428	9/1/2015	5.00	Silt		0	0	0	0	0	0	0	0	0	0
4	7	50	Jennifer Fanzutti	41.49939	-73.37440	9/1/2015	6.70	Silt		0	0	0	0	0	0	0	0	0	0
4	8	60	Jennifer Fanzutti	41.49944	-73.37448	9/1/2015	7.80	Silt		0	0	0	0	0	0	0	0	0	0
4	9	70	Jennifer Fanzutti	41.49949	-73.37459	9/1/2015	9.00	Silt		0	0	0	0	0	0	0	0	0	0
4	10	80	Jennifer Fanzutti	41.49957	-73.37471	9/1/2015	10.00	Silt		0	0	0	0	0	0	0	0	0	0

Appendix Lake Lillinonah Transect Data (2 of 3)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	ElaSp	EleSp	EloNut	MyrSpi	NajMin	PotCri	SagSp	ZanPal	ZosDub
5	1	0.5	Jennifer Fanzutti	41.49685	-73.32762	9/2/2015	0.10	Silt		0	2	5	0	0	0	0	2	0	0
5	2	5	Jennifer Fanzutti	41.49683	-73.32757	9/2/2015	0.20	Sand		0	2	2	0	0	0	0	0	0	0
5	3	10	Jennifer Fanzutti	41.49680	-73.32749	9/2/2015	0.40	Silt		0	0	2	0	2	0	0	2	0	0
5	4	20	Jennifer Fanzutti	41.49672	-73.32740	9/2/2015	2.40	Silt		0	0	0	0	2	0	0	0	0	0
5	5	30	Jennifer Fanzutti	41.49665	-73.32732	9/2/2015	4.00	Silt		0	0	0	0	0	0	0	0	0	0
5	6	40	Jennifer Fanzutti	41.49664	-73.32720	9/2/2015	4.00	Silt		0	0	0	0	0	0	0	0	0	0
5	7	50	Jennifer Fanzutti	41.49658	-73.32712	9/2/2015	4.00	Silt		0	0	0	0	0	0	0	0	0	0
5	8	60	Jennifer Fanzutti	41.49654	-73.32700	9/2/2015	4.30	Silt		0	0	0	0	0	0	0	0	0	0
5	9	70	Jennifer Fanzutti	41.49647	-73.32693	9/2/2015	3.80	Silt		0	0	0	0	0	0	0	0	0	0
5	10	80	Jennifer Fanzutti	41.49641	-73.32684	9/2/2015	5.70	Silt		0	0	0	0	0	0	0	0	0	0
6	1	0.5	Jennifer Fanzutti	41.48405	-73.32409	9/2/2015	0.10	Gravel		0	0	0	0	0	0	0	0	0	0
6	2	5	Jennifer Fanzutti	41.48399	-73.32411	9/2/2015	1.10	Silt		0	0	0	0	2	0	0	0	0	0
6	3	10	Jennifer Fanzutti	41.48391	-73.32410	9/2/2015	1.50	Silt		0	0	0	0	0	0	0	0	0	0
6	4	20	Jennifer Fanzutti	41.48383	-73.32409	9/2/2015	7.50	Silt		0	0	0	0	0	0	0	0	0	0
6	5	30	Jennifer Fanzutti	41.48373	-73.32413	9/2/2015	9.20	Silt		0	0	0	0	0	0	0	0	0	0
6	6	40	Jennifer Fanzutti	41.48364	-73.32418	9/2/2015	11.50	Silt		0	0	0	0	0	0	0	0	0	0
6	7	50	Jennifer Fanzutti	41.48358	-73.32420	9/2/2015	13.00	Silt		0	0	0	0	0	0	0	0	0	0
6	8	60	Jennifer Fanzutti	41.48349	-73.32423	9/2/2015	13.60	Silt		0	0	0	0	0	0	0	0	0	0
6	9	70	Jennifer Fanzutti	41.48342	-73.32429	9/2/2015	14.10	Silt		0	0	0	0	0	0	0	0	0	0
6	10	80	Jennifer Fanzutti	41.48333	-73.32434	9/2/2015	14.50	Silt		0	0	0	0	0	0	0	0	0	0
7	1	0.5	Jennifer Fanzutti	41.47218	-73.31419	9/1/2015	0.20	Gravel		0	0	0	0	0	0	0	0	0	0
7	2	5	Jennifer Fanzutti	41.47215	-73.31416	9/1/2015	1.00	Gravel		0	0	0	0	0	0	0	0	0	0
7	3	10	Jennifer Fanzutti	41.47212	-73.31407	9/1/2015	3.50	Gravel		0	0	0	0	0	0	0	0	0	0
7	4	20	Jennifer Fanzutti	41.47207	-73.31399	9/1/2015	5.60	Silt		0	0	0	0	0	0	0	0	0	0
7	5	30	Jennifer Fanzutti	41.47202	-73.31385	9/1/2015	8.40	Silt		0	0	0	0	0	0	0	0	0	0
7	6	40	Jennifer Fanzutti	41.47202	-73.31377	9/1/2015	8.60	Silt		0	0	0	0	0	0	0	0	0	0
7	7	50	Jennifer Fanzutti	41.47200	-73.31364	9/1/2015	9.00	Silt		0	0	0	0	0	0	0	0	0	0
7	8	60	Jennifer Fanzutti	41.47197	-73.31352	9/1/2015	8.80	Silt		0	0	0	0	0	0	0	0	0	0
7	9	70	Jennifer Fanzutti	41.47195	-73.31340	9/1/2015	8.10	Silt		0	0	0	0	0	0	0	0	0	0
7	10	80	Jennifer Fanzutti	41.47194	-73.31329	9/1/2015	7.80	Silt		0	0	0	0	0	0	0	0	0	0
8	1	0.5	Jennifer Fanzutti	41.44799	-73.30357	9/2/2015	0.10	Sand		0	0	0	0	0	0	0	0	0	0
8	2	5	Jennifer Fanzutti	41.44794	-73.30356	9/2/2015	2.30	Silt		0	0	0	0	2	0	0	0	0	0
8	3	10	Jennifer Fanzutti	41.44788	-73.30354	9/2/2015	3.90	Silt		0	0	0	0	3	0	0	0	0	0
8	4	20	Jennifer Fanzutti	41.44780	-73.30356	9/2/2015	7.40	Silt		0	0	0	0	0	0	0	0	0	0
8	5	30	Jennifer Fanzutti	41.44771	-73.30362	9/2/2015	9.00	Silt		0	0	0	0	0	0	0	0	0	0
8	6	40	Jennifer Fanzutti	41.44762	-73.30360	9/2/2015	12.20	Silt		0	0	0	0	0	0	0	0	0	0
8	7	50	Jennifer Fanzutti	41.44754	-73.30370	9/2/2015	14.50	Silt		0	0	0	0	0	0	0	0	0	0
8	8	60	Jennifer Fanzutti	41.44744	-73.30373	9/2/2015	15.00	Silt		0	0	0	0	0	0	0	0	0	0
8	9	70	Jennifer Fanzutti	41.44736	-73.30369	9/2/2015	14.70	Silt		0	0	0	0	0	0	0	0	0	0
8	10	80	Jennifer Fanzutti	41.44728	-73.30372	9/2/2015	14.30	Silt		0	0	0	0	0	0	0	0	0	0

Appendix Lake Lillinonah Transect Data (3 of 3)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	ElaSp	EleSp	EloNut	MyrSpi	NajMin	PotCri	SagSp	ZanPal	ZosDub
9	1	0.5	Jennifer Fanzutti	41.51007	-73.32031	9/2/2015	0.60	Gravel		0	0	0	0	0	0	0	0	0	0
9	2	5	Jennifer Fanzutti	41.51002	-73.32029	9/2/2015	1.10	Silt		0	0	0	0	2	0	0	0	0	0
9	3	10	Jennifer Fanzutti	41.50995	-73.32026	9/2/2015	1.30	Silt		0	0	0	0	0	0	0	0	0	0
9	4	20	Jennifer Fanzutti	41.50989	-73.32017	9/2/2015	1.40	Silt		0	0	0	0	3	2	0	0	0	0
9	5	30	Jennifer Fanzutti	41.50981	-73.32011	9/2/2015	1.00	Silt		0	0	0	0	0	0	0	0	0	0
9	6	40	Jennifer Fanzutti	41.50977	-73.32003	9/2/2015	2.30	Silt		0	0	0	0	1	0	0	0	0	0
9	7	50	Jennifer Fanzutti	41.50968	-73.31993	9/2/2015	3.30	Silt		0	0	0	0	0	0	0	0	0	0
9	8	60	Jennifer Fanzutti	41.50960	-73.31989	9/2/2015	3.30	Silt		0	0	0	0	0	0	0	0	0	0
9	9	70	Jennifer Fanzutti	41.50952	-73.31987	9/2/2015	3.40	Silt		0	0	0	0	0	0	0	0	0	0
9	10	80	Jennifer Fanzutti	41.50946	-73.31976	9/2/2015	3.00	Silt		0	0	0	0	0	0	0	0	0	0
10	1	0.5	Jennifer Fanzutti	41.49053	-73.38149	9/1/2015	0.20	Sand		0	0	0	0	3	0	0	0	0	0
10	2	5	Jennifer Fanzutti	41.49058	-73.38153	9/1/2015	0.40	Silt		2	0	0	0	2	0	0	0	0	0
10	3	10	Jennifer Fanzutti	41.49064	-73.38151	9/1/2015	1.00	Silt		0	0	0	0	0	0	0	0	0	0
10	4	20	Jennifer Fanzutti	41.49070	-73.38156	9/1/2015	1.50	Silt		0	0	0	0	2	0	0	0	0	0
10	5	30	Jennifer Fanzutti	41.49081	-73.38156	9/1/2015	2.10	Silt		1	0	0	0	2	0	0	0	0	0
10	6	40	Jennifer Fanzutti	41.49088	-73.38160	9/1/2015	2.30	Silt		0	0	0	0	2	0	0	0	0	0
10	7	50	Jennifer Fanzutti	41.49097	-73.38166	9/1/2015	2.40	Silt		0	0	0	0	2	0	0	0	0	0
10	8	60	Jennifer Fanzutti	41.49107	-73.38170	9/1/2015	2.50	Silt		0	0	0	0	2	0	0	0	0	0
10	9	70	Jennifer Fanzutti	41.49116	-73.38169	9/1/2015	2.50	Gravel		0	0	0	0	0	0	0	0	0	0
10	10	80	Jennifer Fanzutti	41.49122	-73.38175	9/1/2015	2.80	Silt		0	0	0	0	0	0	0	0	0	0
										6	2	3	4	31	14	2	2	2	2

Appendix Lake Zoar Transect Data (1 of 3)

Transect	Point	Distance from shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	CerDem	EloNut	MyrSpi	NajFle	NajMin	PotCri	PotFol	PotZos	SagSp	StuPec	ValAme
1	1	0.5	Jennifer Fanzutti	41.42839	-73.23945	9/3/2015	0.30	Sand	0	0	0	0	0	0	0	0	0	0	0
1	2	5	Jennifer Fanzutti	41.42835	-73.23950	9/3/2015	0.40	Sand	0	0	0	0	0	0	0	0	0	0	0
1	3	10	Jennifer Fanzutti	41.42832	-73.23954	9/3/2015	1.00	Sand	2	2	3	0	0	0	0	3	0	0	3
1	4	20	Jennifer Fanzutti	41.42830	-73.23968	9/3/2015	1.80	Silt	3	4	4	0	0	0	0	0	0	0	4
1	5	30	Jennifer Fanzutti	41.42818	-73.23973	9/3/2015	2.00	Silt	0	0	0	0	0	0	0	0	0	0	0
1	6	40	Jennifer Fanzutti	41.42812	-73.23987	9/3/2015	3.20	Silt	0	2	2	0	0	0	0	0	0	0	0
1	7	50	Jennifer Fanzutti	41.42803	-73.23992	9/3/2015	3.90	Silt	0	0	0	0	0	0	0	0	0	0	0
1	8	60	Jennifer Fanzutti	41.42802	-73.24007	9/3/2015	4.40	Sand	0	0	0	0	0	0	0	0	0	0	0
1	9	70	Jennifer Fanzutti	41.42801	-73.24021	9/3/2015	4.60	Silt	0	0	0	0	0	0	0	0	0	0	0
1	10	80	Jennifer Fanzutti	41.42789	-73.24023	9/3/2015	4.70	Silt	0	0	0	0	0	0	0	0	0	0	0
2	1	0.5	Jennifer Fanzutti	41.43692	-73.25140	9/3/2015	0.20	Gravel	0	0	0	0	0	0	0	0	0	0	0
2	2	5	Jennifer Fanzutti	41.43696	-73.25138	9/3/2015	1.40	Sand	2	0	1	0	2	0	0	0	0	0	4
2	3	10	Jennifer Fanzutti	41.43699	-73.25142	9/3/2015	2.00	Silt	2	0	0	0	0	0	0	0	0	0	3
2	4	20	Jennifer Fanzutti	41.43710	-73.25144	9/3/2015	5.30	Silt	0	0	0	0	0	0	0	0	0	0	0
2	5	30	Jennifer Fanzutti	41.43723	-73.25138	9/3/2015	5.10	Silt	0	0	0	0	0	0	0	0	0	0	0
2	6	40	Jennifer Fanzutti	41.43730	-73.25139	9/3/2015	5.30	Silt	0	0	0	0	0	0	0	0	0	0	0
2	7	50	Jennifer Fanzutti	41.43739	-73.25138	9/3/2015	0.00	Silt	0	0	0	0	0	0	0	0	0	0	0
2	8	60	Jennifer Fanzutti	41.43746	-73.25142	9/3/2015	6.00	Silt	0	0	0	0	0	0	0	0	0	0	0
2	9	70	Jennifer Fanzutti	41.43754	-73.25145	9/3/2015	6.10	Silt	0	0	0	0	0	0	0	0	0	0	0
2	10	80	Jennifer Fanzutti	41.43762	-73.25145	9/3/2015	6.20	Silt	0	0	0	0	0	0	0	0	0	0	0
3	1	0.5	Jennifer Fanzutti	41.43729	-73.26640	9/3/2015	0.30	Gravel	0	0	0	0	1	0	0	0	0	0	0
3	2	5	Jennifer Fanzutti	41.43731	-73.26636	9/3/2015	0.90	Silt	0	0	0	0	0	0	0	0	0	0	4
3	3	10	Jennifer Fanzutti	41.43738	-73.26641	9/3/2015	0.80	Silt	0	0	0	0	0	0	0	0	0	0	4
3	4	20	Greg Bugbee	41.43746	-73.26648	9/3/2015	0.40	Sand	0	0	0	0	0	0	0	0	0	0	0
3	5	30	Greg Bugbee	41.43756	-73.26655	9/3/2015	4.00	Sand	0	0	0	0	0	2	0	0	0	0	0
3	6	40	Greg Bugbee	41.43762	-73.26659	9/3/2015	0.50	Sand	0	0	0	0	0	2	0	0	0	0	0
3	7	50	Greg Bugbee	41.43770	-73.26665	9/3/2015	0.40	Sand	0	0	0	0	0	0	0	0	0	0	0
3	8	60	Greg Bugbee	41.43779	-73.26672	9/3/2015	0.40	Sand	0	0	0	0	0	0	0	0	0	0	0
3	9	70	Greg Bugbee	41.43788	-73.26677	9/3/2015	0.40	Sand	0	0	0	0	2	0	0	0	0	0	0
3	10	80	Greg Bugbee	41.43796	-73.26681	9/3/2015	0.40	Sand	0	0	0	0	0	0	0	0	0	0	0
4	1	0.5	Jennifer Fanzutti	41.45311	-73.28164	9/3/2015	0.30	Gravel	0	0	0	0	0	0	0	0	0	0	3
4	2	5	Jennifer Fanzutti	41.45307	-73.28162	9/3/2015	1.80	Silt	3	0	4	0	0	0	0	0	0	0	0
4	3	10	Jennifer Fanzutti	41.45309	-73.28155	9/3/2015	2.00	Silt	3	0	2	0	0	0	0	0	0	0	2
4	4	20	Jennifer Fanzutti	41.45299	-73.28147	9/3/2015	3.00	Silt	0	0	4	2	0	0	0	0	0	0	2
4	5	30	Jennifer Fanzutti	41.45289	-73.28144	9/3/2015	3.80	Silt	0	0	0	0	0	0	0	0	0	0	0
4	6	40	Jennifer Fanzutti	41.45282	-73.28139	9/3/2015	3.80	Silt	0	0	0	0	0	0	0	0	0	0	0
4	7	50	Jennifer Fanzutti	41.45274	-73.28134	9/3/2015	4.00	Silt	0	0	0	0	0	0	0	0	0	0	0
4	8	60	Jennifer Fanzutti	41.45263	-73.28129	9/3/2015	3.80	Silt	0	0	0	0	0	0	0	0	0	0	0
4	9	70	Jennifer Fanzutti	41.45255	-73.28122	9/3/2015	0.00	Silt	0	0	0	0	0	0	0	0	0	0	0
4	10	80	Jennifer Fanzutti	41.45247	-73.28117	9/3/2015	3.40	Silt	0	0	0	0	0	0	0	0	0	0	0
5	1	0.5	Greg Bugbee	41.43198	-73.22744	9/3/2015	0.10	Muck	0	0	0	0	0	0	0	0	0	0	0
5	2	5	Greg Bugbee	41.43195	-73.22747	9/3/2015	0.30	Muck	0	0	0	0	0	0	0	0	0	0	0
5	4	20	Greg Bugbee	41.43181	-73.22747	9/3/2015	1.00	Muck	0	0	2	0	0	0	0	0	0	0	0
5	5	30	Jennifer Fanzutti	41.43174	-73.22746	9/3/2015	0.60	Muck	0	0	2	0	0	0	0	0	0	0	0
5	6	40	Jennifer Fanzutti	41.43164	-73.22748	9/3/2015	0.80	Muck	3	3	0	0	3	0	0	0	0	0	0

Appendix Lake Zoar Transect Data (2 of 3)

Transect	Point	Distance from shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	CerDem	EloNut	MyrSpi	NajFle	NajMin	PotCri	PotFol	PotZos	SagSp	StuPec	ValAme
5	7	50	Jennifer Fanzutti	41.43157	-73.22749	9/3/2015	1.00	Silt	2	0	3	0	3	0	0	0	0	0	0
5	8	60	Jennifer Fanzutti	41.43149	-73.22753	9/3/2015	1.20	Silt	2	0	3	0	0	0	0	0	0	0	0
5	9	70	Jennifer Fanzutti	41.43138	-73.22757	9/3/2015	1.60	Silt	3	0	0	0	2	2	0	0	0	0	0
5	10	80	Jennifer Fanzutti	41.43129	-73.22755	9/3/2015	2.40	Silt	0	0	0	0	0	0	0	0	0	0	0
6	1	0.5	Jennifer Fanzutti	41.42491	-73.20619	9/3/2015	0.20	Muck	0	2	1	0	0	0	0	0	0	0	0
6	2	5	Greg Bugbee	41.42486	-73.20621	9/3/2015	0.40	Muck	4	2	1	0	0	0	0	0	0	0	0
6	3	10	Jennifer Fanzutti	41.42483	-73.20617	9/3/2015	0.40	Muck	2	2	2	0	0	0	0	0	0	0	0
6	4	20	Jennifer Fanzutti	41.42470	-73.20621	9/3/2015	0.60	Muck	4	2	3	0	0	3	0	0	0	0	0
6	5	30	Greg Bugbee	41.42457	-73.20626	9/3/2015	0.40	Muck	4	2	3	0	2	0	0	0	0	0	0
6	6	40	Jennifer Fanzutti	41.42454	-73.20627	9/3/2015	0.50	Muck	3	0	2	0	0	0	0	0	0	0	0
6	7	50	Jennifer Fanzutti	41.42445	-73.20632	9/3/2015	0.50	Muck	2	0	3	0	0	2	0	0	0	0	0
6	8	60	Jennifer Fanzutti	41.42434	-73.20630	9/3/2015	0.50	Muck	0	0	2	0	0	0	0	0	0	0	0
6	9	70	Jennifer Fanzutti	41.42425	-73.20629	9/3/2015	0.50	Muck	2	0	0	0	2	0	0	0	0	0	0
6	10	80	Jennifer Fanzutti	41.42417	-73.20638	9/3/2015	0.40	Muck	0	0	0	0	2	0	0	0	0	0	0
7	1	0.5	Jennifer Fanzutti	41.41265	-73.20174	9/3/2015	0.20	Sand	0	0	0	0	0	0	0	0	0	0	0
7	2	5	Jennifer Fanzutti	41.41266	-73.20164	9/3/2015	0.90	Sand	0	0	0	0	0	0	0	0	0	0	0
7	3	10	Jordan Gibbons	41.41270	-73.20164	9/3/2015	0.80	Sand	0	0	0	0	0	0	0	0	0	0	3
7	4	20	Jennifer Fanzutti	41.41277	-73.20151	9/3/2015	1.20	Silt	0	0	0	0	0	0	0	0	0	0	0
7	5	30	Jennifer Fanzutti	41.41279	-73.20134	9/3/2015	1.80	Silt	0	0	0	0	0	0	0	0	0	0	0
7	6	40	Greg Bugbee	41.41285	-73.20129	9/3/2015	1.60	Silt	0	0	0	0	0	0	0	0	0	0	0
7	7	50	Jordan Gibbons	41.41288	-73.20118	9/3/2015	2.00	Silt	0	0	0	0	0	0	0	0	0	0	0
7	8	60	Jordan Gibbons	41.41290	-73.20100	9/3/2015	2.30	Silt	0	0	0	0	0	0	0	0	0	0	0
7	9	70	Jennifer Fanzutti	41.41291	-73.20088	9/3/2015	2.50	Silt	0	0	0	0	0	0	0	0	0	0	0
7	10	80	Jennifer Fanzutti	41.41296	-73.20079	9/3/2015	5.00	Silt	0	0	0	0	0	0	0	0	0	0	0
8	1	0.5	Jennifer Fanzutti	41.39849	-73.19058	9/3/2015	0.40	Gravel	0	0	0	0	0	0	0	0	0	0	0
8	2	5	Jennifer Fanzutti	41.39847	-73.19050	9/3/2015	0.90	Sand	0	0	0	0	0	0	0	0	0	0	0
8	3	5	Jennifer Fanzutti	41.39849	-73.19045	9/3/2015	1.20	Sand	1	0	0	0	0	0	0	0	0	0	0
8	4	20	Greg Bugbee	41.39850	-73.19031	9/3/2015	2.00	Silt	4	0	0	0	0	0	0	0	0	0	0
8	5	30	Jennifer Fanzutti	41.39850	-73.19019	9/3/2015	2.10	Silt	4	0	0	0	0	0	0	0	0	0	0
8	6	40	Greg Bugbee	41.39853	-73.19007	9/3/2015	3.70	Silt	4	0	0	0	0	0	0	0	0	0	0
8	7	50	Jennifer Fanzutti	41.39858	-73.18994	9/3/2015	3.60	Silt	3	0	0	0	0	0	0	0	0	0	0
8	8	60	Jennifer Fanzutti	41.39862	-73.18985	9/3/2015	2.50	Silt	0	0	0	0	0	0	0	0	0	0	0
8	9	70	Greg Bugbee	41.39863	-73.18973	9/3/2015	4.00	Silt	0	0	0	0	0	0	0	0	0	0	0
8	10	80	Jennifer Fanzutti	41.39866	-73.18962	9/3/2015	4.30	Silt	0	0	0	0	0	0	0	0	0	0	0
9	1	0.5	Jennifer Fanzutti	41.39185	-73.17439	9/3/2015	0.20	Sand	0	0	0	0	2	0	0	0	0	0	0
9	2	5	Jennifer Fanzutti	41.39184	-73.17445	9/3/2015	0.40	Sand	0	0	0	0	2	0	0	0	0	0	0
9	3	10	Jennifer Fanzutti	41.39176	-73.17447	9/3/2015	0.70	Sand	0	0	2	0	0	0	0	0	0	0	0
9	4	20	Jennifer Fanzutti	41.39168	-73.17450	9/3/2015	1.00	Silt	0	0	0	0	4	0	0	0	0	0	0
9	5	30	Greg Bugbee	41.39161	-73.17457	9/3/2015	1.20	Silt	0	0	0	0	2	0	0	0	0	0	0
9	6	40	Jennifer Fanzutti	41.39154	-73.17466	9/3/2015	3.20	Silt	0	0	0	0	0	0	0	0	0	0	0
9	7	50	Jennifer Fanzutti	41.39149	-73.17477	9/3/2015	3.70	Silt	0	0	0	0	0	0	0	0	0	0	0
9	8	60	Greg Bugbee	41.39141	-73.17488	9/3/2015	4.80	Silt	0	0	0	0	0	0	0	0	0	0	0
9	9	70	Greg Bugbee	41.39135	-73.17493	9/3/2015	5.00	Silt	0	0	0	0	0	0	0	0	0	0	0
9	10	80	Jennifer Fanzutti	41.39127	-73.17497	9/3/2015	5.40	Silt	0	0	0	0	0	0	0	0	0	0	0
10	1	0.5	Greg Bugbee	41.38143	-73.17521	9/3/2015	0.10	Sand	0	0	0	0	0	0	1	2	2	0	0

Appendix Lake Zoar Transect Data (3 of 3)

Transect	Point	Distance from shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	CerDem	EloNut	MyrSpi	NajFle	NajMin	PotCri	PotFol	PotZos	SagSp	StuPec	ValAme
10	2	5	Greg Bugbee	41.38147	-73.17523	9/3/2015	0.20	Sand	0	0	2	0	0	0	0	0	0	3	3
10	3	10	Greg Bugbee	41.38154	-73.17522	9/3/2015	0.50	Sand	0	0	2	0	0	0	3	0	0	3	0
10	4	20	Greg Bugbee	41.38162	-73.17524	9/3/2015	1.00	Sand	0	0	3	0	2	0	0	0	0	0	3
10	5	30	Greg Bugbee	41.38169	-73.17526	9/3/2015	1.20	Sand	2	0	3	2	2	0	3	0	0	0	0
10	6	40	Jennifer Fanzutti	41.38178	-73.17528	9/3/2015	1.20	Sand	0	0	0	0	0	0	2	0	0	0	0
10	7	50	Jennifer Fanzutti	41.38187	-73.17529	9/3/2015	2.60	Muck	4	0	0	0	2	0	0	0	0	0	0
10	8	60	Jennifer Fanzutti	41.38196	-73.17531	9/3/2015	3.50	Silt	4	0	0	0	0	0	0	0	0	0	0
10	9	70	Jennifer Fanzutti	41.38204	-73.17533	9/3/2015	3.70	Silt	2	0	0	0	0	0	0	0	0	0	0
10	10	80	Jennifer Fanzutti	41.38214	-73.17530	9/3/2015	4.10	Silt	0	0	0	0	0	0	0	0	0	0	0

Appendix Squantz Pond Transect Data (1 of 2)

Transect	Point	Distance from shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	ElaSp	EleSp	MyrSpi	NajFle	NajMin	PonCor	PotBic	PotPus
1	1	0.5	Jennifer Fanzutt	41.51019	-73.47160	8/13/2015	0.10	Sand		2	0	0	0	2	0	2	0
1	2	5	Jennifer Fanzutt	41.51023	-73.47158	8/13/2015	0.20	Sand		2	0	1	0	2	0	2	0
1	3	10	Jennifer Fanzutt	41.51027	-73.47163	8/13/2015	0.30	Sand		0	0	2	0	2	0	2	0
1	4	20	Jennifer Fanzutt	41.51036	-73.47170	8/13/2015	0.70	Sand		0	0	0	0	2	0	0	0
1	5	30	Jennifer Fanzutt	41.51042	-73.47172	8/13/2015	1.30	Sand		0	0	0	0	2	0	2	0
1	6	30	Jennifer Fanzutt	41.51049	-73.47184	8/13/2015	1.40	Gravel		0	0	0	0	2	0	1	0
1	7	50	Jennifer Fanzutt	41.51055	-73.47193	8/13/2015	1.70	Gravel		0	0	3	0	0	0	0	0
1	8	60	Jennifer Fanzutt	41.51062	-73.47197	8/13/2015	2.30	Sand		0	0	3	0	0	0	0	0
1	9	70	Jennifer Fanzutt	41.51072	-73.47203	8/13/2015	2.10	Sand		0	0	3	0	0	0	0	0
1	10	80	Jennifer Fanzutt	41.51080	-73.47212	8/13/2015	3.60	Sand		0	0	3	0	0	0	0	0
2	1	0.5	Jennifer Fanzutt	41.52356	-73.48135	8/14/2015	0.20	Sand		0	4	0	0	0	0	0	0
2	2	5	Jennifer Fanzutt	41.52355	-73.48142	8/14/2015	0.30	Sand		0	0	0	3	4	0	3	0
2	3	10	Jennifer Fanzutt	41.52357	-73.48148	8/14/2015	0.70	Sand		0	0	2	3	4	1	2	0
2	4	20	Jennifer Fanzutt	41.52352	-73.48164	8/14/2015	2.10	Silt		0	0	2	0	0	0	0	0
2	5	30	Jennifer Fanzutt	41.52353	-73.48171	8/14/2015	2.30	Silt		0	0	3	0	0	0	0	0
2	6	40	Jennifer Fanzutt	41.52350	-73.48180	8/14/2015	3.60	Silt		0	0	3	0	0	0	0	0
2	7	50	Jennifer Fanzutt	41.52347	-73.48191	8/14/2015	4.20	Silt		0	0	0	0	0	0	0	0
2	8	70	Jennifer Fanzutt	41.52347	-73.48205	8/14/2015	4.90	Silt		0	0	0	0	0	0	0	0
2	9	70	Jennifer Fanzutt	41.52346	-73.48219	8/14/2015	5.50	Silt		0	0	0	0	0	0	0	0
2	10	80	Jennifer Fanzutt	41.52339	-73.48231	8/14/2015	6.00	Silt		0	0	0	0	0	0	0	0
3	1	0.5	Jennifer Fanzutt	41.53393	-73.48312	8/14/2015	0.20	Sand		0	2	3	3	3	0	0	0
3	2	5	Jennifer Fanzutt	41.53394	-73.48319	8/14/2015	0.40	Silt		0	0	3	0	5	0	0	0
3	3	10	Jennifer Fanzutt	41.53395	-73.48324	8/14/2015	1.00	Silt		0	0	3	0	5	0	0	0
3	4	20	Jennifer Fanzutt	41.53392	-73.48337	8/14/2015	1.50	Silt		0	0	3	0	2	0	0	0
3	5	30	Jennifer Fanzutt	41.53393	-73.48348	8/14/2015	2.30	Silt		0	0	3	0	2	0	0	0
3	6	30	Jennifer Fanzutt	41.53391	-73.48364	8/14/2015	0.00	Silt		0	0	4	0	0	0	0	0
3	7	50	Jennifer Fanzutt	41.53396	-73.48373	8/14/2015	2.60	Silt		0	0	4	0	0	0	0	0
3	8	60	Jennifer Fanzutt	41.53393	-73.48386	8/14/2015	2.60	Silt		0	0	4	0	0	0	0	0
3	9	70	Jennifer Fanzutt	41.53391	-73.48397	8/14/2015	2.50	Silt		0	0	4	0	0	0	0	0
3	10	80	Jennifer Fanzutt	41.53387	-73.48410	8/14/2015	2.50	Silt		0	0	4	0	0	0	0	0
4	1	0.5	Jennifer Fanzutt	41.53080	-73.48270	8/13/2015	0.10	Sand		2	2	1	0	4	1	2	0
4	2	5	Jennifer Fanzutt	41.53078	-73.48275	8/13/2015	0.20	Sand		2	0	0	3	4	0	2	0
4	3	10	Jennifer Fanzutt	41.53080	-73.48286	8/13/2015	0.90	Sand		0	0	0	3	4	0	3	2
4	4	20	Jennifer Fanzutt	41.53075	-73.48296	8/13/2015	0.80	Sand		0	0	0	3	4	0	0	1
4	5	20	Jennifer Fanzutt	41.53079	-73.48309	8/13/2015	0.90	Sand		0	0	0	0	5	0	0	0
4	6	40	Jennifer Fanzutt	41.53076	-73.48316	8/13/2015	1.20	Sand		0	0	3	0	2	0	0	0
4	7	50	Jennifer Fanzutt	41.53076	-73.48331	8/13/2015	2.30	Sand		0	0	3	0	2	0	0	0
4	8	60	Jennifer Fanzutt	41.53072	-73.48344	8/13/2015	2.70	Muck		0	0	3	0	0	0	0	0
4	9	70	Jennifer Fanzutt	41.53075	-73.48356	8/13/2015	3.40	Muck		0	0	3	0	0	0	0	0
4	10	80	Jennifer Fanzutt	41.53079	-73.48369	8/13/2015	3.70	Muck		0	0	0	0	0	0	0	0

Appendix Squantz Pond Transect Data (2 of 2)

Transect	Point	Distance from shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	ElaSp	EleSp	MyrSpi	NajFle	NajMin	PonCor	PotBic	PotPus
5	1	0.5	Jennifer Fanzutt	41.52815	-73.48594	8/14/2015	1.40	Bedrock		0	0	0	0	0	0	0	0
5	2	5	Jennifer Fanzutt	41.52814	-73.48594	8/14/2015	1.90	Silt		0	0	2	0	0	0	0	0
5	3	10	Jennifer Fanzutt	41.52811	-73.48590	8/14/2015	1.70	Silt		0	0	4	0	0	0	0	0
5	4	20	Jennifer Fanzutt	41.52813	-73.48583	8/14/2015	2.10	Silt		0	0	4	0	0	0	0	0
5	5	30	Jennifer Fanzutt	41.52812	-73.48569	8/14/2015	2.10	Silt		0	0	2	0	0	0	0	0
5	6	40	Jennifer Fanzutt	41.52811	-73.48558	8/14/2015	2.30	Bedrock		0	0	2	0	0	0	0	0
5	7	50	Jennifer Fanzutt	41.52810	-73.48547	8/14/2015	2.60	Bedrock		0	0	1	0	0	0	0	0
5	8	60	Jennifer Fanzutt	41.52816	-73.48531	8/14/2015	2.80	Bedrock		0	0	0	0	0	0	0	0
5	9	70	Jennifer Fanzutt	41.52818	-73.48524	8/14/2015	4.90	Silt		0	0	0	0	0	0	0	0
5	10	80	Jennifer Fanzutt	41.52818	-73.48506	8/14/2015	5.20	Silt		0	0	0	0	0	0	0	0

Notes