Monitoring Report

Invasive Aquatic Plants

Candlewood Lake
Lake Lillinonah
Lake Zoar

2013

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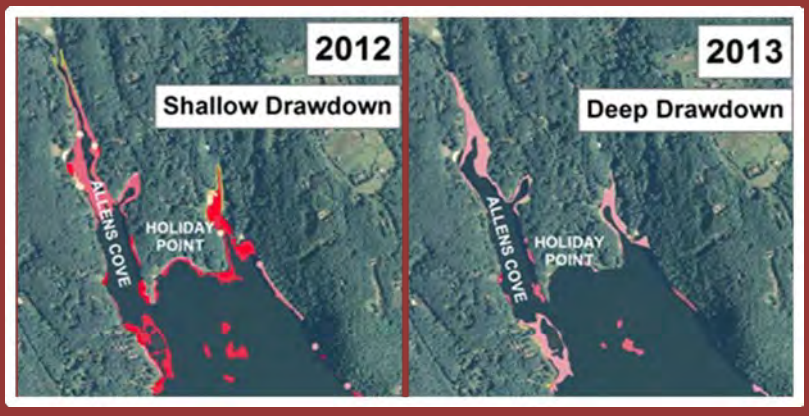
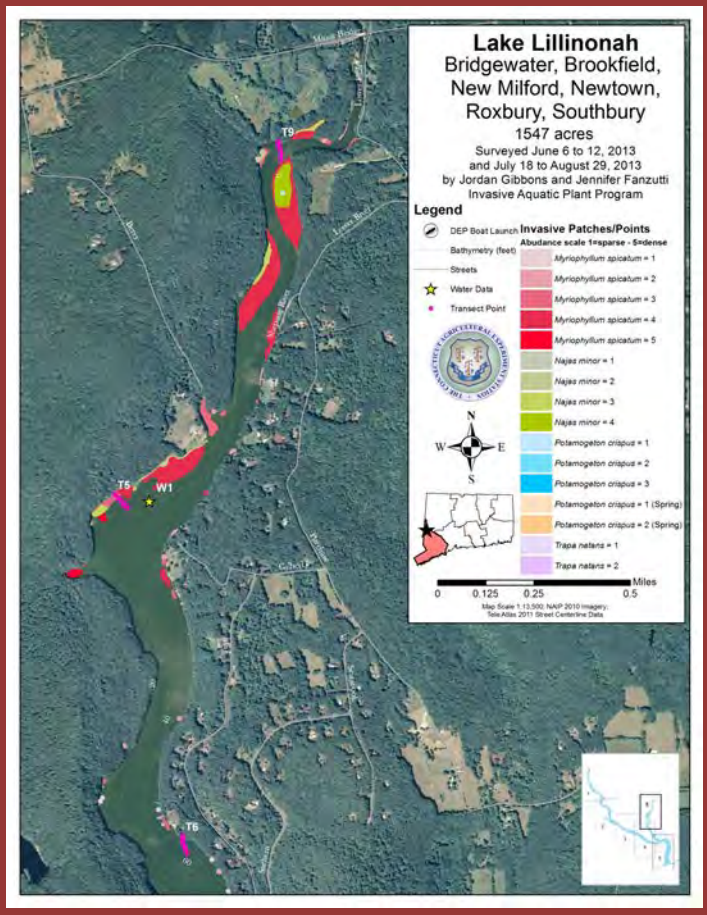




The Connecticut Agricultural Experiment Station was founded in 1875. It is chartered by the General Assembly to make scientific inquiries and conduct experiments regarding plants and their pests, insects, soil and water, and to perform analyses for state agencies. Station laboratories are in New Haven and Windsor, and research farms in Hamden and Griswold.

Table of Contents

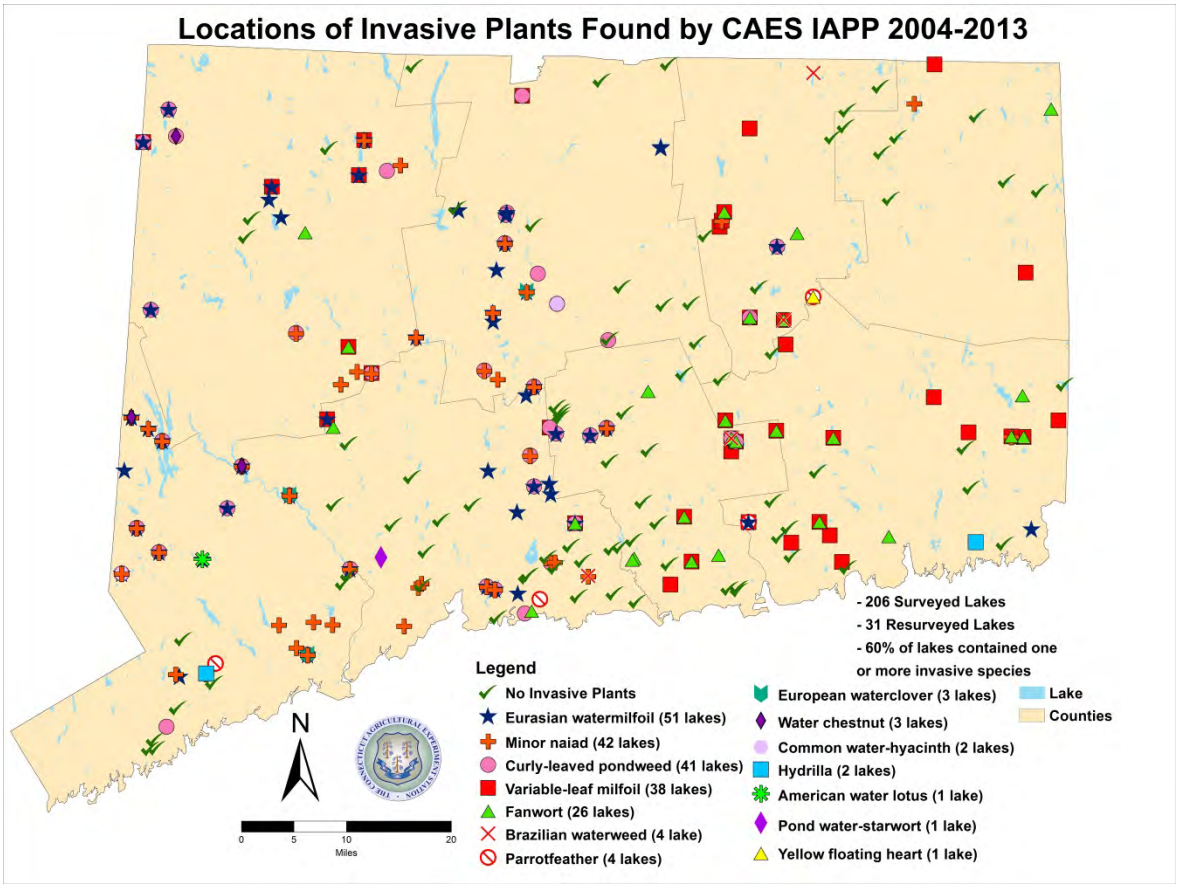


Figure 1. Locations of invasive aquatic plants found by CAES IAPP from 2004 – 2013.

Introduction

Connecticut's lakes and ponds are among the State's most important natural resources. They provide drinking water supplies, wildlife habitat, and a multitude of recreational opportunities. Lakes Candlewood, Lillinonah and Zoar are three of the Connecticut's largest lakes and offer the additional benefit of supplying hydroelectric power via generating stations located at their outlets. The overabundance of aquatic plants is of great concern because they can impede recreation, alter native aquatic ecosystems (Barrett 1989, Les and Mehrhoff 1999) and reduce home values (Connecticut Aquatic Nuisance Species Working Group 2006, Fishman et al. 1998). Once invasive plants are established, long term and often costly management programs are often needed. Invasive aquatic plants have few natural enemies (Wilcove et al. 1998, Pimintel et al. 2000), and therefore, are capable of uncontrolled growth. Lakes Candlewood, Lillinonah and Zoar are managed by FirstLight Power Resources Services, LLC (FLP). The Federal Energy Regulatory Commission

(FERC) Article 409 requires FLP to provide annual invasive aquatic plant monitoring of Lakes Candlewood, Lillinonah and Zoar (Northeast Generating Company, 2005).

Statewide surveys by The Connecticut Agricultural Experiment Station's (CAES) Invasive Aquatic Plant Program (IAPP) have found 14 invasive aquatic plant species inhabiting approximately 60 percent of Connecticut's lakes and ponds (Figure 1) (CAES IAPP, 2014). Eurasian watermilfoil (*Myriophyllum spicatum*) is the most commonly found invasive aquatic plant and the principal problem in Lakes Candlewood, Lillinonah and Zoar. Eurasian watermilfoil has been present in Candlewood Lake since at least the early 1980's (Siver et al., 1986) when it probably entered Lakes Lillinonah and Zoar as well.

CAES IAPP has studied the plant communities in Lakes Candlewood, Lillinonah and Zoar since 2005 and has found many similarities (Bugbee et al. 2013, Bugbee et al. 2012, Bugbee 2011, Bugbee and Balfour 2010, Bugbee and Reeps 2009, Bugbee et al. 2008). Fifteen to 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 only found in Lake Lillinonah and European waterclover only occurs in Lake Zoar. Eurasian watermilfoil covers the largest area in the lakes followed by minor naiad and curlyleaf pondweed (Bugbee et al. 2012). Curlyleaf pondweed may be underestimated in the CAES IAPP surveys prior to 2012 because it naturally dies back prior to the summer surveys (Catling and Dobson 1985). A CAES IAPP spring survey of Candlewood Lake and Lake Zoar in 2012 for curlyleaf pondweed (when is growth is most prolific) found this plant only in a few locations in Lake Zoar. Although the plant communities are similar in all three lakes, differences in the way nuisance plants are being managed likely results in the yearly differences in plant communities. Winter drawdown and occasional harvesting are used to manage Eurasian watermilfoil in Candlewood Lake (Tarsi, 2006). Deep drawdowns (3 meters) with long exposure times have proven most effective (Bugbee et al., 2012). Harvesting in small areas provides short term relief, however, records on where the harvesting has been performed are sparse. In 2008, 2010 and 2012, milfoil weevils (*Euhrychiopsis lecontei*) were introduced into Candlewood Lake to control Eurasian watermilfoil, however, their efficacy appears minimal. In Lakes Lillinonah and Zoar nuisance vegetation is actively managed by harvesting and herbicide applications. Passive control

may be occurring due to occasional low water levels and storm events that cause intense flow rates throughout the year.

The following report represents the seventh year of CAES IAPP surveillance and mapping of invasive aquatic plants for FLP to fulfill the requirements of FERC Article 409.

Objectives:

Survey and map invasive aquatic plants in Lakes Candlewood, Lillinonah and Zoar to fulfill the FERC nuisance plant monitoring requirement in Article 409. Provide scientific information to assist in the management of invasive aquatic vegetation, enhancement of native species and overall protection of the water bodies.

Materials and Methods:

Our 2013 aquatic vegetation surveys utilized methods established by CAES IAPP (2014). We recorded locations of all invasive plants with Trimble GeoXT® or ProXT® global positioning systems (GPS) with sub-meter accuracy. Plants occurring in patches were circumnavigated to form a polygon. 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 visually using a scale of 1 – 5 (1 = single stem; 2 = few stems; 3 = common; 4 = abundant; 5 = extremely abundant). When field identification was 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® 5.10 (Trimble Navigation Limited, Sunnyvale, CA) and then imported it into ArcGIS® 10.1 (ESRI, Redlands, CA), where it was geo-corrected. Data were then overlaid onto 2010 United States Department of Agriculture - National Agricultural Inventory Program (NAIP) aerial imagery with 1 meter resolution.

We collected occurrence and abundance plant information from ten transects per lake with points positioned 0, 5, 10, 20, 30, 40, 50, 60, 70 and 80 meters from 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.

Figure 2. Checking for Eurasian watermilfoil with a grapple for plant growth near the bottom (left). Visibility was limited by algal blooms and associated lack of water clarity (right).

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 to 10 from the 16 we surveyed in 2009. We chose transects that represented the greatest species richness and ranked abundance as described above. Significant differences in the frequency of occurrence of plant species between years along transects ($p < 0.05$) was 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 from June 12 – June 19 and all invasive plants from August 1 – September 11. This was the second consecutive year we performed the early curlyleaf pondweed survey to document this plant prior to its summer senescence. The Candlewood Lake transect data were obtained from August 29 – 30. We surveyed Lake Lillinonah for curlyleaf pondweed from June 5 - June 13 and all invasive plants from July 18 - August 28. We obtained transect data on Lake Lillinonah on August 28 and 29. The Lake Zoar transect data were obtained on September 6. Detailed information regarding our "on-lake" time is located in the Appendix (Page 53).

We obtained water samples from Candlewood Lake on August 21, Lake Lillinonah on August 29 and Lake Zoar on September 6. We used a Secchi disk to measure transparency

Table 1. The frequency of occurrence and area covered by aquatic plants in Candlewood Lake.

		Frequency of Occurrence (percent *)							Area (acres)						
Scientific Name	**Common Name**	**2005**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**
Callitriche sp.	Water starwort	1.0	0.0	0.0	0.0	0.0	0.0	0.0	ND**	ND	ND	ND	ND	ND	ND
Ceratophyllum demersum	Coontail	3.1	33.3	11.3	22.7	29.9	22.7	21.7	ND	ND	ND	ND	ND	ND	ND
Elatine sp.	Waterwort	0.0	1.0	3.1	2.1	0.0	4.1	0.0	ND	ND	ND	ND	ND	ND	ND
Eleocharis sp.	Spikerush	0.0	0.0	3.1	1.0	1.0	3.1	0.0	ND	ND	ND	ND	ND	ND	ND
Elodea nuttallii	Waterweed	4.2	0.0	0.0	0.0	0.0	0.0	0.0	ND	ND	ND	ND	ND	ND	ND
Lemna minor	Duckweed	2.1	6.3	1.0	4.1	7.2	4.1	0.0	ND	ND	ND	ND	ND	ND	ND
Myriophyllum spicatum	**Eurasian watermilfoil**	**51.0**	**79.2**	**64.9**	**70.1**	**78.4**	**79.4**	**42.3**	**221**	**451**	**373**	**461**	**331**	**505**	**259**
Najas flexilis	Nodding waternymph	7.3	1.0	1.0	0.0	2.0	0.0	0.0	ND	ND	ND	ND	ND	ND	ND
Najas minor	**Minor naid**	**12.5**	**6.3**	**8.2**	**11.3**	**15.5**	**12.4**	**19.6**	**12**	**11**	**26**	**21**	**19**	**32**	**24**
Nymphaea odorata	White water lily	1.0	1.0	0.0	1.0	1.0	1.0	1.0	ND	ND	ND	ND	ND	ND	ND
Potamogeton bicupulatus	Snailseed pondweed	0.0	1.0	0.0	0.0	0.0	0.0	0.0	ND	ND	ND	ND	ND	ND	ND
Potamogeton crispus	**Curly leaf pondweed**	**13.5**	**1.0**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**<1**	**<1**	**1**	**1**	**<1**	**0**	**0**
Potamogeton foliosus	Leafy pondweed	3.1	0.0	0.0	0.0	2.1	1.0	5.2	ND	ND	ND	ND	ND	ND	ND
Potamogeton gramineus	Variable leaf pondweed	2.1	0.0	0.0	0.0	0.0	0.0	0.0	ND	ND	ND	ND	ND	ND	ND
Potamogeton perfoliatus	Clasping leaf pondweed	1.0	2.1	1.0	0.0	0.0	2.1	0.0	ND	ND	ND	ND	ND	ND	ND
Potamogeton pusillus	Small Pondweed	3.1	1.0	0.0	0.0	0.0	0.0	0.0	ND	ND	ND	ND	ND	ND	ND
Spirodela polyrhiza	Great duckweed	1.0	0.0	0.0	1.0	5.2	0.0	0.0	ND	ND	ND	ND	ND	ND	ND
Stuckenia pectinata	Sago pondweed	6.3	1.0	0.0	4.1	0.0	3.1	2.1	ND	ND	ND	ND	ND	ND	ND
Vallisneria americana	Eel grass	2.1	2.1	4.1	4.1	3.1	4.0	4.1	ND	ND	ND	ND	ND	ND	ND
Wolffia sp.	Spotless watermeal	0.0	0.0	0.0	0.0	0.0	3.1	0.0	ND	ND	ND	ND	ND	ND	ND
Zannichellia palustrus	Horned pondweed	11.5	3.1	0.0	0.0	0.0	0.0	0.0	ND	ND	ND	ND	ND	ND	ND

Invasive plant

* Percent occurrence on 97 points in 10 transects

**Not determined

Shaded columns indicate deep drawdown years

on the sampling dates. Because algal blooms often restricted our ability to see vegetation growing near the bottom of Candlewood Lake that could affect our results, we also performed Secchi measurements most days we performed surveillance (Figure 2). We used a 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 1 m intervals thereafter until we reached the bottom. We collected water samples from 0.5 m below the surface and 0.5 m from the bottom. Samples were stored in sterile 250 ml plastic Nalgene® containers at 3°C until they were analyzed for pH, alkalinity, conductivity and total phosphorus. We measured conductivity and pH with a Fisher-Accumet® XL20 meter (Fisher Scientific International Inc., Hampton, NH) and quantified alkalinity by titration with 0.16 N H_2SO_4 to a pH 4.5 endpoint. Finally, we analyzed total phosphorus via spectroscopy using the ascorbic acid method with potassium persulfate digestion (American Public Health Association, 1995).

To assess the temperatures during the 2013 winter drawdown, we installed three Hobo® temperature monitoring stations (Onset Computer Corporation, Bourne, MA) at a site in

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

	Patch Size (acres)											
	Eurasian watermilfoil				Minor naid				Curlyleaf pondweed			
Year	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)
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

*Shaded rows indicate deep drawdown years

northern Turtle Bay (Map 5, Page 25) on January 10, 2013. The stations were placed perpendicular to the shore at drawdown depths of 0.6 m, 1.2 m, and 1.8 m (2, 4, and 6 feet, respectively). We positioned temperature probes 0.5 m above the sediment to record air temperature and 15.0 cm into the sediment to record sediment temperatures. Data were logged at 5 minutes intervals from January 10 – February 28, 2013.

Results and Discussion

Candlewood Lake

Our 2013 invasive aquatic plant survey of Candlewood Lake found generally sparse growth of vegetation over less acreage than in previous years. We found the invasive plant species Eurasian watermilfoil and minor naiad (Table 1, Maps 1 – 9, Pages 21 - 29). Curlyleaf pondweed, which had been found from 2007 - 2011 was not found in 2012 or 2013. This was surprising since we performed a separate spring survey to avoid missing this plant that naturally dies back in early summer prior to our main survey. We observed no new invasive species in Candlewood Lake in 2013. Our surveillance was slowed because reduced water clarity prevented us from viewing vegetation growing near the bottom. This required us to perform grapple tosses at 355 sites mainly in areas shown to have abundant Eurasian watermilfoil on our 2012 maps (Bugbee et al., 2013). We found Eurasian watermilfoil at 177 of these sites usually in low abundance (mean 2.0). Eurasian watermilfoil continued to be the most prevalent invasive aquatic plant covering 259 acres. This compares to

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

Year	Patch Abundance (1 = sparse - 5 = dense)								
	Eurasian watermilfoil			Minor naid			Curlyleaf pondweed		
	(min)	(max)	(mean)	(min)	(max)	(mean)	(min)	(max)	(mean)
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

505, 331, 461,373, 451 and 221 acres in 2012, 2011, 2010, 2009, 2008 and 2007, respectively. There were 432 patches of Eurasian watermilfoil in 2013 compared to 637, 485, 324, 489, 469 and 489 from 2012 to 2007 respectively. Mean patch size of Eurasian watermilfoil was 0.6 acres in 2013, compared to 0.8, 0.7, 1.6, 0.8, 1.0 and 0.4 from 2012 - 2007, respectively (Table 2). The decrease in patch size in 2013 appears to coincide with the overall decline in Eurasian watermilfoil lakewide.

The largest patches of Eurasian watermilfoil, in 2013, were approximately 15 acres and were located at the east side of the start of the New Milford arm (Map 5, Page 25, near T5) and in Danbury Cove (Map 9, Page 29). In the previous deep drawdown years of 2011, 2009 and 2007 the largest patches of Eurasian watermilfoil were 14.9, 39.6 and 24.9 acres, respectively. The locations of the largest patches are inconsistent from year to year. After the deep drawdown of 2011 the largest patches was just over 13.5 acres in size (similar to 2013) but located near Great Neck, southwest of Great Mountain (Map 8, Page 28) and in Brookfield Bay (Map 6, Page 26). These changes from year to year are likely related to weather conditions during the drawdown and their effects on sediment temperature and moisture. The mean abundance of Eurasian watermilfoil patches (Table 3) decreased from 3.1 in 2012 to 2.4 in 2013. This follows a pattern of patch abundances that range from 2.3 - 2.9 in the deep drawdown years and near 3.0 in the shallow drawdown years. Changes in milfoil coverage, patch number, size and abundance are likely related to differences in drawdown practices and corresponding weather conditions during the period when the sediment is exposed (Marsicano, 2009).

We found 24 acres of minor naiad in 2013 compared to 32 acres in 2012, 19 in 2011, 21

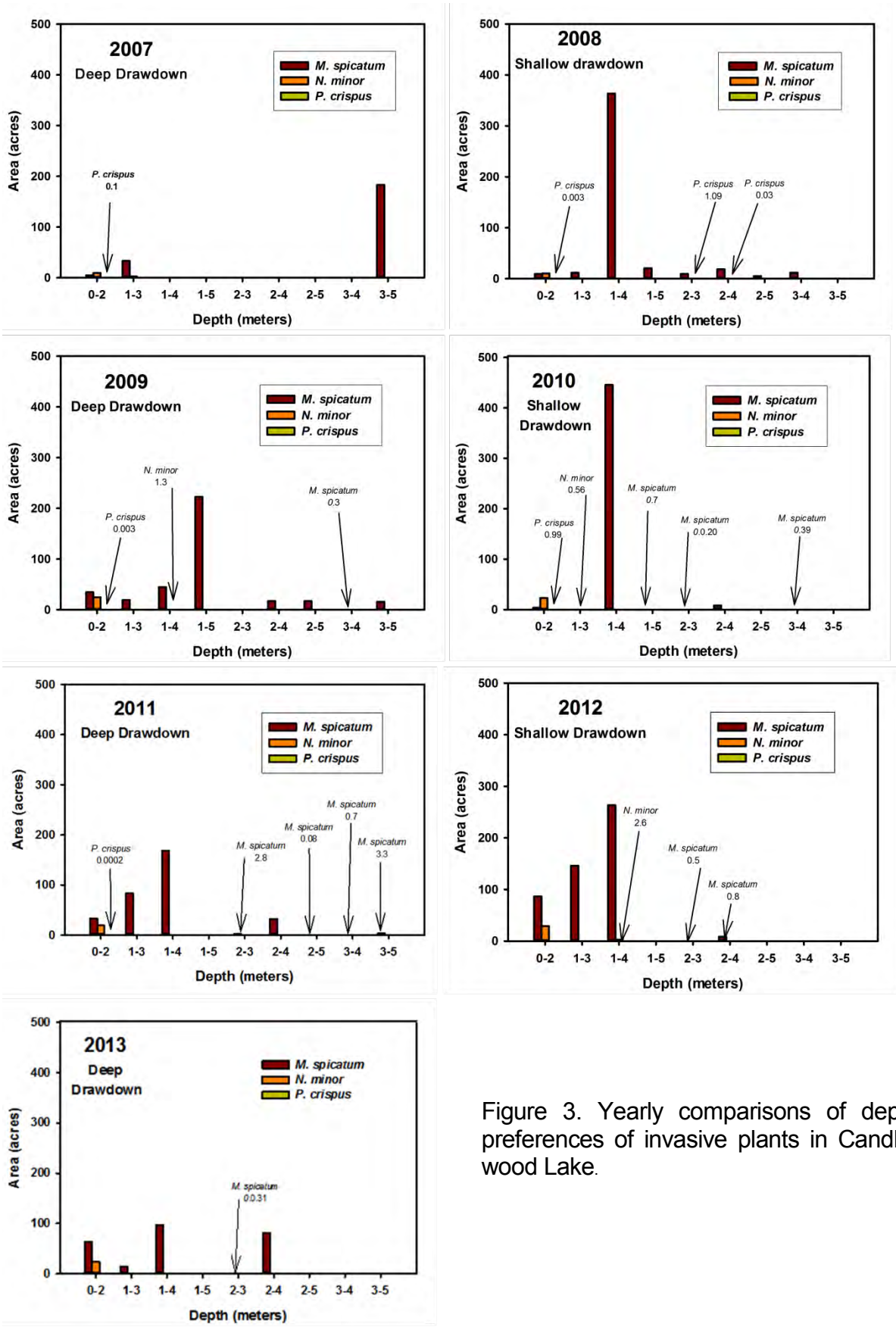


Figure 3. Yearly comparisons of depth preferences of invasive plants in Candlewood Lake.

in 2010, 26 in 2009, 11 in 2008 and 12 in 2007 (Table 1). The 2013 decrease offsets the large increase in 2012 but still represents an overall increase compared to pre- 2012 levels. The number of minor naiad patches followed a similar pattern with a reduction from 83 in 2012 to 79 in 2013 but still substantially more than the 26 - 50 patches found in previous years. The largest patch was in Echo Bay (Map 8, Page 28) and covered 2.8 acres. Minor naiad patches averaged 0.3 acres in 2013 which is slightly smaller than the mean patch size of 0.4 - 0.5 acres found in previous years (Table 2). The mean patch abundance of minor naiad in 2013 was 2.4 (Table 3) which was similar to 2012 (2.6) but higher than in all our previous survey years (1.5 – 2.1). Minor naiad appears to be less affected by drawdown than Eurasian watermilfoil because it is an annual plant that propagates from potentially drawdown resistant seeds. We found no curlyleaf pondweed during our spring or summer surveillance. The absence of curlyleaf pondweed suggests that this invasive species is having difficulty establishing in Candlewood Lake and may be sensitive to the drawdown practices.

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 (Figure 3). In 2013, Eurasian watermilfoil patches were distributed at depths of from 0 - 4 m. We observed 64.3 acres (22.8%) at depths of 0-2 meters, 15.1 acres (5.8%) at depths of depths of 1-3 meters, 96.6 acres (37.3%) at depths of 1-4 meters, and 81.7 acres (31.5%) at 2 - 4 meters. We found very little difference in the abundance of Eurasian watermilfoil at any depth with all being in the range of 2 - 3. Although the Eurasian watermilfoil coverage at depths of 0-2 meters was reduced from the 86.9 acres found in 2012 it was still considerably greater than the 30 acres found in 2011 and 2009 and <5 acres in 2007, 2008 and 2010. The apparent difficulty for the recent drawdowns to control Eurasian watermilfoil in the shallowest areas is perplexing but might be explained by increased rooting of “float-in” fragments or more groundwater discharge that prevents freezing and desiccation. Water clarity and associated light restriction at depths of >5 meters is the likely cause for Eurasian watermilfoil to be absent at greater depths. Minor naiad was limited to depths of 0 - 2 meters in 2013, but small amounts have been in slightly deeper locations in previous years. The restriction of minor naiad to shallow water is probably because it rarely grows more than 1 m in height and is light-limited at deeper depths.

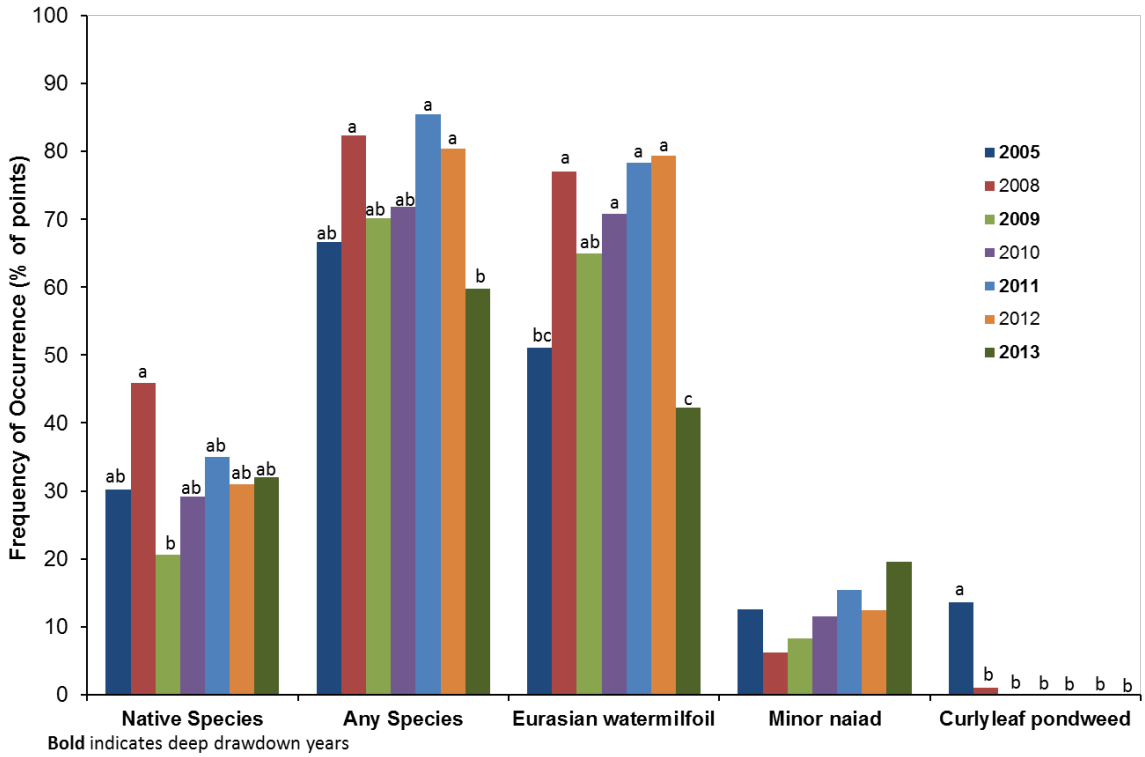


Figure 4. Yearly frequency of occurrence of aquatic vegetation on transects in Candlewood Lake. Bars with the same letter within a species are not statistically different.

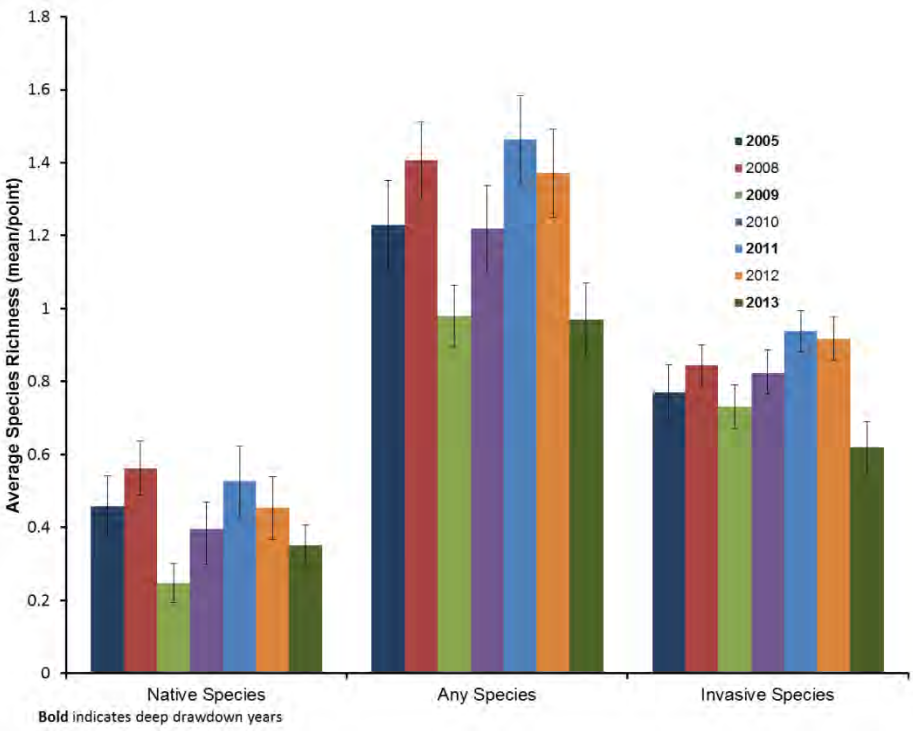


Figure 5. Yearly comparisons of average number of plant species per transect point in Candlewood Lake. Error bars equal +/- one standard error of the mean (SEM).

The frequency of occurrence of Eurasian watermilfoil on transects in 2013 (Figure 4) was 42.3% compared to 79.4% in 2012 and was significantly ($p < 0.05$) lower than any year except 2005 (51.0%). This reduction indicates the efficacy of the deep 2013 drawdown. The frequency of occurrence of minor naiad in 2013 was 19.6%. Although numerically higher than any other year, the level was not statistically different ($p < 0.05$). We did not find curlyleaf pondweed on transects in 2013. The mean invasive species richness (number of plant species) per transect point was 0.6 in 2013 compared to 0.9 in 2012 and was the lowest of any year (Figure 5). With the exception of 2011, the deep drawdown years tend to have slightly lower species richness than the shallow drawdown years.

Robust populations of non–nuisance native species are sometimes considered an indicator of a healthy aquatic ecosystem. In addition, they may decrease the invasibility of non-native species (Capers et al., 2007). Overall native species richness on the transects were 4 in 2013, 10 in 2012, 8 in 2011, 8 in 2010, 7 in 2009, 11 in 2008, and 14 in 2005 (Table 1). Some species rich Connecticut lakes contain over 30 native plant species (CAES IAPP, 2014) and for a large lake like Candlewood to contain only four is unusual. We found no new native species in 2013 compared to 2012. We found waterwort (*Elatine sp.*), spikerush (*Eleocharis sp.*), duckweed (*Lemna minor*), clasping leaf pondweed (*Potamogeton perfoliatus*) and watermeal (*Wolffia sp*.) in 2012 but not in 2013. Water starwort (*Callitriche sp.*), waterweed (*Elodea nuttallii*), nodding waternymph (*Najas flexilis*), variable leaf pondweed (*Potamogeton gramineus*), small pondweed (*Potamogeton pusillus*), great duckweed (*Spirodela polyrhiza*), and horned pondweed (*Zannichellia palustris*) were present in 2005 but not in 2013. Nodding waternymph and great duckweed (*Spirodela polyrhiza*) were present in 2011 but not in 2013. The 2013 reduction in native species reverses the trend toward increasing number of native species in the previous survey years and suggests that reductions in Eurasian watermilfoil by an effective deep winter drawdown will also reduce native species richness.

When frequency of occurrence and species richness is high, biodiversity is considered optimal. The frequency of occurrence of any species (native + invasive) on transect points (Figure 4) has ranged between 67% and 86% from 2005 - 2012 and have not been statistically different ($p > 0.05$). In 2013, the frequency of occurrence of any species dropped to 59.8% and was significantly lower ($p > 0.05$) than in 2008, 2011 and 2012.

Table 4. Yearly comparison of the coverage of invasive aquatic plants in Candlewood Lake's littoral zone (0-5m).

Scientific Name	Common Name	Year	Area (%)
Myriophyllum spicatum	Eurasian watermilfoil	2013	32.0
		2012	62.3
		2011	40.9
		2010	56.9
		2009	46.0
		2008	55.7
		2007	27.3
Najas minor	Minor naiad	2013	3.0
		2012	4.0
		2011	2.3
		2010	2.6
		2009	3.2
		2008	1.3
		2007	1.5
Potamogeton crispus	Curly leaf pondweed	2013	0.0
		2012	0.0
		2011	<0.1
		2010	0.1
		2009	<0.1
		2008	<0.1
		2007	<0.1

The frequency of occurrence of native species in 2013 was 31.9% which was not statistically different from any previous year. The average native species richness on transect points in 2013 was 0.4 (Figure 5) which is statistically lower (± 1 SEM) than 2008 and 2011 and higher than 2009. These data suggest that species richness for both native and invasive species may be reduced in the year after an effective deep drawdown.

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 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 five meters (16 feet) as the littoral zone limit in Candlewood Lake because it best corresponds to our field observations. Candlewood Lake has a littoral zone of 810 acres or 16 % of the total lake area (Bugbee, 2011). Eurasian watermilfoil occupied 32% of the littoral zone in 2013 compared to 62% in 2012 when it attained the greatest littoral zone coverage since we began our surveys (Table 4). Littoral zone coverage of Eurasian watermilfoil appears

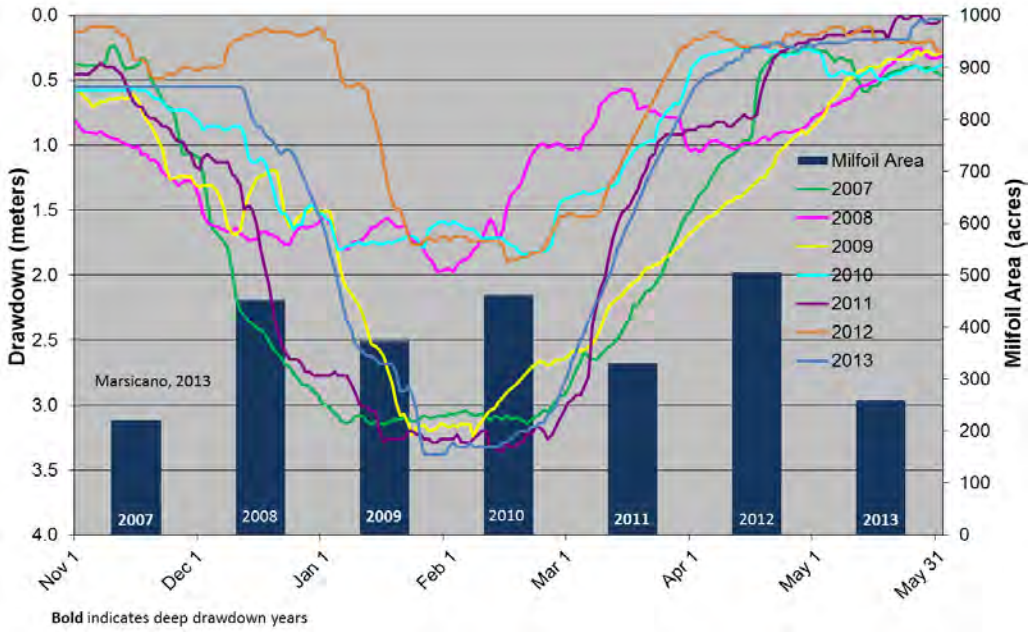


Figure 6. Candlewood Lake's drawdown depths and duration from 2007 to 2013.

substantially reduced by deep drawdowns. In the deep drawdown years of 2007, 2009, 2011 and 2013 the littoral zone coverage of Eurasian watermilfoil was 27, 46, 41 and 32 percent, respectively, with a mean of 36 percent. In the previous shallow drawdown years of 2008, 2010 and 2012, Eurasian watermilfoil covered 56, 57 and 62 percent of the littoral zone respectively with a mean of 58 percent. Minor naiad covered 3% of the littoral zone in 2013. This was a reduction from the all survey year high of 4% found in 2012 but is still higher than the 1% values found in our early survey years of 2007 and 2008. We did not find curlyleaf pondweed in our 2013 spring or summer surveys. The apparent effective 2013 deep drawdown likely caused the littoral zone coverage of aquatic macrophytes (primarily Eurasian watermilfoil) to fall within the optimal range of 20 - 40%.

2013 Drawdown:

The 2013 deep winter drawdown reached its lowest level in late January and refilling began in mid-February (Figure 6). The duration of the drawdown was shorter than the drawdowns of 2007 and 2011 but longer than 2009. Our temperature sensors in Turtle Bay (Figure 7) found the sediment at the drawdown depth of 0.6 m had a mean temperature of 1.8 ˚C, with a minimum of -1.2 ˚C for a period of ½ day (Figure 8). The sediment insulated the sensor from daily minimum air temperatures that ranged from -10 to - 17 ˚C for six days

Figure 7. Air and sediment temperature sensors to monitor drawdown conditions (depth 0.6m) in northwest Turtle Cove, January 10, 2013. Note leafy substrate.

in late January and from -5 to -13 ˚C for 15 days in February. Temperature sensors located at deeper drawdown depth of 1.2 and 1.8 m showed progressively colder sediment during similar timeframes. The sediment temperature at the 1.8 m location had a mean temperature of 1.2 ˚C and a minimum of -4.9 ˚C. It is somewhat surprising that the lowest sediment temperature was found closest to the water line. This may be due to a greater accumulation of leaves and organic matter near the shore which has better insulating properties than sandier sediment and that the actual water line was at a depth of near 3m. Unfortunately, we did not obtain sediment samples and could not quantify their physical properties. These factors likely resulted in the observed poor suppression of Eurasian watermilfoil in certain shallow areas.

Eurasian watermilfoil coverage in Allen's Cove from 2007 - 2013 (Figure 9) is least in the deep drawdown years with rapid regrowth in the shallow drawdown years. In 2013 the deep drawdown did not eliminate the milfoil in this area but rather reduced its abundance and kept most near the bottom where it could not be seen from the surface. This should allow for

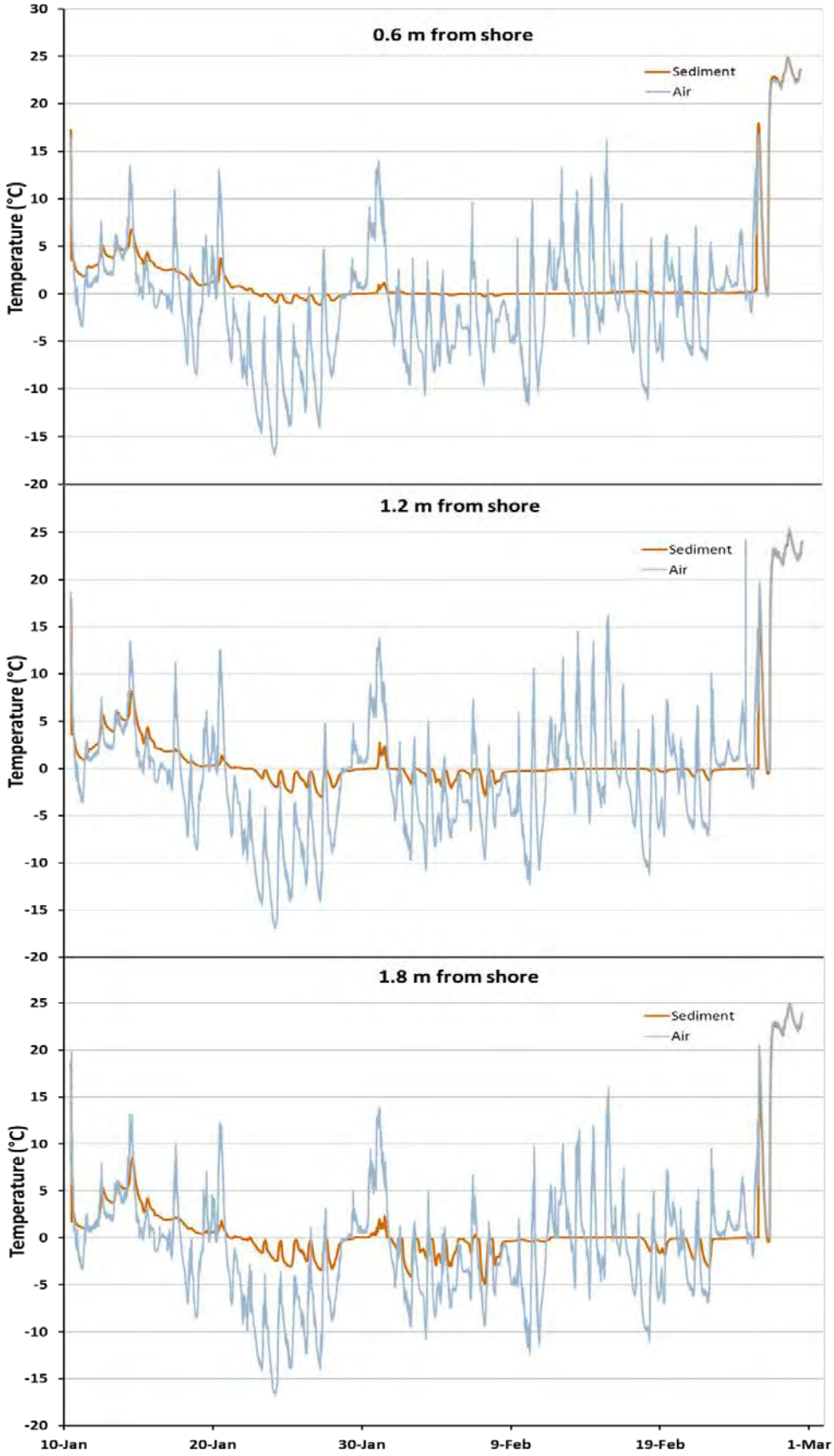


Figure 8. Sediment vs. air temperature of northern Turtle Cove

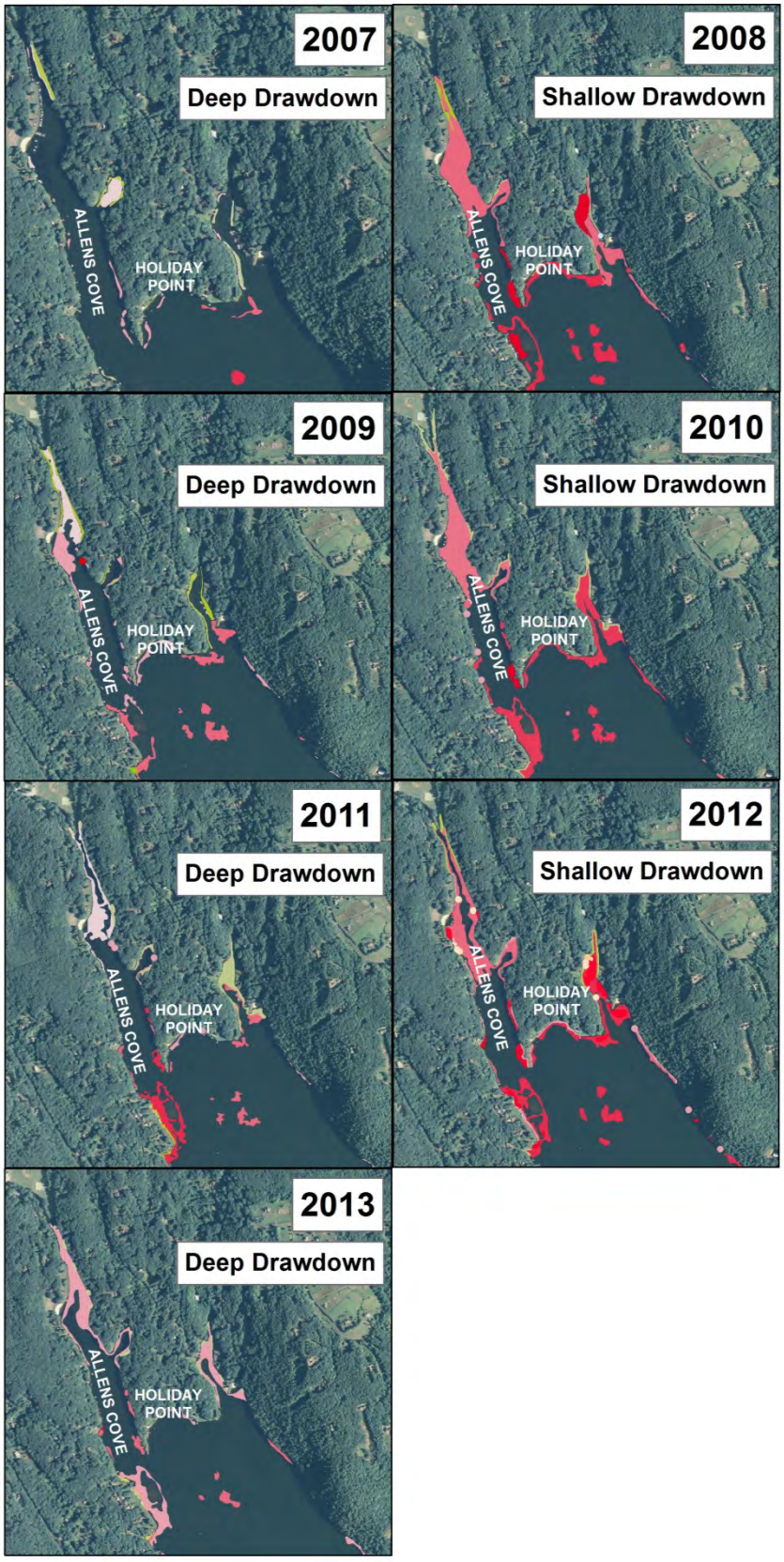
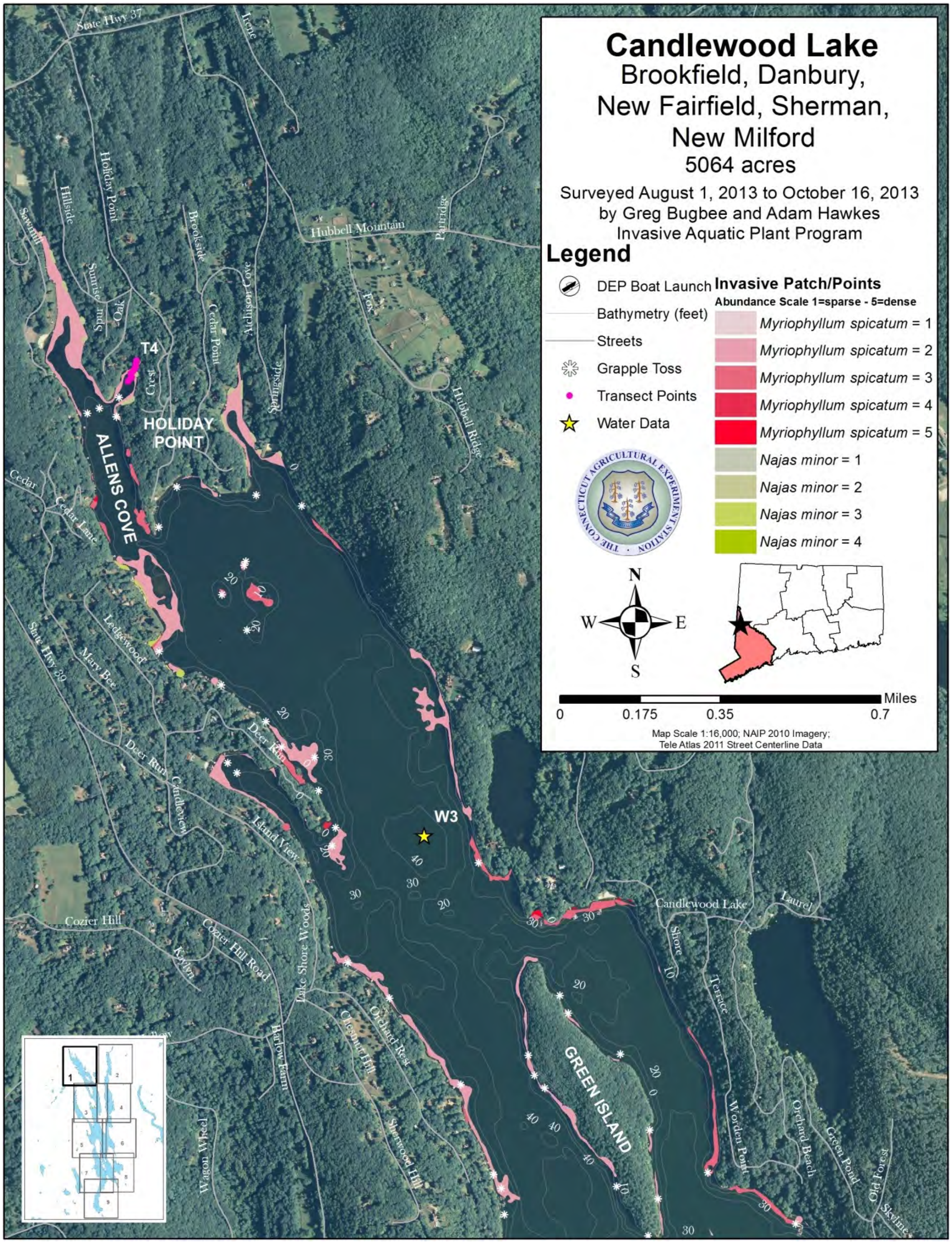


Figure 9. Comparison of the coverage and abundance of Eurasian watermilfoil in Allen's Cove from 2007 to 2012. Darker pink colors indicate greater abundance.

Figure 10. Eurasian watermilfoil abundance at reference site outside Lattin's Cove.

rapid regrowth in 2014. Our yearly photograph of the outer west side of Lattin's Cove (Figure 10) showed no Eurasian watermilfoil reaching the surface. Considerable details on the effects of the 2013 deep winter drawdown on the invasive plants in Candlewood Lake have been stated in other parts of this report.


Candlewood Lake
Brookfield, Danbury, New Fairfield, Sherman, New Milford
5064 acres
Surveyed August 1, 2013 to October 16, 2013
by Greg Bugbee and Adam Hawkes
Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
Streets
Grapple Toss
Transect Points
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
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Najas minor = 2
Najas minor = 3
Najas minor = 4
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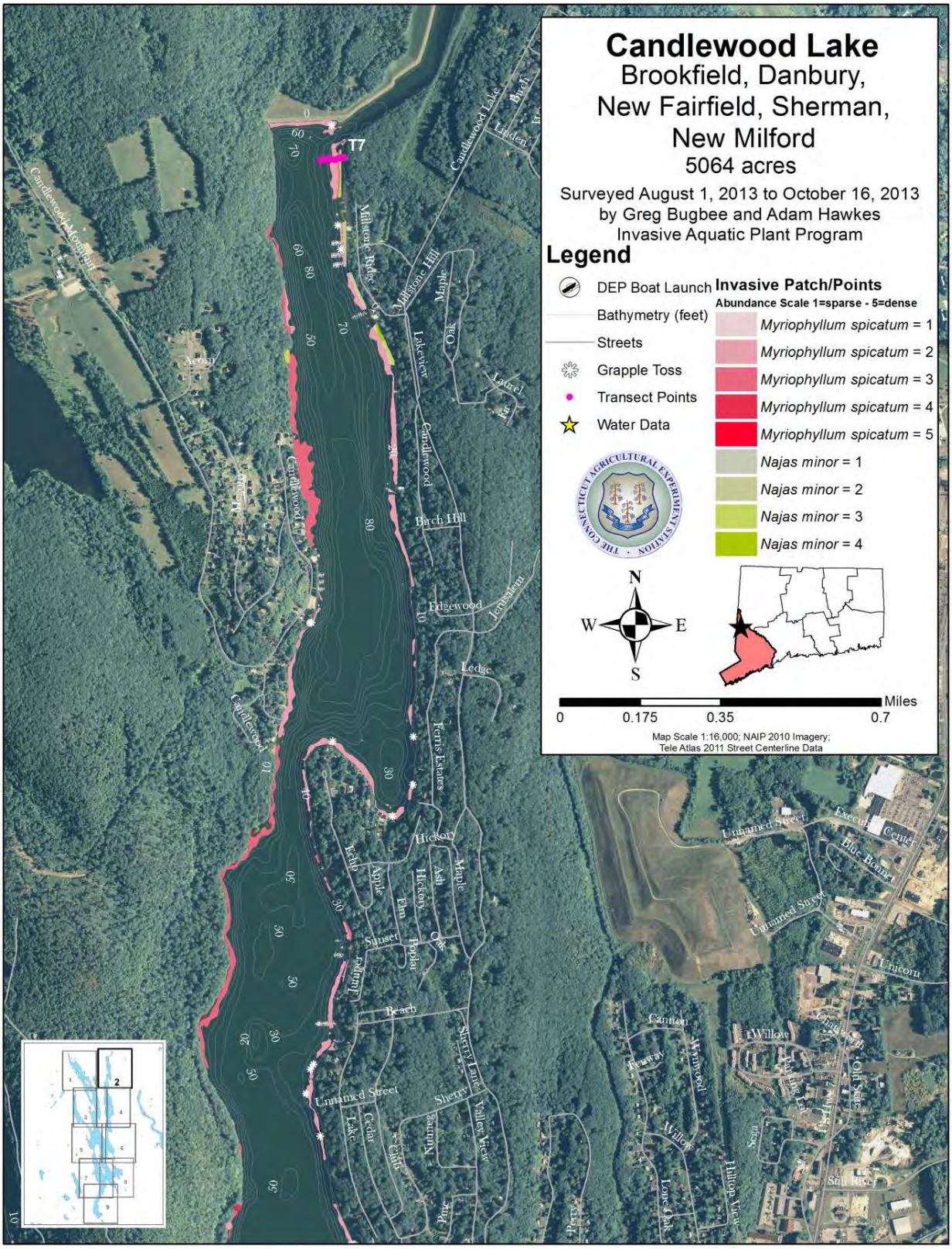
Map Scale 1:16,000; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
ALLENS COVE
HOLIDAY POINT
GREEN ISLAND
T4
W3
State Hwy 37
Hubbell Mountain
Candlewood Lake


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed August 1, 2013 to October 16, 2013
by Greg Bugbee and Adam Hawkes
Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
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Myriophyllum spicatum = 5
Najas minor = 1
Najas minor = 2
Najas minor = 3
Najas minor = 4
THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION
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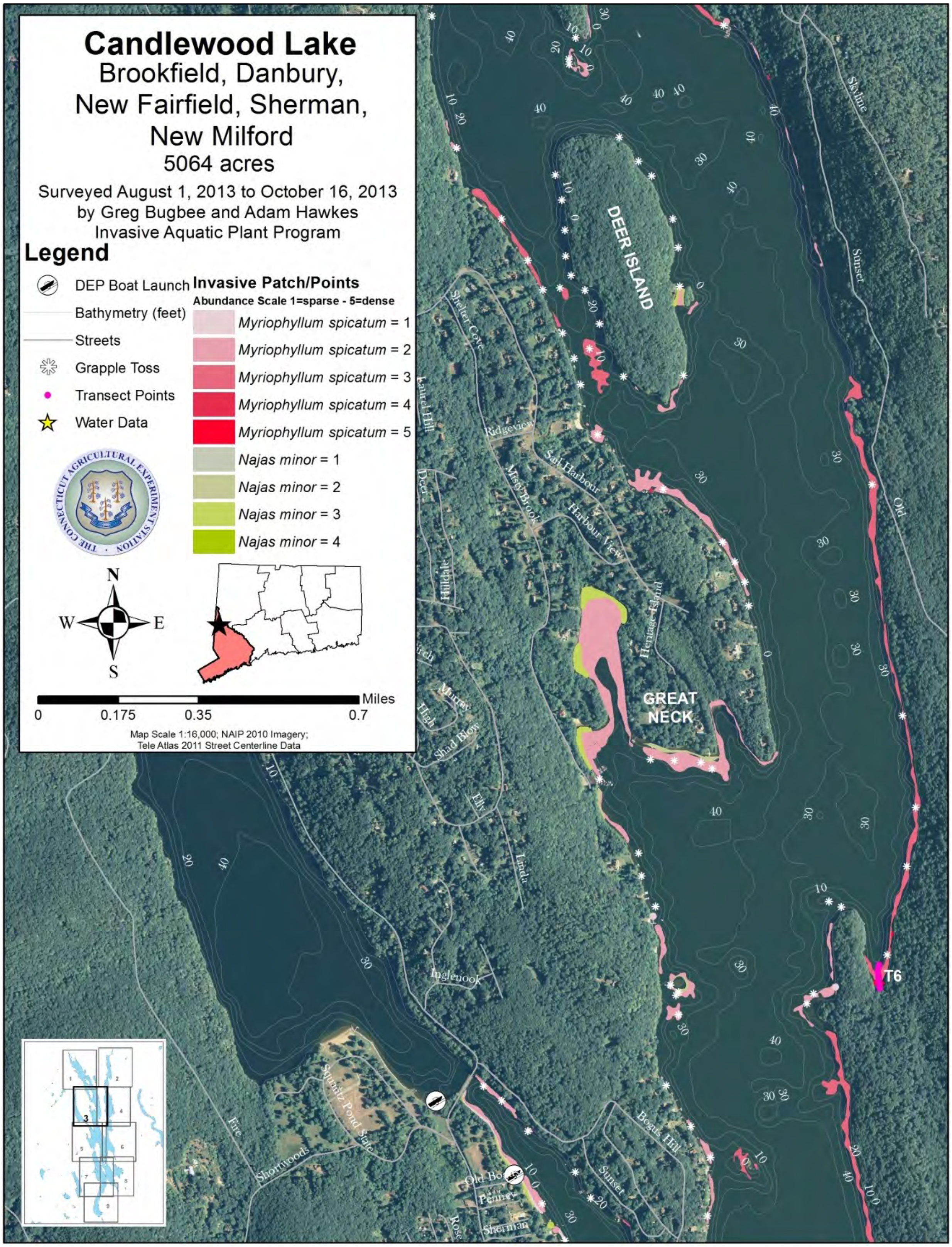
0.7
Map Scale 1:16,000; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
T7
Candlewood Mountain
Millstone Ridge
Millstone Hill
Maple
Oak
Lakeview
Laurel
Acorn
Candlewood
Birch Hill
Edgewood
Jerusalem
Ledge
Ferris Estates
Hickory
Apple
Ash
Elm
Sunset
Poplar
Beach
Sherry Lane
Valley View
Cedar Lake
Cedar
Cliff
Mountain
Pine
Unnamed Street
Executive Center
Blue Bonnet
Unicorn
Willow
Cannon
Fenway
Wynwood
Old Saw Mill
Still River
Hillton View
Lone Oak
Berry


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed August 1, 2013 to October 16, 2013
by Greg Bugbee and Adam Hawkes
Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
Streets
Grapple Toss
Transect Points
Water Data
Invasive Patch/Points
Abundance Scale 1=sparse - 5=dense
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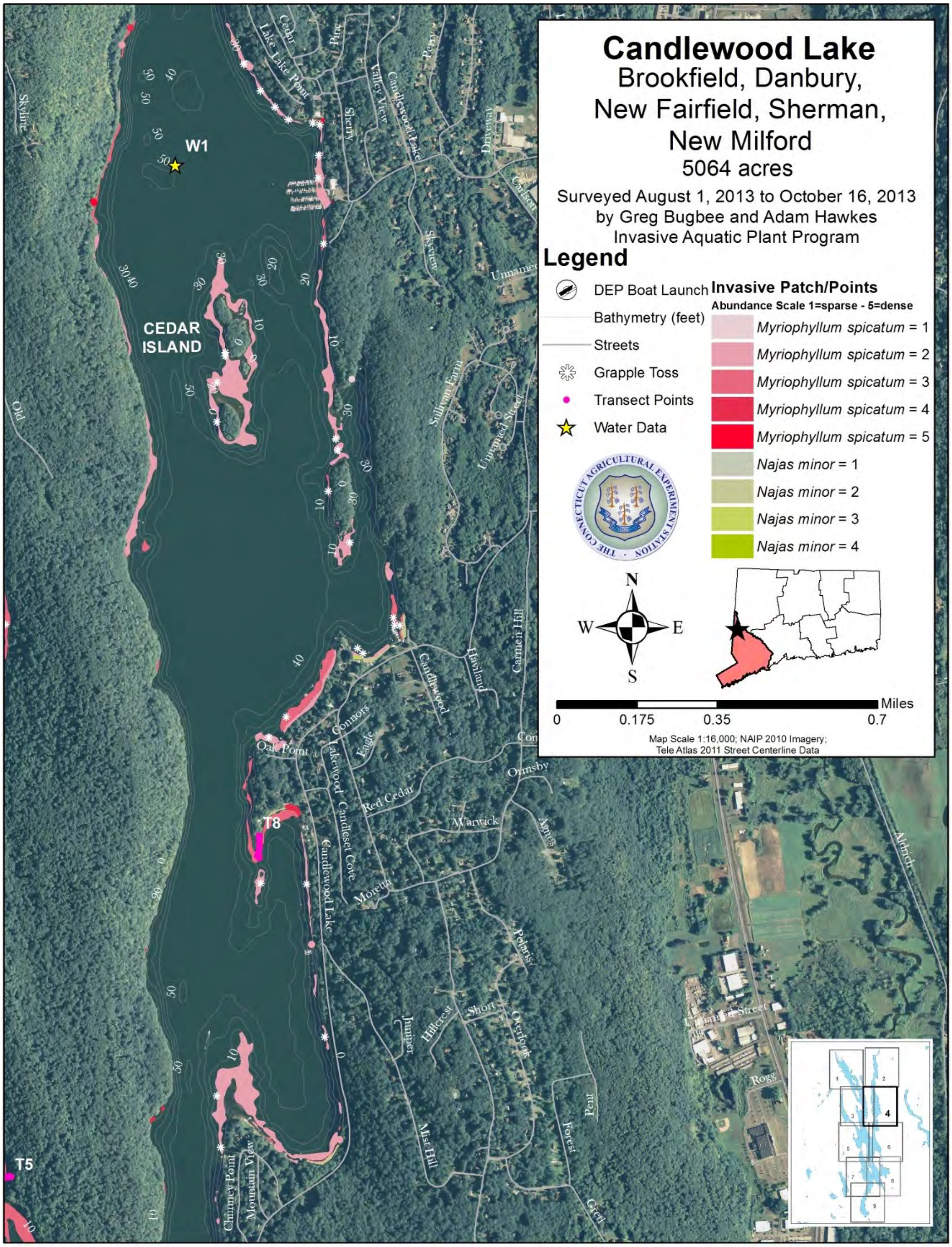
Map Scale 1:16,000; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
DEER ISLAND
GREAT NECK
T6


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed August 1, 2013 to October 16, 2013
by Greg Bugbee and Adam Hawkes
Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
Streets
Grapple Toss
Transect Points
Water Data
Invasive Patch/Points
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Najas minor = 1
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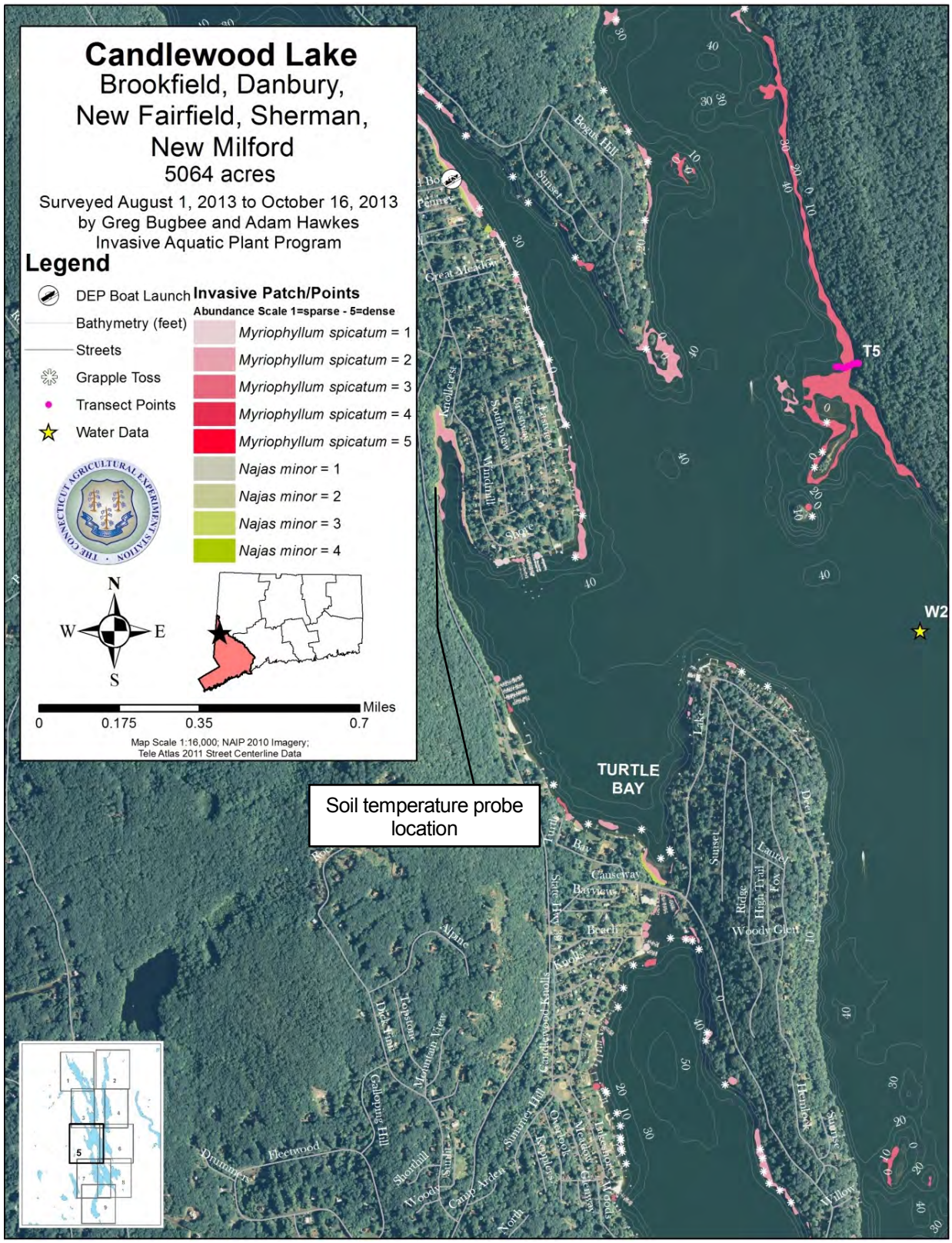
Miles
Map Scale 1:16,000; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
W1
CEDAR ISLAND
T8
T5
Oak Point


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed August 1, 2013 to October 16, 2013
by Greg Bugbee and Adam Hawkes
Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
Streets
Grapple Toss
Transect Points
Water Data
Invasive Patch/Points
Abundance Scale 1=sparse - 5=dense
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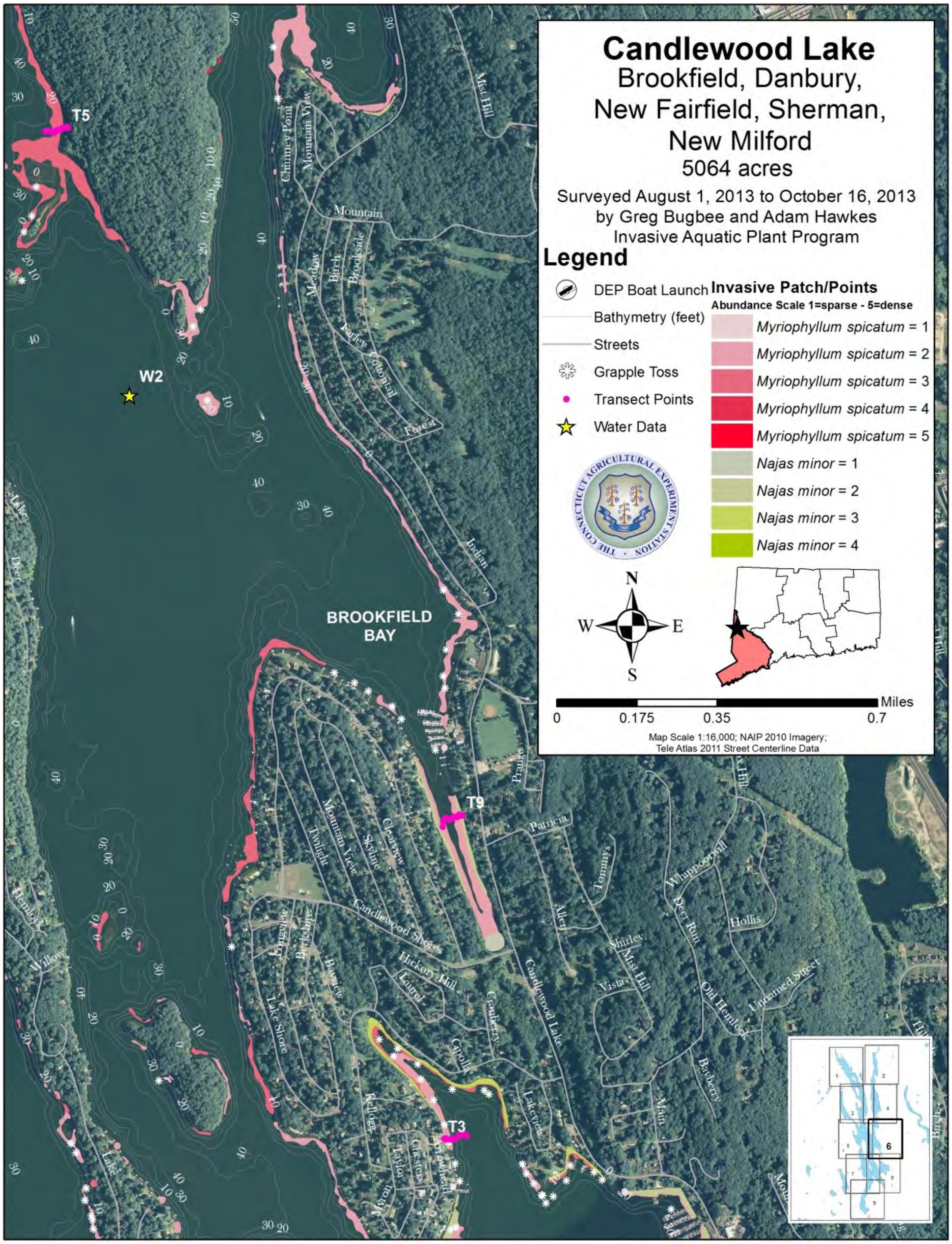
T5
W2
TURTLE
BAY
Soil temperature probe
location


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed August 1, 2013 to October 16, 2013
by Greg Bugbee and Adam Hawkes
Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
Streets
Grapple Toss
Transect Points
Water Data
Invasive Patch/Points
Abundance Scale 1=sparse - 5=dense
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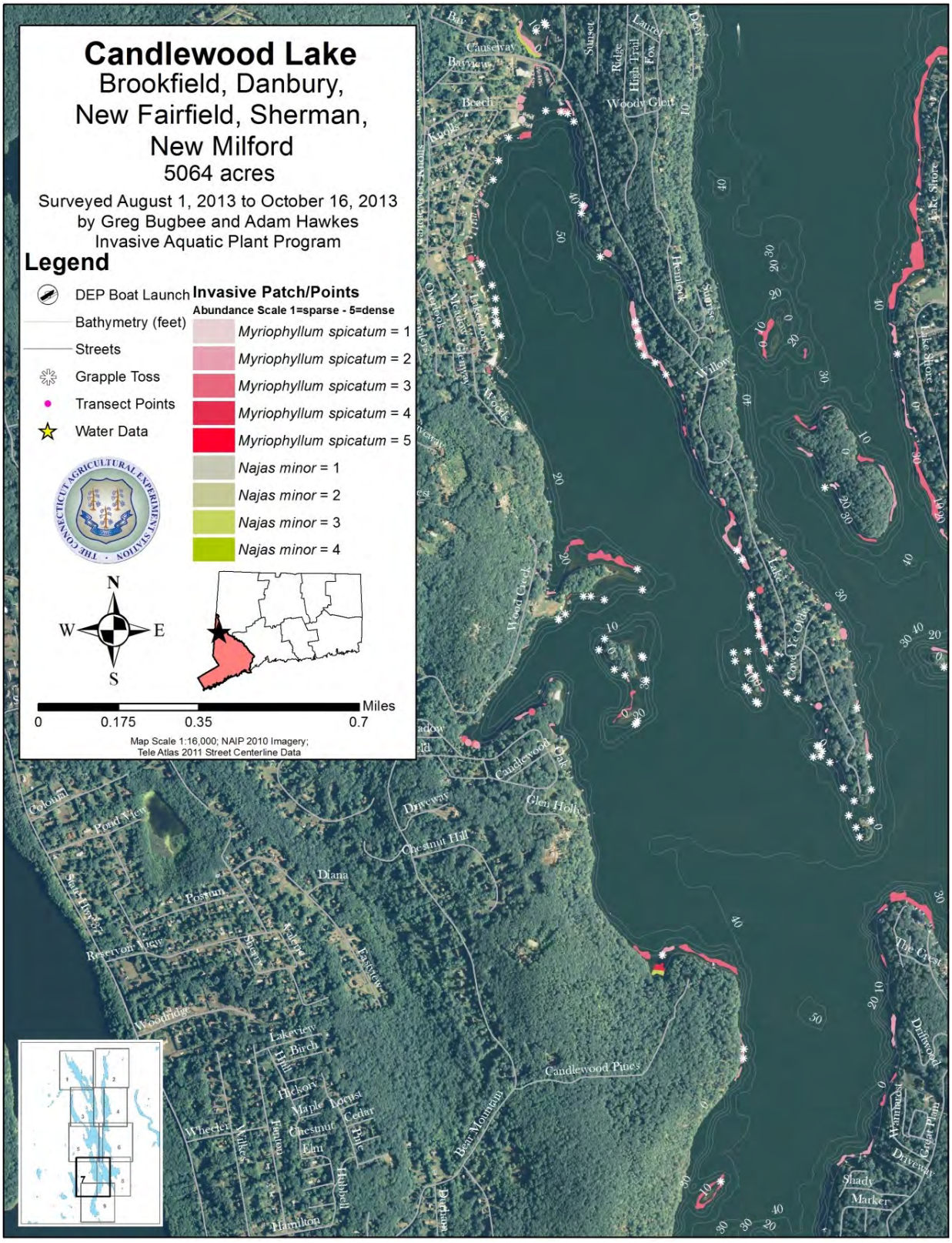
Tele Atlas 2011 Street Centerline Data
BROOKFIELD BAY
T5
T9
T3
W2


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed August 1, 2013 to October 16, 2013
by Greg Bugbee and Adam Hawkes
Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
Streets
Grapple Toss
Transect Points
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THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION
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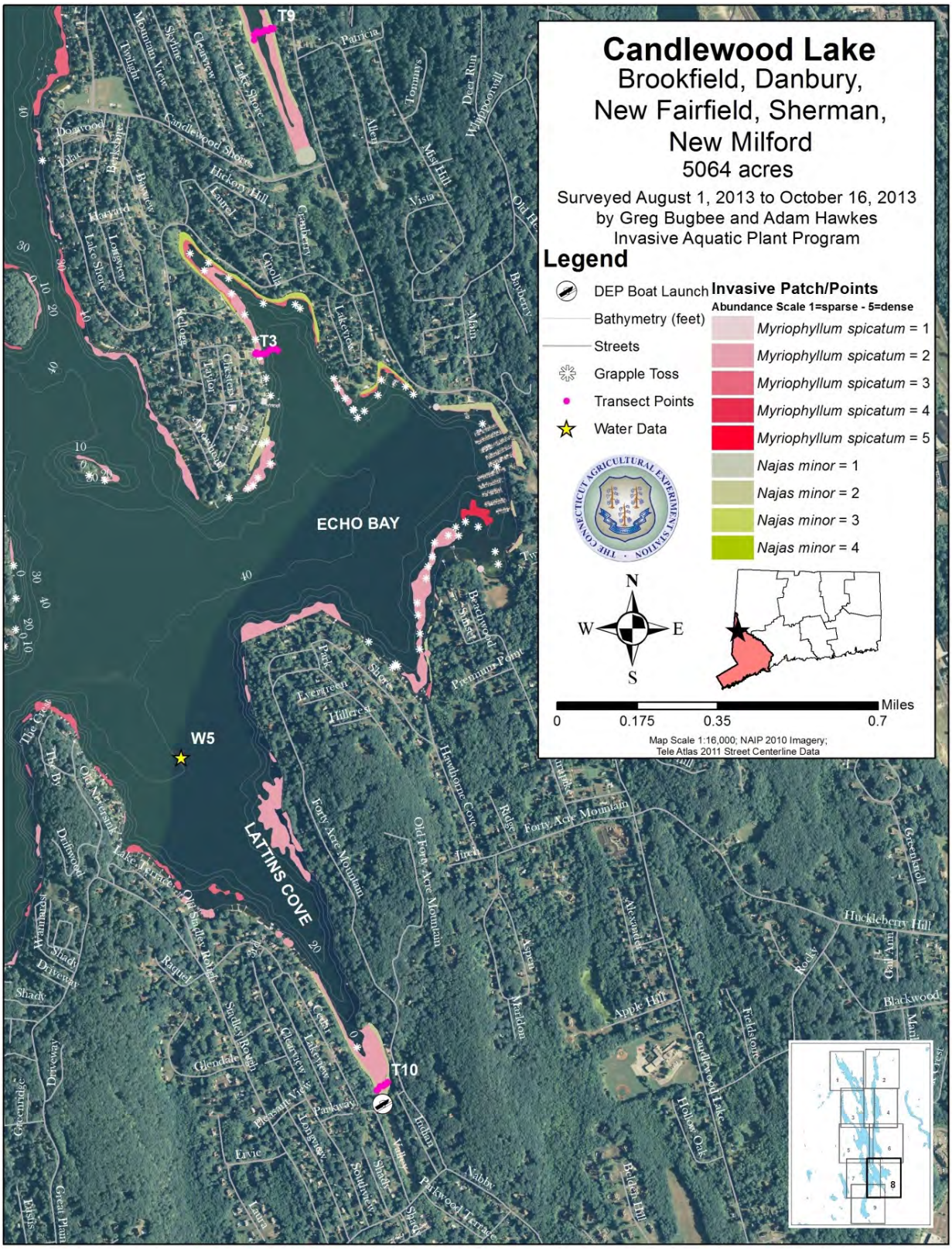
Map Scale 1:16,000; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
Causeway
Beach
Woody Gleit
Sunset
Ridge
High Trail
Fox
Hemlock
Sunrise
Willow
Lake Shore
Wood Creek
Cove De Olde
Candlewood Cir
Glen Holly
Chestnut Hill
Diana
Possum
Reservoir View
Valerie
Eastview
Woodridge
Lakeview
Birch
Hickory
Maple
Locust
Cedar
Chestnut
Elm
Pine
Hubbell
Hamilton
Wheeler
Wilkes
Harrison
Bear Mountain
Candlewood Pines
Driftwood
Hammarest
Cougar Point
Driveway
Shady
Marker
The Crest
Colonial
Pond View
Sally Hayes


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed August 1, 2013 to October 16, 2013
by Greg Bugbee and Adam Hawkes
Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
Streets
Grapple Toss
Transect Points
Water Data
Invasive Patch/Points
Abundance Scale 1=sparse - 5=dense
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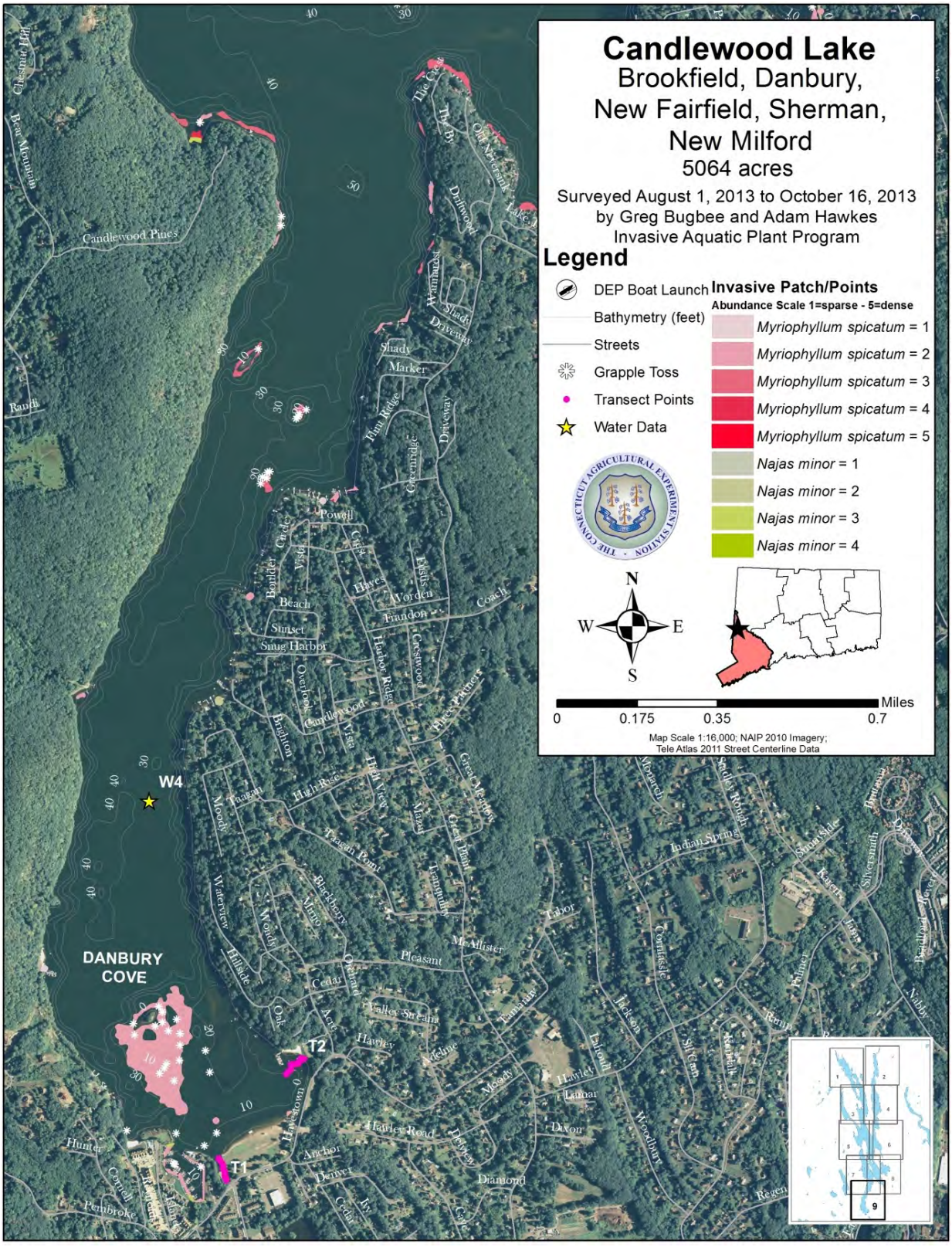
Map Scale 1:16,000; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
ECHO BAY
LATTINS COVE
T9
T3
T10
W5


Candlewood Lake
Brookfield, Danbury,
New Fairfield, Sherman,
New Milford
5064 acres
Surveyed August 1, 2013 to October 16, 2013
by Greg Bugbee and Adam Hawkes
Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
Streets
Grapple Toss
Transect Points
Water Data
Invasive Patch/Points
Abundance Scale 1=sparse - 5=dense
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Myriophyllum spicatum = 5
Najas minor = 1
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Najas minor = 4
THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION
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Map Scale 1:16,000; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
DANBURY
COVE
W4
T1
T2

Table 5. Yearly comparisons of frequency of occurrence and total area of aquatic vegetation in Lake Lillinonah.

Scientific Name	Common Name	Frequency of Occurrence (percent*)						Area (acres)			
		2007	2009	2010	2011	2012	2013	2007	2009	2011	2013
Callitiche sp.	Water starwort	1	0	0	0	0	0	ND**	ND	ND	ND
Ceratophyllum demersum	Coontail	0	1	3	5	2	4	ND	ND	ND	ND
Elatine sp.	Waterwort	0	0	2	1	0	4	ND	ND	ND	ND
Eleocharis sp.	Spikerush	2	4	4	4	0	3	ND	ND	ND	ND
Eriocaulon aquaticum	Sevenangel pipewort	0	1	2	3	0	0	ND	ND	ND	ND
Gratiola aurea	Golden hedge-hyssop	0	1	0	0	0	0	ND	ND	ND	ND
Lemna minor	Duckweed	0	1	0	0	4	0	ND	ND	ND	ND
Ludwigia species	Primrose-willow	0	0	0	0	0	1	ND	ND	ND	ND
Myriophyllum spicatum	**Eurasian watermilfoil**	**16**	**15**	**25**	**12**	**39**	**35**	**21**	**19**	**36**	**90**
Najas minor	**Minor naiad**	**14**	**6**	**5**	**12**	**19**	**7**	**8**	**1**	**11**	**8**
Potamogeton bicupulatus	Snailseed pondweed	0	3	0	0	0	0	ND	ND	ND	ND
Potamogeton crispus	**Curly leaf pondweed**	**3**	**0**	**1**	**5**	**4**	**1**	**0.1**	**<0.1**	**<0.1**	**<0.1**
Potamogeton foliosus	Leafy pondweed	0	0	4	4	1	4	ND	ND	ND	ND
Potamogeton illinoensis	Illinois pondweed	2	2	0	0	0	0	ND	ND	ND	ND
Potamogeton nodosus	Longleaf pondweed	0	0	0	1	2	0	ND	ND	ND	ND
Potamogeton pusillus	Small pondweed	0	0	1	0	1	1	ND	ND	ND	ND
Sagittaria sp.	Arrowhead	0	0	1	0	0	5	ND	ND	ND	ND
Stuckenia pectinata	Sago pondweed	0	0	0	1	0	0	ND	ND	ND	ND
Trapa natans	**Water chestnut**	**0**	**0**	**0**	**0**	**0**	**0**	**0.0**	**0.0**	**<0.1**	**<0.1**
Zannichellia palustrus	Horned pondweed	1	0	4	1	0	3	ND	ND	ND	ND
Zosterella dubia	Water stargrass	4	0	0	0	0	0	ND	ND	ND	ND

Invasive plant

* Percent occurrence on 100 points in 10 transects

** Not Determined

Lake Lillinonah

Our 2013 invasive aquatic plant survey of Lake Lillinonah confirmed the presence of curlyleaf pondweed, Eurasian watermilfoil, minor naiad, and water chestnut (Table 5). Eurasian watermilfoil nearly tripled in acreage from 2011 (36 acres) to 2013 (90 acres). Minor naiad acreage decreased from 11 acres in 2011 to 8 acres in 2012, the same amount as found in 2007 but not as low as the one acre found in 2009. Both curlyleaf pondweed and water chestnut covered less than 0.1 acres, similar to all other survey years. We found the frequency of occurrence of Eurasian watermilfoil on transects decreased slightly from 39% in 2012 to 35% in 2013. This frequency is still significantly higher ($p<0.05$) than survey years 2007 (16%); 2009 (15%); and 2011 (12%) (Figure 11). Minor naiad also showed a decrease in frequency of occurrence along transects from 19% in 2012 to 7% in 2013. This was more similar to the 2009 and 2010 levels of 6% and 5%, respectively.

There was a large increase in the number of Eurasian watermilfoil patches in 2013 (245) compared to 2011 (109) and 2009 (131) and both the average and maximum acreage (0.4 and 7.1, respectively) were the highest of all the years (Table 6). Mean patch abundance of

Table 6. Yearly comparisons of the number of invasive patches and their size in Lake Lillinonah.

		Patch Size (acres)															
		Myriophyllum spicatum				*Najas minor*				*Potamogeton crispus*				*Trapa natans*			
		Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)	Number	(min)	(max)	(mean)
Year	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 7. Yearly comparisons of the abundance of plants in patches in Lake Lillinonah.

		Patch Abundance (1 = sparse - 5 = dense)											
		Myriophyllum spicatum			*Najas minor*			*Potamogeton crispus*			*Trapa natans*		
		(min)	(max)	(mean)	(min)	(max)	(mean)	(min)	(max)	(mean)	(min)	(max)	(mean)
Year	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

Eurasian watermilfoil (2.3) has remained similar to 2011 (2.4) and higher than 2009 (2.1) and 2007 (1.9) (Table 7). The number of minor naiad patches has fluctuated widely from 95 in 2007, 5 in 2009, 83 in 2011, and 22 in 2013. Both the maximum patch size (2.7 acres) and the mean patch size (0.4 acres) of minor naiad showed large increases from previous years suggesting that some of the minor naiad patches have coalesced. Mean patch abundance of minor naiad decreased slightly from 2.9 in 2011 to 2.1 in 2013, remaining well below the 3.6 observed in 2007. The mean patch size of curlyleaf pondweed has remained at 0.0002 acres for all survey years and represents small patches containing only a few plants. The number of curlyleaf pondweed patches decreased from 6 in 2011 to 4 in 2013 but remained lower than the 10 recorded in 2007. Curlyleaf pondweed's patch size, number and abundance has remained nearly the same throughout the survey years. This may be misleading as curlyleaf pondweed is not normally abundant during the summer months. We did a preliminary survey of Lake Lillinonah in June and found 2.3 acres in the northern portion of the lake at an average abundance of 1.5 (Map 1, Page 35). Surveying proved difficult during this time as the lake elevation level was low. Water chestnut was found as singular plants in four locations of the lake (Maps 1 and 2, Pages 35 and 36). We did not observe this plant in the southern location in Map 1 or the Map 2 location in 2011 indicating that water flow may be spreading this plant southward. It was difficult to determine if the plants were rooted but specimens did contain nuttlets that should be capable of reproducing. No known aquatic herbicide applications were made in 2013 (personal communication with Aquatic Control Technologies Inc., 2014).

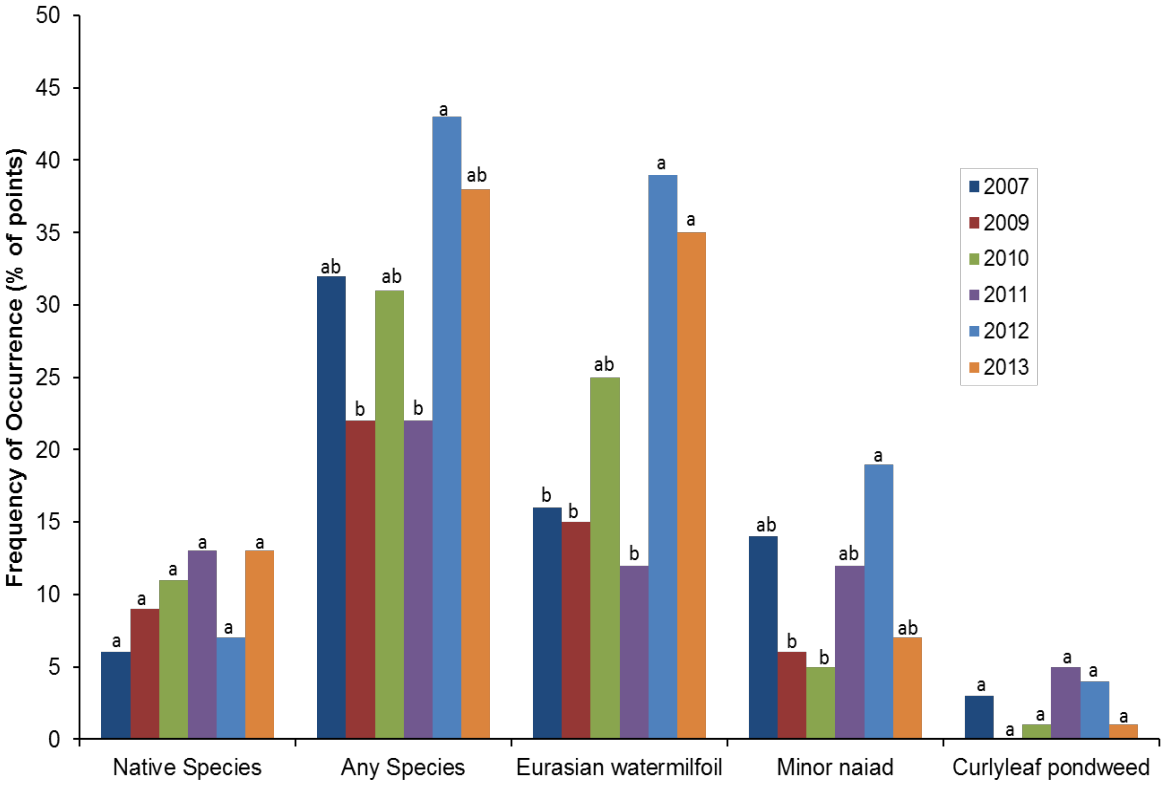


Figure 11. Yearly comparisons of the frequency of native and invasive plants on transects in Lake Lillinonah. Bars with the same letter are not significantly different.

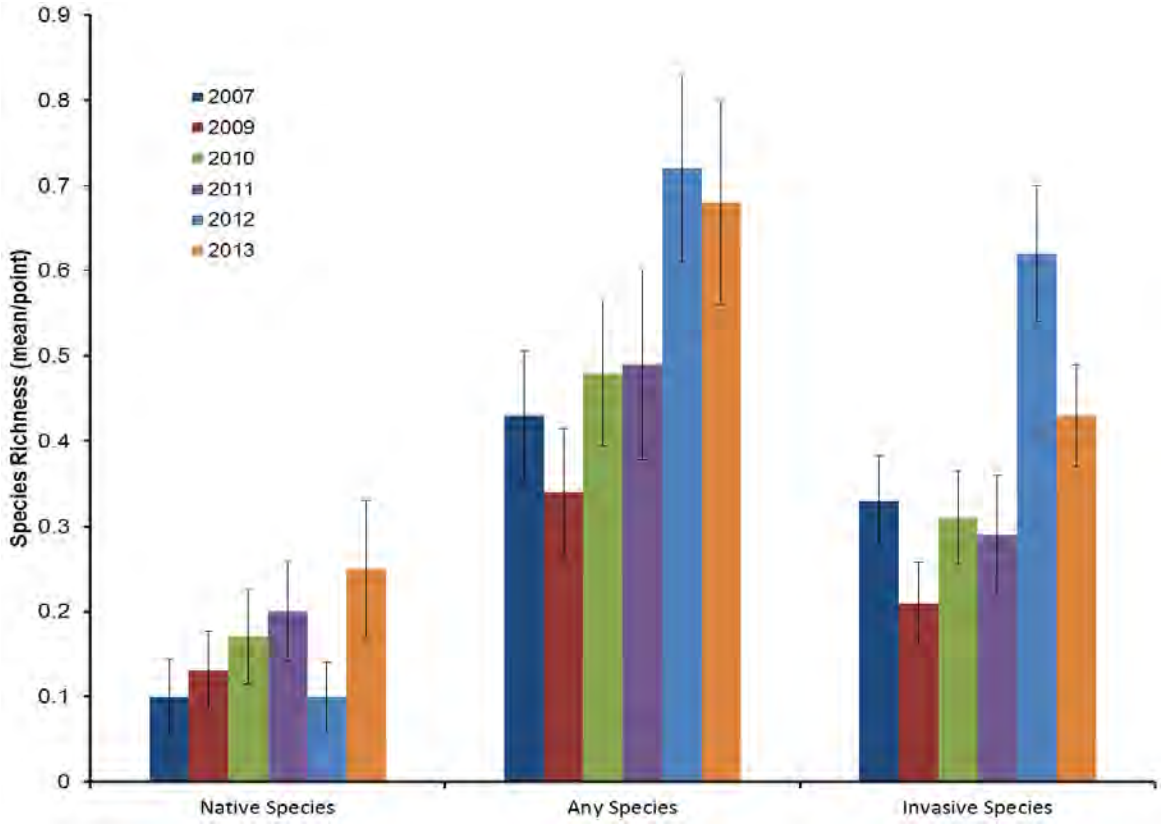


Figure 12. Yearly comparisons of the average number of species per transect point in Lake Lillinonah. Error bars equal +/- one standard error of the mean.

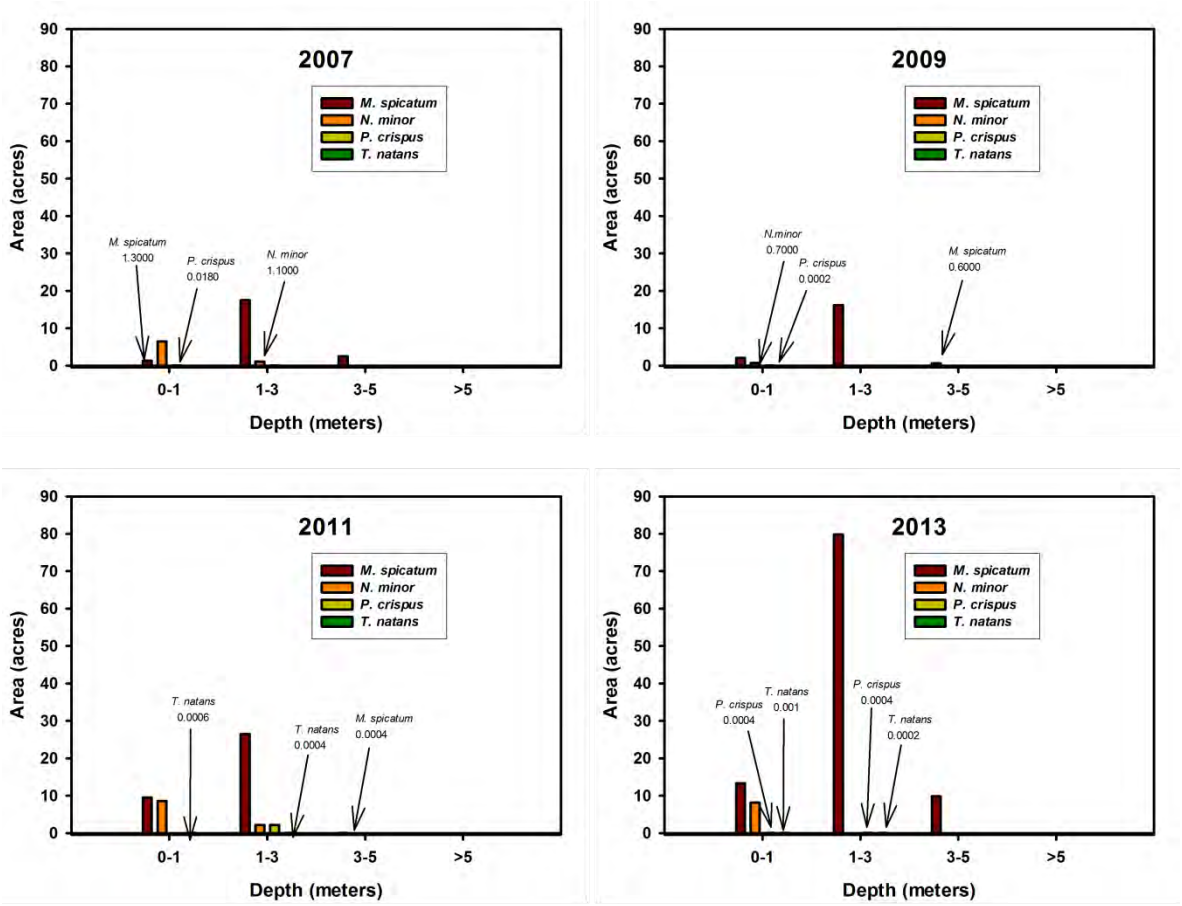


Figure 13. Yearly comparisons of the depth preferences of invasive plants in Lake Lillinonah

Eleven plant species occurred on Lake Lillinonah's transects in 2013, including the invasive plants curlyleaf pondweed, Eurasian watermilfoil, and minor naiad. This is higher than the 8 species found in 2012 and unchanged from 2011(Table 5). Similarly, eight native species were found in both 2013 and 2011, compared to 5 native species found in 2012; however, there has been no significant change ($p<0.05$) in frequency of native plants along transects (Figure 11). We've found that the native aquatic plant community in Lake Lillinonah changes substantially from year to year with only spikerush found in all five of our survey years. The most frequently found native species in 2013, were coontail (*Ceratophyllum demersum,* 4%), waterwort (4%), leafy pondweed (*Potamogeton foliosus,* 4%), and arrowhead (*Sagittaria sp.*, 5%). Primrose-willow (*Ludwigia sp.*) was found for the first time in 2013. A significant increase (± 1 SEM) in native species richness along transects occurred from 2012 to 2013 (0.1 to 0.25, respectively, Figure 12). Also, a significant decrease in invasive species richness along transects occurred from 2012 (0.62) to 2013 (0.43); however, 2013's invasive species richness is still significantly higher than 2009 thru 2011. Changes in the

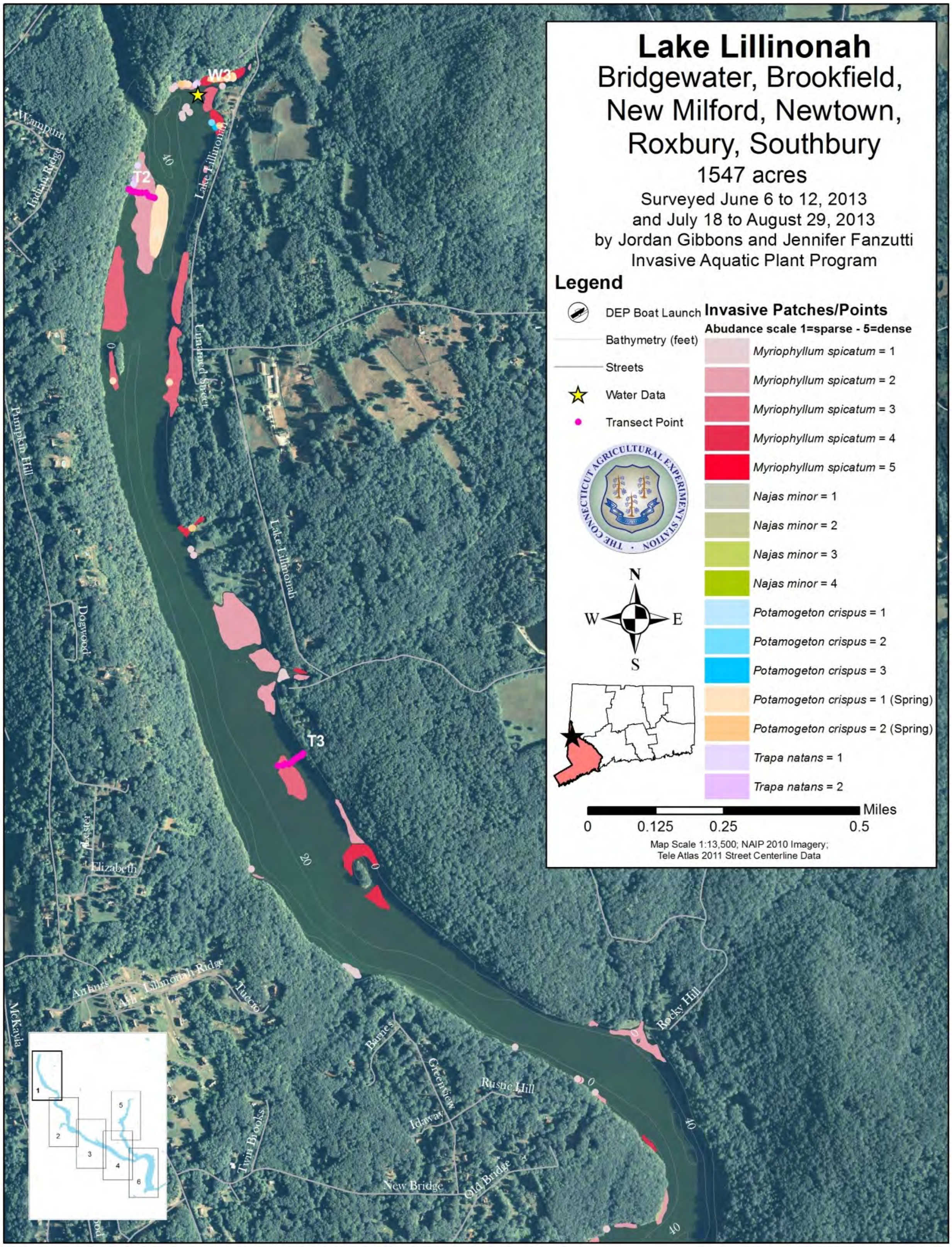
Table 8. Yearly comparison of the coverage of invasive plants in Lake Lillinonah's littoral zone

Scientific Name	Common Name	Year	Area (%)
Myriophyllum spicatum	Eurasian watermilfoil	2013	18.8
		2011	7.5
		2009	3.9
		2007	4.5
Najas minor	Minor naiad	2013	1.7
		2011	2.3
		2009	0.1
		2007	1.6
Potamogeton crispus	Curly leaf pondweed	2013	<0.1
		2011	<0.1
		2009	<0.1
		2007	<0.1
Trapa natans	Water chestnut	2013	<0.1
		2011	<0.1
		2009	0
		2007	0

plant community along transects in Lillinonah may be influenced by changes in water levels due to flooding events associated with its riverine environment and additional water level changes associated with hydroelectric power generation.

The depth preference of Eurasian watermilfoil continues to be in 1 - 3 meters of water (Figure 13). The increase in acreage in 2013 resulted in a higher percentage of Eurasian watermilfoil being found at the 1 - 3 meter depth. Most acreage of minor naiad was located in 0-1 meters of water, similar to all other survey years. Minor naiad was not found in the 1-3 meter depth in 2009 or 2013 which may reflect its overall decline or exposure by fluctuating water levels. Curlyleaf pondweed occurred in equal amounts in 0-1 and 1-3 meters of water but its depth preference could not be quantified because of the small sample size.

Lake Lillinonah's littoral zone is 478 acres or 31 % of the lake's area. Eurasian watermilfoil increased its littoral zone coverage to 18.8% in 2013 from 7.5% in 2011, 3.9% in 2009 and 4.5% in 2007 (Table 8). Minor naiad covered 1.7% of the littoral zone in 2013 compared to 2.3% in 2011. The littoral zone coverage of curlyleaf pondweed and water chestnut is extremely small (< 0.1%) and has remained the same throughout our surveys. Lake Lillinonah's littoral zone coverage of invasive species is near the 20% coverage considered optimal for lakes.


Lake Lillinonah
Bridgewater, Brookfield, New Milford, Newtown, Roxbury, Southbury
1547 acres
Surveyed June 6 to 12, 2013
and July 18 to August 29, 2013
by Jordan Gibbons and Jennifer Fanzutti
Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
Streets
Water Data
Transect Point
Invasive Patches/Points
Abudance 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 = 1
Potamogeton crispus = 2
Potamogeton crispus = 3
Potamogeton crispus = 1 (Spring)
Potamogeton crispus = 2 (Spring)
Trapa natans = 1
Trapa natans = 2
THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION
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Map Scale 1:13,500; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
W3
T2
T3
Lake Lillinonah
Pumpkin Hill
Dogwood
Elizabeth
Rocky Hill
Rustic Hill
New Bridge
Old Bridge
Twin Brooks
McKayla
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20
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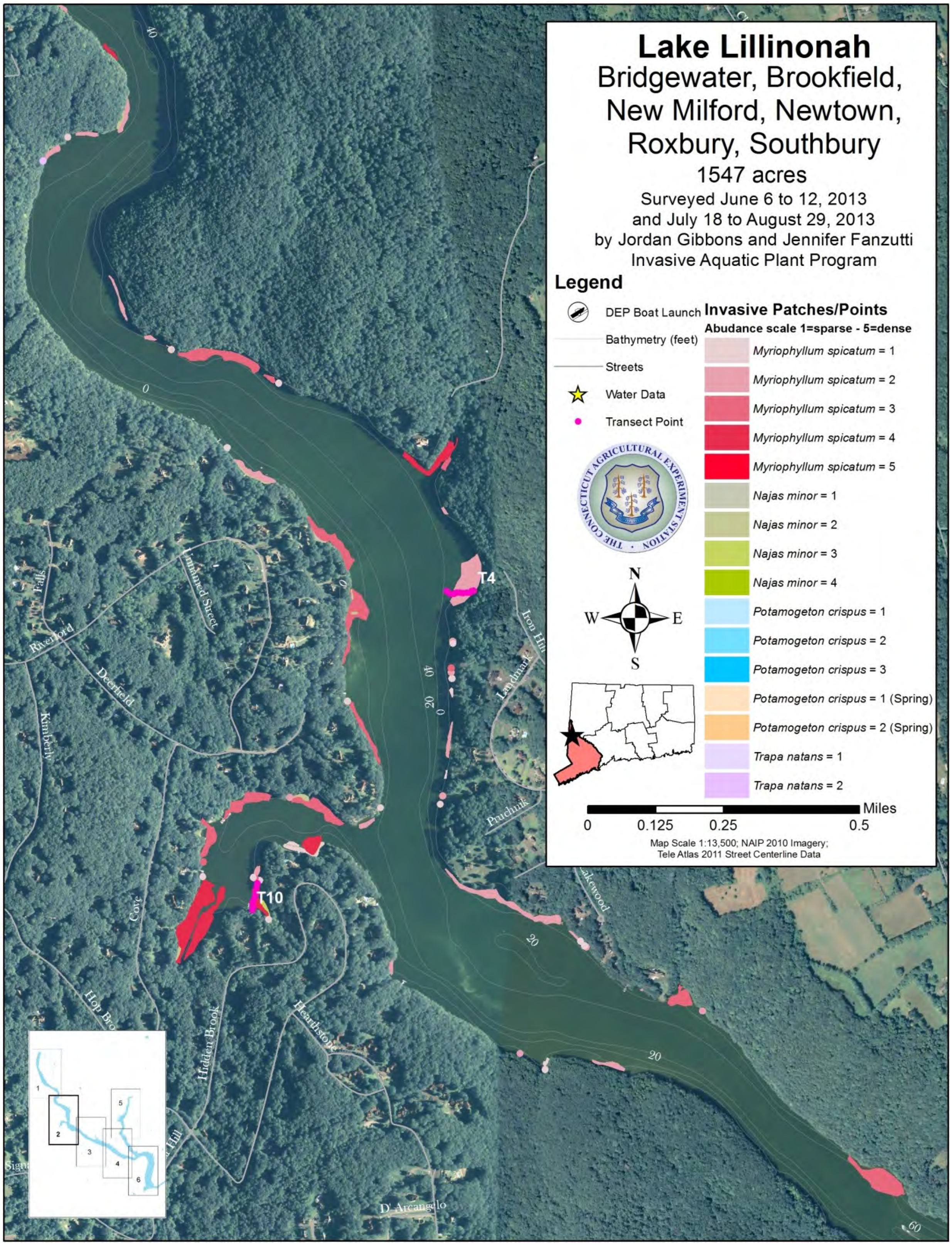

Lake Lillinonah
Bridgewater, Brookfield, New Milford, Newtown, Roxbury, Southbury
1547 acres
Surveyed June 6 to 12, 2013
and July 18 to August 29, 2013
by Jordan Gibbons and Jennifer Fanzutti
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Potamogeton crispus = 2 (Spring)
Trapa natans = 1
Trapa natans = 2
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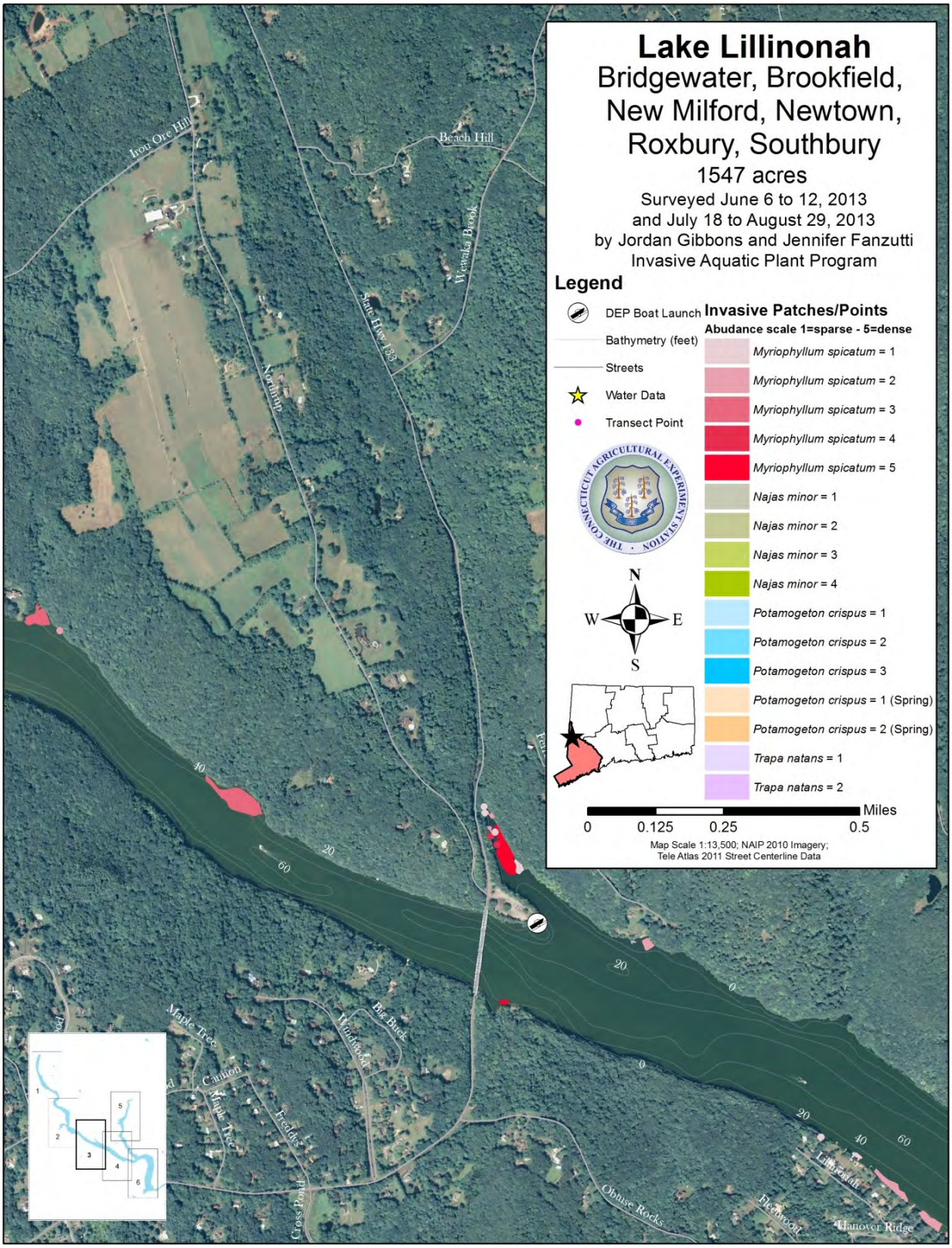
Map Scale 1:13,500; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
T4
T10


Lake Lillinonah
Bridgewater, Brookfield, New Milford, Newtown, Roxbury, Southbury
1547 acres
Surveyed June 6 to 12, 2013
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Trapa natans = 1
Trapa natans = 2
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Map Scale 1:13,500; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
Iron Ore Hill
Beach Hill
Weantinoge Brook
State Hwy 133
Northrup
Maple Tree
Woodchuck
Big Brook
Canfield
Maple Tree
Freddies
Cross Point
Obtuse Rocks
Fleetwood
Hanover Ridge
Lillinonah
40
20
60
0
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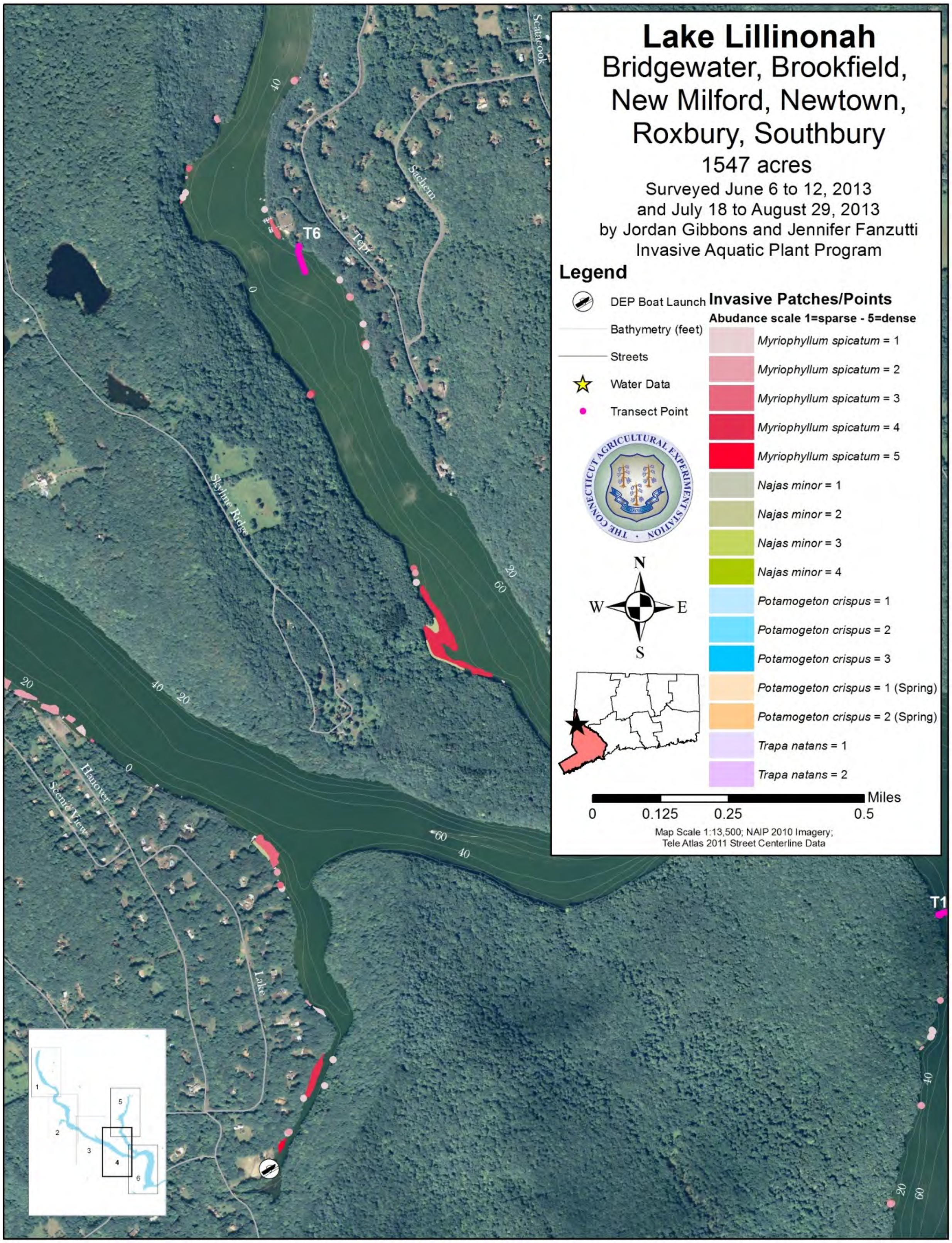
60


Lake Lillinonah
Bridgewater, Brookfield, New Milford, Newtown, Roxbury, Southbury
1547 acres
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Potamogeton crispus = 2 (Spring)
Trapa natans = 1
Trapa natans = 2
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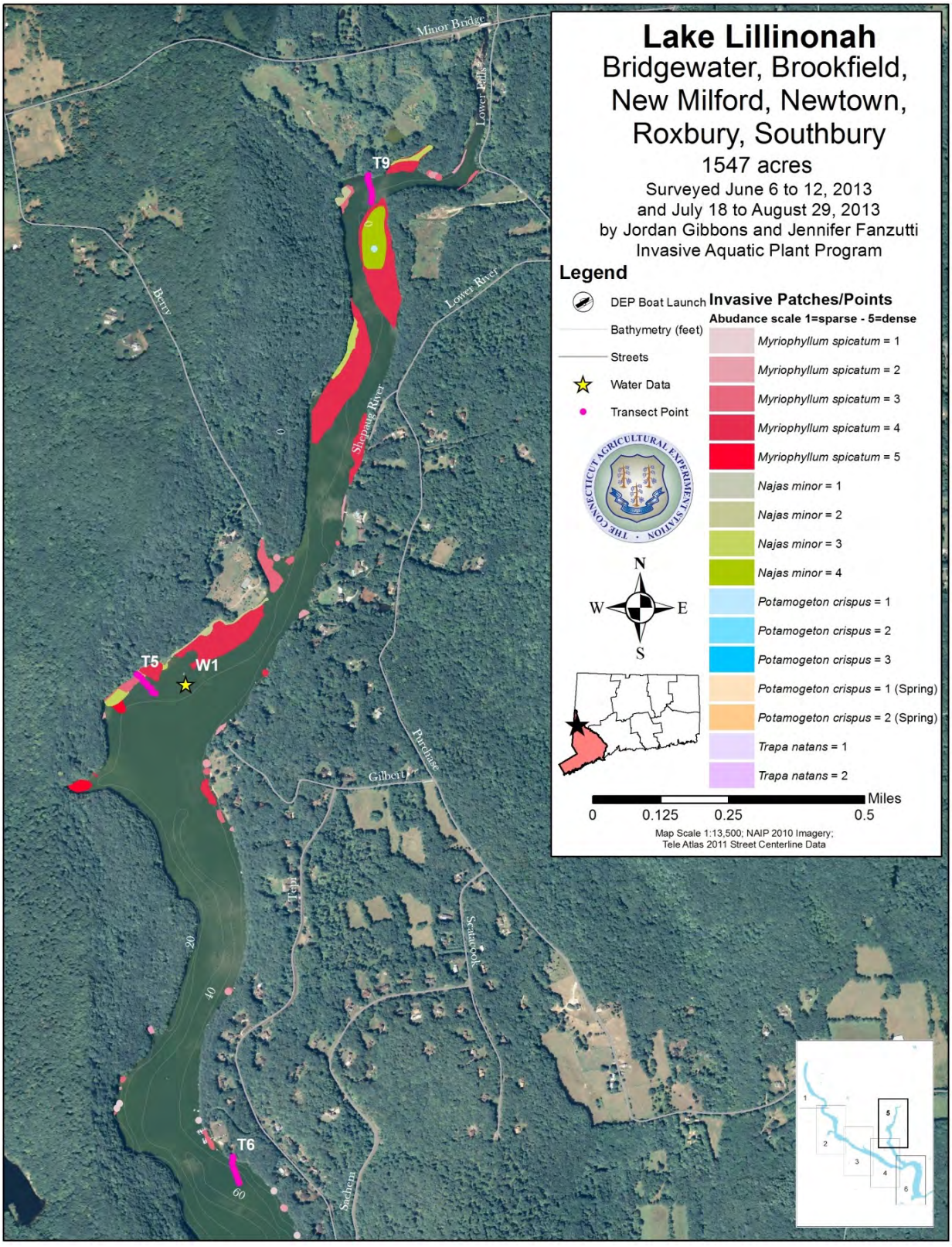
Map Scale 1:13,500; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
T6
T1
Skyline Ridge
Hanover
Scenic View
Lake
Sachem
Tepi
Scatacook


Lake Lillinonah
Bridgewater, Brookfield, New Milford, Newtown, Roxbury, Southbury
1547 acres
Surveyed June 6 to 12, 2013
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Trapa natans = 2
THE CONNECTICUT AGRICULTURAL EXPERIMENT STATION
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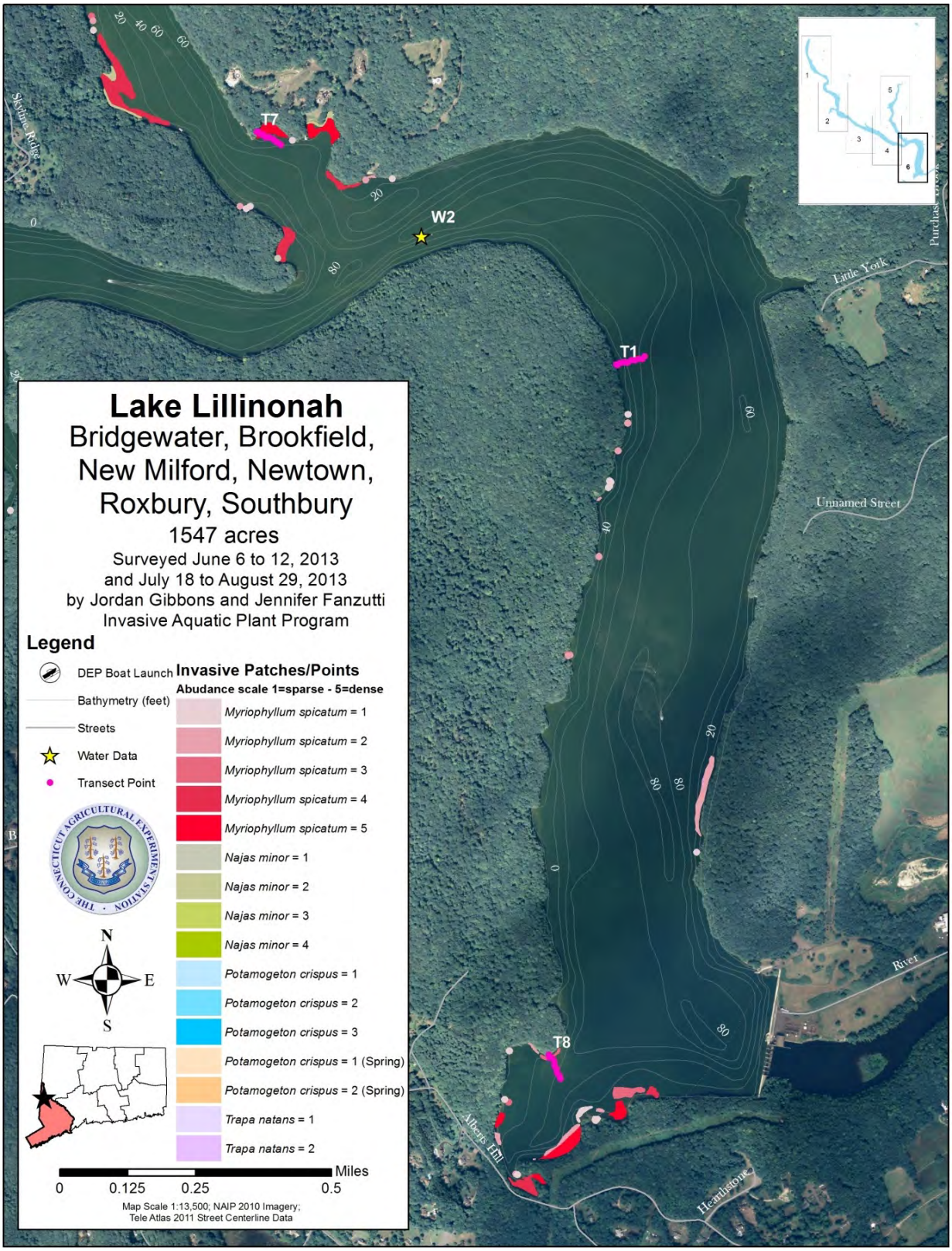
Map Scale 1:13,500; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
Minor Bridge
Lower Path
Lower River
Berry
Shepaug River
Purdisse
Gilbert
Scatacook
Sachem
T9
T5
W1
T6
0
20
40
60


Lake Lillinonah
Bridgewater, Brookfield,
New Milford, Newtown,
Roxbury, Southbury
1547 acres
Surveyed June 6 to 12, 2013
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Invasive Aquatic Plant Program
Legend
DEP Boat Launch
Bathymetry (feet)
Streets
Water Data
Transect Point
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Potamogeton crispus = 2 (Spring)
Trapa natans = 1
Trapa natans = 2
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Miles
0
0.125
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0.5
Map Scale 1:13,500; NAIP 2010 Imagery;
Tele Atlas 2011 Street Centerline Data
T7
W2
T1
T8
Skyline Ridge
Little York
Unnamed Street
River
Alberts Hill
Headstone

Table 9. Yearly comparisons of the frequency of occurrence and total area of aquatic vegetation in Lake Zoar.

Scientific Name	Common Name	Frequency of Occurrence (percent *)							Area (acres)			
		2007	2008	2009	2010	2011	2012	2013	2007	2008	2010	2012
Ceratophyllum demersum	Coontail	3	4	23	15	7	6	9	ND**	ND	ND	ND
Elodea nuttallii	Waterweed	6	7	7	23	0	1	2	ND	ND	ND	ND
Ludwigia species	Primrose-willow	0	0	0	0	1	0	1	ND	ND	ND	ND
Marsilea quadrifolia	**European waterclover**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**<0.1**	**0.2**	**0.3**	**0.3**
Myriophyllum spicatum	**Eurasian watermilfoil**	**35**	**37**	**33**	**49**	**18**	**15**	**49**	**63**	**70**	**85**	**85**
Najas flexilis	Nodding waternymph	2	1	4	2	2	0	0	ND	ND	ND	ND
Najas minor	**Minor naiad**	**18**	**18**	**16**	**24**	**8**	**17**	**21**	**33**	**13**	**12**	**34**
Peltandra virginica	Green arrow arum	0	0	0	0	1	0	1	ND	ND	ND	ND
Potamogeton crispus	**Curly leaf pondweed**	**6**	**10**	**7**	**7**	**1**	**9**	**5**	**21**	**4**	**12**	**17**
Potamogeton epihyrdus	Ribbon leaf pondweed	0	0	2	0	0	0	0	ND	ND	ND	ND
Potamogeton foliosus	Leafy pondweed	2	0	0	4	1	0	6	ND	ND	ND	ND
Potamogeton praelongus	White stem pondweed	0	0	1	1	0	0	0	ND	ND	ND	ND
Potamogeton zosteriformis	Flatstem pondweed	0	0	0	3	2	0	0	ND	ND	ND	ND
Stuckenia pectinata	Sago pondweed	3	0	0	0	0	0	1	ND	ND	ND	ND
Vallisneria americana	Eel grass	8	6	15	6	9	11	12	ND	ND	ND	ND
Zannichellia palustris	Horned pondweed	0	0	0	0	0	0	2	ND	ND	ND	ND
Zosterella dubia	Water stargrass	1	1	0	0	0	3	2	ND	ND	ND	ND

Invasive plant

* Percent occurrence on 100 points in 10 transects

** Not Determined

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 2013 (Figure 14). The invasive species found along the 10 transects were Eurasian watermilfoil, minor naiad and curlyleaf pondweed. These were the same invasive species found in our previous survey years. Our transect data showed a significantly greater ($p<0.05$) frequency of occurrence of Eurasian watermilfoil in 2013 (49%) than in 2012 (15%) and 2011(18%) and similar frequency of occurrences to the other years (Table 9, Figure 15). Minor naiad's frequency of occurrence on transects continued its numerical increasing trend in 2013 (21%), statistically, however, it was not different ($p<0.05$) than any other year (Table 9, Figure 15). The frequency of occurrence of curlyleaf pondweed ranged between 6% and 10% throughout the years with no significant changes. Since curlyleaf pondweed grows primarily in the spring and senesces in the summer, the plant may be underrepresented since the data was not collected during its period of optimum growth. European waterclover was not found along any transects but was found during our general survey of other portions of the lake.

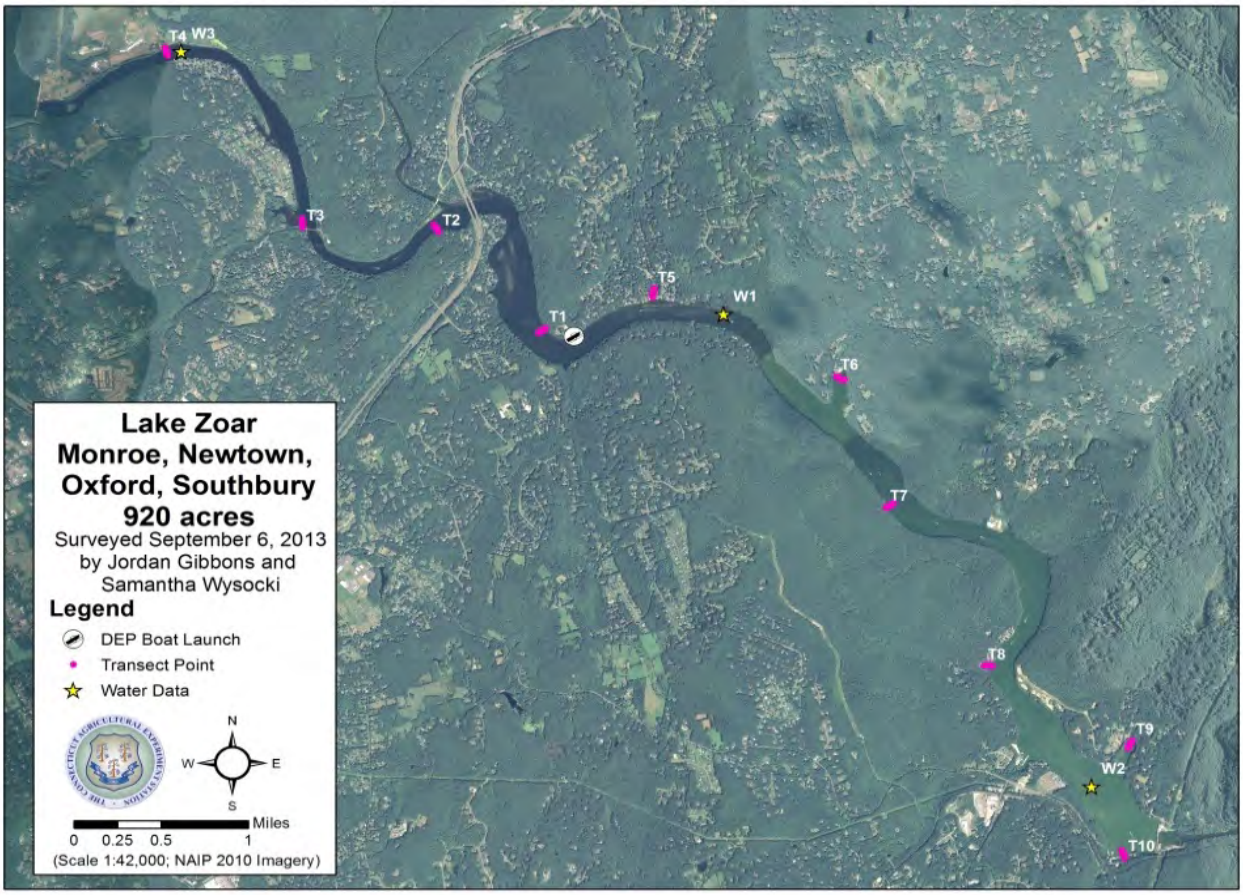

Figure 14. Locations of transects and water sampling sites in Lake Zoar

We found nine native plant species on Lake Zoar's transects in 2013, compared to 4 in 2012 and 7 in 2011 (Table 9). Although the most native plant species were found in 2013, the frequency of occurrence along transects of native plant species was not significantly different than any other survey year (Figure 15). Among the most common native species were coontail (9%), leafy pondweed (6%), and Eel grass (*Vallisneria americana, 12*%, Table 9). We found horned pondweed (2%) along transects for the first time in 2013. Species present in 2013 but not in 2012 were primrose-willow, green arrow arum (*Peltandra virginica*), leafy pondweed, Sago pondweed (*Stuckenia palustris*), and horned pondweed.

Species richness of native plants in 2013 increased to 0.4 species per point, significantly greater than in 2012 when we found 0.2 species (±1 SEM, Figure 16). The years 2009 and 2010 had the highest native species richness of 0.6 and 0.5, respectively. The species richness of any plant being found on transects also significantly increased in 2013 (1.1) from

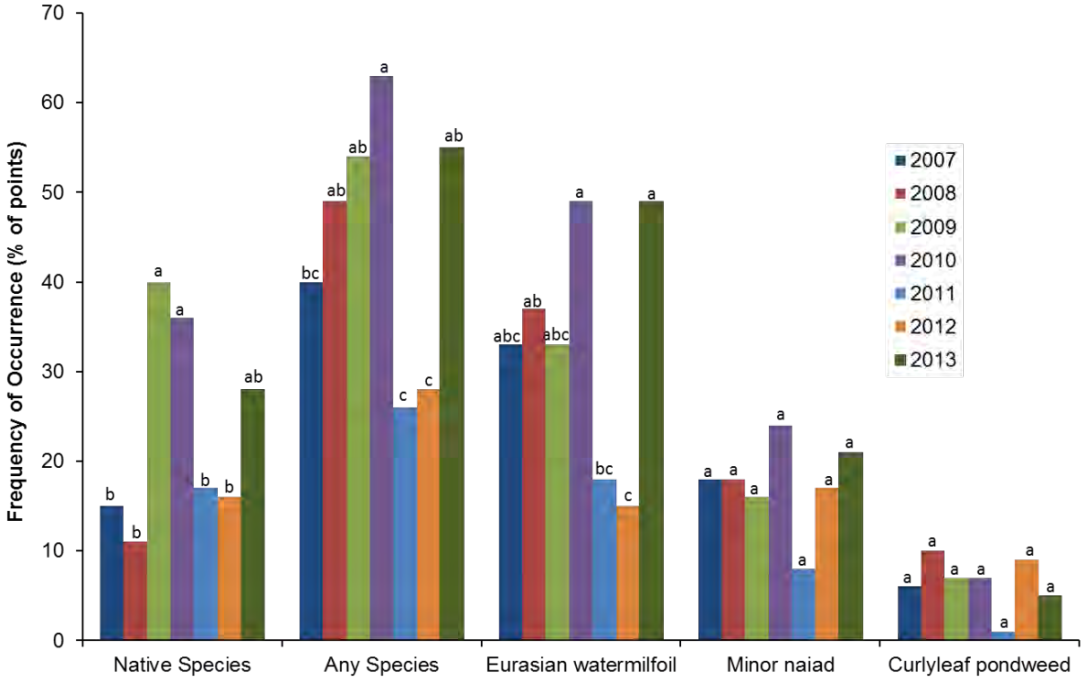

Figure 15. Yearly comparison of average frequency of occurrence of aquatic plants on transects in Lake Zoar. Bars with the same letter within a species are not statistically different.

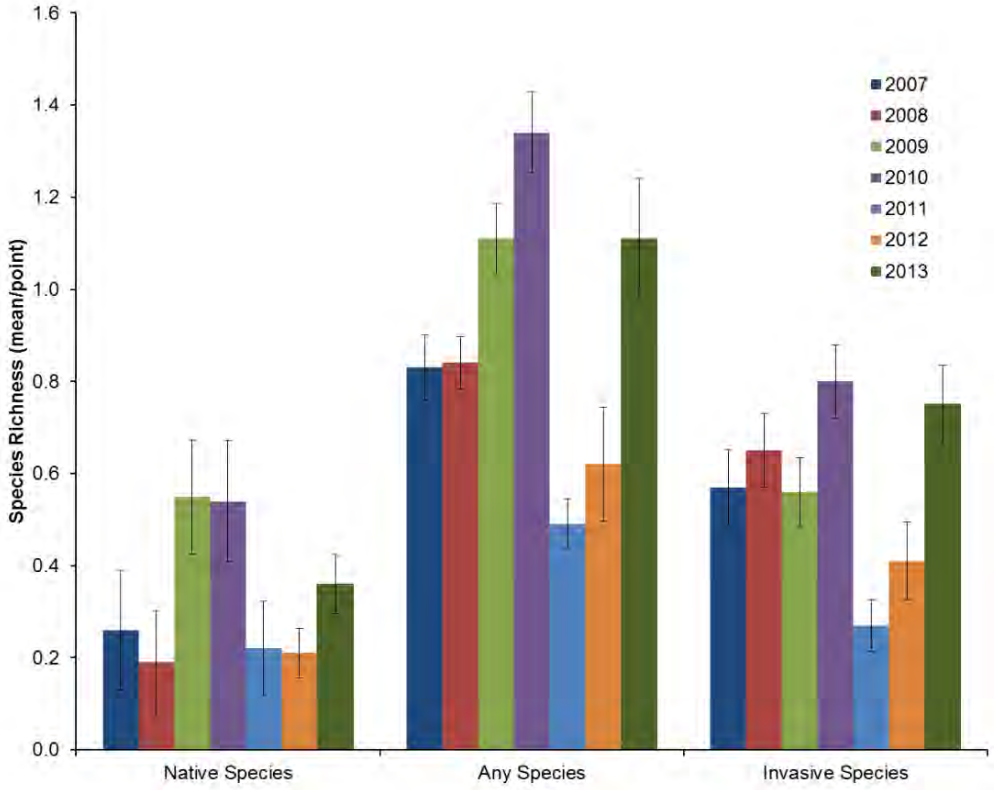

Figure 16. Yearly comparisons of acreage number of species per transect point in Lake Zoar. Error bars equal +/- one standard error of the mean.

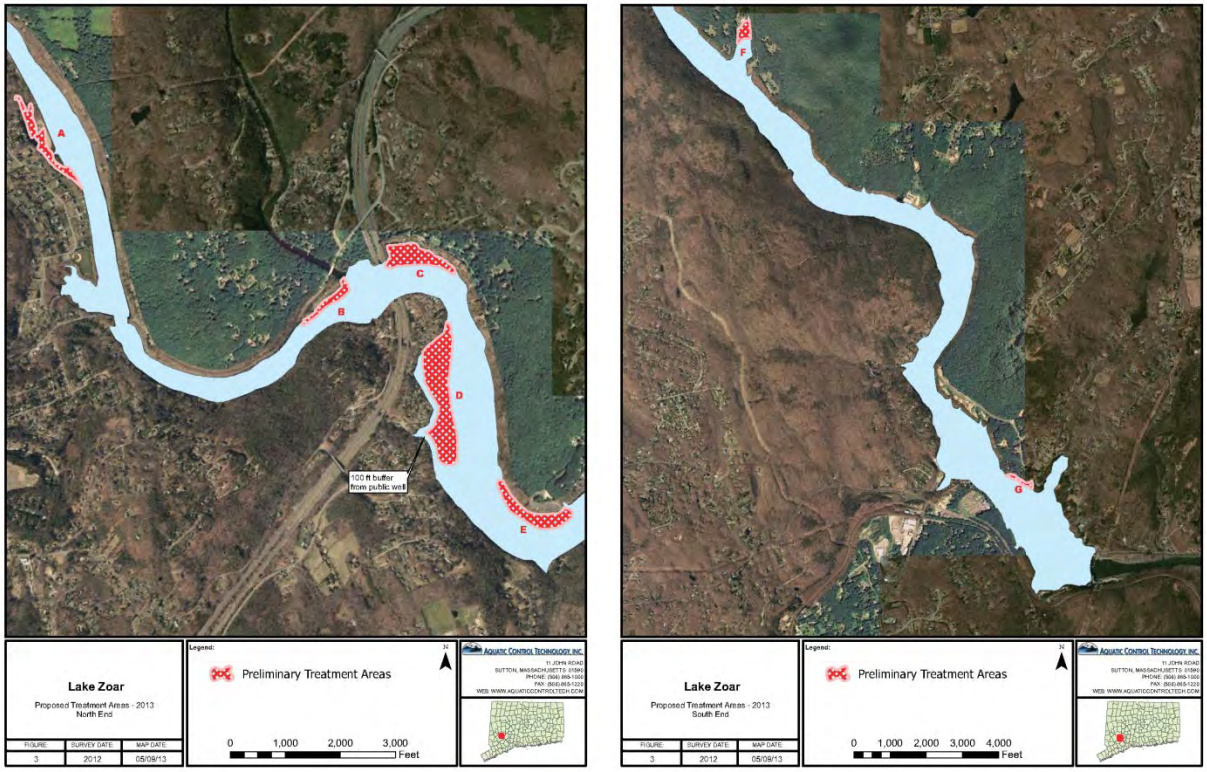

Figure 17. Areas of Lake Zoar treated with herbicides in 2013. Maps courtesy of Aquatic Control Technologies Inc., Sutton, MA.

2012 (0.6), more similar to levels found in 2009 (1.1) and 2010 (1.3). Invasive plant species richness also increased in 2013 to 0.8 species per point. Similar to Lake Lillinonah, predicting future trends in plant community structure based on transect data alone may be difficult considering the riverine nature of the lake and water level changes associated with hydrogeneration of electricity.

Lake Zoar received herbicide treatments to control a combination of Eurasian watermilfoil and curlyleaf pondweed by Aquatic Control Technologies Inc. Sutton MA (ACT). Locations of where the treatments occurred in Lake Zoar are shown in Figure 17. Approximately 37 acres were treated with a combination of the herbicides Reward (diquat) and Clipper (flumioxazin) on 6/26/13. Reward was applied at rate to achieve a concentration of approximately 250 ppb and Clipper was applied to attain 100 ppb. The combination of herbicides was used to achieve greater efficacy on the combined population of Eurasian watermilfoil and curlyleaf pondweed. In addition, the herbicides are quick acting and were best suited to the limited period of slow water flow available. Correspondence with ACT suggests this treatment may have been the most successful in recent years.

Table 10. Water chemistry of Lakes Candlewood, Lillinonah and Zoar, 2013

Lake	Site	Date	Latitude	Longitude	Sample Depth (m)	Transperency Secchi (m)	Conductivity (uS/cm)	pH	Alkalinity $CaCO_3$ (mg/L)	Total P (ug/L)
Candlewood	W1	8/21/2013	41.53405	-73.44491	0.5	2	187	8.3	56	11
					13		215	6.6	71	85
	W2	8/21/2013	41.49369	-73.44881	0.5	1.9	185	8.4	59	12
					12		210	6.7	71	107
	W3	8/21/2013	41.55629	-73.47606	0.5	1.8	183	8.3	56	13
					14		235	6.7	85	322
	W4	8/21/2013	41.43577	-73.45591	0.5	1.9	185	8.4	57	17
					10		199	6.7	64	60
	W5	8/21/2013	41.45752	-73.43829	0.5	1.9	183	8.4	54	13
					11		207	6.7	83	97
Lillinonah	W1	8/29/2013	41.49662	-73.32589	0.5	1.5	206	8.4	60	27
					6		190	7.1	47	134
	W2	8/29/2013	41.46969	-73.30818	0.5	1.1	236	8.4	65	28
					15.8		243	7.2	61	20
	W3	8/25/2013	41.54121	-73.40325	0.5	1.5	337	7.7	92	32
					2.5		338	7.6	90	40
Zoar	W1	9/6/2013	41.42967	-73.21976	0.5	2.1	282	7.4	68	20
					9.5		283	7.4	75	84
	W2	9/6/2013	41.38780	-73.17883	0.5	2.1	266	7.4	69	19
					12.5		257	7.2	68	38
	W3	9/6/2013	41.45280	-73.27986	0.5	2	280	7.4	71	15
					2.8		279	7.3	74	49

Comparisons of Water Chemistry

At the conclusion of each lakes survey we perform water testing to compare conditions from year to year. Because our water tests are performed only once each year they cannot be used as a gauge of lake conditions at other times. Changes in water chemistry may affect invasive aquatic plants. For example, vegetation will be limited by water transparency. Some plants such as Eurasian watermilfoil, minor naiad and curlyleaf pondweed prefer water with a higher pH and alkalinity than many other plants (June-Wells et al., 2013). The transparency of Candlewood Lake averaged 1.9 meters in 2013 compared to 2.2 m in 2012 (Bugbee et al., 2013). Over the course of our August survey the lake's transparency varied between 1.4 and 2.1 m. In Lake Lillinonah and Lake Zoar we recorded a mean transparency of 1.3 m and 1.4 m, respectively (Table 10). Transparencies in Connecticut's lakes ranged from 0.3 to 10.2 meters with an average of 2.3 meters (CAES IAPP, 2014). Thus, the transparency of Candlewood, Lillinonah and Zoar all rank slightly below Connecticut's average. Candlewood Lake appeared to have poorer water clarity in 2013 due to algal blooms. This could be related to the deep drawdown but the science needed to confirm this observation is beyond the scope of this study. Conductivity is an indicator of dissolved ions that come from natural and man-made sources (fertilizers, septic systems, road salts etc.). The conductivity

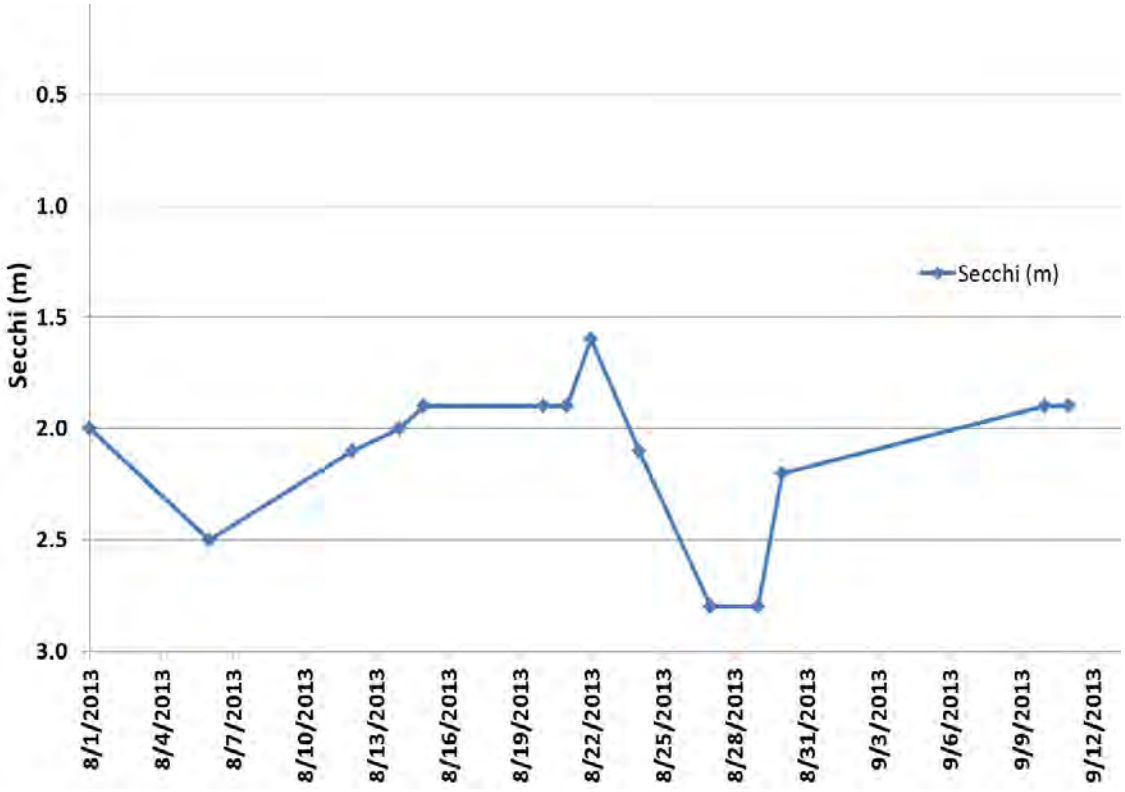

Figure 17. Water transparency in Lakes Candlewood during our 2013 survey.

of Candlewood Lake ranged from 183 - 235 µS/cm with the highest levels in the bottom water (Table 10). In 2012, the lake's conductivity ranged from 165-202 µS/cm compared to the early 1990's when it ranged from 176 - 184 µS/cm (Canavan and Siver, 1995). It is possible that a slight increase is occurring. The conductivity of Lake Lillinonah ranged from 190 - 338 µS/cm while Lake Zoar ranged from 257 - 283 µS/cm. For some reason the conductivity in Lake Lillinonah at site W3 was considerably higher than at the other locations.

The pH of Candlewood Lake's surface water ranged from 8.3 - 8.4 with little difference between locations. This was more alkaline than the range of 6.8 - 7.9 found in 2012 and may be caused by greater algal populations (Wetzel, 2001). The bottom water pH was more acidic and ranged between from 6.6 – 6.7. Lake Lillinonah's water pH ranged from 7.1 to 8.4. Sites at W1 and W2 had pH's approximately one pH unit lower at the bottom than at the surface while little difference between surface and bottom water occurred at the shallower W3. This was likely due to the deeper water at sites W1 (6.0 m) and W2 (15.8 m) compared to the shallow water site W3 (2.5 m). Lake Zoar's surface and bottom water pH fell within narrow range of 7.2 – 7.4.

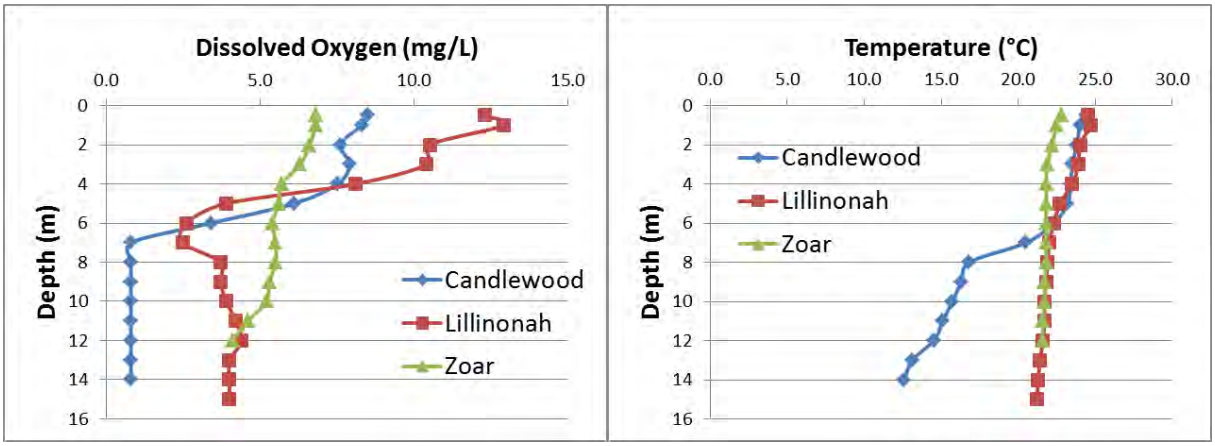

Figure 18. Temperature and dissolved oxygen profiles in Lakes Candlewood, Lillinonah, and Zoar.

Alkalinities in Connecticut's lakes range from near 0 to greater than 172 mg/L $CaCO_3$ (CAES IAPP, 2014, Canavan and Siver, 1995, Frink and Norvell, 1984). Candlewood Lake's surface water alkalinity ranged from 54 – 59 mg/L and bottom water ranged from 64 – 85 mg/L. Lake Lillinonah's surface water alkalinity ranged from 60 – 91 mg/L $CaCO_3$ and the bottom water ranged from 46-90 mg/L $CaCO_3$. Lake Zoar's surface and bottom water fell within a similar alkalinity range of 67– 75 mg/L $CaCO_3$. The trend of a slight increase in pH and alkalinity as water moves downstream from Candlewood Lake, through Lake Lillinonah and into Lake Zoar that was noted in 2012 (Bugbee et al. 2013) was not as evident in 2013.

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 at 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 11 - 17 µg/L and bottom water ranged from 60 - 322 µg/L (Table 10). This partitioning of P between the surface and bottom water is common in the summer as anoxic conditions near the bottom (Figure 18) release P from the sediment (Norvell, 1974). We found the highest P level of 322 µg/L at the deepest site (14 m, W3) in the center of the New Milford arm (Map 1,Page 33). The P concentration in Lake Lillinonah's surface water ranged from 27 - 32 µg/L and bottom water

ranged from 20 - 134 µg/L. Lake Zoar's surface water had P concentration from 15 - 20 µg/L and from 38 - 84 µg/L in its bottom waters. Lake Lillinonah and Zoar's small difference in P concentration between surface and bottom water may be due to shallower depth and greater mixing.

Summer dissolved oxygen profiles of the lakes showed well oxygenated conditions to a depth of approximately six meters (Figure 18). In Lake Candlewood severe anoxic (low dissolved oxygen) conditions occurred around 7 meters while in Lake Lillinonah and Lake Zoar anoxic conditions were not as pronounced. Greater anoxia in Candlewood Lake is probably due to its greater depth and less vertical mixing.

Conclusions:

Eurasian watermilfoil dominates the plant communities in Lakes Candlewood, Lillinonah and Zoar. The coverage of Eurasian watermilfoil in Candlewood Lake decreased from 505 acres in 2012 to 259 acres in 2013. This represented the smallest coverage since 2007 and is likely due to the efficacy of the previous winter's deep drawdown. Sensors measuring air and sediment confirmed a cold period, with daily low temperatures between -10 and -17 °C occurring just as the lake was reaching the drawdowns lowest elevation in late January. Sensors with remote data access capability could help determine optimal times to start Candlewood Lake's refilling process. The amount of Eurasian watermilfoil in Candlewood Lake appears inversely related to the depth and duration of the previous winter's drawdown. Minor naiad inhabited 24 acres of Candlewood Lake in 2013 compared to 32 acres in 2012 suggesting the drawdowns efficacy on this seed borne annual is less effective than on Eurasian watermilfoil. Curlyleaf pondweed was not found in our spring and summer surveys of Lake Candlewood indicating this plant is likely to remain a minimal problem in the near future. Our 2013 invasive plant survey of Lake Lillinonah found Eurasian watermilfoil, minor naiad, curlyleaf pondweed and water chestnut. We found no new invasive plant species in Lake Lillinonah in 2013. Eurasian watermilfoil coverage rose from 36 acres in 2011 to 90 acres in 2013 which more than double that found in any of our previous survey years. Minor naiad coverage, however, decreased slightly from 11 acres in 2011 to 8 acres in 2013. As in our previous surveys of Lake Lillinonah curlyleaf pondweed was nearly nonexistent. Water chestnut remained localized to small areas in the northern part of the Lake Lillinonah but has spread further south than in 2011.

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Samantha Wysocki, Invasive Aquatic Plant Program, CAES

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Appendix

2012 CAES IAPP On-Lake Time

Candlewood (Lead surveyor)	**Lillinonah** (Lead surveyor)	**Zoar** (Lead surveyor)
6/12/2013 (Bugbee)	6/5/2013 (Gibbons)	9/6/2013 (Gibbons)
6/18/2013 (Gibbons)	6/6/2013 (Gibbons)	
6/19/2013 (Gibbons)	6/12/2013 (Gibbons)	
8/1/2013 (Bugbee)	6/13/2013 (Gibbons)	
8/6/2013 (Bugbee)	7/18/2013 (Gibbons)	
8/12/2013 (Bugbee)	7/19/2013 (Gibbons)	
8/14/2013 (Bugbee)	7/23/2013 (Gibbons)	
8/15/2013 (Bugbee)	7/24/2013 (Gibbons)	
8/20/2013 (Bugbee)	7/25/2013 (Gibbons)	
8/21/2013 (Bugbee)	7/26/2013 (Gibbons)	
8/22/2013 (Bugbee)	7/30/2013 (Gibbons)	
8/24/2013 (Bugbee)	8/2/2013 (Gibbons)	
8/25/2013 (Bugbee)	8/6/2013 (Gibbons)	
8/27/2013 (Bugbee)	8/8/2013 (Gibbons)	
8/29/2013 (Bugbee)	8/20/2013 (Gibbons)	
8/30/2013 (Bugbee)	8/25/2013 (Gibbons)	
9/10/2013 (Bugbee)	8/27/2013 (Gibbons)	
9/11/2013 (Bugbee)	8/28/2013 (Gibbons)	
10/16/2013 (Gibbons)	8/29/2013 (Gibbons)	
19 days	**19 days**	**1 day**

Invasive Plant Descriptions

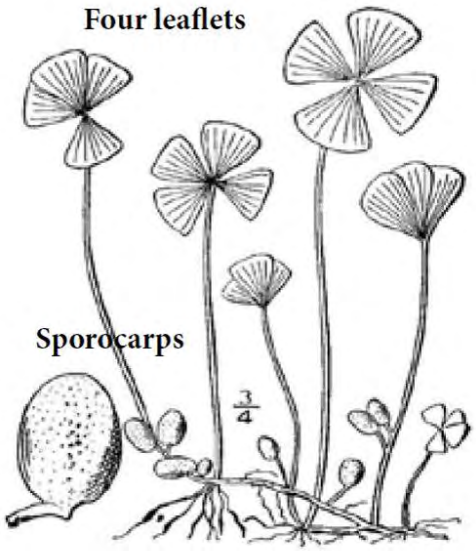
Marsilea quadrifolia

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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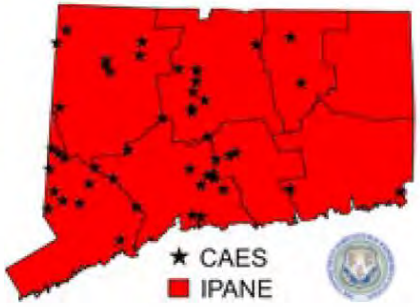
Center forAquatic and Invasive Plants

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

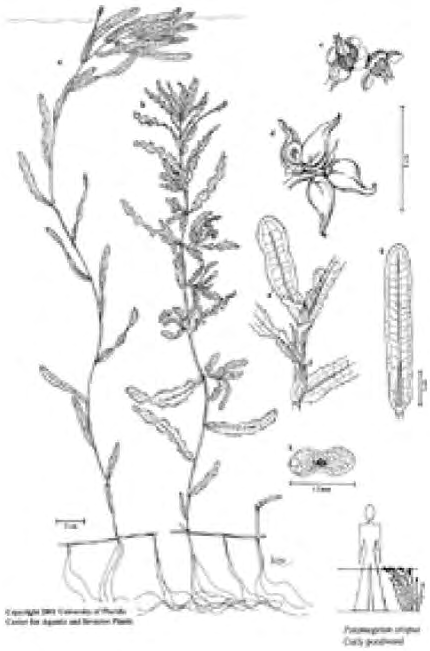
Leaves: Alternate leaves 0.3-1 inches (3-8 cm) wide with wavy edges (similar to lasagna) with a prominent mid-vein

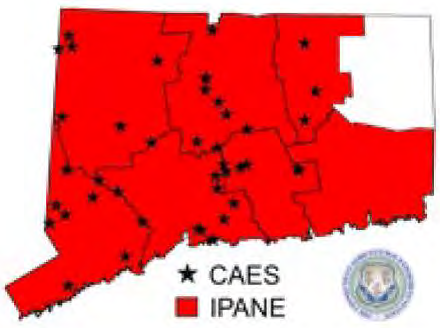
Flowers: Brown and inconspicuous

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

Reproduction: Turions (right) and seeds

Easily confused species:
None





Trapa natans


Photo by Leslie J. Mehrhoff

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

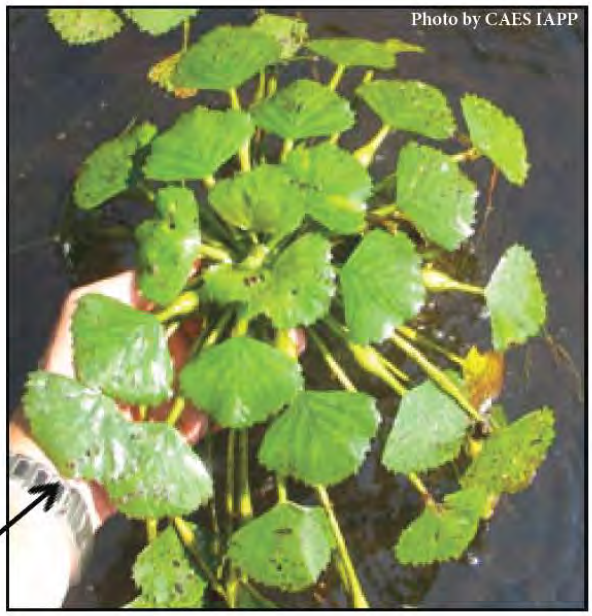


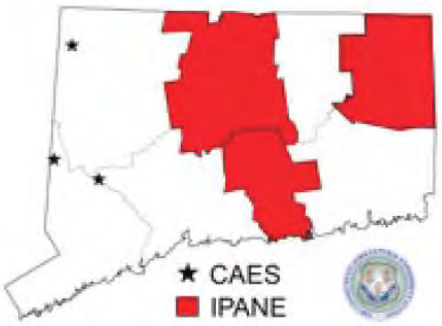
Photo by CAES IAPP

Rosette


Fruit

Photo by CAES IAPP


Photo by Leslie J. Mehrhoff



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 and Lillinonah found during the 2013 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 and Lillinonah during 2013. 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 Jordan Gibbons, 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 10.1 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, 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 each lake. 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 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 and Zoar during 2013. 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 Jordan Gibbons, 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 10.1 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 and Zoar. Five sample locations were chosen in Candlewood Lake and three locations in Lakes Lillinonah and Zoar. 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.

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 Jordan Gibbons, 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 10.1 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	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
0	MyrSpi		Patch	8/22/2013	09:30:14am	41.45043	-73.43125	2-4	2	0.00869
1	MyrSpi		Patch	8/22/2013	09:35:15am	41.45384	-73.43257	0-1	2	0.00639
2	MyrSpi		Patch	8/22/2013	09:36:20am	41.45395	-73.43273	0-1	3	0.00778
3	MyrSpi	Found with Grapple	Patch	8/22/2013	09:45:46am	41.45540	-73.43421	2-4	2	4.07361
4	MyrSpi		Patch	8/22/2013	09:55:40am	41.45514	-73.43358	0-2	2	0.50420
5	MyrSpi		Patch	8/22/2013	10:01:06am	41.45635	-73.43415	0-2	2	0.36895
6	MyrSpi	Found with Grapple	Patch	8/22/2013	10:05:30am	41.45753	-73.43445	2-4	2	0.09071
7	MyrSpi		Patch	8/22/2013	10:07:41am	41.45852	-73.43509	2-4	2	0.00696
8	MyrSpi		Patch	8/22/2013	10:11:46am	41.45955	-73.43552	2-4	2	0.14481
9	MyrSpi	Found with Grapple	Patch	8/22/2013	10:13:15am	41.46034	-73.43567	2-4	2	0.10267
10	MyrSpi	Bare Patches NE	Patch	8/22/2013	10:15:39am	41.46185	-73.43388	2-4	2	2.89182
11	MyrSpi	Found with Grapple	Patch	8/22/2013	10:38:09am	41.46395	-73.44549	2-4	2	0.18956
12	MyrSpi		Patch	8/22/2013	10:41:49am	41.46525	-73.44590	2-4	2	0.03257
13	MyrSpi		Patch	8/22/2013	10:49:15am	41.46860	-73.44760	2-4	2	0.01385
14	MyrSpi		Patch	8/22/2013	10:51:08am	41.46891	-73.44807	0-1	2	0.01711
15	MyrSpi		Patch	8/22/2013	10:53:17am	41.46926	-73.44838	0-2	2	0.00297
16	MyrSpi		Patch	8/22/2013	10:55:05am	41.46951	-73.44871	0-2	2	0.07009
17	MyrSpi		Patch	8/22/2013	11:19:05am	41.49139	-73.45438	2-4	2	0.08595
18	MyrSpi	Found with Grapple	Patch	8/22/2013	11:23:50am	41.49256	-73.45675	1-3	2	0.12473
19	MyrSpi	Found with Grapple	Patch	8/22/2013	11:29:48am	41.49140	-73.45846	2-4	2	0.07280
20	MyrSpi	Found with Grapple	Patch	8/22/2013	11:31:55am	41.49100	-73.45853	2-4	2	0.03599
21	MyrSpi		Patch	8/22/2013	11:42:21am	41.48609	-73.45920	0-1	2	0.03454
22	MyrSpi		Patch	8/22/2013	11:45:28am	41.48607	-73.45999	0-2	2	0.62035
23	MyrSpi	Found with Grapple	Patch	8/22/2013	11:57:36am	41.48745	-73.46188	2-4	2	0.31701
24	MyrSpi		Patch	8/22/2013	12:02:34pm	41.48747	-73.46315	0-2	2	0.10016
25	MyrSpi		Patch	8/22/2013	12:06:13pm	41.48808	-73.46380	0-2	3	0.14625
26	MyrSpi		Patch	8/22/2013	12:15:03pm	41.49113	-73.46606	0-2	3	0.08741
27	MyrSpi		Patch	8/22/2013	12:27:22pm	41.49920	-73.46892	0-2	2	2.21810
28	MyrSpi		Patch	8/22/2013	12:47:20pm	41.49713	-73.46803	0-2	2	0.27066
29	MyrSpi		Patch	8/22/2013	12:57:57pm	41.49582	-73.46573	0-2	2	0.12596
30	MyrSpi	Found with Grapple	Patch	8/22/2013	01:10:11pm	41.49635	-73.46311	2-4	2	0.83238
31	MyrSpi	Found with Grapple; Some Visible	Patch	8/22/2013	01:22:15pm	41.48200	-73.44333	2-4	3	4.65430
32	MyrSpi		Patch	8/22/2013	01:49:38pm	41.47692	-73.44449	2-4	2	0.20841
33	MyrSpi	Found with Grapple	Patch	8/22/2013	01:56:13pm	41.47443	-73.44396	2-4	2	0.24198
34	MyrSpi		Patch	8/22/2013	02:01:09pm	41.47389	-73.44359	0-2	2	0.04022
35	MyrSpi	Found with Grapple	Patch	8/22/2013	02:03:23pm	41.47210	-73.44308	2-4	3	1.12016
36	MyrSpi		Patch	8/22/2013	02:08:42pm	41.47149	-73.44255	0-2	2	0.04173
37	MyrSpi	Found with Grapple	Patch	8/22/2013	02:11:55pm	41.46816	-73.43954	2-4	2	2.95936
38	MyrSpi		Patch	8/24/2013	12:20:30pm	41.47213	-73.44684	0-2	2	0.03545
39	MyrSpi		Patch	8/24/2013	12:22:46pm	41.47208	-73.44698	2-4	1	0.06416
40	MyrSpi		Patch	8/24/2013	12:30:21pm	41.47315	-73.44816	2-4	2	0.12920
41	MyrSpi		Patch	8/24/2013	12:37:09pm	41.47408	-73.44825	2-4	3	0.18614

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

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
42	MyrSpi		Patch	8/24/2013	12:42:12pm	41.47458	-73.44730	2-4	2	0.05139
43	MyrSpi		Patch	8/24/2013	12:43:47pm	41.47395	-73.44645	2-4	2	0.01827
44	MyrSpi		Patch	8/24/2013	12:45:39pm	41.47295	-73.44569	2-4	3	0.18740
45	MyrSpi		Patch	8/24/2013	12:47:56pm	41.47197	-73.44461	2-4	2	0.45082
46	MyrSpi		Patch	8/24/2013	12:53:34pm	41.47041	-73.44552	2-4	3	0.13622
47	MyrSpi		Patch	8/24/2013	01:05:40pm	41.47684	-73.44986	2-4	3	0.54861
48	MyrSpi		Patch	8/24/2013	01:15:55pm	41.47627	-73.44822	2-4	3	0.06844
49	MyrSpi		Patch	8/24/2013	01:33:56pm	41.50835	-73.45910	2-4	3	0.46998
50	MyrSpi		Patch	8/24/2013	01:44:49pm	41.50818	-73.45851	2-4	3	0.04761
51	MyrSpi		Patch	8/24/2013	01:58:26pm	41.53267	-73.46382	2-4	2	0.01773
52	MyrSpi		Patch	8/24/2013	02:40:44pm	41.53551	-73.46202	0-1	2	0.29186
53	MyrSpi		Patch	8/24/2013	02:46:24pm	41.53521	-73.46147	2-4	2	0.13506
54	MyrSpi	Found with Grapple	Patch	8/24/2013	02:52:15pm	41.53227	-73.46240	2-4	2	0.45163
55	MyrSpi	Found with Grapple	Patch	8/24/2013	03:04:50pm	41.54283	-73.46636	2-4	2	0.52335
56	MyrSpi	Found with Grapple	Patch	8/24/2013	03:27:58pm	41.54908	-73.47075	2-4	2	1.87898
57	MyrSpi		Patch	8/24/2013	03:39:26pm	41.55056	-73.46982	0-2	2	0.15964
58	MyrSpi		Patch	8/24/2013	03:46:02pm	41.54926	-73.46796	0-1	2	0.04251
59	MyrSpi	Found with Grapple	Patch	8/24/2013	03:52:19pm	41.54673	-73.46643	2-4	2	0.18215
60	MyrSpi	Found with Grapple	Patch	8/24/2013	03:56:36pm	41.54474	-73.46605	2-4	2	0.28532
61	MyrSpi	Found with Grapple	Patch	8/25/2013	01:04:10pm	41.48398	-73.43792	2-4	2	0.35977
62	MyrSpi		Patch	8/25/2013	01:07:52pm	41.48274	-73.43694	0-1	2	0.02914
63	MyrSpi		Patch	8/25/2013	01:09:59pm	41.47878	-73.43447	0-2	2	7.94087
64	MyrSpi		Patch	8/25/2013	01:42:50pm	41.48349	-73.43544	0-2	2	0.20592
65	MyrSpi	Found with Grapple; Some Visible 1-3 m	Patch	8/25/2013	01:55:15pm	41.48934	-73.43744	1-4	2	6.03178
66	MyrSpi	Barely Visible	Patch	8/25/2013	02:28:39pm	41.49791	-73.44240	1-4	2	0.46995
67	MyrSpi		Patch	8/25/2013	02:33:02pm	41.49986	-73.44266	2-4	2	0.04879
68	MyrSpi		Patch	8/25/2013	02:34:29pm	41.50079	-73.44277	2-4	2	0.04474
69	MyrSpi		Patch	8/25/2013	02:36:10pm	41.50147	-73.44289	2-3	2	0.02231
70	MyrSpi	Found with Grapple	Patch	8/25/2013	02:42:08pm	41.50463	-73.44145	1-4	2	7.22237
71	MyrSpi		Patch	8/25/2013	03:08:31pm	41.50383	-73.44124	0-1	2	0.04854
72	MyrSpi		Patch	8/25/2013	03:11:08pm	41.50334	-73.44061	0-1	3	0.04805
73	MyrSpi		Patch	8/25/2013	03:15:07pm	41.50271	-73.43962	0-1	2	0.06891
74	MyrSpi		Patch	8/25/2013	03:19:22pm	41.50280	-73.43830	0-1	3	0.26064
75	MyrSpi		Patch	8/25/2013	03:26:54pm	41.50374	-73.43767	0-2	3	0.01890
76	MyrSpi		Patch	8/25/2013	03:28:13pm	41.50438	-73.43766	2-4	2	0.07510
77	MyrSpi	Found with Grapple	Patch	8/25/2013	03:32:48pm	41.50659	-73.43829	2-4	2	0.15202
78	MyrSpi	Found with Grapple	Patch	8/25/2013	03:35:33pm	41.50825	-73.43875	2-4	2	0.13835
79	MyrSpi	Found with Grapple	Patch	8/25/2013	03:39:59pm	41.51153	-73.43914	1-4		0.52491
80	MyrSpi		Patch	8/25/2013	03:50:22pm	41.51336	-73.44093	1-4	3	1.79838
81	NajMin		Patch	8/25/2013	04:06:08pm	41.51375	-73.44020	0-1	2	0.23939
82	MyrSpi	Found with Grapple	Patch	8/27/2013	09:55:50am	41.51140	-73.44116	2-4	2	0.48881
83	MyrSpi		Patch	8/27/2013	10:09:27am	41.51601	-73.44086	1-4	2	0.48169

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

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
84	MyrSpi		Patch	8/27/2013	10:15:05am	41.51747	-73.43912	2-4	3	1.96990
85	MyrSpi		Patch	8/27/2013	10:29:17am	41.51870	-73.43648	0-2	2	0.35324
86	MyrSpi		Patch	8/27/2013	10:42:35am	41.51952	-73.43520	0-2	3	0.24382
87	MyrSpi	Found with Grapple	Patch	8/27/2013	10:48:48am	41.52006	-73.43556	2-4	3	0.39064
88	MyrSpi	Found with Grapple	Patch	8/27/2013	10:55:09am	41.52128	-73.43581	2-3	2	0.28817
89	MyrSpi		Patch	8/27/2013	11:10:59am	41.52768	-73.43706	0-2	2	0.01221
90	MyrSpi	Found with Grapple	Patch	8/27/2013	11:18:24am	41.52501	-73.43793	2-4		0.45415
91	MyrSpi	Found with Grapple	Patch	8/27/2013	11:27:27am	41.52206	-73.43767	2-4	2	0.99172
92	MyrSpi		Patch	8/27/2013	11:34:28am	41.52251	-73.43764	0-1	2	0.01573
93	MyrSpi		Patch	8/27/2013	11:36:52am	41.52281	-73.43799	0-2	3	0.01677
94	MyrSpi	Found with Grapple	Patch	8/27/2013	11:40:17am	41.52401	-73.43837	2-4	3	0.09662
95	MyrSpi	Found with Grapple	Patch	8/27/2013	11:43:55am	41.52770	-73.43842	2-4	2	2.23442
96	MyrSpi	Found with Grapple	Patch	8/27/2013	12:00:29pm	41.53193	-73.43865	2-4	3	0.18764
97	MyrSpi		Patch	8/27/2013	12:05:21pm	41.53294	-73.43832	0-1	5	0.00896
98	MyrSpi	10% Visible	Patch	8/27/2013	12:07:36pm	41.53350	-73.43878	2-4	2	1.13444
99	MyrSpi		Patch	8/27/2013	12:27:23pm	41.53445	-73.43872	0-1	2	0.01156
100	MyrSpi		Patch	8/27/2013	12:29:55pm	41.53375	-73.43859	0-1	3	0.00681
101	MyrSpi	Found with Grapple	Patch	8/27/2013	12:35:32pm	41.53514	-73.43880	2-4	2	0.10812
102	MyrSpi		Patch	8/27/2013	12:40:18pm	41.53550	-73.43900	0-2	3	0.04277
103	MyrSpi	Found with Grapple	Patch	8/27/2013	12:53:36pm	41.53686	-73.44156	2-4	2	0.96146
104	MyrSpi	Found with Grapple	Patch	8/27/2013	01:09:29pm	41.54141	-73.44367	2-4	2	0.75430
105	MyrSpi	Found with Grapple	Patch	8/27/2013	01:17:33pm	41.54321	-73.44344	2-4	2	0.47842
106	MyrSpi		Patch	8/27/2013	01:21:59pm	41.54345	-73.44294	0-1	2	0.08438
107	MyrSpi	5% Visible	Patch	8/27/2013	01:27:02pm	41.54509	-73.44286	2-4	2	0.77565
108	MyrSpi		Patch	8/27/2013	01:34:58pm	41.54582	-73.44243	0-1	2	0.08584
109	MyrSpi	20% Visible	Patch	8/27/2013	01:41:35pm	41.54710	-73.44236	2-4	2	0.12336
110	MyrSpi		Patch	8/27/2013	01:43:37pm	41.54711	-73.44227	0-1	3	0.11389
111	MyrSpi		Patch	8/27/2013	01:49:26pm	41.54859	-73.44320	2-4	2	0.06856
112	MyrSpi		Patch	8/27/2013	01:52:09pm	41.54939	-73.44363	1-4	3	0.05918
113	MyrSpi		Patch	8/27/2013	01:53:51pm	41.55037	-73.44391	2-4	2	0.04187
114	MyrSpi		Patch	8/27/2013	01:55:54pm	41.55155	-73.44411	1-4	2	0.29497
115	MyrSpi	Found with Grapple; 10% Visible 0-2 m	Patch	8/27/2013	02:01:38pm	41.55255	-73.44251	1-4	2	1.40055
116	MyrSpi	Found with Grapple; 10% Visible	Patch	8/27/2013	02:12:01pm	41.55086	-73.44049	1-4	2	0.45655
117	MyrSpi		Patch	8/27/2013	02:17:24pm	41.55057	-73.44048	0-1	2	0.00538
118	MyrSpi	Found with Grapple; 10% Visible	Patch	8/27/2013	02:20:24pm	41.55155	-73.43972	1-4	2	0.15500
119	MyrSpi	Found with Grapple	Patch	8/27/2013	02:24:26pm	41.55320	-73.43961	2-4	2	0.01761
120	MyrSpi		Patch	8/27/2013	02:25:14pm	41.55397	-73.43977	2-4	2	0.15813
121	MyrSpi		Patch	8/27/2013	02:27:24pm	41.55555	-73.43960	2-4	2	0.04079
122	MyrSpi		Patch	8/27/2013	02:28:55pm	41.55611	-73.43965	2-4	2	0.09186
123	MyrSpi		Patch	8/27/2013	02:30:39pm	41.55745	-73.43976	2-4	2	0.01037
124	MyrSpi		Patch	8/27/2013	02:32:08pm	41.55782	-73.43976	1-4	2	0.01084
125	MyrSpi	Found with Grapple; Visible 1-2 m	Patch	8/27/2013	02:33:22pm	41.55971	-73.44030	1-4	2	1.02669

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
126	MyrSpi	Found with Grapple; Visible 1-2 m	Patch	8/27/2013	02:51:07pm	41.56378	-73.44077	1-4	2	2.25238
127	MyrSpi		Patch	8/27/2013	03:03:28pm	41.56569	-73.44109	0-1	1	0.27539
128	MyrSpi		Patch	8/27/2013	03:07:39pm	41.56720	-73.44224	1-4	2	0.50018
129	MyrSpi		Patch	8/29/2013	09:31:20am	41.56884	-73.44270	0-2	2	0.40363
130	MyrSpi	Found with Grapple	Patch	8/29/2013	09:39:58am	41.56880	-73.44280	2-4	2	0.25553
131	MyrSpi	Found with Grapple	Patch	8/29/2013	09:43:13am	41.57109	-73.44312	2-4	2	1.08279
132	MyrSpi		Patch	8/29/2013	09:48:08am	41.57090	-73.44294	0-2	3	0.30588
133	MyrSpi		Patch	8/29/2013	09:51:36am	41.57193	-73.44280	0-2	3	0.01287
134	MyrSpi	Found with Grapple	Patch	8/29/2013	09:55:23am	41.57245	-73.44401	2-4	2	0.62553
135	MyrSpi		Patch	8/29/2013	10:00:37am	41.57256	-73.44448	0-2	2	0.34438
136	MyrSpi	Visible	Patch	8/29/2013	10:13:13am	41.56869	-73.44560	1-4	3	0.32666
137	MyrSpi		Patch	8/29/2013	10:18:32am	41.56652	-73.44503	1-4	2	0.40653
138	MyrSpi		Patch	8/29/2013	10:26:14am	41.56412	-73.44480	1-4	3	1.27148
139	MyrSpi		Patch	8/29/2013	10:35:56am	41.56126	-73.44415	1-4	3	2.69424
140	MyrSpi		Patch	8/29/2013	10:51:06am	41.55761	-73.44357	2-4	2	0.02786
141	MyrSpi	Found with Grapple 2-4 m; Visible 1-2 m	Patch	8/29/2013	10:55:11am	41.55485	-73.44476	1-4	2	1.53444
142	MyrSpi		Patch	8/29/2013	11:10:11am	41.54757	-73.44701	1-4	3	4.03888
143	MyrSpi		Patch	8/29/2013	11:36:05am	41.55279	-73.44546	0-1	3	0.06332
144	MyrSpi		Patch	8/29/2013	11:41:04am	41.55020	-73.44633	0-1	5	0.02859
145	MyrSpi		Patch	8/29/2013	11:44:30am	41.54918	-73.44719	0-1	5	0.01916
146	MyrSpi		Patch	8/29/2013	11:48:49am	41.54434	-73.44843	0-1	5	0.02486
147	MyrSpi		Patch	8/29/2013	11:51:36am	41.54106	-73.44707	2-4	2	0.02579
148	MyrSpi	Visible	Patch	8/29/2013	11:52:48am	41.54024	-73.44675	2-4	3	0.05663
149	MyrSpi	Visible	Patch	8/29/2013	11:55:11am	41.53804	-73.44700	2-4	3	0.22171
150	MyrSpi		Patch	8/29/2013	12:01:40pm	41.53607	-73.44729	1-4	2	0.04011
151	MyrSpi		Patch	8/29/2013	12:03:59pm	41.53469	-73.44754	1-4	3	0.32069
152	MyrSpi		Patch	8/29/2013	12:07:41pm	41.53382	-73.44791	1-4	3	0.06324
153	MyrSpi		Patch	8/29/2013	12:09:12pm	41.53273	-73.44826	2-4	3	0.25442
154	MyrSpi		Patch	8/29/2013	12:14:22pm	41.53154	-73.44822	2-4	2	0.16940
155	MyrSpi		Patch	8/29/2013	12:17:26pm	41.53063	-73.44792	2-4	2	0.03794
156	MyrSpi		Patch	8/29/2013	12:18:38pm	41.52886	-73.44700	2-4	2	0.28692
157	MyrSpi		Patch	8/29/2013	12:25:27pm	41.52360	-73.44625	1-4	2	1.92709
158	MyrSpi	10% Visible	Patch	8/29/2013	01:03:41pm	41.52784	-73.44251	1-4	2	8.48464
159	MyrSpi		Patch	8/29/2013	01:24:16pm	41.52201	-73.44606	2-4	3	0.16752
160	MyrSpi		Patch	8/29/2013	01:28:47pm	41.51825	-73.44549	2-4	3	0.06416
161	MyrSpi		Patch	8/29/2013	01:34:54pm	41.51207	-73.44480	2-4	2	0.03443
162	MyrSpi		Patch	8/29/2013	01:38:05pm	41.51048	-73.44546	2-4	2	0.02343
163	MyrSpi		Patch	8/29/2013	01:39:33pm	41.50933	-73.44587	2-4	3	0.03122
164	MyrSpi		Patch	8/29/2013	01:45:41pm	41.50431	-73.44514	0-2	4	0.04912
165	MyrSpi		Patch	8/29/2013	01:47:30pm	41.50397	-73.44556	0-2	4	0.06199
166	MyrSpi		Patch	8/29/2013	01:55:46pm	41.50183	-73.44502	2-4	3	0.02658
167	MyrSpi	Found with Grapple; 2-4 m	Patch	8/29/2013	02:04:26pm	41.49646	-73.44634	1-4	2	2.46526

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

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
168	MyrSpi		Patch	8/29/2013	02:14:02pm	41.49734	-73.44761	0-1	4	0.01222
169	MyrSpi		Patch	8/29/2013	02:15:33pm	41.49734	-73.44670	0-1	3	0.02321
170	MyrSpi	Found with Grapple	Patch	8/29/2013	02:22:36pm	41.49345	-73.44548	2-4	2	1.14080
171	MyrSpi	Found with Grapple	Patch	8/30/2013	09:44:38am	41.49814	-73.46334	2-4	2	0.79863
172	MyrSpi	Found with Grapple	Patch	8/30/2013	09:52:20am	41.50289	-73.46506	2-4	1	1.90445
173	MyrSpi		Patch	8/30/2013	10:17:26am	41.50828	-73.46879	1-4	2	1.65756
174	MyrSpi	Found with Grapple; Visible 1-2m	Patch	8/30/2013	10:34:23am	41.51031	-73.46943	1-4	2	0.63617
175	MyrSpi	Found with Grapple	Patch	8/30/2013	10:45:38am	41.50926	-73.46805	2-4	2	0.06432
176	MyrSpi		Patch	8/30/2013	10:52:53am	41.50636	-73.46396	0-2	3	0.04664
177	MyrSpi	Found with Grapple; Some Visible	Patch	8/30/2013	10:56:43am	41.50517	-73.46304	1-4	3	0.29091
178	MyrSpi		Patch	8/30/2013	11:00:44am	41.50425	-73.46221	2-4	2	0.01772
179	MyrSpi	Found with Depth Finder	Patch	8/30/2013	11:02:56am	41.50309	-73.46150	2-4	3	0.03113
180	MyrSpi	Found with Grapple; 10% Visible at 1-2 m	Patch	8/30/2013	11:13:16am	41.50232	-73.45978	1-4	2	2.61562
181	MyrSpi	Found with Grapple	Patch	8/30/2013	11:26:31am	41.50718	-73.46041	2-4	2	0.42040
182	MyrSpi	Found with Grapple	Patch	8/30/2013	11:32:54am	41.50865	-73.46057	2-4	2	0.39001
183	MyrSpi	Found with Grapple	Patch	8/30/2013	11:35:57am	41.50953	-73.46135	2-4	2	0.06498
184	MyrSpi	Found with Grapple	Patch	8/30/2013	11:45:41am	41.51384	-73.46168	1-4	2	1.02773
185	MyrSpi	Found with Grapple	Patch	8/30/2013	11:52:34am	41.51300	-73.46202	2-4	2	0.54089
186	MyrSpi	Visible 1-2 m	Patch	8/30/2013	11:56:07am	41.51512	-73.46258	1-4	2	0.64979
187	MyrSpi		Patch	8/30/2013	12:07:19pm	41.51910	-73.46469	0-2	2	0.66186
188	MyrSpi		Patch	8/30/2013	12:14:32pm	41.52400	-73.46519	0-2	2	13.40509
189	MyrSpi	Found with Grapple	Patch	8/30/2013	12:48:04pm	41.52124	-73.46549	2-4	2	0.43262
190	MyrSpi	Found with Grapple; 10% Visible	Patch	8/30/2013	01:09:43pm	41.52113	-73.46097	1-4	2	4.53471
191	NajMin		Patch	8/30/2013	01:25:46pm	41.52119	-73.46176	0-1	2	0.73265
192	MyrSpi		Patch	9/10/2013	10:47:11am	41.44836	-73.43038	0-2	2	4.51294
193	MyrSpi	Found with Grapple	Patch	9/10/2013	11:25:57am	41.46655	-73.44170	2-4	2	0.61831
194	MyrSpi		Patch	9/10/2013	12:13:07pm	41.50115	-73.45455	2-4	2	0.76134
195	MyrSpi	Found with Grapple; Visible in East	Patch	9/10/2013	12:17:56pm	41.50304	-73.45273	1-4	3	14.86926
196	MyrSpi	Found with Grapple	Patch	9/10/2013	12:58:05pm	41.51395	-73.45588	2-4	2	1.30862
197	MyrSpi		Patch	9/10/2013	01:06:38pm	41.51371	-73.45520	0-1	2	0.01602
198	MyrSpi	Found with Grapple; 25% Visible East Shore	Patch	9/10/2013	01:14:16pm	41.52323	-73.45319	1-4	3	6.53985
199	MyrSpi		Patch	9/10/2013	01:47:18pm	41.51399	-73.45343	0-1	5	0.11939
200	MyrSpi		Patch	9/10/2013	01:51:28pm	41.51553	-73.45286	0-2	5	0.02616
201	MyrSpi		Patch	9/10/2013	02:09:26pm	41.53264	-73.45463	1-4	3	0.62212
202	MyrSpi		Patch	9/10/2013	02:15:55pm	41.53693	-73.45620	2-4	2	0.14119
203	MyrSpi		Patch	9/10/2013	02:18:57pm	41.53842	-73.45674	2-4	2	0.00648
204	MyrSpi		Patch	9/10/2013	02:20:00pm	41.53901	-73.45686	2-4	2	0.02508
205	MyrSpi		Patch	9/10/2013	02:21:36pm	41.53984	-73.45717	2-4	2	0.06280
206	MyrSpi		Patch	9/10/2013	02:24:15pm	41.54068	-73.45753	1-4	2	0.06249
207	MyrSpi		Patch	9/10/2013	02:26:15pm	41.54141	-73.45788	2-4	2	0.00640
208	MyrSpi		Patch	9/10/2013	02:27:53pm	41.54250	-73.45837	0-1	4	0.02510
209	MyrSpi		Patch	9/10/2013	02:30:45pm	41.54331	-73.45891	1-4	2	0.08861

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

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
210	MyrSpi		Patch	9/10/2013	02:33:29pm	41.54411	-73.45981	1-4	2	0.01007
211	MyrSpi		Patch	9/10/2013	02:37:42pm	41.54477	-73.46159	1-4	3	0.88735
212	MyrSpi	Found with Grapple; 20% Visible Along Shore	Patch	9/10/2013	02:47:23pm	41.54719	-73.46387	1-4	3	1.29039
213	MyrSpi		Patch	9/10/2013	03:03:41pm	41.55212	-73.46612	0-2	2	0.02025
214	MyrSpi		Patch	9/10/2013	03:06:33pm	41.55398	-73.46926	1-4	3	1.38072
215	MyrSpi		Patch	9/10/2013	03:18:26pm	41.55433	-73.46784	0-1	5	0.01885
216	MyrSpi		Patch	9/10/2013	03:19:44pm	41.55429	-73.46735	0-1	5	0.01551
217	MyrSpi		Patch	9/10/2013	03:21:57pm	41.55403	-73.46972	0-1	5	0.02216
218	MyrSpi		Patch	9/10/2013	03:23:51pm	41.55386	-73.47127	0-1	5	0.12651
219	MyrSpi	Found with Grapple; 10% Visible	Patch	9/10/2013	03:27:18pm	41.55540	-73.47345	1-4	3	0.80337
220	MyrSpi	Found with Grapple; 10% Visible North Shore	Patch	9/10/2013	03:37:18pm	41.55996	-73.47560	1-4	2	3.12207
221	MyrSpi	Found with Depth Finder; Abundance= 4 in North	Patch	9/11/2013	10:08:26am	41.52885	-73.46183	1-4	2	3.33983
222	MyrSpi		Patch	9/11/2013	10:25:20am	41.52943	-73.46316	1-3	4	0.03575
223	MyrSpi	Found with Grapple; 10% Visible at 1 m	Patch	9/11/2013	10:31:34am	41.53121	-73.46544			0.47927
224	MyrSpi		Patch	9/11/2013	10:34:26am	41.53151	-73.46586	0-2	2	0.02105
225	MyrSpi	Visible	Patch	9/11/2013	10:42:12am	41.53475	-73.46719	1-4	3	0.11459
226	MyrSpi	Found with Grapple	Patch	9/11/2013	10:44:47am	41.53564	-73.46687	2-4	3	0.23007
227	MyrSpi	Found with Grapple	Patch	9/11/2013	10:49:18am	41.53344	-73.46555	2-4	3	1.69320
228	MyrSpi	Found with Grapple; 5% Visible	Patch	9/11/2013	11:01:14am	41.53759	-73.46934	2-4	3	1.55877
229	MyrSpi	Found with Grapple	Patch	9/11/2013	11:09:31am	41.54023	-73.47157	2-4	2	0.11732
230	MyrSpi	5% Visible	Patch	9/11/2013	11:10:50am	41.54088	-73.47187	2-4	2	0.06630
231	MyrSpi	Found with Grapple	Patch	9/11/2013	11:24:15am	41.54883	-73.47547	2-4	2	4.67836
232	MyrSpi		Patch	9/11/2013	11:41:40am	41.54745	-73.47422	0-1	3	0.10887
233	MyrSpi		Patch	9/11/2013	11:47:48am	41.54940	-73.47582	0-1	3	0.01353
234	MyrSpi		Patch	9/11/2013	11:51:45am	41.55175	-73.47837	0-1	2	0.01259
235	MyrSpi		Patch	9/11/2013	11:54:30am	41.55224	-73.47968	0-1	3	0.01139
236	MyrSpi		Patch	9/11/2013	12:11:16pm	41.55796	-73.48417	0-2	2	1.44001
237	MyrSpi		Patch	9/11/2013	12:23:32pm	41.55827	-73.48245	0-2	2	0.06979
238	MyrSpi		Patch	9/11/2013	12:27:32pm	41.55675	-73.48107	0-2	2	0.00991
239	MyrSpi		Patch	9/11/2013	12:31:21pm	41.55658	-73.48017	0-2	4	0.12523
240	MyrSpi	Found with Grapple	Patch	9/11/2013	12:35:21pm	41.55587	-73.47973	2-4	2	1.16293
241	MyrSpi	Abundance= 5 in North	Patch	9/11/2013	12:42:22pm	41.55845	-73.48175	0-2	3	0.72889
242	MyrSpi	Found with Depth Finder; Abundance= 4 in East	Patch	9/11/2013	12:48:00pm	41.55884	-73.48133	2-4	2	2.26163
243	MyrSpi		Patch	9/11/2013	12:54:44pm	41.56099	-73.48472	0-2	3	0.01110
244	MyrSpi		Patch	9/11/2013	12:58:25pm	41.56123	-73.48532	0-1	2	0.01053
245	MyrSpi		Patch	9/11/2013	01:06:58pm	41.56152	-73.48689	0-2	2	0.01745
246	MyrSpi	Found with Grapple	Patch	9/11/2013	01:08:02pm	41.56149	-73.48659	2-4	2	0.20902
247	MyrSpi	Abundance Highly Variable	Patch	9/11/2013	01:10:30pm	41.56373	-73.48742	1-4	2	4.31687
248	MyrSpi		Patch	9/11/2013	01:19:48pm	41.56233	-73.48747	0-1	3	0.15060
249	NajMin		Patch	9/11/2013	01:30:32pm	41.56347	-73.48774	0-1	4	0.02491
250	MyrSpi		Patch	9/11/2013	01:34:21pm	41.56401	-73.48805	0-1	2	0.33124
251	MyrSpi		Patch	9/11/2013	01:40:08pm	41.56472	-73.48889	0-1	2	0.13898

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
252	MyrSpi		Patch	9/11/2013	01:42:45pm	41.56586	-73.48964	0-2	3	0.17714
253	MyrSpi		Patch	9/11/2013	01:45:23pm	41.56666	-73.49012	0-2	3	0.11883
254	MyrSpi		Patch	9/11/2013	01:47:48pm	41.56750	-73.49016	0-2	3	0.01684
255	MyrSpi		Patch	9/11/2013	01:50:03pm	41.56864	-73.49061	0-2	2	0.02172
256	MyrSpi	Abundance Highly Variable	Patch	9/11/2013	01:51:47pm	41.57216	-73.49107	0-2	2	7.59340
257	MyrSpi		Patch	9/11/2013	02:30:34pm	41.56831	-73.48868	0-2	3	0.08893
258	MyrSpi		Patch	9/11/2013	02:31:39pm	41.56763	-73.48844	0-2	3	0.21338
259	MyrSpi		Patch	9/11/2013	02:35:12pm	41.56617	-73.48806	1-4	3	0.54245
260	MyrSpi	Found with Grapple; 10% Visible at 1-2 m	Patch	9/11/2013	02:44:48pm	41.56726	-73.48544	1-4	2	0.23391
261	MyrSpi	Abundance Highly Variable	Patch	9/11/2013	02:53:05pm	41.56923	-73.48380	0-2	2	3.33852
262	MyrSpi	Visible	Patch	9/11/2013	03:11:47pm	41.56576	-73.48029	1-4	3	0.36824
263	MyrSpi	Found with Grapple; Some Visible	Patch	9/11/2013	03:25:13pm	41.56391	-73.48464	2-4	3	0.09999
264	MyrSpi	Found with Grapple	Patch	9/11/2013	03:31:15pm	41.56480	-73.48377	2-4	3	0.15378
265	MyrSpi	Barely Visible	Patch	9/11/2013	03:36:35pm	41.56383	-73.48317	2-4	3	0.79496
266	MyrSpi		Patch	8/1/2013	09:44:05am	41.45315	-73.43581	1-3	3	0.14203
267	MyrSpi		Patch	8/1/2013	09:47:29am	41.45335	-73.43674	2-4	3	0.27459
268	MyrSpi		Patch	8/1/2013	09:54:16am	41.45262	-73.43712	0-1	2	0.31521
269	MyrSpi		Patch	8/1/2013	10:02:09am	41.45350	-73.43838	2-4	3	0.12597
270	MyrSpi		Patch	8/1/2013	10:04:04am	41.45437	-73.43967	2-4	3	0.58720
271	MyrSpi		Patch	8/1/2013	10:14:43am	41.45522	-73.44085	0-1	2	0.00381
272	MyrSpi		Patch	8/1/2013	10:16:15am	41.45506	-73.44072	3-5	2	0.00126
273	MyrSpi		Patch	8/1/2013	10:51:25am	41.45558	-73.44066	2-4	2	0.04096
274	MyrSpi		Patch	8/1/2013	10:56:07am	41.45690	-73.44152	2-4	3	0.21388
275	MyrSpi		Patch	8/1/2013	11:03:13am	41.45887	-73.44353	2-5	3	0.93828
276	MyrSpi		Patch	8/6/2013	09:41:44am	41.45873	-73.44477	2-4	3	0.09538
277	MyrSpi		Patch	8/6/2013	09:45:42am	41.45709	-73.44471	2-4	3	0.07579
278	MyrSpi		Patch	8/6/2013	09:49:58am	41.45494	-73.44428	2-4	2	0.29806
279	MyrSpi		Patch	8/6/2013	09:57:30am	41.45340	-73.44423	2-4	3	0.06266
280	MyrSpi		Patch	8/6/2013	09:59:34am	41.45264	-73.44469	2-4	3	0.08189
281	MyrSpi		Patch	8/6/2013	10:04:29am	41.45109	-73.44530	2-4	2	0.15189
282	MyrSpi		Patch	8/6/2013	10:09:36am	41.45079	-73.44628	2-4	2	0.14935
283	MyrSpi		Patch	8/6/2013	10:21:13am	41.44565	-73.44746	0-1	2	0.08620
284	MyrSpi		Patch	8/6/2013	10:25:59am	41.44540	-73.44819	0-1	2	0.14480
285	MyrSpi		Patch	8/6/2013	10:35:02am	41.44582	-73.45108	2-4	3	0.39825
286	NajMin		Patch	8/6/2013	11:14:17am	41.42593	-73.44994	0-1	3	0.04835
287	MyrSpi		Patch	8/6/2013	12:14:04pm	41.42396	-73.45270	0-1	2	0.10991
288	MyrSpi		Patch	8/6/2013	12:22:43pm	41.42475	-73.45500	0-1	2	0.14907
289	MyrSpi		Patch	8/6/2013	12:26:25pm	41.42378	-73.45413	0-1	2	0.86357
290	MyrSpi		Patch	8/6/2013	01:07:31pm	41.42638	-73.45730	0-1	2	0.01342
291	MyrSpi		Patch	8/6/2013	01:13:04pm	41.43015	-73.46026	0-2	2	0.00722
292	MyrSpi		Patch	8/6/2013	01:24:45pm	41.43906	-73.45882	0-2	2	0.11506
293	MyrSpi		Patch	8/6/2013	01:39:36pm	41.44966	-73.45198	2-4	3	0.53024

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
294	MyrSpi		Patch	8/12/2013	10:05:03am	41.45346	-73.45077	2-4	2	0.08395
295	MyrSpi		Patch	8/12/2013	10:14:40am	41.45419	-73.45063	2-4	2	0.20934
296	MyrSpi		Patch	8/12/2013	10:19:26am	41.45708	-73.45200	2-4	3	0.71193
297	MyrSpi		Patch	8/12/2013	10:29:18am	41.45673	-73.45417	0-1	4	0.34924
298	MyrSpi		Patch	8/12/2013	10:34:44am	41.45732	-73.45386	2-4	2	0.21477
299	MyrSpi		Patch	8/12/2013	10:38:08am	41.45724	-73.45482	2-4	3	0.24428
300	MyrSpi		Patch	8/12/2013	10:48:40am	41.46435	-73.45871	0-2	2	0.07814
301	MyrSpi		Patch	8/12/2013	10:57:28am	41.46588	-73.45879	2-4	2	0.03295
302	MyrSpi		Patch	8/12/2013	10:59:41am	41.46511	-73.45905	0-1	3	0.01682
303	MyrSpi		Patch	8/12/2013	11:01:50am	41.46473	-73.46003	2-4	2	0.13086
304	MyrSpi		Patch	8/12/2013	11:18:24am	41.46533	-73.46135	0-2	2	0.00571
305	MyrSpi		Patch	8/12/2013	11:22:13am	41.46694	-73.45984	1-3	2	0.02656
306	MyrSpi		Patch	8/12/2013	11:32:15am	41.46852	-73.45807	0-2	3	0.01623
307	MyrSpi		Patch	8/12/2013	11:47:30am	41.46591	-73.45556	2-4	2	0.03034
308	MyrSpi	Low Visibility	Patch	8/12/2013	11:50:44am	41.46508	-73.45560	2-4	3	0.22349
309	MyrSpi		Patch	8/12/2013	12:15:18pm	41.46973	-73.45641	2-4	3	0.79822
310	MyrSpi		Patch	8/12/2013	12:23:51pm	41.47019	-73.45783	2-4	3	0.25147
311	MyrSpi		Patch	8/12/2013	12:29:38pm	41.46864	-73.45885	0-2	2	0.06194
312	MyrSpi		Patch	8/12/2013	12:40:30pm	41.47567	-73.46151	0-2	3	0.05777
313	MyrSpi		Patch	8/12/2013	01:04:45pm	41.47921	-73.46204	2-4	3	0.03257
314	MyrSpi		Patch	8/12/2013	01:08:36pm	41.47966	-73.46254	0-1	3	0.00576
315	MyrSpi		Patch	8/12/2013	01:11:00pm	41.48063	-73.46202	2-4	2	0.05091
316	MyrSpi		Patch	8/12/2013	01:12:43pm	41.48097	-73.46208	0-2	2	0.01363
317	MyrSpi		Patch	8/12/2013	01:15:50pm	41.48123	-73.46189	1-4	2	0.04945
318	MyrSpi		Patch	8/12/2013	01:25:46pm	41.48311	-73.46005	2-4	3	0.21141
319	MyrSpi		Patch	8/12/2013	01:34:26pm	41.48503	-73.45944	0-1	2	0.26346
320	MyrSpi	Found with Grapple	Patch	8/14/2013	09:40:17am	41.48389	-73.45848	2-4	3	0.20680
321	MyrSpi		Patch	8/14/2013	09:45:57am	41.48402	-73.45819	0-2	2	0.12374
322	MyrSpi	Found with Grapple	Patch	8/14/2013	09:55:45am	41.48085	-73.45757	2-4	2	0.11416
323	MyrSpi	Found with Grapple	Patch	8/14/2013	10:16:09am	41.47662	-73.45500	2-4	2	1.39817
324	MyrSpi		Patch	8/14/2013	10:23:34am	41.47486	-73.45334	2-4	2	0.03348
325	MyrSpi		Patch	8/14/2013	10:25:22am	41.47444	-73.45324	2-4	3	0.01737
326	MyrSpi		Patch	8/14/2013	10:27:56am	41.47380	-73.45326	2-4	3	0.07060
327	MyrSpi		Patch	8/14/2013	10:30:36am	41.47309	-73.45282	2-4	2	0.04587
328	MyrSpi		Patch	8/14/2013	10:33:22am	41.47186	-73.45212	2-4	2	0.04110
329	MyrSpi		Patch	8/14/2013	10:35:52am	41.47153	-73.45165	2-4	3	0.03577
330	MyrSpi	Abundance= 4 in some areas	Patch	8/14/2013	10:40:04am	41.47114	-73.45125	2-4	3	0.09247
331	MyrSpi	Found with Grapple	Patch	8/14/2013	10:52:34am	41.47023	-73.45108	2-4	2	0.85742
332	MyrSpi	Found with Grapple	Patch	8/14/2013	11:33:18am	41.46734	-73.44998	2-4	2	0.39998
333	MyrSpi	Found with Grapple	Patch	8/14/2013	11:37:18am	41.46834	-73.45040	2-4	2	0.16188
334	MyrSpi	Found with Grapple	Patch	8/14/2013	11:58:09am	41.46602	-73.45023	2-4	2	0.21035
335	MyrSpi		Patch	8/14/2013	12:04:46pm	41.46508	-73.44763	2-4	3	0.03535

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

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
336	MyrSpi		Patch	8/14/2013	12:08:18pm	41.46434	-73.44720	2-4	2	0.02424
337	MyrSpi	Found with Grapple	Patch	8/14/2013	12:43:29pm	41.46672	-73.43501	2-4	2	1.78924
338	MyrSpi		Patch	8/14/2013	12:51:47pm	41.46668	-73.43559	0-1	2	0.01382
339	NajMin	With *Stuckenia pectinata* , Abundance= 3	Patch	8/14/2013	12:53:07pm	41.46743	-73.43506	0-2	2	1.06067
340	MyrSpi	Found with Grapple	Patch	8/14/2013	01:23:06pm	41.47184	-73.43625	2-4	2	2.30561
341	MyrSpi	Variable Abundance	Patch	8/15/2013	10:14:08am	41.47257	-73.43616	0-2	3	3.11827
342	MyrSpi		Patch	8/15/2013	11:02:20am	41.47025	-73.43248	0-2	3	0.00500
343	MyrSpi	Found with Grapple	Patch	8/15/2013	11:15:17am	41.46907	-73.43167	0-2	2	0.44013
344	MyrSpi		Patch	8/15/2013	11:21:59am	41.46945	-73.42988	0-2	3	0.77027
345	MyrSpi		Patch	8/15/2013	11:44:20am	41.46847	-73.42596	0-2	2	1.30971
346	MyrSpi		Patch	8/15/2013	11:59:08am	41.46707	-73.42429	0-1	2	0.36915
347	MyrSpi		Patch	8/15/2013	12:27:40pm	41.46529	-73.42594	2-4	4	1.05278
348	MyrSpi		Patch	8/15/2013	12:37:46pm	41.46543	-73.42445	0-1	2	0.08625
349	MyrSpi		Patch	8/15/2013	12:41:37pm	41.46437	-73.42426	0-1	2	0.18244
350	NajMin		Patch	8/15/2013	12:48:01pm	41.46345	-73.42565	0-1	2	0.01547
351	MyrSpi	Found with Grapple	Patch	8/15/2013	01:07:29pm	41.46243	-73.42806	2-4	2	5.05455
352	MyrSpi		Patch	8/15/2013	01:19:53pm	41.46265	-73.42762	0-1	2	0.03826
353	NajMin	With *Stuckenia pectinata* , Abundance= 3	Patch	8/15/2013	01:22:26pm	41.46212	-73.42767	0-1	2	0.03732
354	NajMin	With *Stuckenia pectinata*	Patch	8/15/2013	01:24:56pm	41.46161	-73.42790	0-1	2	0.04625
355	NajMin		Patch	8/15/2013	01:27:04pm	41.46053	-73.42795	0-1	2	0.34773
356	NajMin	W/FID22	Patch	12/23/2013	10:34:52am	41.48598	-73.46007	0-2	3	0.36984
357	NajMin	W/FID24	Patch	12/23/2013	10:36:12am	41.48742	-73.46318	0-2	2	0.09810
358	NajMin	W/FID27	Patch	12/23/2013	10:40:25am	41.49949	-73.46896	0-1	2	1.01248
359	NajMin	W/FID28	Patch	12/23/2013	10:42:15am	41.49717	-73.46797	0-1	2	0.27374
360	NajMin	W/FID52	Patch	12/23/2013	11:05:20am	41.53552	-73.46217	0-1	3	0.16169
361	NajMin	W/FID52	Patch	12/23/2013	11:05:45am	41.53558	-73.46188	0-1	3	0.07757
362	MyrSpi	W/FID56	Patch	12/23/2013	11:08:32am	41.54756	-73.46978	0-1	2	0.19033
363	MyrSpi	W/FID56	Patch	12/23/2013	11:08:50am	41.54599	-73.46815	0-1	2	0.13523
364	NajMin	W/FID63	Patch	12/23/2013	11:26:10am	41.48275	-73.43701	0-1	2	0.05015
365	NajMin	W/FID64	Patch	12/23/2013	11:26:15am	41.48017	-73.43562	0-1	2	1.34866
366	NajMin	W/FID64	Patch	12/23/2013	11:26:40am	41.47955	-73.43437	0-1	2	1.03321
367	NajMin	W/FID64	Patch	12/23/2013	11:26:55am	41.47650	-73.43325	0-1	1	0.88202
368	NajMin	W/FID74	Patch	8/25/2013	03:19:22pm	41.50278	-73.43829	0-1	2	0.26064
369	MyrSpi	W/FID81	Patch	12/23/2013	11:40:21am	41.51379	-73.43973	0-1	4	0.27113
370	MyrSpi	W/FID84	Patch	12/23/2013	11:43:36am	41.51738	-73.43892	0-2	2	0.90637
371	NajMin	W/FID85	Patch	12/23/2013	11:46:12am	41.51860	-73.43635	0-2	2	0.26438
372	NajMin	W/FID85	Patch	12/23/2013	11:46:46am	41.51857	-73.43709	0-2	3	0.10877
373	NajMin	W/FID86	Patch	8/27/2013	10:42:35am	41.51952	-73.43514	0-2	2	0.23619
374	NajMin	W/FID127	Patch	12/24/2013	12:17:30pm	41.56595	-73.44118	0-1	4	0.15762
375	NajMin	W/FID127	Patch	12/24/2013	12:17:50pm	41.56533	-73.44078	0-1	3	0.25147
376	MyrSpi	W/FID128	Patch	12/24/2013	12:19:12pm	41.56730	-73.44215	0-1	1	0.26482
377	NajMin	W/FID128	Patch	12/24/2013	12:19:25pm	41.56730	-73.44212	0-1	2	0.26482

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

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
378	NajMin	W/FID129	Patch	8/29/2013	09:31:20am	41.56884	-73.44268	0-2	2	0.40363
379	NajMin	W/FID132	Patch	8/29/2013	09:48:08am	41.57090	-73.44289	0-2	3	0.30588
380	NajMin	W/FID133	Patch	8/29/2013	09:51:36am	41.57192	-73.44277	0-2	2	0.01287
381	MyrSpi	W/FID137	Patch	12/24/2013	01:00:13pm	41.56655	-73.44515	0-1	3	0.32520
382	MyrSpi	W/FID138	Patch	12/24/2013	01:03:33pm	41.56447	-73.44490	0-1	3	0.27515
383	NajMin	W/FID138	Patch	12/24/2013	01:04:45pm	41.56520	-73.44506	0-1	3	0.19624
384	MyrSpi	W/FID139	Patch	12/24/2013	01:05:55pm	41.56089	-73.44433	0-1	3	0.77581
385	NajMin	W/FID143	Patch	12/24/2013	01:08:14pm	41.55280	-73.44549	0-1	2	0.05009
386	NajMin	W/FID169	Patch	8/29/2013	02:15:33pm	41.49736	-73.44671	0-1	3	0.02321
387	MyrSpi	W/FID173	Patch	12/24/2013	01:17:30pm	41.50836	-73.46902	0-1	1	0.96252
388	NajMin	W/FID173	Patch	12/24/2013	01:17:40pm	41.50724	-73.46813	0-1	3	0.17865
389	NajMin	W/FID173	Patch	12/24/2013	01:17:45pm	41.50848	-73.46921	0-1	3	0.15033
390	NajMin	W/FID173	Patch	12/24/2013	01:17:55pm	41.51022	-73.47088	0-1	3	0.02982
391	NajMin	W/FID184; Found with Grapple	Patch	12/24/2013	01:26:12pm	41.51386	-73.46175	1-2	2	0.26360
392	NajMin	W/FID187	Patch	12/24/2013	01:26:47pm	41.51963	-73.46521	0-2	2	0.22334
393	NajMin	W/FID188	Patch	12/24/2013	01:40:10pm	41.52405	-73.46614	0-1	3	0.85508
394	NajMin	W/FID188	Patch	12/24/2013	01:40:30pm	41.52597	-73.46522	0-1	3	1.48400
395	NajMin	W/FID188	Patch	12/24/2013	01:40:50pm	41.52145	-73.46595	0-1	3	0.77675
396	NajMin	W/FID192	Patch	12/24/2013	01:44:15pm	41.44836	-73.43052	0-1	2	1.77895
397	NajMin	W/FID246	Patch	9/11/2013	01:06:58pm	41.56153	-73.48694	0-2	3	0.01745
398	NajMin	W/FID249	Patch	12/24/2013	01:54:12pm	41.56234	-73.48756	0-1	3	0.12570
399	NajMin	W/FID251	Patch	12/24/2013	02:05:30pm	41.56398	-73.48809	0-1	3	0.14101
400	NajMin	W/FID252	Patch	9/11/2013	01:40:08pm	41.56473	-73.48888	0-1	3	0.13898
401	MyrSpi	W/FID254	Patch	12/26/2013	10:42:13am	41.56684	-73.49002	0-2	5	0.04973
402	MyrSpi	W/FID287	Patch	8/6/2013	11:14:17am	41.42594	-73.44995	0-1	2	0.04835
403	NajMin	W/FID288	Patch	8/6/2013	12:14:04pm	41.42396	-73.45271	0-1	2	0.10991
404	NajMin	W/FID289	Patch	12/26/2013	10:47:54am	41.42490	-73.45491	0-1	3	0.05688
405	MyrSpi	W/FID331	Patch	12/26/2013	10:52:14am	41.47157	-73.45160	0-2	2	0.06625
406	NajMin	W/FID340	Patch	8/14/2013	12:51:47pm	41.46669	-73.43559	0-1	2	0.01382
407	NajMin	W/FID345	Patch	12/26/2013	09:20:24am	41.46953	-73.42988	0-2	3	0.63694
408	NajMin	W/FID346	Patch	8/15/2013	11:44:20am	41.46851	-73.42592	0-2	2	1.30971
409	NajMin	W/FID347	Patch	8/15/2013	11:59:08am	41.46714	-73.42422	0-1	2	0.48071
410	NajMin	W/FID350	Patch	8/15/2013	12:37:46pm	41.46543	-73.42441	0-1	2	0.08625
411	NajMin	W/FID351	Patch	8/15/2013	12:41:37pm	41.46436	-73.42421	0-1	2	0.18244
412	MyrSpi	W/FID357	Patch	12/26/2013	09:43:54am	41.45971	-73.42791	0-1	3	0.12742
413	NajMin	W/FID257	Patch	12/26/2013	10:12:35am	41.57522	-73.49245	0-2	2	0.04577
414	NajMin	W/FID257	Patch	12/26/2013	10:12:35am	41.57449	-73.49196	0-2	2	0.13631
415	NajMin	W/FID257	Patch	12/26/2013	10:12:35am	41.57356	-73.49142	0-2	2	0.11275
416	NajMin	W/FID257	Patch	12/26/2013	10:12:35am	41.57189	-73.49056	0-2	2	0.08418
417	NajMin	W/FID257	Patch	12/26/2013	10:12:35am	41.57249	-73.49066	0-2	2	0.10144
418	NajMin	W/FID257	Patch	12/26/2013	10:12:35am	41.57079	-73.48836	0-2	2	0.04934
419	NajMin	W/FID257	Patch	12/26/2013	10:12:35am	41.56994	-73.48869	0-2	2	0.17247

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

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
420	NajMin	W/FID262	Patch	12/26/2013	10:16:30am	41.56929	-73.48464	0-2	2	0.16035
421	NajMin	W/FID262	Patch	12/26/2013	10:16:30am	41.57030	-73.48439	0-2	2	0.09844
422	NajMin	W/FID262	Patch	12/26/2013	10:16:30am	41.57108	-73.48411	0-2	2	0.02030
423	NajMin	W/FID262	Patch	12/26/2013	10:16:30am	41.57033	-73.48392	0-2	2	0.13992
424	NajMin	W/FID262	Patch	12/26/2013	10:16:30am	41.56884	-73.48342	0-2	2	0.08839
425	NajMin	W/FID262	Patch	12/26/2013	10:16:30am	41.56839	-73.48315	0-2	2	0.05219
426	NajMin	W/FID262	Patch	12/26/2013	10:16:30am	41.56832	-73.48228	0-2	2	0.04913
427	NajMin	W/FID262	Patch	12/26/2013	10:16:30am	41.56802	-73.48370	0-2	2	0.05201
428	MyrSpi	W/FID285	Patch	12/26/2013	10:17:20am	41.44530	-73.44830	0-1	4	0.01589
429	NajMin	W/FID290	Patch	12/26/2013	10:18:20am	41.42321	-73.45401	0-1	3	0.07489
430	NajMin	W/FID290	Patch	12/26/2013	10:18:20am	41.42312	-73.45342	0-1	3	0.01123
431	NajMin	W/FID298	Patch	12/27/2013	10:19:52am	41.45664	-73.45420	0-1	3	0.16289
432	MyrSpi	W/FID102	Patch	12/27/2013	10:34:25am	41.53548	-73.43874	0-2	5	0.04385
433	NajMin	W/FID341	Patch	12/27/2013	10:39:14am	41.47076	-73.43554	0-2	2	0.32532
434	NajMin	W/FID342	Patch	12/27/2013	10:42:52am	41.47256	-73.43597	0-2	3	2.66732
435	MyrSpi	Found with Grapple	Patch	10/16/2013	03:23:32pm	41.42789	-73.45535	1-3	2	14.79195
436	MyrSpi	Found with Grapple	Patch	10/16/2013	12:40:27pm	41.44807	-73.44972	1-4	3	0.31925
0	MyrSpi		Point	8/22/2013	10:46:05am	41.46748	-73.44654	0-2	2	0.0002
1	MyrSpi		Point	8/22/2013	10:46:20am	41.46737	-73.44649	0-2	2	0.0002
2	MyrSpi		Point	8/22/2013	10:48:20am	41.46828	-73.44717	2-4	2	0.0002
3	MyrSpi		Point	8/22/2013	10:56:50am	41.46997	-73.44907	0-2	2	0.0002
4	MyrSpi		Point	8/22/2013	12:05:50pm	41.48771	-73.46354	0-1	2	0.0002
5	MyrSpi		Point	8/22/2013	12:22:15pm	41.49206	-73.46660	0-1	2	0.0002
6	MyrSpi		Point	8/22/2013	12:56:00pm	41.49574	-73.46655	0-1	1	0.0002
7	MyrSpi		Point	8/22/2013	12:56:10pm	41.49573	-73.46659	0-1	1	0.0002
8	MyrSpi		Point	8/22/2013	12:57:00pm	41.49579	-73.46627	0-1	1	0.0002
9	MyrSpi		Point	8/22/2013	01:04:10pm	41.49599	-73.46497	0-1	1	0.0002
10	MyrSpi		Point	8/22/2013	01:04:20pm	41.49597	-73.46496	0-1	1	0.0002
11	MyrSpi		Point	8/25/2013	01:39:00pm	41.48264	-73.43544	0-1	1	0.0002
12	MyrSpi		Point	8/25/2013	03:13:00pm	41.50317	-73.44031	0-1	2	0.0002
13	MyrSpi		Point	8/25/2013	03:13:30pm	41.50314	-73.44026	0-1	2	0.0002
14	MyrSpi		Point	8/25/2013	03:13:45pm	41.50308	-73.44018	0-1	2	0.0002
15	MyrSpi		Point	8/25/2013	03:25:20pm	41.50340	-73.43768	0-1	2	0.0002
16	MyrSpi		Point	8/25/2013	03:39:15pm	41.50954	-73.43892	2-4	2	0.0002
17	MyrSpi		Point	8/27/2013	10:07:05am	41.51583	-73.44023	0-1	2	0.0002
18	MyrSpi		Point	8/27/2013	10:07:25am	41.51584	-73.44021	0-1	2	0.0002
19	MyrSpi		Point	8/27/2013	10:07:55am	41.51584	-73.44020	0-1	2	0.0002
20	MyrSpi		Point	8/27/2013	10:08:55am	41.51575	-73.44044	0-1	2	0.0002
21	MyrSpi		Point	8/27/2013	11:09:25am	41.52736	-73.43740	0-1	1	0.0002
22	MyrSpi		Point	8/27/2013	01:01:40pm	41.53727	-73.44195	0-1	1	0.0002
23	MyrSpi		Point	8/27/2013	01:02:00pm	41.53722	-73.44188	0-1	2	0.0002
24	MyrSpi		Point	8/27/2013	01:02:10pm	41.53717	-73.44182	0-1	2	0.0002

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

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
25	MyrSpi		Point	8/29/2013	10:54:45am	41.55683	-73.44402	0-1	1	0.0002
26	MyrSpi		Point	8/29/2013	11:58:26am	41.53837	-73.44687	0-2	4	0.0002
27	MyrSpi		Point	8/29/2013	11:59:40am	41.53782	-73.44722	0-1	2	0.0002
28	MyrSpi		Point	8/29/2013	12:12:54pm	41.53287	-73.44834	0-2	5	0.0002
29	MyrSpi		Point	8/29/2013	12:13:09pm	41.53285	-73.44833	0-2	5	0.0002
30	MyrSpi		Point	8/30/2013	10:10:42am	41.50469	-73.46594	0-1	2	0.0002
31	MyrSpi		Point	8/30/2013	10:14:32am	41.50614	-73.46692	0-1	2	0.0002
32	NajMin		Point	8/30/2013	10:15:25am	41.50628	-73.46714	0-1	3	0.0002
33	MyrSpi		Point	8/30/2013	12:00:28pm	41.51605	-73.46295	0-1	1	0.0002
34	MyrSpi		Point	9/10/2013	01:07:35pm	41.51386	-73.45522	0-1	1	0.0002
35	MyrSpi		Point	9/10/2013	02:35:40pm	41.54425	-73.46015	0-1	2	0.0002
36	MyrSpi		Point	9/11/2013	12:05:05pm	41.55654	-73.48188	0-1	3	0.0002
37	MyrSpi		Point	9/11/2013	12:05:15pm	41.55654	-73.48189	0-1	3	0.0002
38	MyrSpi		Point	9/11/2013	12:57:35pm	41.56113	-73.48497	0-1	2	0.0002
39	NajMin		Point	9/11/2013	01:00:00pm	41.56136	-73.48637	0-1	3	0.0002
40	NajMin		Point	9/11/2013	01:00:20pm	41.56136	-73.48642	0-1	3	0.0002
41	MyrSpi		Point	8/1/2013	09:31:30am	41.45176	-73.43381	0-1	2	0.0002
42	MyrSpi		Point	8/1/2013	09:32:25am	41.45170	-73.43368	0-1	2	0.0002
43	MyrSpi		Point	8/1/2013	09:34:15am	41.45198	-73.43413	0-1	2	0.0002
44	MyrSpi		Point	8/1/2013	10:00:45am	41.45305	-73.43807	0-1	2	0.0002
45	MyrSpi		Point	8/6/2013	10:31:06am	41.44528	-73.44873	0-1	1	0.0002
46	MyrSpi		Point	8/6/2013	10:43:18am	41.44224	-73.45179	0-1	2	0.0002
47	MyrSpi		Point	8/6/2013	10:43:46am	41.44226	-73.45174	0-1	2	0.0002
48	MyrSpi		Point	8/6/2013	10:52:45am	41.43891	-73.45300	0-1	2	0.0002
49	NajMin		Point	8/6/2013	10:52:58am	41.43891	-73.45300	0-1	2	0.0002
50	NajMin		Point	8/6/2013	10:53:42am	41.43892	-73.45304	0-1	2	0.0002
51	NajMin		Point	8/6/2013	10:54:17am	41.43898	-73.45305	0-1	2	0.0002
52	MyrSpi		Point	8/6/2013	12:06:25pm	41.42568	-73.45300	2-4	2	0.0002
53	MyrSpi		Point	8/6/2013	01:15:18pm	41.43044	-73.46026	0-1	1	0.0002
54	MyrSpi		Point	8/12/2013	11:04:25am	41.46487	-73.45959	0-1	3	0.0002
55	MyrSpi		Point	8/12/2013	11:09:10am	41.46399	-73.46241	0-1	3	0.0002
56	MyrSpi		Point	8/12/2013	11:11:05am	41.46387	-73.46224	0-1	2	0.0002
57	MyrSpi		Point	8/12/2013	11:11:55am	41.46384	-73.46197	0-1	3	0.0002
58	MyrSpi		Point	8/12/2013	11:12:05am	41.46381	-73.46190	0-2	2	0.0002
59	MyrSpi		Point	8/12/2013	01:06:35pm	41.47919	-73.46230	0-1	3	0.0002
60	MyrSpi		Point	8/12/2013	01:28:50pm	41.48362	-73.46022	0-1	1	0.0002
61	MyrSpi		Point	8/12/2013	01:31:25pm	41.48401	-73.46028	0-1	2	0.0002
62	MyrSpi		Point	8/12/2013	01:32:40pm	41.48428	-73.46025	0-1	2	0.0002
63	MyrSpi		Point	8/12/2013	01:33:05pm	41.48424	-73.46025	0-1	2	0.0002
64	MyrSpi		Point	8/12/2013	01:33:15pm	41.48424	-73.46029	0-1	2	0.0002
65	MyrSpi		Point	8/14/2013	10:01:00am	41.47942	-73.45660	0-2	2	0.0002
66	MyrSpi		Point	8/14/2013	10:01:25am	41.47939	-73.45655	0-2	2	0.0002

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

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
67	MyrSpi		Point	8/14/2013	10:01:45am	41.47938	-73.45651	0-2	2	0.0002
68	MyrSpi		Point	8/14/2013	11:24:25am	41.46878	-73.45005	0-1	3	0.0002
69	MyrSpi		Point	8/14/2013	12:06:30pm	41.46513	-73.44752	0-1	2	0.0002
70	MyrSpi		Point	8/15/2013	11:43:40am	41.46863	-73.42769	0-1	1	0.0002
71	MyrSpi		Point	8/15/2013	12:48:54pm	41.46355	-73.42576	0-1	1	0.0002
72	MyrSpi		Point	8/15/2013	01:34:19pm	41.46086	-73.42797	0-1	2	0.0002
73	MyrSpi		Point	12/20/2013	10:04:17am	41.49757	-73.45355	2-4	3	0.0002

Appendix Lake Lillinonah Invasive Plant Location Data (1 of 8)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
0	MyrSpi	0-3 m	Patch	7/23/2013	10:27:57am	41.53887	-73.40301	1-3	3	0.05561
1	MyrSpi	0-1.5 m	Patch	7/23/2013	10:36:16am	41.53921	-73.40296	0-1	2	0.05982
2	MyrSpi		Patch	7/23/2013	10:56:02am	41.54110	-73.40285	1-3	3	0.51155
3	MyrSpi		Patch	7/23/2013	12:13:17pm	41.54193	-73.40142	0-1	2	0.03438
4	MyrSpi		Patch	7/23/2013	12:21:25pm	41.54166	-73.40239	1-3	4	0.84752
5	MyrSpi		Patch	7/23/2013	12:56:15pm	41.54144	-73.40366	1-3	2	0.28458
6	MyrSpi		Patch	7/24/2013	08:24:09am	41.52301	-73.39973	1-3	3	1.52225
7	MyrSpi		Patch	7/24/2013	08:55:37am	41.52518	-73.40061	1-3	2	0.78387
8	MyrSpi		Patch	7/24/2013	09:17:41am	41.52577	-73.40008	1-3	1	0.22975
9	MyrSpi		Patch	7/24/2013	09:25:11am	41.52572	-73.39944	1-3	2	0.14133
10	MyrSpi		Patch	7/24/2013	09:30:13am	41.52588	-73.39948	0-1	4	0.10659
11	MyrSpi		Patch	7/24/2013	10:01:39am	41.52615	-73.40071	1-3	2	1.02495
12	MyrSpi	0-3 m	Patch	7/24/2013	10:46:07am	41.52714	-73.40173	1-3	2	3.84635
13	MyrSpi		Patch	7/24/2013	12:30:45pm	41.53795	-73.40508	1-3	2	5.02174
14	NajMin		Patch	7/24/2013	12:59:11pm	41.53932	-73.40532	0-1	1	0.13336
15	MyrSpi		Patch	7/24/2013	01:53:46pm	41.53584	-73.40613	1-3	3	3.12798
16	MyrSpi		Patch	7/25/2013	09:15:10am	41.53380	-73.40619	1-3	3	0.49096
17	MyrSpi		Patch	7/25/2013	09:58:45am	41.52042	-73.40091	1-3	2	0.05106
18	MyrSpi		Patch	7/25/2013	10:15:51am	41.51793	-73.39753	1-3	1	0.30376
19	MyrSpi		Patch	7/25/2013	10:49:51am	41.51458	-73.38866	1-3	2	0.09281
20	MyrSpi		Patch	7/25/2013	10:58:28am	41.51341	-73.38695	1-3	4	0.15947
21	MyrSpi		Patch	7/25/2013	11:55:13am	41.51166	-73.38643	1-3	2	0.34402
22	NajMin	0.5-1 m	Patch	7/25/2013	12:13:19pm	41.51157	-73.38657	0-1	2	0.10085
23	MyrSpi		Patch	7/25/2013	12:29:09pm	41.51121	-73.38774	1-3	2	0.18915
24	MyrSpi		Patch	7/25/2013	12:54:10pm	41.51072	-73.38899	1-3	2	0.23219
25	MyrSpi		Patch	7/25/2013	01:27:43pm	41.50220	-73.38170	1-3	2	0.58719
26	MyrSpi		Patch	7/26/2013	08:47:36am	41.50037	-73.37894	1-3	3	1.17543
27	MyrSpi		Patch	7/26/2013	09:46:08am	41.49846	-73.37812	1-3	3	1.31359
28	MyrSpi		Patch	7/26/2013	10:26:29am	41.49535	-73.37773	1-3	3	0.57153
29	MyrSpi		Patch	7/26/2013	10:47:03am	41.49290	-73.37765	1-3	2	0.17051
30	MyrSpi		Patch	7/26/2013	11:46:56am	41.49329	-73.37938	1-3	3	1.03252
31	MyrSpi	0-3 m	Patch	7/26/2013	12:26:15pm	41.49346	-73.38191	1-3	3	0.94161
32	MyrSpi		Patch	7/26/2013	01:17:59pm	41.49248	-73.38326	1-3	3	0.63486
33	MyrSpi		Patch	7/18/2013	09:54:34am	41.48351	-73.35931	1-3	3	1.78410
34	MyrSpi		Patch	7/18/2013	10:39:08am	41.48831	-73.36645	1-3	3	0.65859

Appendix Lake Lillinonah Invasive Plant Location Data (2 of 8)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
35	MyrSpi		Patch	7/18/2013	10:50:56am	41.48853	-73.36784	1-3	2	0.01594
36	MyrSpi		Patch	7/18/2013	11:38:05am	41.48997	-73.37025	1-3	2	0.06409
37	MyrSpi		Patch	7/18/2013	11:45:35am	41.49082	-73.37262	1-3	2	1.58981
38	MyrSpi		Patch	7/18/2013	12:36:24pm	41.49422	-73.37485	1-3	1	0.03822
39	MyrSpi		Patch	7/18/2013	12:44:08pm	41.49511	-73.37475	3-5	2	0.23403
40	MyrSpi		Patch	7/18/2013	12:52:07pm	41.49642	-73.37466	3-5	1	0.05754
41	MyrSpi		Patch	7/18/2013	01:18:26pm	41.49939	-73.37413	1-3	2	1.92084
42	MyrSpi		Patch	7/18/2013	01:36:23pm	41.50125	-73.37497	1-3	2	0.05948
43	MyrSpi		Patch	7/18/2013	01:42:35pm	41.50263	-73.37539	1-3	4	0.96861
44	MyrSpi		Patch	7/18/2013	02:00:19pm	41.50249	-73.37492	1-3	3	0.13931
45	MyrSpi		Patch	7/19/2013	08:37:55am	41.50473	-73.38118	1-3	3	0.12194
46	MyrSpi	1-4 m	Patch	7/19/2013	08:45:47am	41.50529	-73.38298	1-3	3	1.53048
47	MyrSpi		Patch	7/19/2013	09:04:21am	41.50557	-73.38482	1-3	2	0.00981
48	MyrSpi		Patch	7/19/2013	09:09:09am	41.50579	-73.38547	1-3	2	0.10222
49	MyrSpi		Patch	7/19/2013	09:19:02am	41.50682	-73.38657	1-3	2	0.29023
50	MyrSpi		Patch	7/19/2013	09:44:29am	41.51613	-73.38727	1-3	2	1.16218
51	MyrSpi		Patch	7/19/2013	10:05:51am	41.51657	-73.38897	1-3	2	0.08669
52	MyrSpi		Patch	7/19/2013	10:26:48am	41.52178	-73.39768	1-3	2	0.57366
53	MyrSpi		Patch	7/19/2013	10:53:49am	41.51987	-73.39666	1-3	4	0.61652
54	MyrSpi		Patch	7/19/2013	12:34:26pm	41.52969	-73.40342	1-3	4	0.29555
55	MyrSpi		Patch	7/19/2013	01:11:14pm	41.53383	-73.40403	1-3	3	2.06715
56	MyrSpi		Patch	7/19/2013	01:32:30pm	41.53602	-73.40383	1-3	3	1.29819
57	MyrSpi	0-2 m	Patch	8/27/2013	08:40:14am	41.51048	-73.31827	0-1	4	0.82045
58	MyrSpi		Patch	8/27/2013	09:14:48am	41.51053	-73.31630	0-1	2	0.12099
59	MyrSpi		Patch	8/27/2013	09:32:43am	41.51014	-73.31592	0-1	3	0.13594
60	MyrSpi		Patch	8/27/2013	09:54:22am	41.50294	-73.31982	1-3	4	1.21099
61	MyrSpi		Patch	8/27/2013	10:14:53am	41.50137	-73.32034	1-3	2	0.11644
62	MyrSpi		Patch	8/27/2013	10:23:52am	41.50041	-73.32054	1-3	3	0.03629
63	MyrSpi		Patch	8/27/2013	10:31:54am	41.49853	-73.32174	1-3	2	0.12056
64	MyrSpi		Patch	8/27/2013	10:45:15am	41.49545	-73.32464	1-3	2	0.10781
65	MyrSpi		Patch	8/27/2013	10:59:21am	41.49375	-73.32508	1-3	4	0.43882
66	MyrSpi		Patch	8/27/2013	11:45:22am	41.49310	-73.32463	1-3	3	0.13761
67	MyrSpi		Patch	8/27/2013	11:51:53am	41.49277	-73.32423	1-3	2	0.03079
68	MyrSpi		Patch	8/27/2013	12:12:08pm	41.48447	-73.32497	1-3	3	0.20655
69	MyrSpi	1-5 m	Patch	8/27/2013	12:56:48pm	41.47245	-73.31356	1-3	5	0.57197

Appendix Lake Lillinonah Invasive Plant Location Data (3 of 8)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
70	MyrSpi	1-5 m	Patch	8/27/2013	01:09:09pm	41.47247	-73.31166	3-5	5	0.80195
71	MyrSpi	2-5 m	Patch	8/27/2013	01:25:07pm	41.47109	-73.31110	3-5	4	0.37996
72	MyrSpi		Patch	8/27/2013	01:36:26pm	41.47124	-73.31000	0-1	2	0.04038
73	MyrSpi	1-5 m	Patch	8/28/2013	09:29:49am	41.45498	-73.29807	1-3	2	0.97531
74	MyrSpi		Patch	8/28/2013	10:00:01am	41.44703	-73.29979	2-4	4	0.19476
75	MyrSpi		Patch	8/28/2013	10:05:38am	41.44702	-73.30073	2-5	3	0.58713
76	MyrSpi		Patch	8/28/2013	10:16:50am	41.44652	-73.30098	1-3	5	0.43822
77	NajMin		Patch	8/28/2013	10:28:20am	41.44629	-73.30180	0-1	1	0.02555
78	MyrSpi		Patch	8/28/2013	10:31:17am	41.44653	-73.30166	2-5	2	0.05890
79	MyrSpi	1.5-5 m	Patch	8/28/2013	10:36:32am	41.44647	-73.30229	1-5	1	0.23450
80	MyrSpi	0-3 m	Patch	8/28/2013	10:41:08am	41.44559	-73.30288	1-3	5	0.89289
81	MyrSpi		Patch	8/28/2013	11:30:44am	41.44523	-73.30399	1-3	2	0.01010
82	MyrSpi	0-3 m	Patch	8/28/2013	11:37:01am	41.44454	-73.30429	1-3	4	0.59743
83	MyrSpi		Patch	8/28/2013	12:10:29pm	41.44539	-73.30521	1-3	1	0.03493
84	MyrSpi		Patch	8/28/2013	12:14:25pm	41.44577	-73.30527	1-5	2	0.13424
85	MyrSpi	1-4 m	Patch	8/28/2013	12:19:50pm	41.44627	-73.30521	1-3	5	0.19306
86	MyrSpi		Patch	8/28/2013	12:31:34pm	41.44818	-73.30404	1-3	2	0.07786
87	MyrSpi	1-6 m	Patch	8/28/2013	12:38:11pm	41.44797	-73.30343	1-3	3	0.16656
88	MyrSpi		Patch	8/28/2013	01:12:00pm	41.46274	-73.30182	1-3	2	0.02824
89	MyrSpi		Patch	8/20/2013	10:10:30am	41.49971	-73.32296	1-3	3	1.14015
90	MyrSpi		Patch	8/20/2013	10:46:09am	41.49994	-73.32223	1-3	3	0.11187
91	MyrSpi	2-3.5 m	Patch	8/20/2013	11:41:54am	41.50479	-73.32038	1-3	4	6.53077
92	NajMin	0-2 m	Patch	8/20/2013	12:29:21pm	41.50560	-73.32020	0-1	3	0.76437
93	MyrSpi		Patch	8/20/2013	12:55:09pm	41.50962	-73.32033	0-1	3	0.47065
94	MyrSpi		Patch	8/20/2013	01:09:46pm	41.50793	-73.31911	1-3	4	7.07049
95	MyrSpi	0.5-3.5 m	Patch	8/20/2013	09:06:29am	41.49787	-73.32456	3.5	4	4.46393
96	MyrSpi		Patch	8/6/2013	08:42:31am	41.46004	-73.32451	1-3	5	0.13043
97	MyrSpi		Patch	8/6/2013	09:00:08am	41.46187	-73.32336	1-3	4	0.60040
98	MyrSpi	0-3 m	Patch	8/6/2013	09:12:20am	41.46363	-73.32319	1-3	1	0.10372
99	MyrSpi	0-1 m	Patch	8/6/2013	09:20:52am	41.46385	-73.32360	1-3	2	0.03500
100	MyrSpi	0-4 m	Patch	8/6/2013	09:38:44am	41.46792	-73.32507	1-3	3	0.75630
101	NajMin		Patch	8/6/2013	09:47:01am	41.46792	-73.32530	0-1	2	0.16407
102	MyrSpi		Patch	8/6/2013	10:03:17am	41.47081	-73.33133	1-3	3	0.02487
103	MyrSpi		Patch	8/6/2013	10:07:20am	41.47108	-73.33171	1-3	1	0.13269
104	MyrSpi		Patch	8/6/2013	10:16:06am	41.47138	-73.33211	1-3	2	0.10551

Appendix Lake Lillinonah Invasive Plant Location Data (4 of 8)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
105	MyrSpi		Patch	8/6/2013	10:25:10am	41.47165	-73.33281	1-3	2	0.28371
106	MyrSpi	0-3 m	Patch	8/6/2013	10:39:51am	41.47201	-73.33374	1-3	2	0.25930
107	MyrSpi		Patch	8/6/2013	10:57:50am	41.47244	-73.33464	1-3	2	0.41183
108	MyrSpi		Patch	8/6/2013	11:40:57am	41.47337	-73.33601	1-3	2	0.53283
109	MyrSpi		Patch	8/6/2013	12:01:59pm	41.47417	-73.33726	1-3	1	0.07867
110	MyrSpi		Patch	8/8/2013	08:43:06am	41.46945	-73.31302	1-3	4	0.78511
111	MyrSpi		Patch	8/8/2013	09:20:46am	41.47245	-73.31675	1-3	1	0.01486
112	MyrSpi		Patch	8/8/2013	09:41:30am	41.47356	-73.31884	1-4	4	2.78410
113	MyrSpi		Patch	8/8/2013	11:56:43am	41.48520	-73.32830	1-3	3	0.02161
114	MyrSpi		Patch	8/8/2013	12:07:59pm	41.48585	-73.32812	1-3	2	0.01664
115	MyrSpi		Patch	8/8/2013	12:11:11pm	41.48608	-73.32803	1-3	3	0.06988
116	MyrSpi	0-3 m	Patch	8/8/2013	12:17:24pm	41.48740	-73.32705	1-3	2	0.08148
117	MyrSpi		Patch	8/8/2013	12:36:13pm	41.49389	-73.32961	1-3	5	0.43596
118	MyrSpi		Patch	8/8/2013	12:46:24pm	41.49418	-73.32908	0-1	4	0.02215
119	MyrSpi		Patch	8/8/2013	12:54:24pm	41.49577	-73.32878	1-3	2	0.03161
120	MyrSpi		Patch	8/8/2013	01:10:42pm	41.49615	-73.32831	1-3	5	0.64843
121	NajMin		Patch	8/8/2013	01:23:08pm	41.49662	-73.32778	0-1	3	1.37611
122	MyrSpi		Patch	8/8/2013	01:36:00pm	41.49696	-73.32707	1-3	4	0.58803
123	MyrSpi	0-3 m	Patch	7/30/2013	09:07:34am	41.49040	-73.38377	1-3	4	2.23854
124	NajMin		Patch	7/30/2013	09:42:17am	41.48943	-73.38429	0-1	2	0.06882
125	MyrSpi		Patch	7/30/2013	09:56:39am	41.49022	-73.38337	1-3	4	1.43908
126	MyrSpi		Patch	7/30/2013	10:29:20am	41.49077	-73.38149	1-3	4	0.38470
127	MyrSpi		Patch	7/30/2013	11:06:21am	41.49163	-73.38152	1-3	2	0.09305
128	MyrSpi		Patch	7/30/2013	11:50:59am	41.49235	-73.38027	1-3	1	0.08862
129	MyrSpi		Patch	7/30/2013	11:55:33am	41.49234	-73.37959	1-3	4	0.54922
130	MyrSpi		Patch	7/30/2013	12:16:39pm	41.48908	-73.37673	1-3	2	0.11033
131	MyrSpi		Patch	7/30/2013	12:38:59pm	41.48659	-73.37122	1-3	1	0.06714
132	MyrSpi	0-4 m	Patch	7/30/2013	12:48:18pm	41.48652	-73.36893	1-3	2	0.29061
133	MyrSpi		Patch	7/30/2013	01:33:11pm	41.47818	-73.34982	1-3	5	0.08125
134	MyrSpi		Patch	8/2/2013	11:49:53am	41.48279	-73.35036	0-1	2	0.04336
135	MyrSpi		Patch	8/2/2013	12:01:35pm	41.48315	-73.35033	1-3	2	0.05469
136	MyrSpi	0-3 m	Patch	8/2/2013	12:21:18pm	41.48211	-73.34982	1-3	5	1.10517
137	MyrSpi	0-3 m	Patch	8/2/2013	12:43:10pm	41.48177	-73.34933	1-3	1	0.18216
138	MyrSpi		Patch	8/2/2013	01:00:24pm	41.47975	-73.34474	1-3	2	0.20478
139	MyrSpi	W/FID2	Patch	12/19/2013	01:50:20pm	41.54047	-73.40255	1-3	4	0.52638

Appendix Lake Lillinonah Invasive Plant Location Data (5 of 8)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
140	NajMin	W/FID 25; 0-1.5 m	Patch	12/19/2013	02:06:25pm	41.50216	-73.38184	0-1	2	0.11236
141	NajMin	W/FID 26	Patch	12/19/2013	02:07:15pm	41.50049	-73.37942	0-1	1	0.06637
142	NajMin	W/FID 27	Patch	12/19/2013	02:19:20pm	41.49850	-73.37814	0-1	2	0.03832
143	NajMin	W/FID 27	Patch	12/19/2013	02:19:46pm	41.49900	-73.37823	0-1	2	0.04096
144	NajMin	W/FID30	Patch	12/19/2013	02:21:32pm	41.49360	-73.37993	0-1	2	0.13433
145	MyrSpi	W/FID52	Patch	12/19/2013	03:11:14pm	41.52099	-73.39737	1-3	4	1.10158
146	MyrSpi	W/FID57	Patch	12/20/2013	09:44:22am	41.51083	-73.31760	0-1	4	0.25437
147	NajMin	W/FID57	Patch	12/20/2013	09:45:45am	41.51074	-73.31786	0-1	3	0.40124
148	NajMin	W/FID70	Patch	12/20/2013	09:51:23am	41.47275	-73.31172	0-1	2	0.19399
149	MyrSpi	W/FID77	Patch	12/20/2013	09:54:21am	41.44629	-73.30181	0-1	1	0.12927
150	MyrSpi	W/FID80	Patch	12/20/2013	09:55:45am	41.44578	-73.30294	3-5	2	0.35036
151	MyrSpi	W/FID82	Patch	12/20/2013	10:06:12am	41.44472	-73.30381	0-1	5	0.14794
152	NajMin	0-1.5 m	Patch	12/20/2013	10:15:45am	41.49819	-73.32471	0-1	2	0.62900
153	NajMin	W/FID93	Patch	12/20/2013	10:18:20am	41.50965	-73.32042	0-1	2	0.31186
154	NajMin	W/FID94	Patch	12/20/2013	10:22:30am	41.50849	-73.31930	0-2	4	2.73852
155	NajMin	W/FID112	Patch	12/20/2013	10:27:23am	41.47307	-73.31894	0-1	2	0.24702
156	NajMin	W/FID112	Patch	12/20/2013	10:27:56am	41.47391	-73.31921	0-1	2	0.18552
157	MyrSpi	W/FID121	Patch	12/20/2013	10:37:14am	41.49660	-73.32792	0-1	3	0.48650
158	NajMin	W/FID126	Patch	12/20/2013	02:14:52pm	41.49063	-73.38122	0-1	3	0.11532
159	NajMin	W/FID129	Patch	12/20/2013	02:16:30pm	41.49223	-73.37993	0-1	2	0.28430
160	MyrSpi	W/FID129	Patch	12/20/2013	02:16:30pm	41.49221	-73.37991	0-1	1	0.28430
0	MyrSpi		Point	7/23/2013	10:50:23am	41.54143	-73.40238	0-1	1	0.0002
1	PotCri		Point	7/23/2013	11:14:26am	41.54033	-73.40261	1-3	3	0.0002
2	PotCri		Point	7/23/2013	11:20:26am	41.54046	-73.40275	1-3	2	0.0002
3	TraNat		Point	7/23/2013	12:35:42pm	41.54150	-73.40329	1-3	2	0.0002
4	TraNat		Point	7/23/2013	12:41:19pm	41.54147	-73.40333	0-1	1	0.0002
5	MyrSpi		Point	7/23/2013	12:54:13pm	41.54135	-73.40417	1-3	1	0.0002
6	MyrSpi		Point	7/23/2013	12:55:15pm	41.54142	-73.40406	1-3	1	0.0002
7	MyrSpi		Point	7/23/2013	01:06:27pm	41.54088	-73.40365	1-3	1	0.0002
8	MyrSpi		Point	7/23/2013	01:06:56pm	41.54084	-73.40369	1-3	1	0.0002
9	MyrSpi		Point	7/23/2013	01:07:44pm	41.54068	-73.40381	1-3	1	0.0002
10	MyrSpi		Point	7/23/2013	01:08:26pm	41.54059	-73.40378	1-3	1	0.0002
11	MyrSpi		Point	7/23/2013	01:11:19pm	41.54073	-73.40354	1-3	1	0.0002
12	TraNat		Point	7/24/2013	12:12:18pm	41.53882	-73.40550	0-1	1	0.0002
13	TraNat		Point	7/24/2013	12:15:54pm	41.53895	-73.40546	0-1	2	0.0002

Appendix Lake Lillinonah Invasive Plant Location Data (6 of 8)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
14	TraNat		Point	7/24/2013	12:21:01pm	41.53930	-73.40537	0-1	1	0.0002
15	MyrSpi		Point	7/25/2013	09:49:41am	41.52062	-73.40114	1-3	1	0.0002
16	MyrSpi		Point	7/25/2013	10:33:31am	41.51594	-73.39174	1-3	1	0.0002
17	MyrSpi		Point	7/25/2013	10:40:28am	41.51507	-73.38940	1-3	1	0.0002
18	MyrSpi		Point	7/25/2013	10:41:54am	41.51509	-73.38947	1-3	3	0.0002
19	MyrSpi		Point	7/25/2013	10:42:27am	41.51511	-73.38950	1-3	1	0.0002
20	MyrSpi		Point	7/25/2013	10:45:53am	41.51475	-73.38887	1-3	1	0.0002
21	MyrSpi		Point	7/25/2013	12:40:44pm	41.51113	-73.38844	0-1	1	0.0002
22	TraNat	4 plants present; possibly floating	Point	7/25/2013	12:52:01pm	41.51050	-73.38932	0-1	2	0.0002
23	MyrSpi		Point	7/25/2013	01:18:47pm	41.50290	-73.38270	3-5	1	0.0002
24	MyrSpi		Point	7/26/2013	10:16:59am	41.49617	-73.37836	1-3	1	0.0002
25	MyrSpi		Point	7/26/2013	10:41:02am	41.49334	-73.37717	1-3	1	0.0002
26	MyrSpi		Point	7/26/2013	11:44:52am	41.49360	-73.38039	0-1	2	0.0002
27	MyrSpi		Point	7/26/2013	01:28:00pm	41.49186	-73.38342	1-3	3	0.0002
28	MyrSpi		Point	7/26/2013	01:30:46pm	41.49147	-73.38345	1-3	1	0.0002
29	MyrSpi		Point	7/18/2013	10:35:47am	41.48798	-73.36568	3-5	2	0.0002
30	MyrSpi		Point	7/18/2013	11:33:44am	41.48967	-73.36981	1-3	2	0.0002
31	MyrSpi		Point	7/18/2013	11:34:18am	41.48971	-73.36988	1-3	1	0.0002
32	MyrSpi		Point	7/18/2013	11:35:46am	41.48982	-73.37003	1-3	1	0.0002
33	MyrSpi		Point	7/18/2013	12:28:38pm	41.49344	-73.37504	3-5	1	0.0002
34	MyrSpi		Point	7/18/2013	12:30:02pm	41.49367	-73.37495	1-3	2	0.0002
35	MyrSpi		Point	7/18/2013	12:54:59pm	41.49679	-73.37467	1-3	1	0.0002
36	MyrSpi		Point	7/18/2013	12:56:10pm	41.49697	-73.37470	1-3	2	0.0002
37	MyrSpi		Point	7/18/2013	12:57:01pm	41.49707	-73.37469	1-3	3	0.0002
38	MyrSpi		Point	7/18/2013	12:59:45pm	41.49779	-73.37464	1-3	2	0.0002
39	MyrSpi		Point	7/18/2013	01:00:15pm	41.49772	-73.37462	1-3	1	0.0002
40	MyrSpi		Point	7/19/2013	08:30:57am	41.50463	-73.38089	3-5	1	0.0002
41	MyrSpi		Point	7/19/2013	09:00:39am	41.50550	-73.38471	1-3	1	0.0002
42	MyrSpi		Point	7/19/2013	12:29:24pm	41.52896	-73.40328	1-3	1	0.0002
43	MyrSpi		Point	7/19/2013	12:31:57pm	41.52912	-73.40338	1-3	1	0.0002
44	PotCri		Point	8/25/2013	11:36:10am	41.53857	-73.40504	0-1	2	0.0002
45	MyrSpi		Point	8/27/2013	09:07:42am	41.51027	-73.31736	0-1	3	0.0002
46	MyrSpi		Point	8/27/2013	09:08:20am	41.51023	-73.31728	0-1	2	0.0002
47	MyrSpi		Point	8/27/2013	09:09:22am	41.51022	-73.31717	0-1	2	0.0002
48	MyrSpi		Point	8/27/2013	09:10:25am	41.51017	-73.31704	0-1	3	0.0002

Appendix Lake Lillinonah Invasive Plant Location Data (7 of 8)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
49	MyrSpi		Point	8/27/2013	10:40:37am	41.49695	-73.32307	1-3	4	0.0002
50	MyrSpi		Point	8/27/2013	10:54:36am	41.49454	-73.32514	1-3	2	0.0002
51	MyrSpi		Point	8/27/2013	10:54:50am	41.49450	-73.32514	1-3	2	0.0002
52	MyrSpi		Point	8/27/2013	10:57:21am	41.49430	-73.32513	1-3	3	0.0002
53	MyrSpi		Point	8/27/2013	12:01:42pm	41.48847	-73.32429	1-3	3	0.0002
54	MyrSpi		Point	8/27/2013	12:01:57pm	41.48845	-73.32432	1-3	2	0.0002
55	MyrSpi		Point	8/27/2013	12:08:54pm	41.48501	-73.32533	1-3	1	0.0002
56	MyrSpi		Point	8/27/2013	12:24:16pm	41.48315	-73.32265	1-3	1	0.0002
57	MyrSpi		Point	8/27/2013	12:26:58pm	41.48270	-73.32230	1-3	2	0.0002
58	MyrSpi		Point	8/27/2013	12:27:26pm	41.48268	-73.32228	1-3	2	0.0002
59	MyrSpi		Point	8/27/2013	12:29:17pm	41.48197	-73.32182	1-3	1	0.0002
60	MyrSpi		Point	8/27/2013	12:31:00pm	41.48145	-73.32175	3-5	3	0.0002
61	MyrSpi		Point	8/27/2013	12:31:29pm	41.48145	-73.32169	1-3	2	0.0002
62	MyrSpi		Point	8/27/2013	12:33:37pm	41.48138	-73.32170	1-3	1	0.0002
63	MyrSpi		Point	8/27/2013	01:07:41pm	41.47220	-73.31279	1-3	1	0.0002
64	MyrSpi		Point	8/27/2013	01:35:52pm	41.47117	-73.31018	1-3	2	0.0002
65	MyrSpi		Point	8/27/2013	01:41:33pm	41.47120	-73.30924	1-3	1	0.0002
66	MyrSpi		Point	8/28/2013	09:45:43am	41.45340	-73.29829	3-5	1	0.0002
67	MyrSpi		Point	8/28/2013	11:35:15am	41.44483	-73.30463	1-3	2	0.0002
68	MyrSpi		Point	8/28/2013	11:35:30am	41.44482	-73.30458	1-3	1	0.0002
69	MyrSpi		Point	8/28/2013	12:25:57pm	41.44673	-73.30490	1-3	3	0.0002
70	MyrSpi		Point	8/28/2013	12:26:24pm	41.44681	-73.30504	1-3	1	0.0002
71	MyrSpi		Point	8/28/2013	12:29:07pm	41.44810	-73.30490	3-5	1	0.0002
72	MyrSpi		Point	8/28/2013	01:00:55pm	41.45860	-73.30284	1-3	2	0.0002
73	MyrSpi		Point	8/28/2013	01:01:07pm	41.45862	-73.30290	1-3	3	0.0002
74	MyrSpi		Point	8/28/2013	01:01:37pm	41.45858	-73.30290	1-3	2	0.0002
75	MyrSpi		Point	8/28/2013	01:05:33pm	41.46123	-73.30182	1-3	2	0.0002
76	MyrSpi		Point	8/28/2013	01:15:54pm	41.46309	-73.30147	3-5	1	0.0002
77	MyrSpi		Point	8/28/2013	01:16:37pm	41.46305	-73.30151	1-3	1	0.0002
78	MyrSpi		Point	8/28/2013	01:17:43pm	41.46320	-73.30142	3-5	1	0.0002
79	MyrSpi		Point	8/28/2013	01:17:53pm	41.46324	-73.30146	1-3	1	0.0002
80	MyrSpi		Point	8/28/2013	01:20:30pm	41.46403	-73.30117	1-3	2	0.0002
81	MyrSpi		Point	8/28/2013	01:22:07pm	41.46477	-73.30083	1-3	2	0.0002
82	MyrSpi		Point	8/28/2013	01:22:54pm	41.46499	-73.30082	1-3	1	0.0002
83	MyrSpi		Point	8/28/2013	01:53:19pm	41.46235	-73.32271	1-3	1	0.0002

Appendix Lake Lillinonah Invasive Plant Location Data (8 of 8)

FID	Invasive Plant Name	Notes	Type	Date	Time	Latitude	Longitude	Depth (m)	Abundance	Area (acres)
84	MyrSpi		Point	8/28/2013	01:55:29pm	41.46164	-73.32301	1-3	1	0.0002
85	MyrSpi		Point	8/20/2013	10:39:09am	41.50001	-73.32270	0-1	2	0.0002
86	PotCri		Point	8/20/2013	01:47:26pm	41.50825	-73.31931	0-1	1	0.0002
87	MyrSpi		Point	8/6/2013	08:51:49am	41.46038	-73.32430	0-1	1	0.0002
88	MyrSpi		Point	8/6/2013	08:52:40am	41.46040	-73.32426	1-3	2	0.0002
89	MyrSpi		Point	8/6/2013	08:55:54am	41.46131	-73.32375	0-1	1	0.0002
90	MyrSpi		Point	8/6/2013	09:30:00am	41.46690	-73.32455	1-3	1	0.0002
91	MyrSpi		Point	8/6/2013	09:31:43am	41.46699	-73.32463	0-1	3	0.0002
92	MyrSpi		Point	8/6/2013	09:35:19am	41.46734	-73.32473	1-3	2	0.0002
93	NajMin		Point	8/8/2013	08:28:22am	41.46907	-73.31328	0-1	1	0.0002
94	MyrSpi		Point	8/8/2013	09:04:39am	41.47044	-73.31427	1-3	1	0.0002
95	MyrSpi		Point	8/8/2013	09:05:52am	41.47039	-73.31441	1-3	1	0.0002
96	MyrSpi		Point	8/8/2013	09:06:50am	41.47044	-73.31463	3-5	2	0.0002
97	MyrSpi		Point	8/8/2013	10:46:46am	41.47509	-73.31987	0-1	1	0.0002
98	MyrSpi		Point	8/8/2013	10:49:53am	41.47547	-73.31995	1-3	3	0.0002
99	MyrSpi		Point	8/8/2013	10:51:02am	41.47534	-73.31989	1-3	2	0.0002
100	MyrSpi		Point	8/8/2013	11:36:25am	41.48011	-73.32364	1-3	4	0.0002
101	MyrSpi		Point	8/8/2013	11:36:46am	41.48007	-73.32367	1-3	3	0.0002
102	MyrSpi		Point	8/8/2013	12:03:13pm	41.48533	-73.32823	1-3	1	0.0002
103	MyrSpi		Point	8/8/2013	12:04:22pm	41.48545	-73.32814	1-3	1	0.0002
104	MyrSpi		Point	7/30/2013	10:28:19am	41.49034	-73.38110	0-1	1	0.0002
105	MyrSpi		Point	7/30/2013	10:57:22am	41.49138	-73.38144	0-1	1	0.0002
106	MyrSpi		Point	7/30/2013	11:01:42am	41.49144	-73.38160	1-3	3	0.0002
107	MyrSpi		Point	7/30/2013	11:02:39am	41.49146	-73.38166	1-3	1	0.0002
108	MyrSpi		Point	7/30/2013	12:31:51pm	41.48682	-73.37215	1-3	2	0.0002
109	MyrSpi		Point	7/30/2013	12:36:26pm	41.48640	-73.37125	0-1	1	0.0002
110	MyrSpi		Point	7/30/2013	01:53:51pm	41.47466	-73.33855	1-3	1	0.0002
111	MyrSpi		Point	8/2/2013	11:54:18am	41.48260	-73.35033	1-3	4	0.0002
112	MyrSpi		Point	8/2/2013	11:56:31am	41.48321	-73.35055	0-1	1	0.0002
113	MyrSpi		Point	8/2/2013	11:58:49am	41.48338	-73.35057	0-1	1	0.0002
114	MyrSpi		Point	8/2/2013	12:35:56pm	41.48271	-73.35018	1-3	1	0.0002
115	MyrSpi		Point	8/2/2013	12:38:46pm	41.48237	-73.35011	1-3	4	0.0002

Transect Data

Appendix Lake Candlewood Transect Data (1 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	MyrSpi	NajMin	NymOdo	PotFol	StuPec	ValAme
1	1	0.5	Greg Bugbee	41.42382	-73.45253	8/20/2013	0.10	Sand		0	0	0	0	0	0	0
1	2	5.0	Greg Bugbee	41.42386	-73.45256	8/20/2013	0.40	Muck		2	2	1	0	0	0	0
1	3	10.0	Greg Bugbee	41.42390	-73.45258	8/20/2013	1.00	Muck		2	2	1	0	0	0	0
1	4	20.0	Greg Bugbee	41.42398	-73.45260	8/20/2013	1.00	Muck		2	2	1	0	0	0	0
1	5	30.0	Greg Bugbee	41.42409	-73.45261	8/20/2013	1.30	Muck		0	0	0	0	0	0	0
1	6	40.0	Greg Bugbee	41.42417	-73.45269	8/20/2013	1.50	Muck		2	0	0	0	0	0	0
1	7	50.0	Greg Bugbee	41.42428	-73.45268	8/20/2013	1.60	Muck		2	0	2	0	0	0	0
1	8	60.0	Greg Bugbee	41.42436	-73.45274	8/20/2013	1.50	Muck		2	2	0	0	0	0	0
1	9	70.0	Greg Bugbee	41.42442	-73.45281	8/20/2013	1.40	Muck		2	2	2	0	0	0	0
1	10	80.0	Greg Bugbee	41.42450	-73.45286	8/20/2013	1.20	Muck		0	0	3	0	0	0	0
2	1	0.1	Greg Bugbee	41.42767	-73.44932	8/20/2013	0.10	Gravel		2	2	0	0	0	0	0
2	2	5.0	Greg Bugbee	41.42764	-73.44937	8/20/2013	1.00	Sand		2	2	2	0	0	0	0
2	3	10.0	Greg Bugbee	41.42767	-73.44945	8/20/2013	2.00	Sand		3	0	0	0	0	0	0
2	4	20.0	Greg Bugbee	41.42756	-73.44953	8/20/2013	2.50	Silt		4	0	0	0	0	0	0
2	5	30.0	Greg Bugbee	41.42750	-73.44956	8/20/2013	2.80	Sand		2	0	0	0	0	0	0
2	6	40.0	Greg Bugbee	41.42750	-73.44974	8/20/2013	1.70	Sand		0	0	0	0	0	0	0
2	7	50.0	Greg Bugbee	41.42747	-73.44986	8/20/2013	2.50	Silt		2	0	0	0	0	0	0
2	8	60.0	Greg Bugbee	41.42732	-73.44987	8/20/2013	2.60	Silt		2	0	0	0	0	0	0
2	9	70.0	Greg Bugbee	41.42726	-73.44997	8/20/2013	2.80	Sand		2	0	0	0	0	0	0
2	10	80.0	Greg Bugbee	41.42718	-73.45006	8/20/2013	2.90	Silt		2	2	0	0	0	0	0
3	1	0.2	Greg Bugbee	41.47027	-73.43532	8/15/2013	0.20	Gravel		0	0	0	0	0	2	0
3	2	5.0	Greg Bugbee	41.47030	-73.43527	8/15/2013	0.80	Gravel		0	0	2	0	0	2	0
3	3	10.0	Greg Bugbee	41.47026	-73.43520	8/15/2013	1.60	Sand		0	2	2	0	0	0	0
3	4	20.0	Greg Bugbee	41.47027	-73.43507	8/15/2013	4.00	Sand		0	0	0	0	0	0	0
3	5	30.0	Greg Bugbee	41.47026	-73.43493	8/15/2013	7.80	Silt		0	0	0	0	0	0	0
3	6	40.0	Greg Bugbee	41.47028	-73.43485	8/15/2013	9.00	Silt		0	0	0	0	0	0	0
3	7	50.0	Greg Bugbee	41.47039	-73.43470	8/15/2013	9.00	Silt		0	0	0	0	0	0	0
3	8	60.0	Greg Bugbee	41.47042	-73.43460	8/15/2013	9.20	Silt		0	0	0	0	0	0	0
3	9	70.0	Greg Bugbee	41.47048	-73.43454	8/15/2013	9.20	Silt		0	0	0	0	0	0	0
3	10	80.0	Greg Bugbee	41.47038	-73.43437	8/15/2013	9.20	Silt		0	0	0	0	0	0	0
4	1	0.2	Greg Bugbee	41.57124	-73.48836	8/21/2013	0.20	Muck		0	2	0	0	0	0	0

Appendix Lake Candlewood Transect Data (2 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	MyrSpi	NajMin	NymOdo	PotFol	StuPec	ValAme
4	2	5.0	Greg Bugbee	41.57119	-73.48837	8/21/2013	0.60	Muck		0	2	0	0	0	0	0
4	3	10.0	Greg Bugbee	41.57114	-73.48839	8/21/2013	0.70	Muck		0	0	0	0	0	0	0
4	4	20.0	Greg Bugbee	41.57105	-73.48839	8/21/2013	1.10	Muck		0	2	0	2	0	0	0
4	5	30.0	Greg Bugbee	41.57099	-73.48844	8/21/2013	2.00	Silt		0	2	0	0	0	0	0
4	6	40.0	Greg Bugbee	41.57090	-73.48851	8/21/2013	2.00	Silt		0	2	0	0	0	0	0
4	7	50.0	Greg Bugbee	41.57083	-73.48860	8/21/2013	2.20	Silt		0	0	0	0	0	0	0
4	8	60.0	Greg Bugbee	41.57072	-73.48855	8/21/2013	2.60	Silt		0	2	0	0	0	0	0
4	9	70.0	Greg Bugbee	41.57064	-73.48865	8/21/2013	2.90	Sand		0	0	0	0	0	0	0
4	10	80.0	Greg Bugbee	41.57058	-73.48871	8/21/2013	3.10	Silt		0	0	0	0	0	0	0
5	1	0.1	Greg Bugbee	41.50213	-73.45149	8/20/2013	0.10	Sand		0	0	0	0	0	0	0
5	2	5.0	Greg Bugbee	41.50216	-73.45155	8/20/2013	0.50	Sand		0	1	3	0	0	0	0
5	3	10.0	Greg Bugbee	41.50213	-73.45162	8/20/2013	1.10	Gravel		0	2	3	0	0	0	0
5	4	20.0	Greg Bugbee	41.50213	-73.45174	8/20/2013	1.50	Sand		0	0	4	0	0	0	0
5	5	30.0	Greg Bugbee	41.50207	-73.45184	8/20/2013	2.00	Sand		0	2	2	0	0	0	0
5	6	40.0	Greg Bugbee	41.50206	-73.45195	8/20/2013	2.20	Sand		0	1	0	0	0	0	0
5	7	50.0	Greg Bugbee	41.50199	-73.45204	8/20/2013	2.80	Sand		0	2	0	0	0	0	0
5	8	60.0	Greg Bugbee	41.50201	-73.45218	8/20/2013	3.90	Sand		0	0	0	0	0	0	0
5	9	70.0	Greg Bugbee	41.50203	-73.45232	8/20/2013	4.90	Silt		0	0	0	0	0	0	0
5	10	80.0	Greg Bugbee	41.50202	-73.45245	8/20/2013	5.00	Silt		0	0	0	0	0	0	0
6	1	0.1	Greg Bugbee	41.51383	-73.45336	8/20/2013	0.10	Muck		0	0	0	0	0	0	0
6	2	5.0	Greg Bugbee	41.51389	-73.45337	8/20/2013	0.50	Muck	Flowering	0	4	0	0	0	0	0
6	3	10.0	Greg Bugbee	41.51393	-73.45337	8/20/2013	0.80	Muck		0	5	0	0	0	0	0
6	4	20.0	Greg Bugbee	41.51401	-73.45338	8/20/2013	1.20	Silt		0	3	0	0	0	0	0
6	5	30.0	Greg Bugbee	41.51410	-73.45341	8/20/2013	1.60	Silt		0	3	0	0	0	0	0
6	6	40.0	Greg Bugbee	41.51419	-73.45342	8/20/2013	2.00	Silt		0	2	0	0	0	0	0
6	7	50.0	Greg Bugbee	41.51428	-73.45342	8/20/2013	2.20	Sand		0	0	0	0	0	0	0
6	8	60.0	Greg Bugbee	41.51437	-73.45347	8/20/2013	2.90	Silt		0	2	0	0	0	0	0
6	9	70.0	Greg Bugbee	41.51447	-73.45342	8/20/2013	4.00	Silt		0	0	0	0	0	0	0
6	10	80.0	Greg Bugbee	41.51456	-73.45340	8/20/2013	4.80	Silt		0	0	0	0	0	0	0
7	1	0.1	Greg Bugbee	41.57148	-73.44273	8/20/2013	0.10	Rock		0	0	0	0	0	0	0
7	2	5.0	Greg Bugbee	41.57146	-73.44279	8/20/2013	0.80	Gravel		0	1	0	0	0	0	0

Appendix Lake Candlewood Transect Data (3 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	MyrSpi	NajMin	NymOdo	PotFol	StuPec	ValAme
7	3	10.0	Greg Bugbee	41.57148	-73.44285	8/20/2013	1.00	Gravel		0	2	0	0	0	0	0
7	4	20.0	Greg Bugbee	41.57145	-73.44298	8/20/2013	1.80	Sand		0	0	0	0	0	0	0
7	5	30.0	Greg Bugbee	41.57141	-73.44308	8/20/2013	2.60	Rock		0	2	0	0	0	0	0
7	6	40.0	Greg Bugbee	41.57141	-73.44321	8/20/2013	3.80	Silt		0	0	0	0	0	0	0
7	7	50.0	Greg Bugbee	41.57145	-73.44334	8/20/2013	5.00	Rock		0	0	0	0	0	0	0
7	8	60.0	Greg Bugbee	41.57141	-73.44346	8/20/2013	5.40	Sand		0	0	0	0	0	0	0
7	9	70.0	Greg Bugbee	41.57144	-73.44357	8/20/2013	5.90	Silt		0	0	0	0	0	0	0
7	10	80.0	Greg Bugbee	41.57138	-73.44372	8/20/2013	7.40	Silt		0	0	0	0	0	0	0
8	1	0.2	Greg Bugbee	41.51295	-73.44118	8/20/2013	0.20	Gravel		0	0	0	0	0	0	0
8	2	5.0	Greg Bugbee	41.51293	-73.44113	8/20/2013	1.00	Gravel		0	0	1	0	1	0	0
8	3	10.0	Greg Bugbee	41.51286	-73.44115	8/20/2013	1.50	Gravel		0	2	3	0	2	0	0
8	4	20.0	Greg Bugbee	41.51277	-73.44116	8/20/2013	1.80	Sand		0	2	2	0	2	0	0
8	5	30.0	Greg Bugbee	41.51268	-73.44115	8/20/2013	2.50	Gravel		0	0	0	0	0	0	0
8	6	40.0	Greg Bugbee	41.51257	-73.44114	8/20/2013	3.50	Gravel		0	2	0	0	0	0	0
8	7	50.0	Greg Bugbee	41.51249	-73.44118	8/20/2013	3.50	Gravel		0	0	0	0	0	0	0
8	8	60.0	Greg Bugbee	41.51238	-73.44119	8/20/2013	3.80	Sand		2	2	0	0	0	0	0
8	9	70.0	Greg Bugbee	41.51231	-73.44122	8/20/2013	4.00	Sand		0	2	0	0	0	0	0
8	10	80.0	Greg Bugbee	41.51225	-73.44115	8/20/2013	5.00	Sand		0	0	0	0	0	0	0
9	1	0.1	Greg Bugbee	41.48052	-73.43465	8/20/2013	0.10	Sand		0	2	2	0	0	0	0
9	2	5.0	Greg Bugbee	41.48050	-73.43471	8/20/2013	0.80	Sand		0	0	1	0	0	0	0
9	3	10.0	Greg Bugbee	41.48052	-73.43478	8/20/2013	0.60	Sand		0	0	0	0	0	0	0
9	4	20.0	Greg Bugbee	41.48045	-73.43488	8/20/2013	1.30	Sand		0	0	0	0	0	0	0
9	5	30.0	Greg Bugbee	41.48046	-73.43501	8/20/2013	1.70	Silt		0	0	0	0	0	0	0
9	6	40.0	Greg Bugbee	41.48041	-73.43512	8/20/2013	2.10	Silt		0	0	0	0	0	0	0
9	7	50.0	Greg Bugbee	41.48036	-73.43523	8/20/2013	2.10	Silt		0	0	0	0	0	0	0
9	8	60.0	Greg Bugbee	41.48041	-73.43536	8/20/2013	2.00	Silt		0	0	1	0	0	0	0
9	9	70.0	Greg Bugbee	41.48031	-73.43547	8/20/2013	1.60	Silt		0	0	0	0	0	0	0
9	10	80.0	Greg Bugbee	41.48014	-73.43547	8/20/2013	1.20	Sand		0	0	0	0	1	0	0
10	1	0.2	Greg Bugbee	41.44736	-73.42951	8/21/2013	0.20	Sand		0	2	0	0	1	0	0
10	2	5.0	Greg Bugbee	41.44731	-73.42956	8/21/2013	0.50	Sand		2	2	0	0	0	0	2
10	3	10.0	Greg Bugbee	41.44729	-73.42961	8/21/2013	0.70	Sand		2	2	0	0	0	0	2

Appendix Lake Candlewood Transect Data (4 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	MyrSpi	NajMin	NymOdo	PotFol	StuPec	ValAme
10	4	20.0	Greg Bugbee	41.44725	-73.42966	8/21/2013	0.80	Silt		0	0	0	0	0	0	3
10	5	30.0	Greg Bugbee	41.44722	-73.42983	8/21/2013	0.80	Sand		0	2	0	0	0	0	2
10	6	40.0	Greg Bugbee	41.44712	-73.42991	8/21/2013	0.30	Sand		2	2	0	0	0	0	0
10	7	50.0	Greg Bugbee	41.44710	-73.42997	8/21/2013	0.10	Sand		2	2	0	0	1	0	0

Appendix Lake Lillinonah Transect Data (1 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	CerDem	ElaSp	EleSp	LudSp	MyrSpi	NajMin	PotCri	PotFol	PotPus	SagSp	ZanPal
1	1	.5	Jordan Gibbons	41.46632	-73.30125	8/29/2013	0.50	Gravel	0	0	0	0	0	0	0	0	0	0	0
1	2	5.0	Jordan Gibbons	41.46632	-73.30120	8/29/2013	4.00	Sand	0	0	0	0	0	0	0	0	0	0	0
1	3	10.0	Jordan Gibbons	41.46636	-73.30111	8/29/2013	5.60	Sand	0	0	0	0	0	0	0	0	0	0	0
1	4	20.0	Jordan Gibbons	41.46639	-73.30097	8/29/2013	9.30	Sand	0	0	0	0	0	0	0	0	0	0	0
1	5	30.0	Jordan Gibbons	41.46637	-73.30084	8/29/2013	10.40	Sand	0	0	0	0	0	0	0	0	0	0	0
1	6	40.0	Jordan Gibbons	41.46644	-73.30071	8/29/2013	11.30	Sand	0	0	0	0	0	0	0	0	0	0	0
1	7	50.0	Jordan Gibbons	41.46643	-73.30059	8/29/2013	11.50	Sand	0	0	0	0	0	0	0	0	0	0	0
1	8	60.0	Jordan Gibbons	41.46647	-73.30049	8/29/2013	11.70	Sand	0	0	0	0	0	0	0	0	0	0	0
1	9	70.0	Jordan Gibbons	41.46647	-73.30032	8/29/2013	13.00	Sand	0	0	0	0	0	0	0	0	0	0	0
1	10	80.0	Jordan Gibbons	41.46655	-73.30025	8/29/2013	13.50	Sand	0	0	0	0	0	0	0	0	0	0	0
2	1	.5	Jordan Gibbons	41.53867	-73.40567	8/25/2013	1.00	Bedrock	0	0	0	0	0	0	0	0	0	0	0
2	2	5.0	Jordan Gibbons	41.53864	-73.40561	8/25/2013	1.50	Muck	0	0	0	0	4	0	0	0	0	0	0
2	3	10.0	Jordan Gibbons	41.53861	-73.40555	8/25/2013	1.50	Muck	0	0	0	0	5	0	0	0	0	0	0
2	4	20.0	Jordan Gibbons	41.53860	-73.40545	8/25/2013	1.20	Muck	0	0	0	0	5	0	0	0	0	0	0
2	5	30.0	Jordan Gibbons	41.53858	-73.40533	8/25/2013	0.50	Muck	0	0	0	0	5	0	0	0	0	0	0
2	6	40.0	Jordan Gibbons	41.53858	-73.40520	8/25/2013	1.00	Sand	2	0	0	0	4	0	0	0	0	0	0
2	7	50.0	Jordan Gibbons	41.53858	-73.40506	8/25/2013	1.00	Muck	0	0	0	0	3	0	2	0	0	0	0
2	8	60.0	Jordan Gibbons	41.53850	-73.40496	8/25/2013	1.00	Muck	0	0	0	0	3	0	0	0	0	0	0
2	9	70.0	Jordan Gibbons	41.53847	-73.40487	8/25/2013	1.00	Muck	1	0	0	0	2	0	0	0	0	0	0
2	10	80.0	Jordan Gibbons	41.53845	-73.40476	8/25/2013	1.00	Muck	0	0	0	0	1	0	0	0	0	0	0
3	1	.5	Jordan Gibbons	41.52371	-73.39934	8/25/2013	0.50	Bedrock	0	0	0	0	0	0	0	0	0	0	0
3	2	5.0	Jordan Gibbons	41.52366	-73.39938	8/25/2013	2.50	Sand	0	0	0	0	0	0	0	0	0	0	0
3	3	10.0	Jordan Gibbons	41.52364	-73.39944	8/25/2013	2.80	Sand	0	0	0	0	0	0	0	0	0	0	0
3	4	20.0	Jordan Gibbons	41.52360	-73.39955	8/25/2013	3.10	Sand	0	0	0	0	0	0	0	0	0	0	0
3	5	30.0	Jordan Gibbons	41.52354	-73.39965	8/25/2013	3.10	Sand	0	0	0	0	0	0	0	0	0	0	0
3	6	40.0	Jordan Gibbons	41.52347	-73.39973	8/25/2013	2.80	Sand	0	0	0	0	1	0	0	0	0	0	0
3	7	50.0	Jordan Gibbons	41.52342	-73.39985	8/25/2013	2.50	Sand	0	0	0	0	3	0	0	0	0	0	0
3	8	60.0	Jordan Gibbons	41.52343	-73.39999	8/25/2013	2.30	Sand	0	0	0	0	3	0	0	0	0	0	0
3	9	70.0	Jordan Gibbons	41.52339	-73.40005	8/25/2013	1.70	Sand	0	0	0	0	4	0	0	0	0	0	0
3	10	80.0	Jordan Gibbons	41.52338	-73.40022	8/25/2013	2.00	Sand	0	0	0	0	2	0	0	0	0	0	0
4	1	.5	Jordan Gibbons	41.49914	-73.37391	8/25/2013	0.50	Sand	0	0	0	0	0	0	0	0	0	0	0

Appendix Lake Lillinonah Transect Data (2 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	CerDem	ElaSp	EleSp	LudSp	MyrSpi	NajMin	PotCri	PotFol	PotPus	SagSp	ZanPal
4	2	5.0	Jordan Gibbons	41.49913	-73.37397	8/25/2013	0.50	Sand	0	0	0	0	2	2	0	2	0	0	2
4	3	10.0	Jordan Gibbons	41.49908	-73.37403	8/25/2013	1.00	Sand	0	0	0	0	3	3	0	0	0	0	0
4	4	20.0	Jordan Gibbons	41.49908	-73.37414	8/25/2013	0.70	Sand	0	0	0	0	5	0	0	2	0	0	0
4	5	30.0	Jordan Gibbons	41.49908	-73.37428	8/25/2013	1.00	Sand	2	0	0	0	3	2	0	0	0	0	0
4	6	50.0	Jordan Gibbons	41.49909	-73.37438	8/25/2013	1.40	Sand	0	0	0	0	3	1	0	0	0	0	0
4	7	50.0	Jordan Gibbons	41.49908	-73.37451	8/25/2013	2.10	Sand	2	0	0	0	4	0	0	0	0	0	0
4	8	60.0	Jordan Gibbons	41.49905	-73.37460	8/25/2013	2.00	Sand	0	0	0	0	2	0	0	0	0	0	0
4	9	70.0	Jordan Gibbons	41.49905	-73.37474	8/25/2013	3.40	Sand	0	0	0	0	0	0	0	0	0	0	0
4	10	80.0	Jordan Gibbons	41.49913	-73.37487	8/25/2013	4.10	Sand	0	0	0	0	0	0	0	0	0	0	0
5	1	.5	Jordan Gibbons	41.49689	-73.32763	8/29/2013	0.50	Gravel	0	2	2	0	1	0	0	1	0	3	1
5	2	5.0	Jordan Gibbons	41.49687	-73.32759	8/29/2013	0.50	Gravel	0	2	0	0	0	1	0	0	0	3	0
5	3	10.0	Jordan Gibbons	41.49684	-73.32754	8/29/2013	0.50	Gravel	0	0	0	0	0	0	0	0	0	3	0
5	4	20.0	Jordan Gibbons	41.49678	-73.32744	8/29/2013	0.75	Sand	0	0	0	0	1	2	0	0	1	0	0
5	5	20.0	Jordan Gibbons	41.49669	-73.32740	8/29/2013	3.10	Sand	0	0	0	0	1	0	0	0	0	0	0
5	6	40.0	Jordan Gibbons	41.49664	-73.32728	8/29/2013	3.60	Sand	0	0	0	0	0	0	0	0	0	0	0
5	7	50.0	Jordan Gibbons	41.49657	-73.32724	8/29/2013	3.90	Sand	0	0	0	0	0	0	0	0	0	0	0
5	8	60.0	Jordan Gibbons	41.49652	-73.32711	8/29/2013	4.20	Sand	0	0	0	0	0	0	0	0	0	0	0
5	9	70.0	Jordan Gibbons	41.49642	-73.32708	8/29/2013	3.10	Muck	0	0	0	0	0	0	0	0	0	0	0
5	10	80.0	Jordan Gibbons	41.49638	-73.32697	8/29/2013	3.60	Muck	0	0	0	0	0	0	0	0	0	0	0
6	1	.5	Jordan Gibbons	41.48405	-73.32410	8/29/2013	0.50	Gravel	0	0	0	0	0	0	0	0	0	0	0
6	2	5.0	Jordan Gibbons	41.48400	-73.32409	8/29/2013	2.00	Sand	0	0	0	0	0	0	0	0	0	0	0
6	3	10.0	Jordan Gibbons	41.48397	-73.32411	8/29/2013	3.60	Sand	0	0	0	0	0	0	0	0	0	0	0
6	4	20.0	Jordan Gibbons	41.48388	-73.32413	8/29/2013	5.60	Sand	0	0	0	0	0	0	0	0	0	0	0
6	5	30.0	Jordan Gibbons	41.48377	-73.32408	8/29/2013	8.10	Sand	0	0	0	0	0	0	0	0	0	0	0
6	6	40.0	Jordan Gibbons	41.48370	-73.32405	8/29/2013	9.20	Sand	0	0	0	0	0	0	0	0	0	0	0
6	7	50.0	Jordan Gibbons	41.48361	-73.32401	8/29/2013	10.10	Sand	0	0	0	0	0	0	0	0	0	0	0
6	8	60.0	Jordan Gibbons	41.48353	-73.32397	8/29/2013	11.70	Sand	0	0	0	0	0	0	0	0	0	0	0
6	9	70.0	Jordan Gibbons	41.48343	-73.32393	8/29/2013	12.60	Sand	0	0	0	0	0	0	0	0	0	0	0
6	10	80.0	Jordan Gibbons	41.48336	-73.32388	8/29/2013	13.20	Sand	0	0	0	0	0	0	0	0	0	0	0
7	1	.5	Jordan Gibbons	41.47242	-73.31405	8/29/2013	0.50	Gravel	0	0	0	0	0	0	0	0	0	0	0
7	2	5.0	Jordan Gibbons	41.47242	-73.31399	8/29/2013	1.50	Sand	0	0	0	0	1	0	0	0	0	0	0

Appendix Lake Lillinonah Transect Data (3 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	CerDem	ElaSp	EleSp	LudSp	MyrSpi	NajMin	PotCri	PotFol	PotPus	SagSp	ZanPal
7	3	10.0	Jordan Gibbons	41.47239	-73.31394	8/29/2013	1.50	Sand	0	0	0	0	3	0	0	0	0	0	0
7	4	20.0	Jordan Gibbons	41.47235	-73.31382	8/29/2013	3.60	Sand	0	0	0	0	0	0	0	0	0	0	0
7	5	30.0	Jordan Gibbons	41.47228	-73.31373	8/29/2013	5.30	Sand	0	0	0	0	0	0	0	0	0	0	0
7	6	40.0	Jordan Gibbons	41.47228	-73.31361	8/29/2013	5.90	Sand	0	0	0	0	0	0	0	0	0	0	0
7	7	50.0	Jordan Gibbons	41.47224	-73.31349	8/29/2013	6.10	Sand	0	0	0	0	0	0	0	0	0	0	0
7	8	60.0	Jordan Gibbons	41.47219	-73.31340	8/29/2013	6.50	Sand	0	0	0	0	0	0	0	0	0	0	0
7	9	70.0	Jordan Gibbons	41.47215	-73.31330	8/29/2013	6.70	Sand	0	0	0	0	0	0	0	0	0	0	0
7	10	80.0	Jordan Gibbons	41.47209	-73.31320	8/29/2013	6.90	Sand	0	0	0	0	0	0	0	0	0	0	0
8	1	.5	Jordan Gibbons	41.44801	-73.30348	8/29/2013	0.50	Gravel	0	0	0	0	0	0	0	0	0	0	0
8	2	5.0	Jordan Gibbons	41.44798	-73.30346	8/29/2013	1.00	Sand	0	0	0	0	0	0	0	0	0	0	0
8	3	10.0	Jordan Gibbons	41.44794	-73.30346	8/29/2013	2.00	Sand	0	0	0	0	2	0	0	0	0	0	0
8	4	20.0	Jordan Gibbons	41.44790	-73.30333	8/29/2013	4.60	Sand	0	0	0	0	0	0	0	0	0	0	0
8	5	30.0	Jordan Gibbons	41.44781	-73.30329	8/29/2013	8.50	Sand	0	0	0	0	0	0	0	0	0	0	0
8	6	40.0	Jordan Gibbons	41.44772	-73.30327	8/29/2013	12.00	Sand	0	0	0	0	0	0	0	0	0	0	0
8	7	50.0	Jordan Gibbons	41.44763	-73.30321	8/29/2013	14.90	Sand	0	0	0	0	0	0	0	0	0	0	0
8	8	60.0	Jordan Gibbons	41.44754	-73.30319	8/29/2013	16.00	Sand	0	0	0	0	0	0	0	0	0	0	0
8	9	70.0	Jordan Gibbons	41.44745	-73.30311	8/29/2013	16.80	Sand	0	0	0	0	0	0	0	0	0	0	0
8	10	80.0	Jordan Gibbons	41.44738	-73.30307	8/29/2013	17.00	Sand	0	0	0	0	0	0	0	0	0	0	0
9	1	.5	Jordan Gibbons	41.51022	-73.31953	8/29/2013	0.50	Organic	0	2	2	2	2	0	0	0	0	2	0
9	2	5.0	Jordan Gibbons	41.51018	-73.31953	8/29/2013	0.50	Gravel	0	3	0	0	1	1	0	1	0	1	1
9	3	10.0	Jordan Gibbons	41.51013	-73.31956	8/29/2013	0.00	Gravel	0	0	0	0	0	0	0	0	0	0	0
9	4	20.0	Jordan Gibbons	41.51005	-73.31952	8/29/2013	1.70	Muck	0	0	0	0	0	0	0	0	0	0	0
9	5	30.0	Jordan Gibbons	41.50995	-73.31947	8/29/2013	3.40	Muck	0	0	0	0	0	0	0	0	0	0	0
9	6	40.0	Jordan Gibbons	41.50986	-73.31942	8/29/2013	3.20	Muck	0	0	0	0	0	0	0	0	0	0	0
9	7	50.0	Jordan Gibbons	41.50977	-73.31940	8/29/2013	3.90	Muck	0	0	0	0	0	0	0	0	0	0	0
9	8	60.0	Jordan Gibbons	41.50968	-73.31939	8/29/2013	3.50	Muck	0	0	0	0	0	0	0	0	0	0	0
9	9	70.0	Jordan Gibbons	41.50959	-73.31940	8/29/2013	3.00	Muck	0	0	0	0	0	0	0	0	0	0	0
9	10	80.0	Jordan Gibbons	41.50950	-73.31942	8/29/2013	2.60	Muck	0	0	0	0	0	0	0	0	0	0	0
10	1	.5	Jordan Gibbons	41.49059	-73.38167	8/25/2013	0.50	Muck	0	0	3	0	0	0	0	0	0	0	0
10	2	5.0	Jordan Gibbons	41.49064	-73.38167	8/25/2013	0.50	Gravel	0	0	0	0	0	0	0	0	0	0	0
10	3	10.0	Jordan Gibbons	41.49067	-73.38164	8/25/2013	1.50	Gravel	0	0	0	0	1	0	0	0	0	0	0

Appendix Lake Lillinonah Transect Data (4 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	CerDem	ElaSp	EleSp	LudSp	MyrSpi	NajMin	PotCri	PotFol	PotPus	SagSp	ZanPal
10	4	20.0	Jordan Gibbons	41.49076	-73.38168	8/25/2013	2.00	Muck	0	0	0	0	2	0	0	0	0	0	0
10	5	30.0	Jordan Gibbons	41.49085	-73.38163	8/25/2013	2.00	Muck	0	0	0	0	3	0	0	0	0	0	0
10	6	40.0	Jordan Gibbons	41.49095	-73.38159	8/25/2013	2.30	Muck	0	0	0	0	3	0	0	0	0	0	0
10	7	50.0	Jordan Gibbons	41.49104	-73.38155	8/25/2013	1.50	Muck	0	0	0	0	2	0	0	0	0	0	0
10	8	60.0	Jordan Gibbons	41.49112	-73.38154	8/25/2013	1.20	Sand	0	0	0	0	1	0	0	0	0	0	0
10	9	70.0	Jordan Gibbons	41.49122	-73.38153	8/25/2013	0.60	Gravel	0	0	0	0	0	0	0	0	0	0	0
10	10	80.0	Jordan Gibbons	41.49130	-73.38150	8/25/2013	0.50	Gravel	0	0	0	0	0	0	0	0	0	0	0

Appendix Lake Zoar Transect Data (1 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	EloNut	LudSp	MyrSpi	NajMin	PelVir	PotSp	PotCri	StuPec	ValAme	ZanPal
1	1	.5	Jordan Gibbons	41.42837	-73.23946	9/6/2013	0.50	Gravel		0	0	0	0	0	0	0	0	0	0	0
1	2	5.0	Jordan Gibbons	41.42834	-73.23948	9/6/2013	0.50	Sand		0	0	0	0	0	0	0	0	0	0	0
1	3	10.0	Jordan Gibbons	41.42831	-73.23954	9/6/2013	0.50	Sand		0	0	0	2	2	0	0	0	0	3	0
1	4	20.0	Jordan Gibbons	41.42823	-73.23960	9/6/2013	1.00	Sand		2	0	0	2	0	0	0	0	0	4	0
1	5	30.0	Jordan Gibbons	41.42824	-73.23975	9/6/2013	1.20	Muck		0	0	0	0	0	0	0	0	0	0	0
1	6	40.0	Jordan Gibbons	41.42814	-73.23982	9/6/2013	3.00	Muck		0	0	0	0	0	0	0	0	0	0	0
1	7	50.0	Jordan Gibbons	41.42811	-73.23993	9/6/2013	3.70	Muck		0	0	0	0	0	0	0	0	0	0	0
1	8	60.0	Jordan Gibbons	41.42806	-73.24003	9/6/2013	4.20	Muck		0	0	0	0	0	0	0	0	0	0	0
1	9	70.0	Jordan Gibbons	41.42801	-73.24014	9/6/2013	4.50	Muck		0	0	0	0	0	0	0	0	0	0	0
1	10	80.0	Jordan Gibbons	41.42796	-73.24022	9/6/2013	4.60	Muck		0	0	0	0	0	0	0	0	0	0	0
2	1	.5	Jordan Gibbons	41.43692	-73.25135	9/6/2013	0.50	Gravel		0	0	0	0	0	0	0	0	0	0	0
2	2	5.0	Jordan Gibbons	41.43695	-73.25139	9/6/2013	1.00	Sand		0	0	0	0	0	0	0	0	0	3	0
2	3	10.0	Jordan Gibbons	41.43699	-73.25139	9/6/2013	1.70	Sand		0	0	0	0	0	0	0	0	0	4	0
2	4	20.0	Jordan Gibbons	41.43709	-73.25146	9/6/2013	5.00	Muck		0	0	0	0	0	0	0	0	0	0	0
2	5	30.0	Jordan Gibbons	41.43717	-73.25154	9/6/2013	5.50	Muck		0	0	0	0	0	0	0	0	0	0	0
2	6	40.0	Jordan Gibbons	41.43724	-73.25158	9/6/2013	6.00	Muck		0	0	0	0	0	0	0	0	0	0	0
2	7	50.0	Jordan Gibbons	41.43732	-73.25166	9/6/2013	6.20	Muck		0	0	0	0	0	0	0	0	0	0	0
2	8	60.0	Jordan Gibbons	41.43739	-73.25173	9/6/2013	6.30	Muck		0	0	0	0	0	0	0	0	0	0	0
2	9	70.0	Jordan Gibbons	41.43746	-73.25182	9/6/2013	6.30	Muck		0	0	0	0	0	0	0	0	0	0	0
2	10	80.0	Jordan Gibbons	41.43752	-73.25187	9/6/2013	6.10	Muck		0	0	0	0	0	0	0	0	0	0	0
3	1	.5	Jordan Gibbons	41.43726	-73.26636	9/6/2013	0.50	Gravel		0	0	0	0	0	0	0	0	0	0	0
3	2	5.0	Jordan Gibbons	41.43730	-73.26635	9/6/2013	0.50	Sand		0	0	0	0	0	0	0	0	0	3	0
3	3	10.0	Jordan Gibbons	41.43734	-73.26636	9/6/2013	0.50	Muck		0	0	0	2	0	0	0	0	0	3	0
3	4	20.0	Jordan Gibbons	41.43744	-73.26638	9/6/2013	0.20	Muck		0	2	0	2	3	0	0	0	0	0	0
3	5	30.0	Jordan Gibbons	41.43752	-73.26636	9/6/2013	0.50	Muck		0	0	0	3	2	0	0	2	0	2	0
3	6	40.0	Jordan Gibbons	41.43762	-73.26637	9/6/2013	0.50	Muck		0	0	0	3	0	0	0	2	0	0	0
3	7	50.0	Jordan Gibbons	41.43771	-73.26635	9/6/2013	0.50	Muck		2	1	0	3	0	0	0	2	0	3	0
3	8	60.0	Jordan Gibbons	41.43780	-73.26635	9/6/2013	0.50	Muck		0	0	0	2	0	0	0	0	0	0	0
3	9	70.0	Jordan Gibbons	41.43789	-73.26639	9/6/2013	0.80	Muck		0	0	0	3	0	0	0	0	0	0	0

Appendix Lake Zoar Transect Data (2 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	EloNut	LudSp	MyrSpi	NajMin	PelVir	PotSp	PotCri	StuPec	ValAme	Za
3	10	80.0	Jordan Gibbons	41.43797	-73.26643	9/6/2013	0.60	Muck		0	0	0	3	1	0	0	0	0	3	
4	1	.5	Jordan Gibbons	41.45314	-73.28169	9/6/2013	0.50	Gravel		0	0	0	0	0	0	0	0	0	0	
4	2	5.0	Jordan Gibbons	41.45311	-73.28165	9/6/2013	1.00	Muck		3	0	0	5	0	0	0	0	0	2	
4	3	10.0	Jordan Gibbons	41.45307	-73.28164	9/6/2013	2.00	Muck		1	0	0	5	0	0	0	0	0	3	
4	4	20.0	Jordan Gibbons	41.45298	-73.28162	9/6/2013	2.20	Muck		0	0	0	3	0	0	0	0	0	2	
4	5	30.0	Jordan Gibbons	41.45290	-73.28153	9/6/2013	3.90	Muck		0	0	0	0	0	0	0	0	0	0	
4	6	40.0	Jordan Gibbons	41.45283	-73.28147	9/6/2013	3.90	Muck		0	0	0	0	0	0	0	0	0	0	
4	7	50.0	Jordan Gibbons	41.45277	-73.28145	9/6/2013	4.00	Muck		0	0	0	0	0	0	0	0	0	0	
4	8	60.0	Jordan Gibbons	41.45261	-73.28153	9/6/2013	3.60	Muck		0	0	0	0	0	0	0	0	0	0	
4	9	70.0	Jordan Gibbons	41.45251	-73.28145	9/6/2013	3.50	Muck		0	0	0	0	0	0	0	0	0	0	
4	10	80.0	Jordan Gibbons	41.45244	-73.28143	9/6/2013	3.40	Muck		0	0	0	0	0	0	0	0	0	0	
5	1	.5	Jordan Gibbons	41.43193	-73.22751	9/6/2013	0.50	Muck	shallow	0	0	0	1	0	0	0	0	0	0	
5	2	5.0	Jordan Gibbons	41.43187	-73.22749	9/6/2013	0.50	Muck		0	0	2	2	0	0	0	0	0	0	
5	3	10.0	Jordan Gibbons	41.43183	-73.22749	9/6/2013	0.50	Muck		0	0	0	2	1	0	0	0	0	0	
5	4	20.0	Jordan Gibbons	41.43173	-73.22751	9/6/2013	0.50	Muck		2	0	0	2	2	0	0	0	0	0	
5	5	30.0	Jordan Gibbons	41.43166	-73.22753	9/6/2013	0.70	Muck		3	0	0	3	0	0	0	0	0	0	
5	6	40.0	Jordan Gibbons	41.43156	-73.22757	9/6/2013	0.90	Muck		0	0	0	2	0	0	0	0	0	0	
5	7	50.0	Jordan Gibbons	41.43147	-73.22761	9/6/2013	1.00	Muck		0	0	0	2	0	0	0	0	0	0	
5	8	60.0	Jordan Gibbons	41.43138	-73.22760	9/6/2013	1.10	Muck		0	0	0	0	0	0	0	0	0	0	
5	9	70.0	Jordan Gibbons	41.43129	-73.22762	9/6/2013	1.60	Muck		0	0	0	0	0	0	0	0	0	0	
5	10	80.0	Jordan Gibbons	41.43120	-73.22763	9/6/2013	2.60	Muck		0	0	0	0	0	0	0	0	0	0	
6	1	.5	Jordan Gibbons	41.42423	-73.20727	9/6/2013	0.50	Sand		0	0	0	0	2	0	0	0	0	0	
6	2	5.0	Jordan Gibbons	41.42418	-73.20723	9/6/2013	0.50	Muck		0	0	0	2	2	0	2	2	0	0	
6	3	10.0	Jordan Gibbons	41.42414	-73.20724	9/6/2013	0.50	Muck		0	0	0	3	3	0	3	0	0	0	
6	4	20.0	Jordan Gibbons	41.42410	-73.20710	9/6/2013	0.50	Muck		0	0	0	3	0	0	0	0	0	0	
6	5	30.0	Jordan Gibbons	41.42406	-73.20696	9/6/2013	0.80	Muck		0	0	0	1	0	0	0	0	0	0	
6	6	40.0	Jordan Gibbons	41.42400	-73.20689	9/6/2013	1.00	Muck		0	0	0	0	0	0	0	0	0	0	
6	7	50.0	Jordan Gibbons	41.42395	-73.20677	9/6/2013	0.80	Muck		0	0	0	0	1	0	0	0	0	0	
6	8	60.0	Jordan Gibbons	41.42392	-73.20667	9/6/2013	1.10	Muck		0	0	0	1	0	0	0	0	0	0	
6	9	70.0	Jordan Gibbons	41.42391	-73.20651	9/6/2013	1.30	Muck		0	0	0	1	0	0	0	0	0	0	

Appendix Lake Zoar Transect Data (3 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	EloNut	LudSp	MyrSpi	NajMin	PelVir	PotSp	PotCri	StuPec	ValAme	Za
6	10	80.0	Jordan Gibbons	41.42391	-73.20638	9/6/2013	1.30	Muck		0	0	0	2	0	0	0	0	0	0	
7	1	.5	Jordan Gibbons	41.41258	-73.20169	9/6/2013	0.50	Sand		0	0	0	0	0	0	0	0	0	0	
7	2	5.0	Jordan Gibbons	41.41260	-73.20165	9/6/2013	0.50	Sand		0	0	0	2	0	0	0	0	0	0	
7	3	10.0	Jordan Gibbons	41.41261	-73.20157	9/6/2013	0.90	Muck		0	0	0	0	0	0	0	0	0	0	
7	4	20.0	Jordan Gibbons	41.41267	-73.20149	9/6/2013	1.20	Muck		0	0	0	0	0	0	0	0	0	0	
7	5	30.0	Jordan Gibbons	41.41269	-73.20134	9/6/2013	1.40	Muck		0	0	0	3	0	0	0	0	0	0	
7	6	40.0	Jordan Gibbons	41.41275	-73.20126	9/6/2013	1.60	Muck		0	0	0	2	0	0	0	0	0	0	
7	7	50.0	Jordan Gibbons	41.41276	-73.20114	9/6/2013	1.70	Muck		0	0	0	2	0	0	0	0	0	0	
7	8	60.0	Jordan Gibbons	41.41282	-73.20105	9/6/2013	1.80	Muck		0	0	0	2	0	0	0	0	0	0	
7	9	70.0	Jordan Gibbons	41.41290	-73.20098	9/6/2013	2.10	Muck		0	0	0	0	0	0	0	0	0	0	
7	10	80.0	Jordan Gibbons	41.41297	-73.20089	9/6/2013	2.90	Muck		0	0	0	0	0	0	0	0	0	0	
8	1	.5	Jordan Gibbons	41.39852	-73.19079	9/6/2013	0.50	Muck		0	0	0	0	2	0	0	0	0	0	
8	2	5.0	Jordan Gibbons	41.39852	-73.19075	9/6/2013	0.50	Muck		0	0	0	2	2	0	0	0	0	0	
8	3	10.0	Jordan Gibbons	41.39851	-73.19071	9/6/2013	0.50	Muck		2	0	0	2	0	0	0	0	0	0	
8	4	20.0	Jordan Gibbons	41.39853	-73.19056	9/6/2013	0.70	Muck	;	0	0	0	3	3	0	0	0	0	0	
8	5	30.0	Jordan Gibbons	41.39853	-73.19044	9/6/2013	0.90	Muck		0	0	0	3	2	0	0	0	0	0	
8	6	40.0	Jordan Gibbons	41.39855	-73.19035	9/6/2013	1.40	Muck		0	0	0	3	0	0	0	0	0	0	
8	7	50.0	Jordan Gibbons	41.39855	-73.19022	9/6/2013	3.20	Muck		0	0	0	0	0	0	0	0	0	0	
8	8	60.0	Jordan Gibbons	41.39853	-73.19011	9/6/2013	3.60	Muck		0	0	0	0	0	0	0	0	0	0	
8	9	70.0	Jordan Gibbons	41.39851	-73.18998	9/6/2013	4.00	Muck		0	0	0	0	0	0	0	0	0	0	
8	10	80.0	Jordan Gibbons	41.39850	-73.18985	9/6/2013	4.30	Muck		0	0	0	0	0	0	0	0	0	0	
9	1	.5	Jordan Gibbons	41.39193	-73.17441	9/6/2013	0.50	Gravel		0	0	0	1	2	1	0	0	0	0	
9	2	5.0	Jordan Gibbons	41.39189	-73.17446	9/6/2013	0.50	Gravel		2	0	0	2	0	0	0	0	0	0	
9	3	10.0	Jordan Gibbons	41.39184	-73.17444	9/6/2013	0.50	Sand		0	0	0	1	0	0	0	0	0	0	
9	4	20.0	Jordan Gibbons	41.39176	-73.17448	9/6/2013	0.50	Sand		0	0	0	0	0	0	0	0	0	0	
9	5	30.0	Jordan Gibbons	41.39165	-73.17453	9/6/2013	0.80	Sand		0	0	0	1	0	0	0	0	0	0	
9	6	40.0	Jordan Gibbons	41.39157	-73.17462	9/6/2013	2.80	Muck		0	0	0	1	0	0	0	0	0	0	
9	7	50.0	Jordan Gibbons	41.39152	-73.17470	9/6/2013	3.30	Muck		0	0	0	0	0	0	0	0	0	0	
9	8	60.0	Jordan Gibbons	41.39145	-73.17475	9/6/2013	4.00	Muck		0	0	0	0	0	0	0	0	0	0	

Appendix Lake Zoar Transect Data (4 of 4)

Transect	Point	Distance from Shore (m)	Surveyor	Latitude	Longitude	Date	Depth (m)	Substrate	Notes	CerDem	EloNut	LudSp	MyrSpi	NajMin	PelVir	PotSp	PotCri	StuPec	ValAme	ZanPal	ZosDub
9	9	70.0	Jordan Gibbons	41.39137	-73.17481	9/6/2013	4.70	Muck		0	0	0	0	0	0	0	0	0	0	0	0
9	10	80.0	Jordan Gibbons	41.39128	-73.17486	9/6/2013	5.40	Muck		0	0	0	0	0	0	0	0	0	0	0	0
10	1	.5	Jordan Gibbons	41.38149	-73.17515	9/6/2013	0.50	Sand		0	0	0	1	2	0	2	0	2	0	0	0
10	2	5.0	Jordan Gibbons	41.38154	-73.17514	9/6/2013	0.50	Sand		1	0	0	2	2	0	2	0	0	0	0	0
10	3	10.0	Jordan Gibbons	41.38159	-73.17516	9/6/2013	0.50	Sand		0	0	0	3	2	0	1	0	0	0	0	0
10	4	20.0	Jordan Gibbons	41.38167	-73.17520	9/6/2013	0.50	Sand		0	0	0	5	4	0	0	0	0	0	0	0
10	5	30.0	Jordan Gibbons	41.38176	-73.17526	9/6/2013	0.00	Sand		0	0	0	5	4	0	2	3	0	0	0	0
10	6	40.0	Jordan Gibbons	41.38184	-73.17534	9/6/2013	1.00	Sand		0	0	0	4	3	0	0	0	0	0	0	0
10	7	50.0	Jordan Gibbons	41.38191	-73.17539	9/6/2013	3.00	Muck		0	0	0	2	0	0	0	0	0	0	0	0
10	8	60.0	Jordan Gibbons	41.38201	-73.17541	9/6/2013	3.40	Muck		0	0	0	0	0	0	0	0	0	0	0	0
10	9	70.0	Jordan Gibbons	41.38208	-73.17548	9/6/2013	3.60	Muck		0	0	0	0	0	0	0	0	0	0	0	0
10	10	80.0	Jordan Gibbons	41.38216	-73.17549	9/6/2013	4.00	Muck		0	0	0	0	0	0	0	0	0	0	0	0