The Connecticut Agricultural Experiment Station

123 Huntington Street

New Haven, CT 06511

Taunton Lake

Newtown, CT

Aquatic vegetation survey

Water chemistry

Aquatic plant management options

2017

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CAES
The Connecticut Agricultural Experiment Station
Putting Science to Work for Society since 1875

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 are in Hamden and Griswold.

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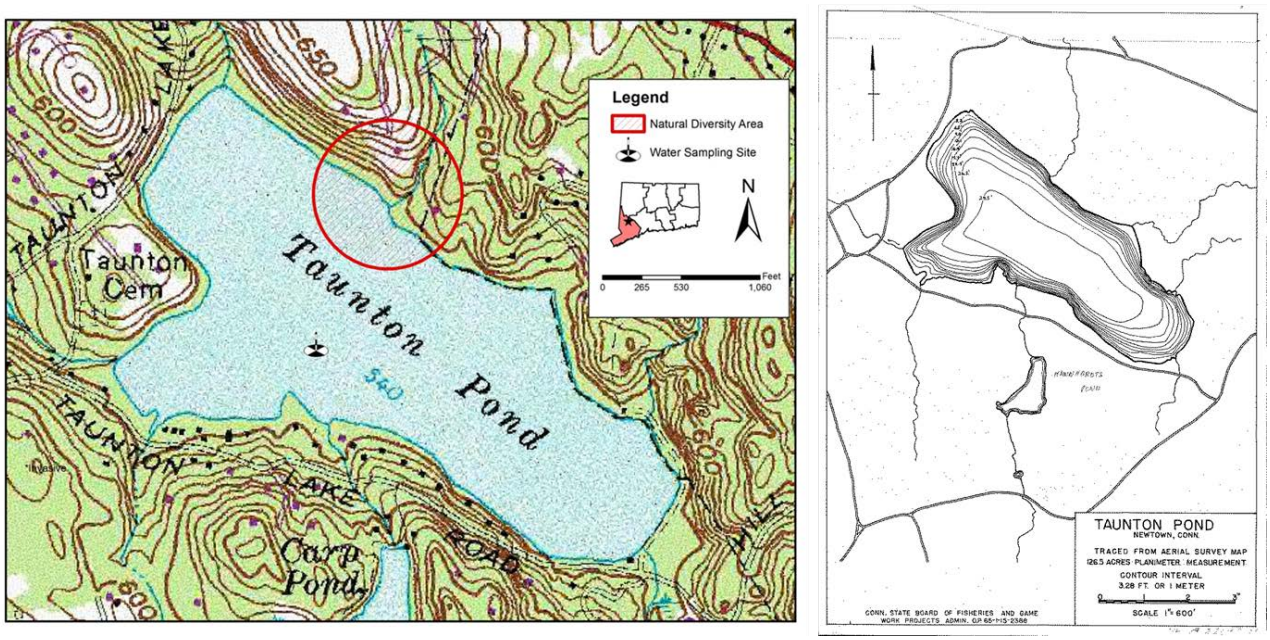

Figure 1. Topographic map of Taunton Lake including location of State listed species (Natural Diversity Area) and CAES IAPP water sampling site (left) and Bathymetry map (right).

Introduction

Taunton Lake is a 124 acre waterbody located in Newtown, CT (Figure 1). It has a maximum depth of about 9 meters (30 feet) and an average depth of about 6 meters (20 feet). The lakes littoral zone is mostly covered with aquatic vegetation and extends approximately 25 – 75 meters (82 – 246 feet) from shore. Public access is available via town open space property adjacent to property of the Newtown Fish and Game Club (NFGC). Only electric motors are allowed. Taunton Lake is stocked with brown, rainbow and brook trout several times each year by the NFGC. Large and Smallmouth bass, white and yellow perch, crappie, sunfish and others reproduce naturally in the lake.

Information from the 1950's describes Taunton Lake as having scarce vegetation, clear water and a bottom of boulders, rubble and gravel (State Board of Fisheries and Game Lake and Pond Survey Unit, 1959). Present conditions are far different with abundant invasive vegetation, mainly Eurasian watermilfoil (*Myriophyllum spicatum*) and a bottom composed mainly of muck, silt and organic matter (CAES IAPP, 2017). Reasons for the drastic change

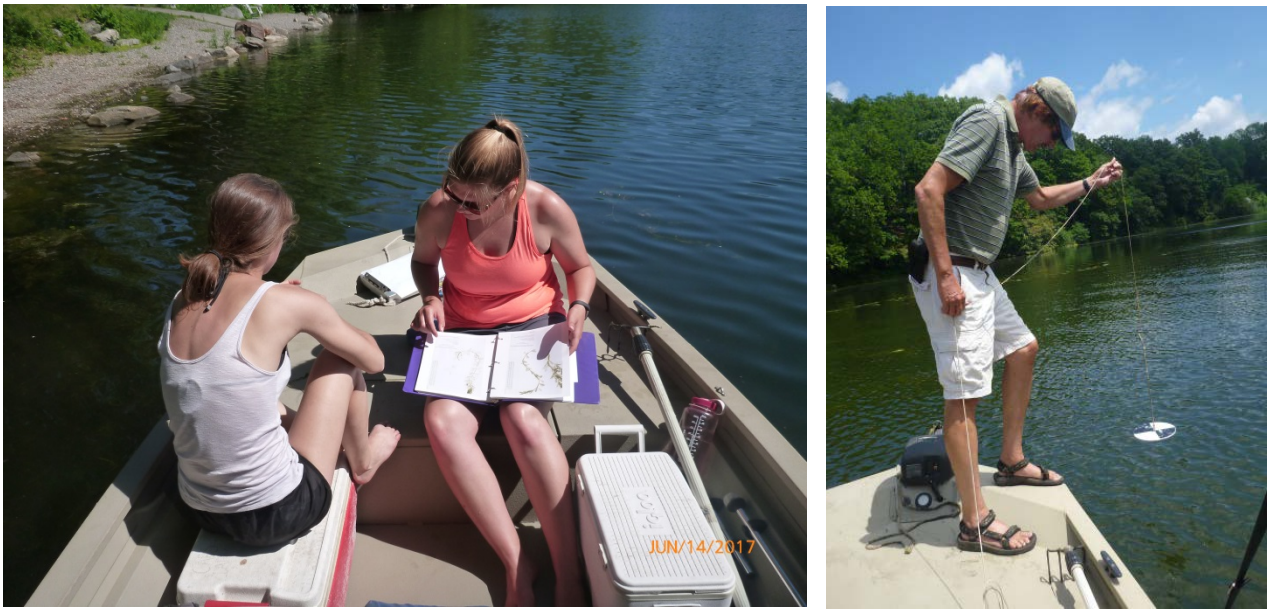

Figure 2. CAES IAAP aquatic plant surveyors Amanda Massa and Summer Stebbins (left) and Greg Bugbee (right).

are unclear, but over the last decade considerable efforts have been employed to mitigate the Eurasian watermilfoil (personal communication Paul McNamara, 2017). Techniques include, hand harvesting and treatment of four acres with the herbicide Renovate 3® (Triclopyr: 2-[(3,5,6-trichloro-2-pyridinyl)oxy] acetic acid, triethylamine salt) in 2007, suction harvesting in the north end in 2010, application of the herbicide 2,4-D (Butoxyethyl ester, 2,4-Dichlorophenoxyacetic acid) in 2011) and 2013, the introduction of 250, 175 and 125 triploid grass carp *(Ctenopharyngodon idella)* in 2013, 2015 and 2016 respectively.

Vegetation control with grass carp varies with plant abundance, the number and age of the fish, feeding preferences and mortality. Usually effects are not noticed until the fish have grown to the point of consuming large quantities of vegetation which can take many years. In populations of mixed invasive and native vegetation, native species could be lost first if they are preferred. In addition, nutrients added through plant digestion combined with a reduction in plant nutrient uptake by a decreased plant biomass can lead to algal blooms (AERF, 2014). This 2017 survey report explores the effects of the grass carp on both the invasive and native aquatic plant community.

This is the fourth Connecticut Agricultural Experiment Station (CAES) Invasive Aquatic Plant Program (IAPP) survey of Taunton Lake's aquatic vegetation and water chemistry. Previous surveys occurred in 2009, 2010, and 2014. These surveys found Taunton Lake's vegetation to be dominated by invasive Eurasian watermilfoil and from eight to 14 native species. Invasive curlyleaf pondweed (*Potamogeton crispus*) was present but sparse in all years. As part of the initial survey, we set up 17 geo-referenced transects. Each contained 10 points where plant species, abundance and sediment type were recorded. These points were then revisited in future years to quantify changes.

CAES IAPP analyzed water chemistry each year to track changes that could influence plant populations. Tests included water clarity, dissolved oxygen, temperature, pH, alkalinity, conductivity and total phosphorus. Taunton Lake was determined to be a mesotrophic-to-eutrophic alkaline waterbody that is highly suitable to plants such as Eurasian watermilfoil and curlyleaf pondweed.

Objectives

- Survey Taunton Lake for aquatic vegetation and compare with previous surveys to provide information on aquatic plants for improved management.
- Analyze water to quantify changes in water chemistry and relate to plant populations.

Materials and Methods

Aquatic plant surveys and mapping:

We surveyed Taunton Lake for aquatic vegetation from mid to late June. Surveys were conducted from small boats traveling over areas shallow enough to support aquatic plants (Figure 2). Plant species were recorded based on visual observation or collections with a long-handled rake or grapple. Quantitative information on plant abundance was

Figure 3. Eurasian watermilfoil covered with algae in Taunton Lake in 2017.

obtained from 17 transects that were positioned perpendicular to the shoreline. Transects were set in 2009 (first survey) using Trimble® global positioning systems with sub-meter accuracy. Transect locations represented the variety of habitat occurring in the lake. Sampling locations were along each transect at points 0, 5, 10, 20, 30, 40, 50, 60, 70, and 80 m from the shore. Abundances of species present at each point were ranked on a scale of 1 – 5 (1 = very sparse, 2 = sparse, 3 = moderately abundant, 4 = abundant; 5 = extremely abundant). One specimen of each species collected in each lake were dried, and mounted in the CAES aquatic plant herbarium and digitized mounts can be viewed online (www.ct.gov/caes/iapp).

Water Analysis:

Water was analyzed from a point in the deepest part of the lake each year (Figure 1). Water temperature and dissolved oxygen were measured 0.5 m beneath the surface and at depth intervals of 1 m to approximately 0.5 m above the bottom. Sample size was 250-mL, and all samples were stored at 3°C until analyzed for pH, alkalinity, conductivity, and total phosphorus concentration. A Fisher AR20® meter was used to determine pH and conductivity. Alkalinity (expressed as mg/l $CaCO_3$) was quantified by titration with 0.016 N

Table 1. Plants found in Taunton Lake during general survey and on transects *(T)* 2009, 2010, 2014 and 2017.

Taunton Lake (T = found on transects)					
Scientific Name	**Common Name**	**2009**	**2010**	**2014**	**2017**
Alisma species	water plantain			X	
Elatine species	waterwort	X	X	X	
Eleocharis species	spikerush			X	
Elodea nuttallii	western waterweed	X *(T)*	X *(T)*	X *(T)*	X
Lemna minor	common duckweed			X	X *(T)*
Isoetes species	quillwort		X		
Ludwigia species	primrose-willow			X *(T)*	X *(T)*
Myriophyllum spicatum*	**Eurasian watermilfoil**	**X *(T)***	**X *(T)***	**X *(T)***	**X *(T)***
Najas flexilis	slender naiad				X
Nuphar variegata	yellow water lily	X *(T)*	X *(T)*	X	X *(T)*
Potamogeton bicupulatus	snailseed pondweed	X		X	
Potamogeton crispus	**curlyleaf pondweed**	**X**	**X**	**X**	**X**
Potamogeton foliosus	leafy pondweed	X *(T)*	X	X *(T)*	X *(T)*
Sagittaria sp.	arrowhead	X	X *(T)*	X *(T)*	X
Sparganium sp.	bur-reed			X	X (T)
Spirodella polyrhiza	great duckweed		X	X *(T)*	
**** invasives in bold***	Total	8 *(4)*	9 *(4)*	14 *(6)*	10 *(6)*

H_2SO_4 to an end point of pH 4.5. We determined total phosphorus using the ascorbic acid method preceded by digestion with potassium persulfate (APHA, 1995). Phosphorus was quantified using a Milton Roy Spectronic 20D® spectrometer with a light path of 2 cm and a wave length of 880 nm. Water was tested for temperature and dissolved oxygen using an YSI 58® meter. Water clarity was measured by lowering a six inch diameter black and white Secchi disk into the water and determining to what depth it could be viewed.

Results and Discussion

General Aquatic Plant Surveys and Transects:

Our general aquatic plant surveys of Taunton Lake from 2009 -2017 found 8 -14 plant species and our transect data documented 4-6 species (Table 1). The fewest species found by our general survey was eight in 2009 and the greatest was 14 in 2014. With the exception of Eurasian water milfoil and curlyleaf pondweed, all were native. Unfortunately, Eurasian

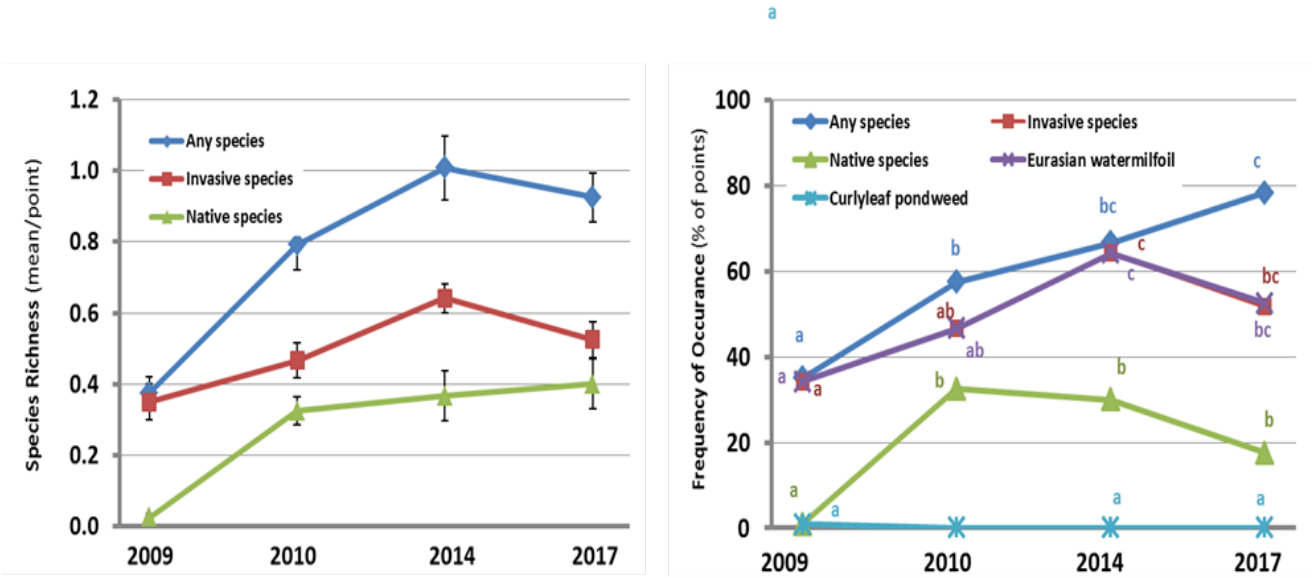

Figure 4. Species richness (left) and frequency of occurrence (right) of invasive and native plants in Taunton Lake in 2009, 2010, 2014 and 2017.

watermilfoil dominated the lake. With the exception of western waterweed, native plant species were sparse and largely associated with very shallow areas adjacent to the shoreline. These include waterwort, common and great duckweed, primrose-willow, yellow waterlily, leafy pondweed, arrow head, and bur-weed. This scarcity of the native species accounted for only about half being found on transects in any given year. Invasive curlyleaf pondweed was found in each survey year in low abundance. Curlyleaf pondweed senesces as summer approaches, however, our mid –June surveys occurred early enough to expect to accurately record its presence. Dense stands of Eurasian watermilfoil typically were covered with mats of filamentous algae (Figure 3) that could offer some control by intercepting sunlight and reducing photosynthesis. Our transect data revealed a statistically significant (+/- SEM) increase in the species richness (number of plants species) of any species, invasive species and native species between 2009 and 2017 (Figure 4). Similarly, the frequency of occurrence of any species, invasive species and native species on transects also significantly increased (Tukey p= 0.05) from 2009 to 2017. The invasive species increase was entirely due to greater Eurasian watermilfoil.

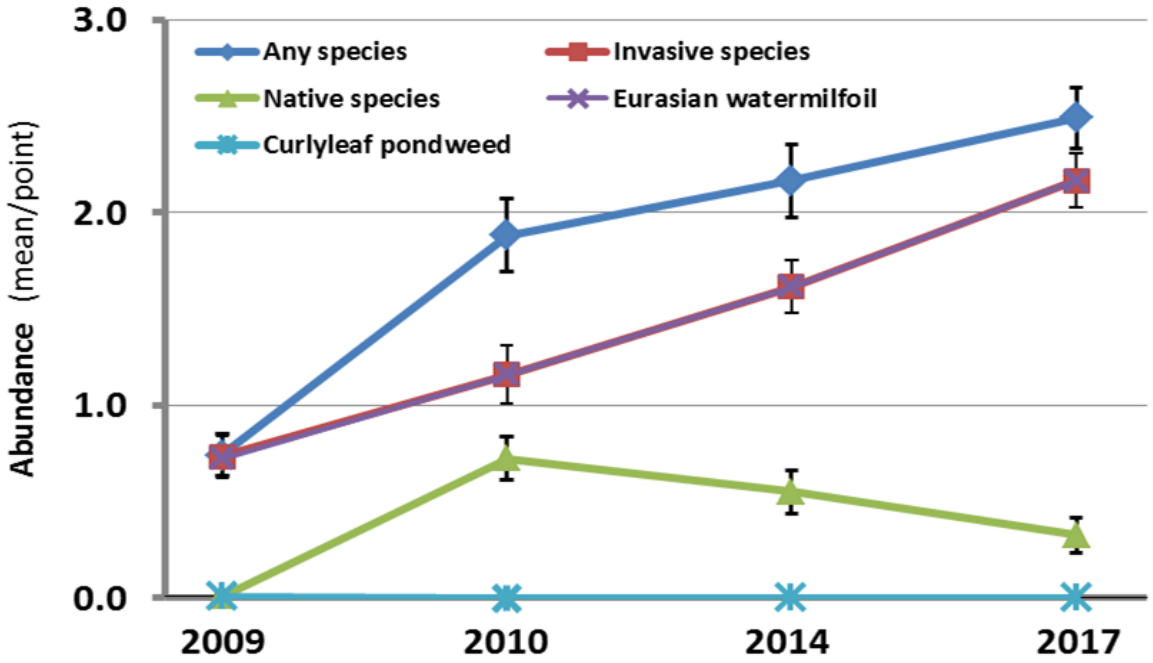

Figure 5. Aquatic plant abundance in Taunton Lake in 2009, 2010, 2014, and 2017.

Differences in the plant community from 2014 to 2017 might show the efficacy of the 2015 and 2016 grass carp introduction. Our transect data showed virtually no change in species richness and frequency of occurrence in invasive or native species from 2014 to 2017 (Figures 4). Because grass carp fed from the plants top downward, the nuisance nature of aquatic plant might improve when species richness and frequency of occurrence remained unchanged. This would be reflected in a change in plant abundance. Unfortunately, our plant abundance data from transects (Figure 5) showed a significant increase (+/- SEM) in Eurasian watermilfoil and a decrease in native species. This could indicate that in the early years of the grass carp introduction, the fish are preferentially feeding on native species. As the carp mature and need additional food sources, greater feeding on the Eurasian watermilfoil can be expected. Often grass carp stockings appear to be having little effect until the population and size reach a critical mass. Then all vegetation is consumed and the water body suffers from insufficient habitat for aquatic biota and conditions that promote algae. Preventing this occurrence is tricky as the effects occur long after the introductions are made but routine surveillance will provide information to make informed decisions.

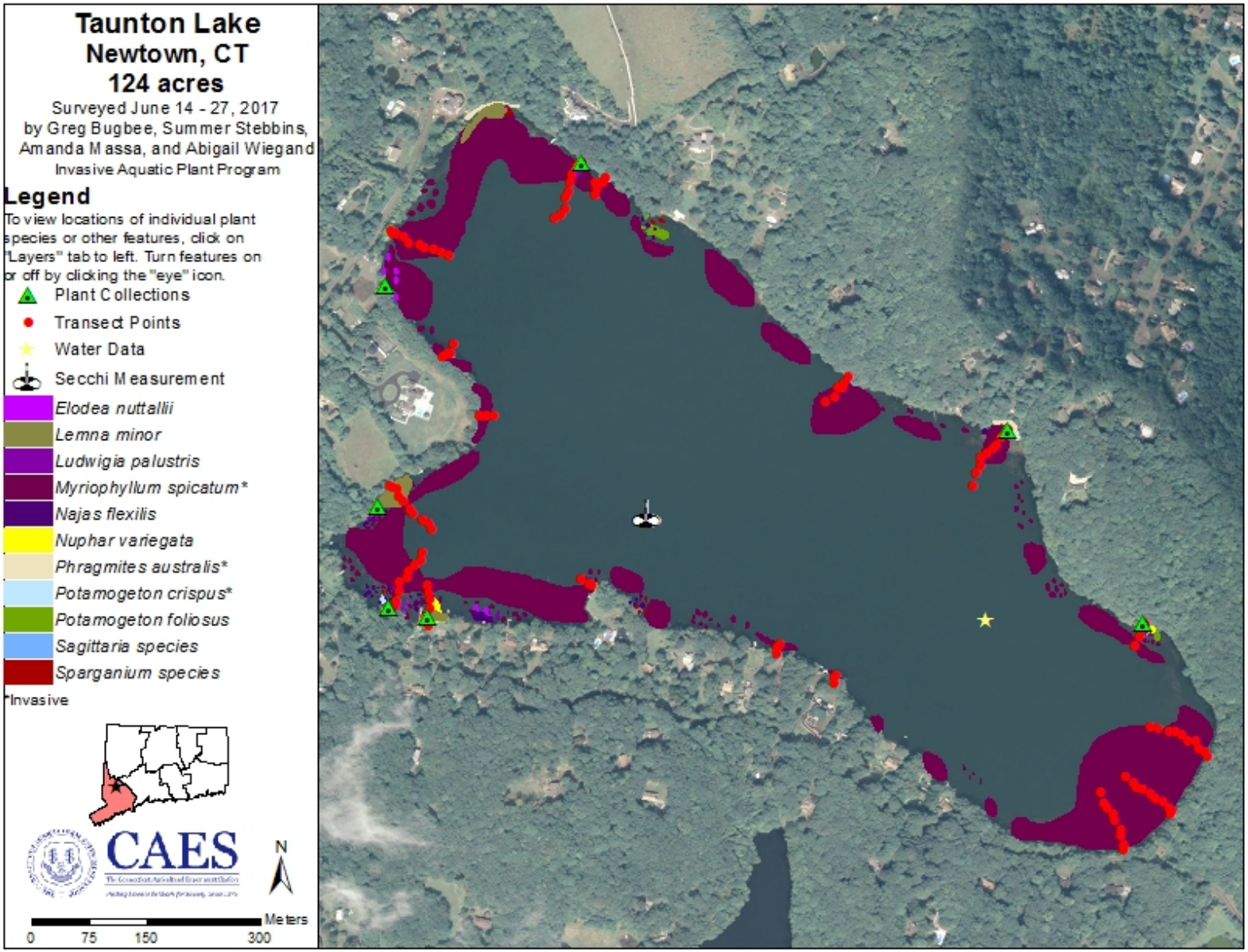

Figure 5. 2017 survey of Taunton Lake.

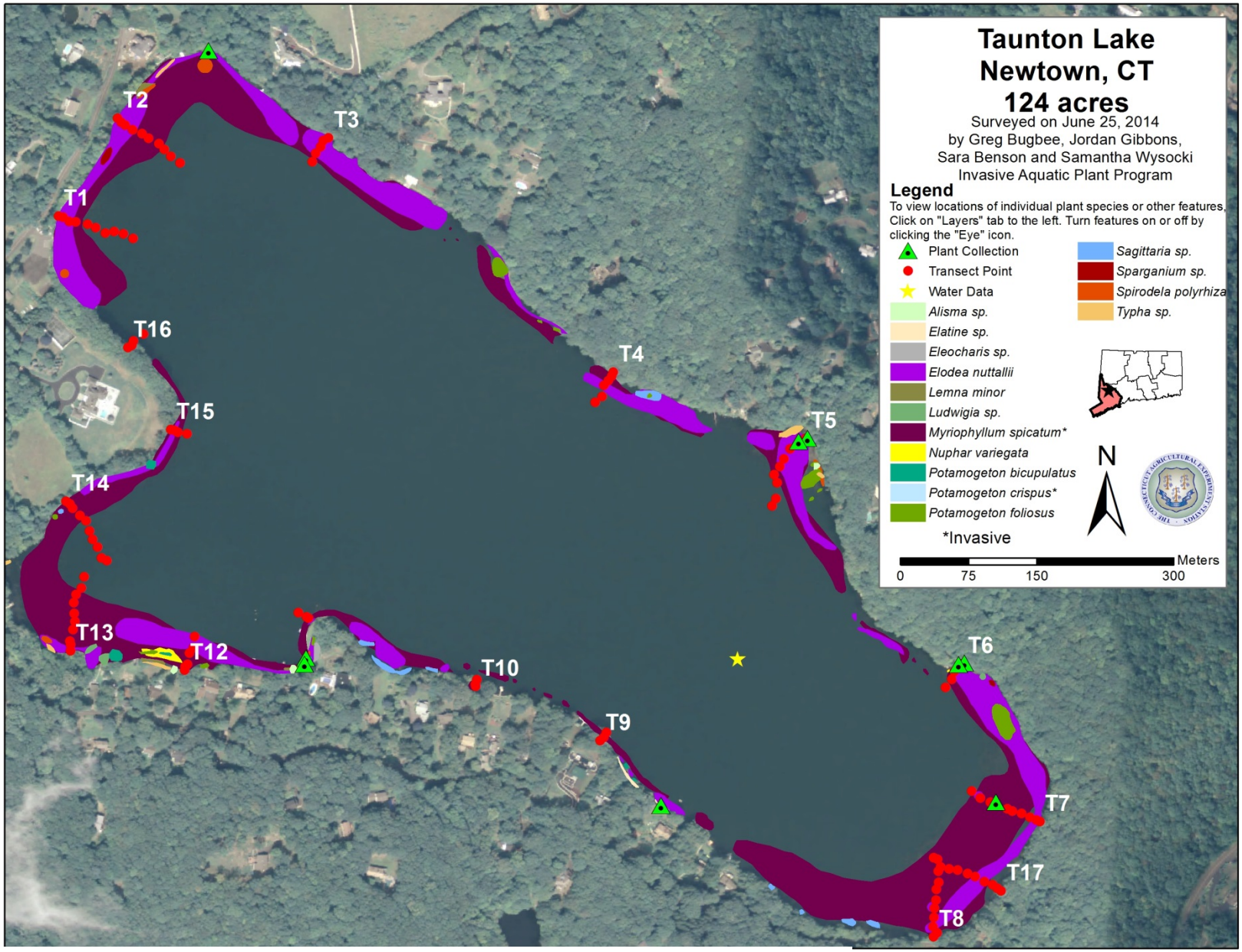

Figure 6. 2014 survey of Taunton Lake.

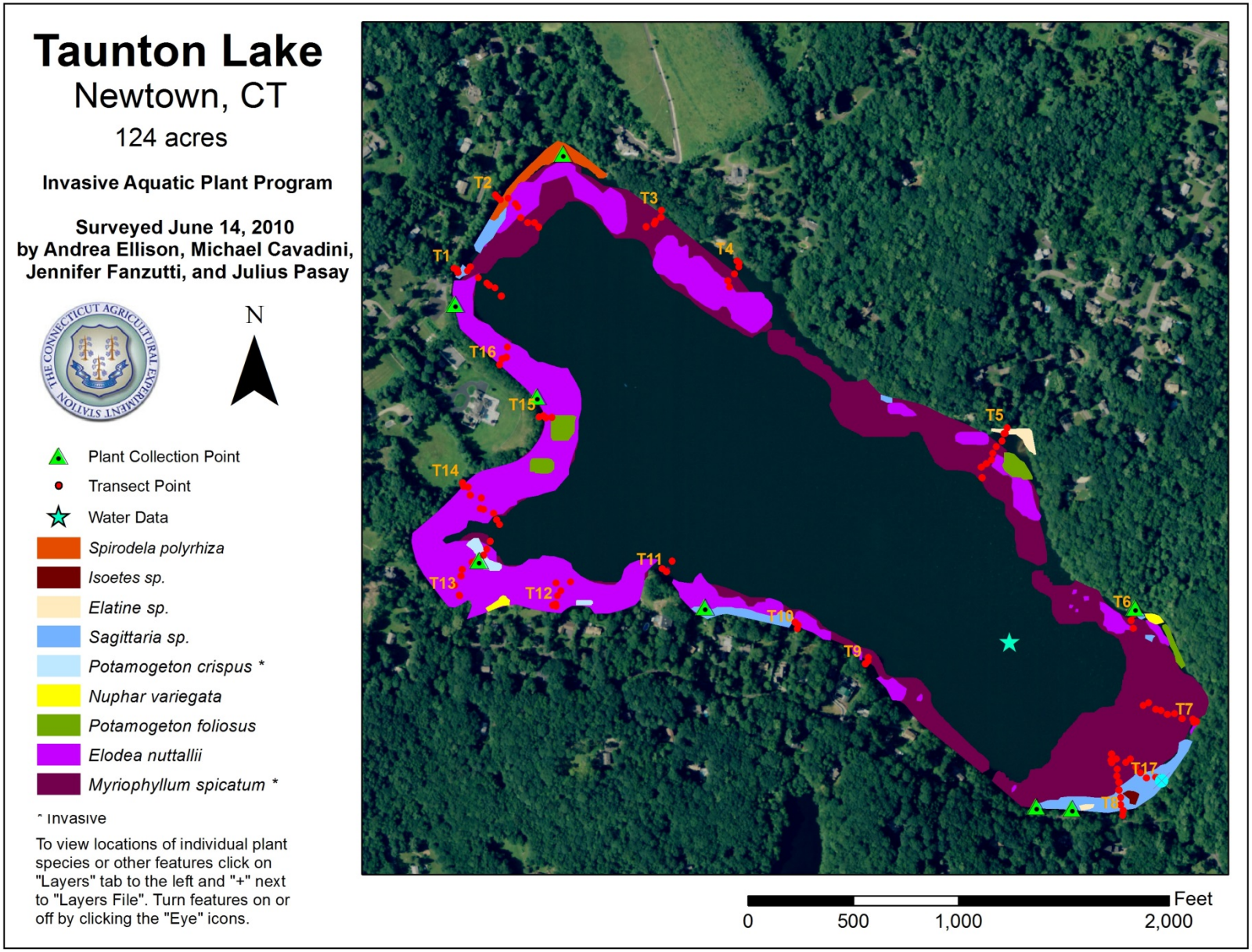

Figure 7. 2010 survey of Taunton Lake.

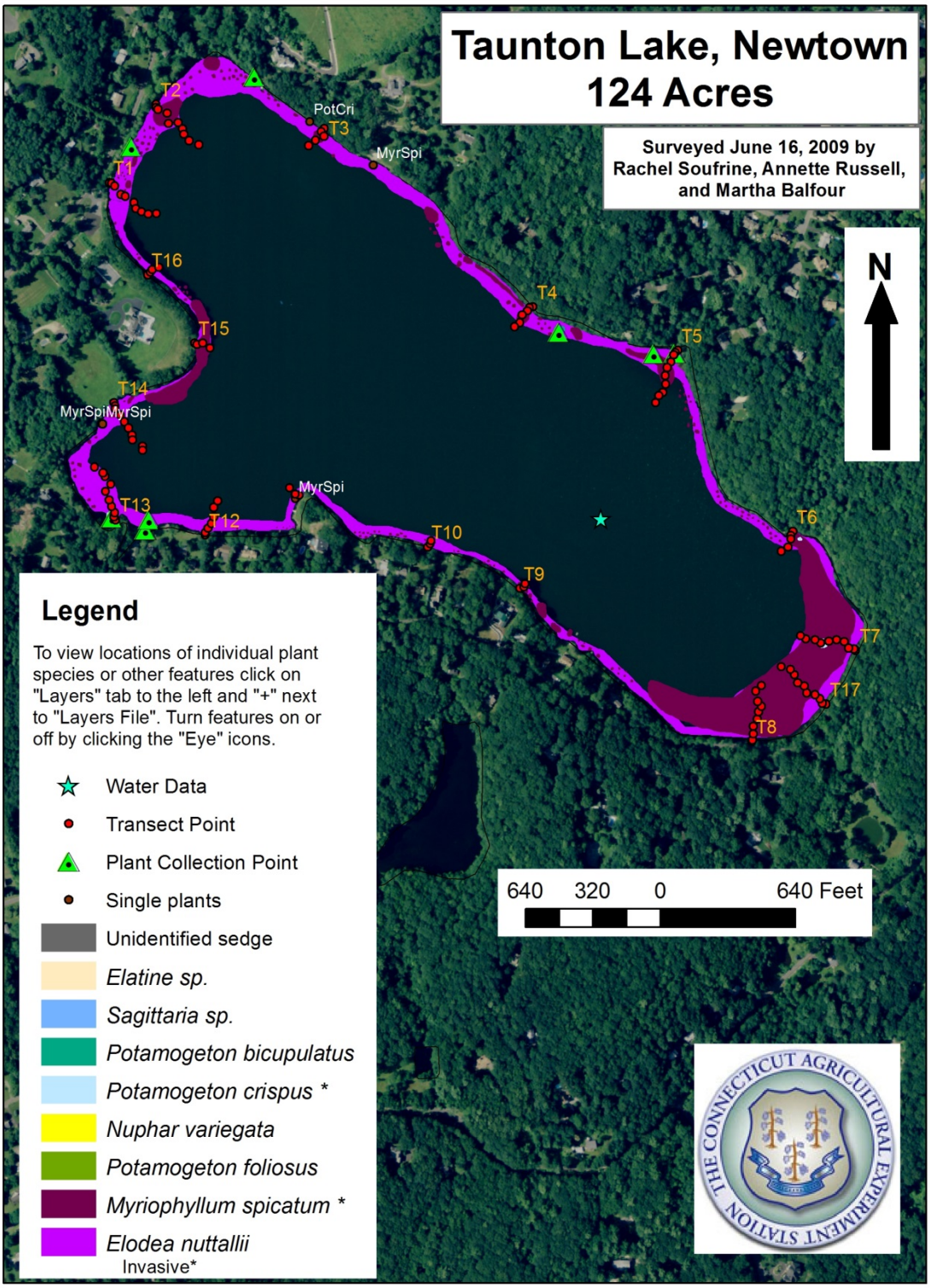

Figure 8. 2009 survey of Taunton Lake.

Table 2. Water chemistry preferences of invasive plants in Connecticut lakes (CAES IAPP 2017).

Group	Species	Alkalinity mg/L $CaCO_3$	Conductivity µS/cm	pH	Phosphorus µg/L
1	Fanwort Variable watermilfoil	0 - 28	39 - 107	5.6 - 7.0	1 - 27
2	Curlyleaf pondweed Euarasian watermilfoil Minor naiad	17 - 77	108 - 232	6.3 - 8.1	0 - 85

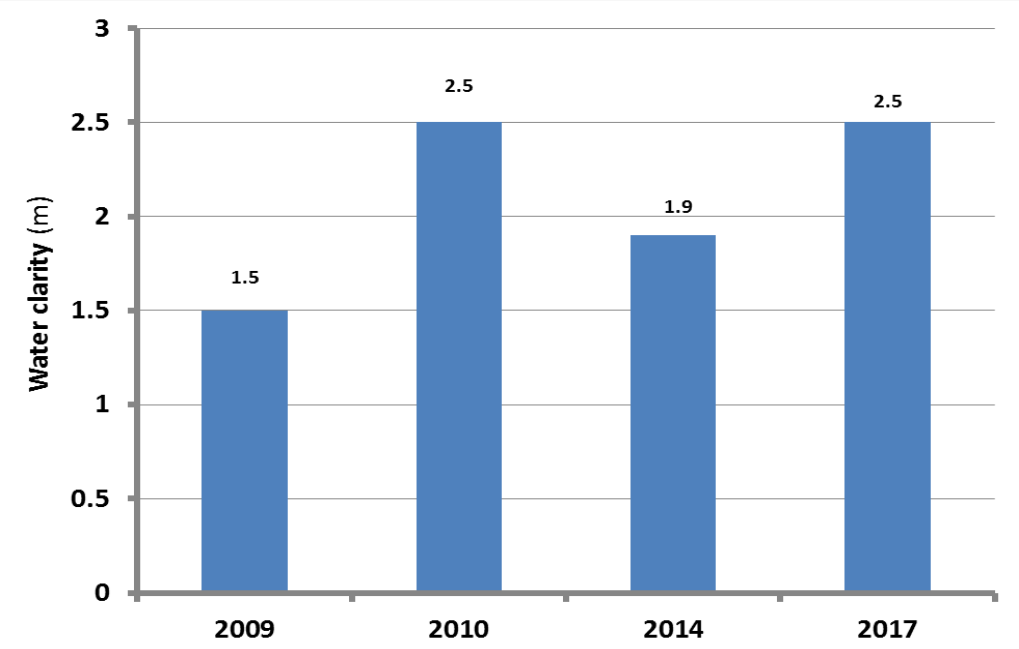

Figure 9. Water clarity in Taunton Lake in 2009, 2010, 2014 and 2017.

Water Chemistry:

CAES IAPP has found that the occurrence of invasive plants in lakes can be attributed to specific water chemistries (June-Wells et al. 2013). For instance, lakes with higher alkalinities and conductivities are more likely to support Eurasian watermilfoil, curlyleaf pondweed, and

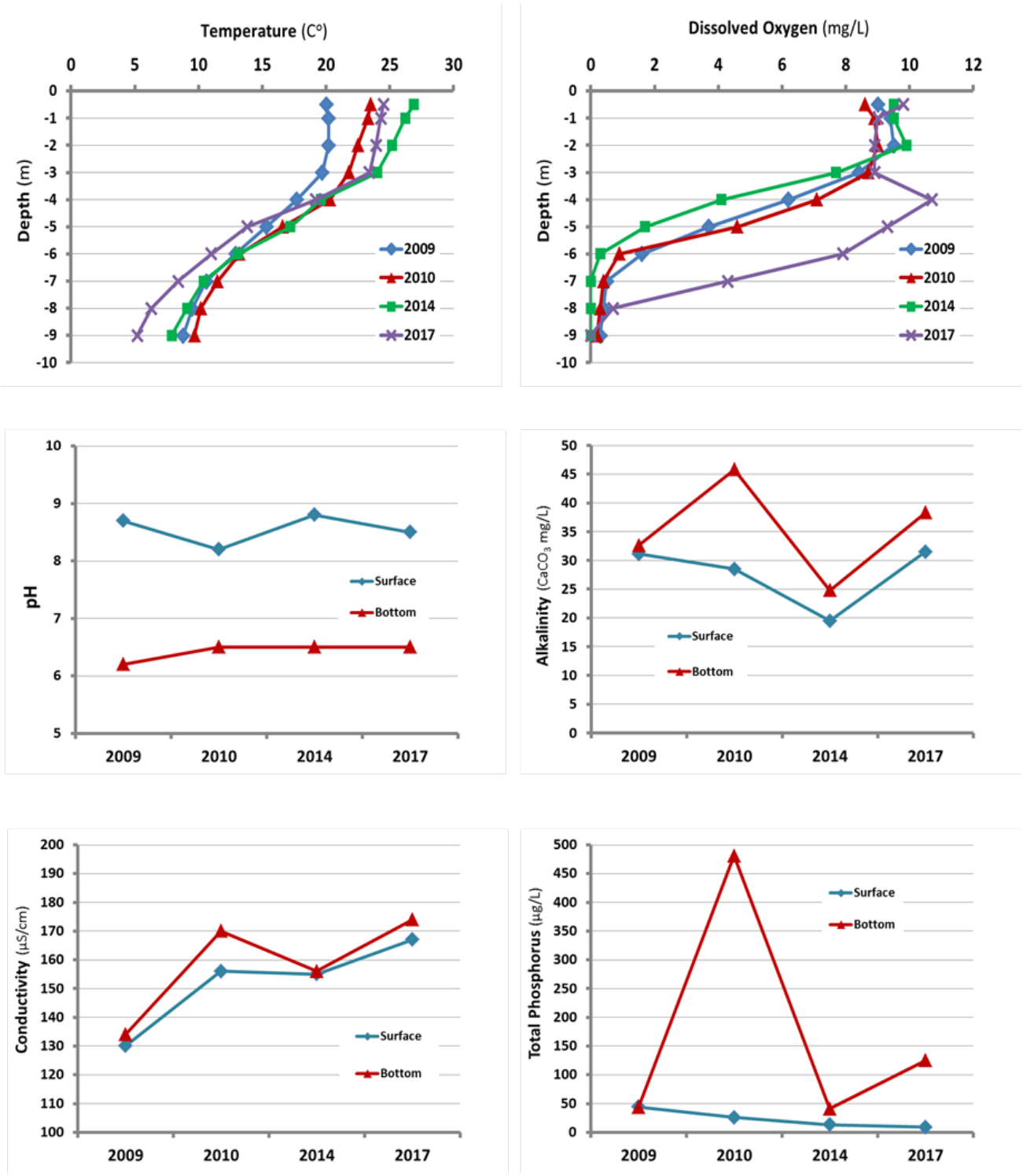

Figure 10. Water chemistry in Taunton Lake in 2009, 2010, 2014, and 2017.

minor naiad (*Najas minor*) while lakes with lower values support fanwort (*Cabomba caroliniana*) and variable watermilfoil (*Myriophyllum heterophyllum*) (Table 2). Invasive zebra mussels (*Dreissena polymorpha*), a problem in nearby lakes, also prefer water in the former category. Water chemistry may be altered when nutrients are utilized by plants, while nutrients not used by plants can support nuisance algal blooms.

The water clarity in Taunton Lake (Figure 9) ranged between 1.5 and 2.5 m in the survey years. Poorest clarity (1.5 m) occurred in 2009 suggesting more recent changes in the plant community and management practices may have caused an improvement. Because the measurements were made in June when Connecticut lakes are often the clearest, this may not reflect conditions later in the summer. Water clarities in Connecticut's lakes ranged from 0.3 - 10 m with an average of 2.3 m (CAES IAPP, 2017). Thus, the clarity of Taunton Lake ranks near the average.

Water temperature in Taunton Lake ranged from 20 - 25 ^{o}C at the surface and from 5 – 10 ^{o}C near the bottom (Figure 10, top left). The thermocline (depth where water temperature showed a rapid decline) was between 3 and 7 m each year. Similarly, dissolved oxygen concentrations (Figure 10, top right) were high from 0- 3 meters and rapidly declined to a anaerobic condition at depths greater than 6 m. Anaerobic conditions favor phosphorus release from the sediment and are unsuitable for most fish.

The pH of Taunton Lake's water ranged from 8.2 - 8.8 at the surface and from 6.2 - 6.5 near the bottom (Figure 10, middle, left). Higher pH (less acidic) near the surface is consistent with daytime removal of carbon dioxide by algae and aquatic plants. Taunton Lake alkalinity ranged from 20 - 32 mg/L $CaCO_3$ at the surface with no trends throughout the survey years (Figure 10, middle, right). Bottom water alkalinity was slightly higher and ranged between 25 and 46 mg/L $CaCO_3$. As with the surface alkalinity, there was no trend throughout the survey years.

Conductivity is an indicator of dissolved ions that come from natural and man-made sources (mineral weathering, organic matter decomposition, fertilizers, septic systems, road salts, etc.). The conductivities of Taunton Lake's water showed an upward trend throughout the survey years (Figure 10, bottom, left). The levels were similar at the surface and bottom but rose from near 130 *us*/cm in 2009 to near 170 *us*/cm in 2017. The conductivity for Connecticut lakes average near 95 us/cm (CAES IAPP 2017) and thus Taunton Lake would be considered above average.

A key parameter used to categorize a lake's trophic state is the concentration of total phosphorus (P) in the water column. High levels of P can cause problematic algal blooms (Frink and Norvell 1984) while rooted macrophytes are less affected as they obtain most nutrients from the substrate (Bristow and Whitcombe 1971). Lakes with P levels from 0 - 10 µg/L are considered nutrient-poor or oligotrophic. When P concentrations reach 15 - 25 µg/L, lakes are classified as moderately fertile or mesotrophic and when P reaches 30 - 50 µg/L they are considered fertile or eutrophic (Frink and Norvell, 1984). Lakes with P concentrations over 50 µg/L are categorized as extremely fertile or hypereutrophic. Surface total P concentrations in Taunton Lake declined from 44 µg/L in 2009 to 9 µg/L in 2017 (Figure 10, bottom right). This could be due to P uptake by the greater biomass of aquatic plants, changes in watershed inputs or random events. A decline in P, during the survey years, was not evident in the bottom water with 2009 and 2014 having the least total P (43 and 41 µg/L respectively) and 2010 and 2017 having the most (481 and 125 µg/L respectively) . Increased P in the bottom water is common during the summer as anoxic conditions release P from the sediment (Norvell, 1974). Wide variations will occur due to mixing events such as high winds and heavy rains.

Taunton Lake's alkalinity, conductivity and phosphorus levels categorize the lake as highly susceptible to invasion from curlyleaf pondweed, Eurasian watermilfoil, and minor naiad (June-Wells et al. 2013). With the exception of minor naiad, this has already occurred. Minor naiad is a seed borne annual and our June survey may have been too early to find it. Zebra

mussels are currently present in the Housatonic River and associated lakes. Taunton Lake's water chemistry makes it a prime candidate for zebra mussel invasion.

Conclusions

Since the 1950's, Taunton Lake has change from a water body with a sandy/gravelly bottom with few plants to a silty/organic bottom with luxuriant plant growth. Our surveys in 2009, 2010, 2014 and 2017 found 8 -14 plant, with the fewest in 2009 and the greatest 2014. With the exception Eurasian watermilfoil and curlyleaf pondweed, all were native. In 2017, dense stands of Eurasian watermilfoil were typically covered with filamentous algae. An increase in the aquatic plant species richness and frequency of occurrence of both invasive and native species occurred between 2009 and 2017 but the abundance of native species declined.

Effects of the 2015 introduction of grass into Taunton Lake might be reflected in changes in the plant community between our 2014 and 2017 surveys. Our data, however, found no significant changes in species richness or frequency of occurrence. Because grass carp feed from the plants top downward, a better measure of change might be species abundance. Unfortunately, our plant abundance showed a significant increase in Eurasian watermilfoil and a downward trend in native species. This could indicate that in the early years of the grass carp introduction, the fish are preferentially feeding on native species. With time and grass carp growth, greater control of Eurasian watermilfoil is expected. Often grass carp stockings appear to be having little effect until the population and size reach a critical mass. Then all vegetation is consumed and the water body suffers from insufficient habitat for aquatic biota and conditions that promote nuisance or harmful algal. The key to understanding the grass carp/plant population dynamics will be to continue surveillance to provide the information necessary for justifying the continuation or cessation of grass carp stockings.

Taunton Lake's water has increased in clarity and declined in total phosphorus from 2014 to 2017. This could be due to P uptake by the greater biomass of aquatic plants, changes in

watershed inputs or random events. Other water chemistry parameters showed the lake to have moderately high pH, alkalinity and conductivity. This creates conditions favoring invasive curlyleaf pondweed, Eurasian watermilfoil and minor naiad which are already present, as well as zebra mussels that are not yet present.

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References:

AERF. 2014 Biology and Control of Aquatic Plants, A Best Management Practices Handbook: Third Edition. Gettys LA. Haller WT, Petty DG, eds. Aquatic Ecosystem Restoration Foundation, Marietta GA. 238 pp.

American Public Health Association. 1995. Standard methods for the examination of water and wastewater. 19th ed. American Public Health Association, 1015 Fifteenth St. NW Washington, DC 2005. 4:108-116.

Bristow JM and Whitcombe M. 1971. The role of roots in the nutrition of aquatic vascular plants. Amer. J. Bot., 58:8-13.

CAES IAPP. 2017. The Connecticut Agricultural Experiment Station Invasive Aquatic Plant Program (CAES IAPP). Retrieved January 30, 2017. http://www.ct.gov/caes/iapp.

Frink CR and Norvell WA. 1984. Chemical and physical properties of Connecticut lakes. Conn. Agric. Exp. Sta. Bull. 817.

June-Wells MF, Gallagher J, Gibbons JA, Bugbee GJ. 2013. Water chemistry preferences of five nonnative aquatic macrophyte species in Connecticut: A preliminary risk assessment tool. Lake and Reservoir Management. 29:303-316.

State Board of Fisheries and Game Lake and Pond Survey Unit. 1959. A Fishery Survey of Lakes and Ponds of Connecticut. Report No.1. State Board of Fisheries and Game. 395 pp.

Appendix

Invasive Plant Descriptions

Myriophyllum spicatum

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

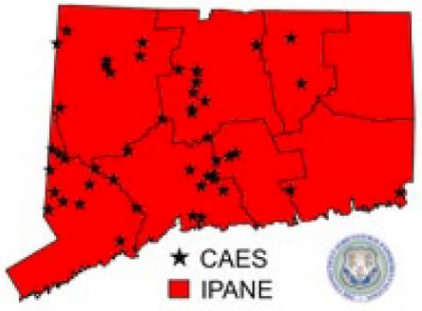
Leaves: Leaves are rectangular with ≥ 12 pairs of leaflets per leaf and are dissected giving a feathery appearance, arranged in a whorl, whorls are 1 inch (2.5 cm) apart

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

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



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

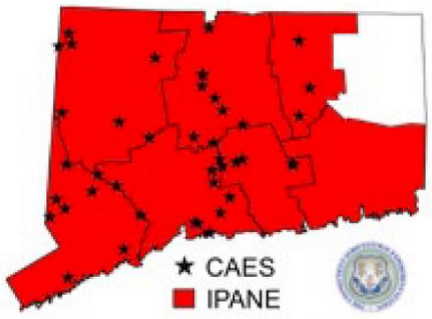
Leaves: Alternate leaves 0.3-1 inches (3-8 cm) wide with wavy edges (similar to lasagna) with a prominent mid-vein

Flowers: Brown and inconspicuous

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

Reproduction: Turions (right) and seeds

Easily confused species:
None



Transect Data

FID	Surveyor	Depth	Substrate	Transect	Points	Meters	Notes	LemMin	LudPal	MyrSpi	NupVar	PotFol	SpaSp	Date	Time	Lattitude	Longitude
82	Greg Bugbee	0.2	Sand	1	1	.5	nothing	0	0	0	0	0	0	2017-06-27	10:46:00am	-73.34023	-73.34023
83	Greg Bugbee	1.2	Organic	1	2	5.0	filamentous algae	0	0	4	0	0	0	2017-06-27	10:49:27am	-73.34019	-73.34019
84	Greg Bugbee	2.0	Organic	1	3	10.0	filamentous algae	0	0	4	0	0	0	2017-06-27	10:51:55am	-73.34013	-73.34013
85	Greg Bugbee	2.3	Organic	1	4	20.0	filamentous algae	0	0	4	0	0	0	2017-06-27	10:53:33am	-73.34002	-73.34002
86	Greg Bugbee	2.5	Organic	1	5	30.0		0	0	4	0	0	0	2017-06-27	10:54:50am	-73.33994	-73.33994
87	Greg Bugbee	3.5	Organic	1	6	40.0		0	0	3	0	0	0	2017-06-27	10:57:06am	-73.33979	-73.33979
88	Greg Bugbee	3.5	Organic	1	7	50.0		0	0	3	0	0	0	2017-06-27	10:58:43am	-73.33970	-73.33970
89	Greg Bugbee	3.7	Silt	1	8	60.0		0	0	2	0	0	0	2017-06-27	11:01:52am	-73.33957	-73.33957
90	Greg Bugbee	4.5	Silt	1	9	70.0		0	0	2	0	0	0	2017-06-27	11:04:04am	-73.33943	-73.33943
91	Greg Bugbee	6.0	Silt	1	10	80.0	nothing	0	0	0	0	0	0	2017-06-27	11:05:58am	-73.33932	-73.33932
72	Greg Bugbee	0.2	Sand	2	1	.5		0	2	1	0	0	1	2017-06-27	10:12:54am	-73.33724	-73.33724
73	Greg Bugbee	1.5	Organic	2	2	10.0		0	2	4	0	0	0	2017-06-27	10:17:39am	-73.33729	-73.33729
74	Greg Bugbee	1.9	Organic	2	3	10.0		0	2	4	0	0	0	2017-06-27	10:21:28am	-73.33734	-73.33734
75	Greg Bugbee	3.0	Silt	2	4	20.0		0	2	3	0	0	0	2017-06-27	10:25:25am	-73.33740	-73.33740
76	Greg Bugbee	6.6	Silt	2	5	30.0	nothing	0	0	0	0	0	0	2017-06-27	10:33:05am	-73.33743	-73.33743
77	Greg Bugbee	7.0	Silt	2	6	40.0	nothing	0	0	0	0	0	0	2017-06-27	10:34:30am	-73.33744	-73.33744
78	Greg Bugbee	7.0	Silt	2	7	50.0	nothing	0	0	0	0	0	0	2017-06-27	10:35:53am	-73.33750	-73.33750
79	Greg Bugbee	7.5	Silt	2	8	60.0	nothing	0	0	0	0	0	0	2017-06-27	10:36:32am	-73.33750	-73.33750
80	Greg Bugbee	7.7	Silt	2	9	70.0	nothing	0	0	0	0	0	0	2017-06-27	10:37:31am	-73.33757	-73.33757
81	Greg Bugbee	7.7	Silt	2	10	80.0	nothing	0	0	0	0	0	0	2017-06-27	10:38:11am	-73.33766	-73.33766
67	Greg Bugbee	0.1	Sand	3	1	.5		0	0	4	0	0	0	2017-06-15	01:37:30pm	-73.33688	-73.33688
68	Greg Bugbee	1.1	Sand	3	2	5.0	filamentous algae	0	0	4	0	0	0	2017-06-15	01:39:26pm	-73.33692	-73.33692
69	Greg Bugbee	1.5	Sand	3	3	10.0	filamentous algae	0	0	4	0	0	0	2017-06-15	01:41:40pm	-73.33704	-73.33704
70	Greg Bugbee	2.5	Silt	3	4	20.0	filamentous algae	0	0	3	0	0	0	2017-06-15	01:45:05pm	-73.33701	-73.33701
71	Greg Bugbee	3.7	Silt	3	5	20.0	nothing	0	0	0	0	0	0	2017-06-15	01:46:34pm	-73.33704	-73.33704
61	Greg Bugbee	0.2	Gravel	4	1	.5	nothing	0	0	0	0	0	0	2017-06-15	01:14:19pm	-73.33305	-73.33305
62	Greg Bugbee	1.0	Gravel	4	2	10.0	filamentous algae	0	0	4	0	0	0	2017-06-15	01:16:36pm	-73.33312	-73.33312
63	Greg Bugbee	1.8	Gravel	4	3	10.0	filamentous algae	0	0	4	0	0	0	2017-06-15	01:19:18pm	-73.33315	-73.33315
64	Greg Bugbee	4.5	Silt	4	4	20.0		0	0	4	0	0	0	2017-06-15	01:21:43pm	-73.33324	-73.33324
65	Greg Bugbee	5.2	Silt	4	5	30.0		0	0	4	0	0	0	2017-06-15	01:25:01pm	-73.33328	-73.33328
66	Greg Bugbee	8.5	Silt	4	6	40.0		0	0	4	0	0	0	2017-06-15	01:25:47pm	-73.33341	-73.33341
51	Greg Bugbee	0.2	Sand	5	1	.5		0	0	2	0	0	2	2017-06-15	11:47:06am	-73.33056	-73.33056
52	Greg Bugbee	0.2	Sand	5	2	5.0		0	0	2	0	0	0	2017-06-15	12:49:57pm	-73.33058	-73.33058
53	Greg Bugbee	1.0	Muck	5	3	10.0	filamentous algae	0	0	2	0	0	0	2017-06-15	12:53:09pm	-73.33067	-73.33067
54	Greg Bugbee	1.0	Muck	5	4	20.0	filamentous algae	0	0	3	0	0	0	2017-06-15	12:55:04pm	-73.33074	-73.33074
55	Greg Bugbee	1.3	Muck	5	5	30.0	filamentous algae	0	0	3	0	0	0	2017-06-15	12:57:08pm	-73.33080	-73.33080
56	Greg Bugbee	1.3	Muck	5	6	40.0	filamentous algae	0	0	3	0	0	0	2017-06-15	12:58:25pm	-73.33088	-73.33088
57	Greg Bugbee	2.0	Organic	5	7	50.0	filamentous algae	0	0	3	0	0	0	2017-06-15	12:59:50pm	-73.33098	-73.33098
58	Greg Bugbee	3.5	Silt	5	8	60.0	nothing	0	0	0	0	0	0	2017-06-15	01:08:23pm	-73.33099	-73.33099

FID	Surveyor	Depth	Substrate	Transect	Points	Meters	Notes	LemMin	LudPal	MyrSpi	NupVar	PotFol	SpaSp	Date	Time	Lattitude	Longitude
59	Greg Bugbee	5.8	Silt	5	9	70.0	nothing	0	0	0	0	0	0	2017-06-15	01:09:09pm	-73.33106	-73.33106
60	Greg Bugbee	7.0	Silt	5	10	80.0	nothing	0	0	0	0	0	0	2017-06-15	01:09:56pm	-73.33109	-73.33109
46	Greg Bugbee	0.1	Muck	6	1	.5		0	2	2	2	2	0	2017-06-15	10:50:40am	-73.32840	-73.32840
47	Greg Bugbee	0.2	Muck	6	2	5.0		0	0	2	0	0	0	2017-06-15	11:01:32am	-73.32841	-73.32841
48	Greg Bugbee	1.2	Muck	6	3	10.0		0	0	4	0	0	0	2017-06-15	11:06:57am	-73.32847	-73.32847
49	Greg Bugbee	1.5	Muck	6	4	20.0	filamentous algae	0	0	3	0	0	0	2017-06-15	11:08:00am	-73.32848	-73.32848
50	Greg Bugbee	4.5	Silt	6	5	30.0	nothing	0	0	0	0	0	0	2017-06-15	11:09:03am	-73.32855	-73.32855
36	Greg Bugbee	0.2	Organic	7	1	.5	floating MyrSpi	0	0	0	0	0	0	2017-06-15	10:02:47am	-73.32741	-73.32741
37	Greg Bugbee	1.0	Sand	7	2	5.0	filamentous algae	0	0	2	0	0	0	2017-06-15	10:13:24am	-73.32745	-73.32745
38	Greg Bugbee	1.1	Sand	7	3	10.0	filamentous algae	0	0	4	0	0	0	2017-06-15	10:19:15am	-73.32754	-73.32754
39	Greg Bugbee	1.8	Silt	7	4	20.0	filamentous algae	0	0	4	0	0	0	2017-06-15	10:20:38am	-73.32761	-73.32761
40	Greg Bugbee	2.0	Silt	7	5	30.0	filamentous algae	0	0	4	0	0	0	2017-06-15	10:25:07am	-73.32773	-73.32773
41	Greg Bugbee	2.2	Silt	7	6	40.0	filamentous algae	0	0	4	0	0	0	2017-06-15	10:26:38am	-73.32782	-73.32782
42	Greg Bugbee	2.5	Silt	7	7	50.0	filamentous algae	0	0	3	0	0	0	2017-06-15	10:28:00am	-73.32791	-73.32791
44	Greg Bugbee	2.5	Silt	7	8	60.0	filamentous algae	0	0	2	0	0	0	2017-06-15	10:38:58am	-73.32802	-73.32802
43	Greg Bugbee	2.5	Silt	7	9	70.0	filamentous algae	0	0	2	0	0	0	2017-06-15	10:37:57am	-73.32818	-73.32818
45	Greg Bugbee	2.5	Silt	7	10	80.0	filamentous algae	0	0	2	0	0	0	2017-06-15	10:40:23am	-73.32830	-73.32830
10	Summer Stebbins	0.2	Gravel	8	1	5.0	filamentous algae, floating MyrSpi	0	0	0	0	0	0	2017-06-15	10:43:34am	-73.32871	-73.32871
11	Summer Stebbins	0.3	Gravel	8	2	5.0	filamentous algae	0	0	2	0	0	0	2017-06-15	10:47:07am	-73.32870	-73.32870
12	Summer Stebbins	0.6	Silt	8	3	10.0	filamentous algae	0	0	3	0	0	0	2017-06-15	10:49:26am	-73.32870	-73.32870
13	Summer Stebbins	0.4	Silt	8	4	20.0	filamentous algae	0	0	4	0	0	0	2017-06-15	10:51:36am	-73.32875	-73.32875
14	Summer Stebbins	0.7	Silt	8	5	30.0	filamentous algae	0	0	4	0	0	0	2017-06-15	10:53:43am	-73.32875	-73.32875
15	Summer Stebbins	0.9	Silt	8	6	40.0	filamentous algae	0	0	4	0	0	0	2017-06-15	10:55:47am	-73.32885	-73.32885
16	Summer Stebbins	1.0	Muck	8	7	50.0	filamentous algae	0	0	4	0	0	0	2017-06-15	10:57:53am	-73.32889	-73.32889
17	Summer Stebbins	1.6	Muck	8	8	60.0	filamentous algae	0	0	2	0	0	0	2017-06-15	11:01:16am	-73.32898	-73.32898
18	Summer Stebbins	2.0	Muck	8	9	70.0	filamentous algae	0	0	3	0	0	0	2017-06-15	11:03:25am	-73.32902	-73.32902
19	Summer Stebbins	2.5	Muck	8	10	80.0	filamentous algae	0	0	2	0	0	0	2017-06-15	11:05:05am	-73.32908	-73.32908
20	Summer Stebbins	0.1	Bedrock	9	1	.5	filamentous algae	0	0	0	0	0	0	2017-06-15	11:13:53am	-73.33325	-73.33325
21	Summer Stebbins	0.3	Sand	9	2	5.0	filamentous algae	0	0	2	0	0	0	2017-06-15	11:19:13am	-73.33323	-73.33323
22	Summer Stebbins	0.8	Bedrock	9	3	10.0	filamentous algae	0	0	2	0	0	0	2017-06-15	11:22:58am	-73.33322	-73.33322
23	Summer Stebbins	0.2	Bedrock	10	1	.5	filamentous algae	2	0	0	0	0	0	2017-06-15	11:41:04am	-73.33416	-73.33416
24	Summer Stebbins	0.4	Organic	10	2	10.0	filamentous algae	0	0	2	0	0	0	2017-06-15	11:45:35am	-73.33414	-73.33414
25	Summer Stebbins	4.7	Muck	10	3	10.0		0	0	1	0	0	0	2017-06-15	11:49:25am	-73.33411	-73.33411
26	Summer Stebbins	1.0	Sand	11	2	5.0	filamentous algae	0	0	2	0	0	0	2017-06-15	12:57:04pm	-73.33704	-73.33704
27	Summer Stebbins	3.2	Sand	11	3	10.0	filamentous algae	0	0	0	0	0	0	2017-06-15	12:59:32pm	-73.33710	-73.33710
28	Summer Stebbins	8.0	Muck	11	4	20.0	nothing	0	0	0	0	0	0	2017-06-15	01:09:46pm	-73.33722	-73.33722
29	Summer Stebbins	0.1	Organic	12	1	.5	Phr spp [A = 2]	2	0	0	0	0	0	2017-06-15	01:29:42pm	-73.33960	-73.33960
30	Summer Stebbins	0.2	Organic	12	2	5.0		2	0	2	3	0	0	2017-06-15	01:32:43pm	-73.33962	-73.33962
31	Summer Stebbins	0.4	Muck	12	3	10.0	filamentous algae	0	0	4	0	0	0	2017-06-15	01:36:46pm	-73.33965	-73.33965

FID	Surveyor	Depth	Substrate	Transect	Points	Meters	Notes	LemMin	LudPal	MyrSpi	NupVar	PotFol	SpaSp	Date	Time	Lattitude	Longitude
7	Summer Stebbins	1.6	Gravel	17	8	60.0	filamentous algae	0	0	3	0	0	0	2017-06-15	10:23:19am	-73.32852	-73.32852
8	Summer Stebbins	2.0	Muck	17	9	70.0	filamentous algae	0	0	3	0	0	0	2017-06-15	10:27:24am	-73.32858	-73.32858
9	Summer Stebbins	2.2	Muck	17	10	80.0	filamentous algae	0	0	2	0	0	0	2017-06-15	10:29:41am	-73.32869	-73.32869

Taunton Transect 2014 (page 1 of 4).

FID	Surveyor	Depth	Substrate	Transect	Points	Meters	Notes	EloNut	LudSp	MyrSpi	PotFol	SagSp	SpiPol	Date	Time	Latitude	Longitude
0	Sara Benson	0.2	Sand	1	1	.5		2	0	2	0	0	0	2014-06-25	08:45:05am	41.41425	-73.34035
1	Sara Benson	0.5	Sand	1	2	5.0		3	0	2	0	0	0	2014-06-25	08:53:37am	41.41424	-73.34028
2	Sara Benson	1.5	Muck	1	3	10.0		3	0	4	0	0	0	2014-06-25	08:58:23am	41.41420	-73.34020
3	Sara Benson	2.2	Muck	1	4	20.0		0	0	3	0	0	0	2014-06-25	09:03:30am	41.41420	-73.34012
4	Sara Benson	2.7	Muck	1	5	30.0	nothing	0	0	0	0	0	0	2014-06-25	09:06:15am	41.41417	-73.33996
5	Sara Benson	3.1	Muck	1	6	40.0	nothing	0	0	0	0	0	0	2014-06-25	09:08:09am	41.41414	-73.33986
6	Sara Benson	3.7	Muck	1	7	50.0	nothing	0	0	0	0	0	0	2014-06-25	09:09:39am	41.41409	-73.33973
7	Sara Benson	3.2	Muck	1	8	60.0	nothing	0	0	0	0	0	0	2014-06-25	09:11:07am	41.41411	-73.33962
8	Sara Benson	5.5	Muck	1	9	70.0	nothing	0	0	0	0	0	0	2014-06-25	09:12:42am	41.41408	-73.33949
9	Sara Benson	6.4	Muck	1	10	80.0	nothing	0	0	0	0	0	0	2014-06-25	09:13:44am	41.41404	-73.33937
10	Sara Benson	0.2	Sand	2	1	.5		1	0	0	0	0	0	2014-06-25	09:19:09am	41.41523	-73.33958
11	Sara Benson	1.2	Sand	2	2	5.0		3	0	2	0	0	0	2014-06-25	09:22:29am	41.41519	-73.33953
12	Sara Benson	1.5	Muck	2	3	10.0		2	0	4	0	0	0	2014-06-25	09:26:08am	41.41516	-73.33947
13	Sara Benson	2.0	Muck	2	4	20.0		1	0	1	0	0	0	2014-06-25	09:29:32am	41.41511	-73.33938
14	Sara Benson	2.0	Muck	2	5	30.0	algae	0	0	3	0	0	0	2014-06-25	09:34:38am	41.41508	-73.33926
15	Sara Benson	2.5	Muck	2	6	40.0		0	0	2	0	0	0	2014-06-25	09:37:34am	41.41503	-73.33917
16	Sara Benson	3.0	Muck	2	7	50.0		0	0	1	0	0	0	2014-06-25	09:40:48am	41.41498	-73.33903
17	Sara Benson	3.5	Muck	2	8	60.0	nothing	0	0	0	0	0	0	2014-06-25	09:42:40am	41.41492	-73.33896
18	Sara Benson	4.1	Muck	2	9	70.0	nothing	0	0	0	0	0	0	2014-06-25	09:45:03am	41.41485	-73.33888
19	Sara Benson	5.2	Muck	2	10	80.0	nothing	0	0	0	0	0	0	2014-06-25	09:46:00am	41.41479	-73.33876
20	Sara Benson	0.2	Gravel	3	1	.5	fallen tree	1	0	1	0	0	0	2014-06-25	09:53:05am	41.41505	-73.33681
21	Sara Benson	1.2	Muck	3	2	5.0		3	0	1	0	0	0	2014-06-25	09:56:58am	41.41502	-73.33687
22	Sara Benson	1.2	Muck	3	3	10.0		1	0	3	0	0	0	2014-06-25	09:59:53am	41.41496	-73.33691
23	Sara Benson	1.9	Muck	3	4	20.0		1	0	1	0	0	0	2014-06-25	10:02:35am	41.41489	-73.33697
24	Sara Benson	4.8	Muck	3	5	30.0	nothing	0	0	0	0	0	0	2014-06-25	10:04:47am	41.41481	-73.33702
25	Sara Benson	0.2	Gravel	4	1	.5	nothing	0	0	0	0	0	0	2014-06-25	10:15:08am	41.41275	-73.33304
26	Sara Benson	1.0	Gravel	4	2	5.0		0	0	1	0	0	0	2014-06-25	10:21:35am	41.41271	-73.33306
27	Sara Benson	1.5	Gravel	4	3	10.0		0	0	3	0	0	0	2014-06-25	10:23:15am	41.41266	-73.33311
28	Sara Benson	1.9	Sand	4	4	20.0		1	0	5	0	0	0	2014-06-25	10:25:55am	41.41262	-73.33317
29	Sara Benson	3.7	Sand	4	5	30.0	nothing	0	0	0	0	0	0	2014-06-25	10:29:11am	41.41251	-73.33319
30	Sara Benson	6.3	Sand	4	6	40.0	nothing	0	0	0	0	0	0	2014-06-25	10:31:41am	41.41245	-73.33328
31	Sara Benson	0.2	Organic	5	1	.5		1	0	0	2	0	0	2014-06-25	10:40:34am	41.41211	-73.33051
32	Sara Benson	0.2	Organic	5	2	5.0		1	0	1	0	0	0	2014-06-25	10:54:41am	41.41208	-73.33057
33	Sara Benson	0.8	Muck	5	3	10.0		2	0	2	0	0	0	2014-06-25	10:57:26am	41.41204	-73.33060
34	Sara Benson	1.2	Muck	5	4	20.0		2	0	3	0	0	0	2014-06-25	11:04:25am	41.41200	-73.33071
35	Sara Benson	1.6	Muck	5	5	30.0		1	0	5	0	0	0	2014-06-25	11:06:59am	41.41190	-73.33079
36	Sara Benson	1.9	Muck	5	6	40.0		1	0	5	0	0	0	2014-06-25	11:10:25am	41.41183	-73.33085
37	Sara Benson	2.1	Muck	5	7	50.0		0	0	3	0	0	0	2014-06-25	11:14:24am	41.41174	-73.33093

FID	Surveyor	Depth	Substrate	Transect	Points	Meters	Notes	EloNut	LudSp	MyrSpi	PotFol	SagSp	SpiPol	Date	Time	Latitude	Longitude
38	Sara Benson	3.3	Muck	5	8	60.0	nothing	0	0	0	0	0	0	2014-06-25	11:17:42am	41.41166	-73.33088
39	Sara Benson	6.4	Muck	5	9	70.0	nothing	0	0	0	0	0	0	2014-06-25	11:19:26am	41.41151	-73.33090
40	Sara Benson	6.7	Muck	5	10	80.0	nothing	0	0	0	0	0	0	2014-06-25	11:20:10am	41.41143	-73.33095
41	Sara Benson	0.2	Organic	6	1	.5	sag gra	4	1	2	2	1	0	2014-06-25	12:08:13pm	41.40989	-73.32843
42	Sara Benson	0.5	Muck	6	2	5.0		3	0	2	0	0	0	2014-06-25	12:20:24pm	41.40984	-73.32846
43	Sara Benson	1.2	Muck	6	3	10.0		1	0	3	0	0	0	2014-06-25	12:31:45pm	41.40981	-73.32854
44	Sara Benson	2.3	Muck	6	4	20.0		0	0	2	0	0	0	2014-06-25	12:34:31pm	41.40973	-73.32857
45	Sara Benson	4.6	Muck	6	5	30.0	nothing	0	0	0	0	0	0	2014-06-25	12:37:54pm	41.40965	-73.32865
46	Sara Benson	0.2	Gravel	7	1	.5		0	0	0	0	0	1	2014-06-25	12:46:24pm	41.40833	-73.32740
47	Sara Benson	0.7	Muck	7	2	5.0		1	0	0	0	0	0	2014-06-25	12:48:51pm	41.40835	-73.32745
48	Sara Benson	1.2	Organic	7	3	10.0		1	0	3	0	0	0	2014-06-25	12:50:21pm	41.40837	-73.32753
49	Sara Benson	1.7	Muck	7	4	20.0		2	0	5	0	0	0	2014-06-25	12:52:49pm	41.40841	-73.32764
50	Sara Benson	1.9	Muck	7	5	30.0		0	0	5	0	0	0	2014-06-25	12:55:20pm	41.40843	-73.32776
51	Sara Benson	1.9	Muck	7	6	40.0		0	0	5	0	0	0	2014-06-25	12:59:07pm	41.40846	-73.32783
52	Sara Benson	2.0	Muck	7	7	50.0		0	0	5	0	0	0	2014-06-25	01:01:00pm	41.40848	-73.32797
53	Sara Benson	2.1	Muck	7	8	60.0		0	0	4	0	0	0	2014-06-25	01:04:11pm	41.40852	-73.32806
54	Sara Benson	2.3	Muck	7	9	70.0		1	0	1	0	0	0	2014-06-25	01:06:06pm	41.40856	-73.32819
55	Sara Benson	2.4	Muck	7	10	80.0	nothing	0	0	0	0	0	0	2014-06-25	01:08:05pm	41.40863	-73.32830
66	Sara Benson	0.2	Gravel	8	1	.5		0	0	1	0	0	0	2014-06-26	09:06:31am	41.40719	-73.32879
67	Sara Benson	0.8	Organic	8	2	5.0		0	0	1	0	0	0	2014-06-26	09:08:05am	41.40722	-73.32874
68	Sara Benson	1.2	Muck	8	3	10.0		1	0	3	0	0	0	2014-06-26	09:09:57am	41.40728	-73.32879
69	Sara Benson	1.4	Muck	8	4	20.0		0	0	3	0	0	0	2014-06-26	09:12:28am	41.40738	-73.32878
70	Sara Benson	1.7	Muck	8	5	30.0		1	0	3	0	0	0	2014-06-26	09:14:34am	41.40747	-73.32878
71	Sara Benson	1.8	Muck	8	6	40.0		0	0	3	0	0	0	2014-06-26	09:17:21am	41.40755	-73.32876
72	Sara Benson	1.9	Muck	8	7	50.0		0	0	4	0	0	0	2014-06-26	09:20:51am	41.40766	-73.32876
73	Sara Benson	2.0	Muck	8	8	60.0		0	0	4	0	0	0	2014-06-26	09:24:47am	41.40772	-73.32872
74	Sara Benson	2.1	Muck	8	9	70.0		0	0	3	0	0	0	2014-06-26	09:27:07am	41.40783	-73.32873
75	Sara Benson	2.3	Muck	8	10	80.0		0	0	2	0	0	0	2014-06-26	09:30:43am	41.40795	-73.32874
76	Samantha Wysocki	0.5	Gravel	9	1	.5	nothing	0	0	0	0	0	0	2014-06-26	09:40:59am	41.40910	-73.33318
77	Samantha Wysocki	1.2	Sand	9	2	5.0		0	0	1	0	0	0	2014-06-26	09:42:03am	41.40913	-73.33314
78	Samantha Wysocki	3.2	Sand	9	3	10.0	nothing	0	0	0	0	0	0	2014-06-26	09:44:58am	41.40918	-73.33310
79	Samantha Wysocki	0.2	Gravel	10	1	.5		0	0	1	0	0	0	2014-06-26	09:54:21am	41.40963	-73.33482
80	Samantha Wysocki	1.2	Sand	10	2	5.0		1	0	2	0	0	0	2014-06-26	09:56:41am	41.40965	-73.33483
81	Samantha Wysocki	2.2	Sand	10	3	10.0	nothing	0	0	0	0	0	0	2014-06-26	09:58:54am	41.40970	-73.33481
82	Samantha Wysocki	1.0	Gravel	11	2	5.0		0	0	2	0	0	0	2014-06-26	10:08:12am	41.41030	-73.33702
83	Samantha Wysocki	1.8	Gravel	11	3	10.0	nothing	0	0	0	0	0	0	2014-06-26	10:10:03am	41.41031	-73.33706
84	Samantha Wysocki	6.5	Sand	11	4	20.0	nothing	0	0	0	0	0	0	2014-06-26	10:12:44am	41.41035	-73.33716
85	Samantha Wysocki	0.2	Organic	12	1	.5		2	0	2	0	2	2	2014-06-26	10:31:40am	41.40977	-73.33865

FID	Surveyor	Depth	Substrate	Transect	Points	Meters	Notes	EloNut	LudSp	MyrSpi	PotFol	SagSp	SpiPol	Date	Time	Latitude	Longitude
86	Samantha Wysocki	0.5	Organic	12	2	5.0		0	0	1	0	0	0	2014-06-26	10:37:59am	41.40981	-73.33864
87	Samantha Wysocki	1.0	Organic	12	3	10.0		0	0	2	0	0	0	2014-06-26	10:40:27am	41.40983	-73.33861
88	Samantha Wysocki	1.8	Muck	12	4	20.0		0	0	3	0	0	0	2014-06-26	10:42:37am	41.40994	-73.33859
89	Samantha Wysocki	2.2	Muck	12	5	30.0		0	0	3	0	0	0	2014-06-26	10:44:40am	41.41000	-73.33853
90	Samantha Wysocki	2.7	Muck	12	6	30.0		2	0	3	0	0	0	2014-06-26	10:48:12am	41.41000	-73.33853
91	Samantha Wysocki	3.0	Muck	12	7	40.0		1	0	0	0	0	0	2014-06-26	10:50:58am	41.41011	-73.33852
92	Samantha Wysocki	0.2	Organic	13	1	.5		1	0	1	0	0	0	2014-06-26	11:49:12am	41.40996	-73.34015
93	Samantha Wysocki	0.5	Muck	13	2	5.0		0	0	1	0	0	0	2014-06-26	11:52:10am	41.41002	-73.34015
94	Samantha Wysocki	0.5	Muck	13	3	10.0	algae	0	0	1	0	0	0	2014-06-26	11:54:59am	41.41005	-73.34016
95	Samantha Wysocki	1.1	Muck	13	4	20.0	algae	0	0	4	0	0	0	2014-06-26	11:57:42am	41.41017	-73.34012
96	Samantha Wysocki	1.7	Muck	13	5	30.0		0	0	3	0	0	0	2014-06-26	12:01:43pm	41.41025	-73.34009
97	Samantha Wysocki	1.9	Muck	13	6	40.0		0	0	2	0	0	0	2014-06-26	12:04:20pm	41.41032	-73.34011
98	Samantha Wysocki	2.1	Muck	13	7	50.0		0	0	2	0	0	0	2014-06-26	12:06:41pm	41.41043	-73.34011
99	Samantha Wysocki	2.3	Muck	13	8	60.0		0	0	1	0	0	0	2014-06-26	12:09:02pm	41.41051	-73.34008
100	Samantha Wysocki	2.3	Muck	13	9	70.0	nothing	0	0	0	0	0	0	2014-06-26	12:11:35pm	41.41058	-73.34001
101	Samantha Wysocki	2.6	Muck	13	10	80.0	nothing	0	0	0	0	0	0	2014-06-26	12:13:25pm	41.41069	-73.33998
102	Sara Benson	0.2	Gravel	14	1	.5		0	0	1	0	0	0	2014-06-26	12:17:35pm	41.41144	-73.34022
103	Sara Benson	0.6	Muck	14	2	5.0		0	0	1	0	0	0	2014-06-26	12:20:33pm	41.41141	-73.34017
104	Sara Benson	1.3	Muck	14	3	10.0		0	0	2	0	0	0	2014-06-26	12:21:58pm	41.41136	-73.34014
105	Sara Benson	1.8	Muck	14	4	20.0		0	0	2	0	0	0	2014-06-26	12:24:07pm	41.41130	-73.34004
106	Sara Benson	2.9	Muck	14	5	30.0	nothing	0	0	0	0	0	0	2014-06-26	12:26:20pm	41.41124	-73.33996
107	Sara Benson	4.3	Muck	14	6	40.0	nothing	0	0	0	0	0	0	2014-06-26	12:27:51pm	41.41114	-73.33991
108	Sara Benson	5.5	Muck	14	7	50.0	nothing	0	0	0	0	0	0	2014-06-26	12:29:20pm	41.41106	-73.33987
109	Sara Benson	6.0	Muck	14	8	60.0	nothing	0	0	0	0	0	0	2014-06-26	12:30:14pm	41.41098	-73.33980
110	Sara Benson	6.2	Muck	14	9	70.0	nothing	0	0	0	0	0	0	2014-06-26	12:30:48pm	41.41088	-73.33975
111	Sara Benson	6.4	Muck	14	10	80.0	nothing	0	0	0	0	0	0	2014-06-26	12:31:36pm	41.41085	-73.33968
112	Sara Benson	0.2	Gravel	15	1	.5		0	0	1	0	0	0	2014-06-26	12:34:16pm	41.41215	-73.33885
113	Samantha Wysocki	1.0	Sand	15	2	5.0		1	0	2	0	0	0	2014-06-26	12:36:29pm	41.41214	-73.33880
114	Samantha Wysocki	2.6	Muck	15	3	10.0		0	0	3	0	0	0	2014-06-26	12:39:23pm	41.41212	-73.33876
115	Samantha Wysocki	4.5	Muck	15	4	20.0	nothing	0	0	0	0	0	0	2014-06-26	12:42:08pm	41.41211	-73.33864
116	Sara Benson	0.2	Organic	16	1	.5	nothing	0	0	0	0	0	0	2014-06-26	12:47:17pm	41.41296	-73.33942
117	Sara Benson	1.0	Organic	16	2	5.0	nothing - algae	0	0	0	0	0	0	2014-06-26	12:49:45pm	41.41298	-73.33937
118	Sara Benson	1.5	Organic	16	3	10.0	nothing	0	0	0	0	0	0	2014-06-26	12:52:01pm	41.41302	-73.33935
119	Sara Benson	7.0	Muck	16	4	20.0	nothing	0	0	0	0	0	0	2014-06-26	12:54:17pm	41.41309	-73.33922
56	Jordan Gibbons	0.5	Organic	17	1	.5	nothing	0	0	0	0	0	0	2014-06-25	01:15:33pm	41.40764	-73.32791
57	Sara Benson	0.5	Sand	17	2	5.0	nothing	0	0	0	0	0	0	2014-06-25	01:17:30pm	41.40767	-73.32795
58	Sara Benson	1.0	Organic	17	3	10.0		0	0	2	0	0	0	2014-06-25	01:18:40pm	41.40770	-73.32802
59	Sara Benson	1.0	Sand	17	4	20.0		1	0	2	0	0	0	2014-06-25	01:20:14pm	41.40774	-73.32813

Taunton Transect 2014 (page 4 of 4).

FID	Surveyor	Depth	Substrate	Transect	Points	Meters	Notes	EloNut	LudSp	MyrSpi	PotFol	SagSp	SpiPol	Date	Time	Latitude	Longitude
60	Sara Benson	1.3	Sand	17	5	30.0		1	0	3	0	0	0	2014-06-25	01:21:53pm	41.40778	-73.32825
61	Sara Benson	1.6	Muck	17	6	40.0		0	0	4	0	0	0	2014-06-25	01:23:37pm	41.40781	-73.32835
62	Sara Benson	1.9	Muck	17	7	50.0		0	0	4	0	0	0	2014-06-25	01:25:22pm	41.40785	-73.32848
63	Sara Benson	2.0		17	8	60.0		0	0	3	0	0	0	2014-06-25	01:27:48pm	41.40786	-73.32859
64	Sara Benson	2.2	Muck	17	9	70.0		0	0	4	0	0	0	2014-06-25	01:30:07pm	41.40787	-73.32870
65	Sara Benson	2.3	Muck	17	10	80.0		0	0	3	0	0	0	2014-06-25	01:32:27pm	41.40797	-73.32880

FID	Surveyor	Depth	Substrate	Transect	Points	Meters	Notes	EloNut	MyrSpi	NupVar	SagSp	Date	Time	Latitude	Longitude
47	Greg Bugbee	0.2	Sand	1	1	0.5	nothing	0	0	0	0	2010-06-10	01:36:07pm	41.41425	-73.34033
48	Greg Bugbee	0.8	Gravel	1	2	5	bag81	0	3	0	0	2010-06-10	01:40:38pm	41.41423	-73.34028
50	Greg Bugbee	0.9	Muck	1	3	10	bag83	2	2	0	0	2010-06-10	02:03:28pm	41.41419	-73.34026
49	Greg Bugbee	0.8	Sand	1	4	20	bag87	0	2	0	0	2010-06-10	01:45:47pm	41.41422	-73.34009
51	Greg Bugbee	1.7	Sand	1	5	30	bag88	0	2	0	0	2010-06-10	02:08:29pm	41.41427	-73.34005
52	Greg Bugbee	1.2	Muck	1	6	40	nothing	0	0	0	0	2010-06-10	02:10:43pm	41.41412	-73.33991
53	Greg Bugbee	2.0	Gravel	1	7	50	nothing	0	0	0	0	2010-06-10	02:12:38pm	41.41406	-73.33976
54	Greg Bugbee	3.3	Muck	1	8	60	bag90	0	1	0	0	2010-06-10	02:14:03pm	41.41403	-73.33972
55	Greg Bugbee	4.6	Muck	1	9	70	nothing	0	0	0	0	2010-06-10	02:16:55pm	41.41400	-73.33961
56	Greg Bugbee	6.0	Sand	1	10	80	nothing	0	0	0	0	2010-06-10	02:19:05pm	41.41389	-73.33951
57	Greg Bugbee	0.2	Sand	2	1	0.5	bag91	0	1	0	0	2010-06-10	02:23:56pm	41.41521	-73.33962
58	Greg Bugbee	0.2	Sand	2	2	5	bag92	1	1	0	0	2010-06-10	02:26:51pm	41.41518	-73.33959
59	Greg Bugbee	1.0	Muck	2	3	10	bag93	0	2	0	0	2010-06-10	02:29:58pm	41.41515	-73.33953
60	Greg Bugbee	1.3	Muck	2	4	20	bag95	5	0	0	0	2010-06-10	02:33:02pm	41.41517	-73.33940
61	Greg Bugbee	1.4	Muck	2	5	30	bag94	3	5	0	0	2010-06-10	02:36:27pm	41.41510	-73.33928
62	Greg Bugbee	1.5	Gravel	2	6	40	bag96	2	4	0	0	2010-06-10	02:39:54pm	41.41505	-73.33923
63	Greg Bugbee	3.0	Muck	2	7	50	bag97	0	1	0	0	2010-06-10	02:42:27pm	41.41491	-73.33918
64	Greg Bugbee	3.4	Muck	2	8	60	nothing	0	0	0	0	2010-06-10	02:43:51pm	41.41485	-73.33906
65	Greg Bugbee	3.3	Muck	2	9	70	bag100	1	0	0	0	2010-06-10	02:45:49pm	41.41485	-73.33894
66	Greg Bugbee	3.7	Muck	2	10	80	nothing	0	0	0	0	2010-06-10	02:48:44pm	41.41480	-73.33887
67	Greg Bugbee	0.0	Rock	3	1	0	nothing	0	0	0	0	2010-06-14	10:26:25am	41.41502	-73.33674
68	Greg Bugbee	1.0	Sand	3	2	5		0	1	0	0	2010-06-14	10:29:17am	41.41493	-73.33675
69	Greg Bugbee	1.5	Muck	3	3	0	bag111	2	3	0	0	2010-06-14	10:31:45am	41.41488	-73.33684
70	Greg Bugbee	2.0	Muck	3	4	20	bag110	2	1	0	0	2010-06-14	10:34:17am	41.41485	-73.33686
71	Greg Bugbee	3.0	Muck	3	5	30	nothing	0	0	0	0	2010-06-14	10:37:49am	41.41481	-73.33700
72	Greg Bugbee	0.5	Gravel	4	1	0	nothing	0	0	0	0	2010-06-14	10:42:18am	41.41434	-73.33539
73	Greg Bugbee	1.5	Muck	4	2	5	baag108	2	0	0	0	2010-06-14	10:47:09am	41.41437	-73.33542
74	Greg Bugbee	3.0	Muck	4	3	10	bag114	1	1	0	0	2010-06-14	10:51:27am	41.41429	-73.33539
75	Greg Bugbee	3.5	Muck	4	4	20	nothing	0	0	0	0	2010-06-14	10:53:33am	41.41420	-73.33546
76	Greg Bugbee	4.5	Muck	4	5	30	nothing	0	0	0	0	2010-06-14	10:55:18am	41.41411	-73.33558
77	Greg Bugbee	5.0	Muck	4	6	40	nothing	0	0	0	0	2010-06-14	10:57:01am	41.41403	-73.33555
78	Greg Bugbee	0.5	Muck	5	1	0		0	0	0	1	2010-06-14	11:08:37am	41.41222	-73.33072
79	Greg Bugbee	0.5	Muck	5	2	5	nothing	0	0	0	0	2010-06-14	11:11:06am	41.41214	-73.33075
80	Greg Bugbee	0.5	Muck	5	3	10	bag109	2	0	0	0	2010-06-14	11:12:37am	41.41214	-73.33077
81	Greg Bugbee	0.5	Gravel	5	4	20	bag107	1	5	0	0	2010-06-14	11:14:08am	41.41204	-73.33080
82	Greg Bugbee	1.0	Muck	5	5	30	bag106	3	4	0	0	2010-06-14	11:16:29am	41.41196	-73.33090
83	Greg Bugbee	1.0	Muck	5	6	40	bag105	2	2	0	0	2010-06-14	11:18:50am	41.41188	-73.33096
84	Greg Bugbee	1.5	Muck	5	7	50	nothing	0	0	0	0	2010-06-14	11:20:52am	41.41179	-73.33098

Taunton Transects 2010 (page 2 of 4).

FID	Surveyor	Depth	Substrate	Transect	Points	Meters	Notes	EloNut	MyrSpi	NupVar	SagSp	Date	Time	Latitude	Longitude
85	Greg Bugbee	3.0	Muck	5	8	60	nothing	0	0	0	0	2010-06-14	11:22:33am	41.41174	-73.33108
86	Greg Bugbee	4.0	Muck	5	9	70	nothing	0	0	0	0	2010-06-14	11:24:27am	41.41169	-73.33116
87	Greg Bugbee	4.5	Muck	5	10	80	nothing	0	0	0	0	2010-06-14	11:26:29am	41.41156	-73.33115
88	Greg Bugbee	0.2	Muck	6	1	0	bag104	0	1	3	0	2010-06-14	11:34:33am	41.40989	-73.32848
89	Greg Bugbee	0.2	Muck	6	2	5	bag103algae	1	2	0	0	2010-06-14	11:37:32am	41.40985	-73.32850
90	Greg Bugbee	1.0	Gravel	6	3	10	bag102algae	0	5	0	0	2010-06-14	11:40:58am	41.40979	-73.32848
91	Greg Bugbee	1.2	Muck	6	4	20	bag101	0	5	0	0	2010-06-14	11:42:50am	41.40971	-73.32854
92	Greg Bugbee	3.0	Muck	6	5	30	nothing	0	0	0	0	2010-06-14	11:45:29am	41.40960	-73.32850
0	Greg Bugbee	0.3	Muck	7	1	0.5	filalgae-bag52	1	2	0	0	2010-06-09	01:18:46pm	41.40839	-73.32739
1	Greg Bugbee	0.4	Muck	7	2	5	bag53	0	1	0	0	2010-06-09	01:28:16pm	41.40838	-73.32744
2	Greg Bugbee	0.6	Muck	7	3	10	falgae	0	0	0	0	2010-06-09	01:30:40pm	41.40842	-73.32746
3	Greg Bugbee	1.0	Muck	7	4	20	nothing	0	0	0	0	2010-06-09	01:32:22pm	41.40843	-73.32765
4	Greg Bugbee	1.5	Muck	7	5	30	bag54	1	1	0	0	2010-06-09	01:34:00pm	41.40849	-73.32778
5	Greg Bugbee	1.8	Muck	7	6	40	nothing	0	0	0	0	2010-06-09	01:36:31pm	41.40848	-73.32790
6	Greg Bugbee	2.0	Muck	7	7	50	bag55	0	1	0	0	2010-06-09	01:37:57pm	41.40853	-73.32801
7	Greg Bugbee	2.2	Muck	7	8	60	nothing	0	0	0	0	2010-06-09	01:40:02pm	41.40854	-73.32811
8	Greg Bugbee	2.5	Muck	7	9	70	nothing	0	0	0	0	2010-06-09	01:40:58pm	41.40863	-73.32823
9	Greg Bugbee	2.0	Muck	7	10	80	falgae-bag57	1	3	0	0	2010-06-09	01:42:37pm	41.40860	-73.32832
20	Greg Bugbee	0.2	Gravel	8	1	0.5	nothing	0	0	0	0	2010-06-09	02:33:35pm	41.40716	-73.32867
21	Greg Bugbee	0.5	Sand	8	2	5	filamentousALGAEbag67	0	2	0	0	2010-06-09	02:36:31pm	41.40722	-73.32866
22	Greg Bugbee	1.0	Gravel	8	3	10	Algae	0	0	0	0	2010-06-09	02:38:45pm	41.40730	-73.32870
23	Greg Bugbee	1.5	Muck	8	4	20	bag68	0	3	0	0	2010-06-09	02:40:14pm	41.40739	-73.32870
24	Greg Bugbee	1.8	Sand	8	5	30	bag69	0	5	0	0	2010-06-09	02:42:54pm	41.40749	-73.32874
25	Greg Bugbee	1.8	Sand	8	6	40	bag70WAlgae	0	5	0	0	2010-06-09	02:45:44pm	41.40759	-73.32874
26	Greg Bugbee	2.0	Sand	8	7	50	bag71	0	4	0	0	2010-06-09	02:48:00pm	41.40767	-73.32877
27	Greg Bugbee	2.0	Muck	8	8	60	bag72	0	5	0	0	2010-06-09	02:50:41pm	41.40776	-73.32876
28	Greg Bugbee	2.0	Sand	8	9	70	bag73	0	5	0	0	2010-06-09	02:52:38pm	41.40784	-73.32886
29	Greg Bugbee	2.0	Sand	8	10	80	bag74	0	4	0	0	2010-06-09	02:56:55pm	41.40788	-73.32888
30	Greg Bugbee	0.2	Gravel	9	1	0.5	nothing	0	0	0	0	2010-06-09	03:07:15pm	41.40911	-73.33315
31	Greg Bugbee	2.0	Gravel	9	2	5	nothing	0	0	0	0	2010-06-09	03:10:49pm	41.40915	-73.33311
32	Greg Bugbee	4.0	Muck	9	3	10	nothing	0	0	0	0	2010-06-09	03:12:46pm	41.40920	-73.33309
33	Greg Bugbee	0.5	Gravel	10	1	0.5	bag75	1	0	0	0	2010-06-10	12:10:22pm	41.40957	-73.33433
34	Greg Bugbee	3.0	Gravel	10	2	5	nothing	0	0	0	0	2010-06-10	12:20:37pm	41.40962	-73.33432
35	Greg Bugbee	3.2	Gravel	10	3	10	nothing	0	0	0	0	2010-06-10	12:22:44pm	41.40965	-73.33437
36	Greg Bugbee	0.5	Rock	11	2	5	algae	0	1	0	0	2010-06-10	12:30:58pm	41.41030	-73.33661
37	Greg Bugbee	0.5	Rock	11	3	10	bag77	2	0	0	0	2010-06-10	12:35:14pm	41.41034	-73.33669
38	Greg Bugbee	6.5	Sand	11	4	20	nothing	0	0	0	0	2010-06-10	12:44:19pm	41.41044	-73.33651
93	Greg Bugbee	0.3	Muck	12	1	0.5		1	1	0	0	2010-06-14	12:45:04pm	41.40985	-73.33852

AppendixTransects2010.xls

FID	SURVEYOR	DEPTH	SUBSTRATE	TRANSECT	POINTS	METERS	NOTES	EloCan	MyrSpi	NupVar	PotCri	PotFol	DATE	TIME	LATITUDE	LONGITUDE
76	Annette Russell	0.7		12	2	5.0		1	0	0	0	0	06/04/09	11:05:10a	41.40979	-73.33863
77	Annette Russell	1.1		12	3	10.0		3	0	0	0	0	06/04/09	11:07:19a	41.40985	-73.33859
78	Annette Russell	1.9		12	4	20.0		2	0	0	0	0	06/04/09	11:08:57a	41.40991	-73.33853
79	Annette Russell	2.6		12	5	30.0		2	0	0	0	0	06/04/09	11:10:17a	41.41000	-73.33849
80	Annette Russell	5.0		12	6	40.0		0	0	0	0	0	06/04/09	11:11:26a	41.41012	-73.33849
81	Annette Russell	7.0		12	7	50.0		0	0	0	0	0	06/04/09	11:12:50a	41.41020	-73.33842
82	Annette Russell	0.2	Sand	13	1	0.0		2	0	0	0	0	06/04/09	11:17:55a	41.40995	-73.34018
83	Annette Russell	0.2		13	2	5.0	unknown	0	0	0	0	1	06/04/09	11:25:09a	41.40999	-73.34021
84	Annette Russell	0.4		13	3	10.0		3	0	0	0	0	06/04/09	11:30:34a	41.41004	-73.34020
85	Annette Russell	1.0		13	4	20.0		2	0	0	0	0	06/04/09	11:33:33a	41.41012	-73.34025
86	Annette Russell	1.0		13	5	30.0		2	0	0	0	0	06/04/09	11:35:34a	41.41020	-73.34030
87	Annette Russell	1.0		13	6	40.0		2	0	0	0	0	06/04/09	11:36:56a	41.41031	-73.34036
88	Annette Russell	1.5		13	7	50.0		3	0	0	0	0	06/04/09	11:43:26a	41.41040	-73.34027
89	Annette Russell	1.9		13	8	60.0		3	0	0	0	0	06/04/09	11:45:08a	41.41050	-73.34037
90	Annette Russell	1.8		13	9	70.0		2	0	0	0	0	06/04/09	11:46:33a	41.41055	-73.34041
91	Annette Russell	1.5		13	10	80.0		2	0	0	0	0	06/04/09	11:48:17a	41.41062	-73.34055
92	Annette Russell	0.2	Muck	14	1	0.0		1	0	0	0	0	06/04/09	11:52:38a	41.41144	-73.34023
93	Annette Russell	0.9		14	2	5.0		3	1	0	0	0	06/04/09	11:55:53a	41.41140	-73.34020
94	Annette Russell	1.1		14	3	10.0		2	1	0	0	0	06/04/09	11:58:14a	41.41136	-73.34020
95	Annette Russell	1.7		14	4	20.0		1	0	0	0	0	06/04/09	11:59:36a	41.41129	-73.34011
96	Annette Russell	3.1		14	5	30.0		2	0	0	0	0	06/04/09	12:01:17p	41.41120	-73.34004
97	Annette Russell	6.0		14	6	40.0		0	0	0	0	0	06/04/09	12:02:26p	41.41112	-73.33997
98	Annette Russell	7.0		14	7	50.0		0	0	0	0	0	06/04/09	12:03:21p	41.41103	-73.33991
99	Annette Russell	7.5		14	8	60.0		0	0	0	0	0	06/04/09	12:04:27p	41.41097	-73.33990
100	Annette Russell	5.0		14	9	70.0		0	0	0	0	0	06/04/09	12:10:16p	41.41089	-73.33973
101	Annette Russell	6.0		14	10	80.0		0	0	0	0	0	06/04/09	12:10:49p	41.41084	-73.33973
102	Annette Russell	0.3	Rock	15	1	0.0	nothing	0	0	0	0	0	06/04/09	01:01:07p	41.41221	-73.33884
103	Annette Russell	0.7		15	2	5.0		1	2	0	0	0	06/04/09	01:04:02p	41.41219	-73.33880
104	Annette Russell	1.2		15	3	10.0		3	2	0	0	0	06/04/09	01:05:09p	41.41221	-73.33870
105	Annette Russell	5.5		15	4	20.0		0	0	0	0	0	06/04/09	01:06:45p	41.41215	-73.33857
106	Martha Balfour	0.1	Sand	16	1	0.0	nothing	0	0	0	0	0	06/04/09	01:11:46p	41.41308	-73.33966
107	Martha Balfour	1.0		16	2	5.0		2	0	0	0	0	06/04/09	01:13:50p	41.41311	-73.33961
108	Martha Balfour	1.5		16	3	10.0		2	0	0	0	0	06/04/09	01:15:29p	41.41314	-73.33958
109	Martha Balfour	7.5		16	4	20.0		0	0	0	0	0	06/04/09	01:16:51p	41.41317	-73.33947
110	Martha Balfour	0.1	Sand	17	1	0.0		0	0	0	0	0	06/04/09	01:52:18p	41.40766	-73.32788
111	Martha Balfour	0.2		17	2	5.0		0	0	0	0	0	06/04/09	01:53:59p	41.40767	-73.32795
112	Martha Balfour	0.5		17	3	10.0		0	0	0	0	0	06/04/09	01:55:21p	41.40773	-73.32799
113	Martha Balfour	0.9		17	4	20.0		0	2	0	0	0	06/04/09	01:56:23p	41.40778	-73.32807

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FID	Surveyor	Depth	Substrate	Transect	Points	Meters	Notes	EloNut	MyrSpi	NupVar	SagSp	Date	Time	Latitude	Longitude
14	Greg Bugbee	1.0	Muck	17	5	30	bag61	0	2	0	0	2010-06-09	02:05:55pm	41.40771	-73.32836
15	Greg Bugbee	1.5	Muck	17	6	40	bag62	0	4	0	0	2010-06-09	02:08:52pm	41.40779	-73.32844
16	Greg Bugbee	1.6	Muck	17	7	50	bag63	0	4	0	0	2010-06-09	02:12:07pm	41.40789	-73.32854
17	Greg Bugbee	1.5	Muck	17	8	60	bag64	0	5	0	0	2010-06-09	02:15:04pm	41.40785	-73.32862
18	Greg Bugbee	1.6	Muck	17	9	70	bag65	0	5	0	0	2010-06-09	02:18:00pm	41.40789	-73.32878
19	Greg Bugbee	2.2	Muck	17	10	80	bag66	0	5	0	0	2010-06-09	02:20:34pm	41.40796	-73.32887

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FID	SURVEYOR	DEPTH	SUBSTRATE	TRANSECT	POINTS	METERS	NOTES	EloCan	MyrSpi	NupVar	PotCri	PotFol	DATE	TIME	LATITUDE	LONGITUDE
0	Annette Russell	0.0	Sand	1	1	0.0		0	0	0	0	0	06/03/09	10:42:26a	41.41425	-73.34033
1	Annette Russell	0.5	Sand	1	2	5.0		0	0	0	0	0	06/03/09	10:43:51a	41.41424	-73.34029
2	Annette Russell	1.3	Sand	1	3	10.0		1	0	0	0	0	06/03/09	10:44:56a	41.41421	-73.34024
3	Annette Russell	4.0	Sand	1	4	20.0		1	0	0	0	0	06/03/09	10:47:01a	41.41410	-73.34013
4	Annette Russell	4.0		1	5	30.0	nothing	0	0	0	0	0	06/03/09	10:48:21a	41.41408	-73.34005
5	Annette Russell	5.0		1	6	40.0	nothing	0	0	0	0	0	06/03/09	10:49:51a	41.41400	-73.33990
6	Annette Russell	5.0		1	7	50.0	nothing	0	0	0	0	0	06/03/09	10:51:39a	41.41392	-73.33987
7	Annette Russell	0.0		1	8	60.0	nothing	0	0	0	0	0	06/03/09	10:52:41a	41.41388	-73.33977
8	Annette Russell	6.5		1	9	70.0		0	0	0	0	0	06/03/09	10:53:41a	41.41385	-73.33966
9	Annette Russell	8.0		1	10	80.0		0	0	0	0	0	06/03/09	10:55:06a	41.41386	-73.33951
10	Annette Russell	0.0	Sand	2	1	0.0	nothing	0	0	0	0	0	06/03/09	11:00:11a	41.41525	-73.33953
11	Annette Russell	0.3		2	2	5.0		1	0	0	0	0	06/03/09	11:03:31a	41.41521	-73.33953
12	Annette Russell	0.5	Sand	2	3	10.0		3	1	0	0	0	06/03/09	11:04:44a	41.41519	-73.33950
13	Annette Russell	1.5	Sand	2	4	20.0		3	1	0	0	0	06/03/09	11:06:25a	41.41514	-73.33934
14	Annette Russell	4.0		2	5	30.0		3	1	0	0	0	06/03/09	11:09:36a	41.41501	-73.33932
15	Annette Russell	4.0		2	6	40.0		1	0	0	0	0	06/03/09	11:11:31a	41.41502	-73.33915
16	Annette Russell	4.5		2	7	50.0		0	0	0	0	0	06/03/09	11:12:33a	41.41494	-73.33907
17	Annette Russell	5.0		2	8	60.0		0	0	0	0	0	06/03/09	11:14:08a	41.41487	-73.33905
18	Annette Russell	5.0		2	9	70.0		0	0	0	0	0	06/03/09	11:15:27a	41.41479	-73.33896
19	Annette Russell	0.0		2	10	80.0	to deep	0	0	0	0	0	06/03/09	11:16:46a	41.41474	-73.33879
20	Annette Russell	0.3	Rock	3	1	0.0		0	0	0	0	0	06/03/09	11:21:13a	41.41496	-73.33662
21	Annette Russell	1.5		3	2	5.0		2	2	0	0	0	06/03/09	11:22:39a	41.41492	-73.33667
22	Annette Russell	1.5		3	3	10.0		3	2	0	0	0	06/03/09	11:24:24a	41.41486	-73.33663
23	Annette Russell	2.0		3	4	20.0		3	1	0	0	0	06/03/09	11:25:39a	41.41481	-73.33677
24	Annette Russell	7.0		3	5	30.0		0	0	0	0	0	06/03/09	11:27:20a	41.41474	-73.33689
25	Martha Balfour	0.0	Rock	4	1	0.0	nothing	0	0	0	0	0	06/03/09	11:33:45a	41.41270	-73.33300
26	Martha Balfour	1.0		4	2	5.0		0	0	0	0	0	06/03/09	11:35:40a	41.41269	-73.33305
27	Martha Balfour	1.5		4	3	10.0		3	0	0	0	0	06/03/09	11:36:23a	41.41265	-73.33309
28	Martha Balfour	2.0	Sand	4	4	20.0		1	1	0	0	0	06/03/09	11:38:26a	41.41260	-73.33318
29	Martha Balfour	6.2		4	5	30.0		0	2	0	0	0	06/03/09	11:39:53a	41.41250	-73.33322
30	Martha Balfour	0.0		4	6	40.0		0	3	0	0	0	06/03/09	11:41:56a	41.41245	-73.33331
31	Martha Balfour	0.0	Sand	5	1	0.0		1	0	0	0	0	06/03/09	11:48:32a	41.41216	-73.33049
32	Annette Rusell	0.3	Silt	5	2	5.0	pot sp un	0	0	0	0	2	06/03/09	11:51:47a	41.41213	-73.33053
33	Martha Balfour	0.3		5	3	10.0		2	0	0	0	0	06/03/09	11:57:32a	41.41210	-73.33056
34	Martha Balfour	0.8	Silt	5	4	20.0		2	2	0	0	0	06/03/09	11:59:45a	41.41201	-73.33060
35	Martha Balfour	1.0	Silt	5	5	30.0		3	3	0	0	0	06/03/09	12:02:34p	41.41194	-73.33067
36	Martha Balfour	1.0		5	6	40.0		2	2	0	0	0	06/03/09	12:06:42p	41.41184	-73.33070
37	Martha Balfour	1.5		5	7	50.0		3	3	0	0	0	06/03/09	12:09:15p	41.41173	-73.33069

FID	SURVEYOR	DEPTH	SUBSTRATE	TRANSECT	POINTS	METERS	NOTES	EloCan	MyrSpi	NupVar	PotCri	PotFol	DATE	TIME	LATITUDE	LONGITUDE
38	Martha Balfour	2.5		5	8	60.0		0	0	0	0	0	06/03/09	12:11:57p	41.41162	-73.33074
39	Martha Balfour	7.5		5	9	70.0		0	0	0	0	0	06/03/09	12:14:35p	41.41158	-73.33081
40	Martha Balfour	0.0		5	10	80.0		0	0	0	0	0	06/03/09	12:15:56p	41.41149	-73.33086
41	Martha Balfour	0.1	Muck	6	1	0.0		3	0	1	0	0	06/03/09	01:22:38p	41.40986	-73.32848
42	Martha Balfour	0.8		6	2	5.0		3	2	0	0	0	06/03/09	01:28:19p	41.40981	-73.32851
43	Martha Balfour	1.0		6	3	10.0		2	2	0	0	0	06/03/09	01:30:29p	41.40976	-73.32851
44	Martha Balfour	5.0		6	4	20.0		0	0	0	0	0	06/03/09	01:32:51p	41.40966	-73.32856
45	Martha Balfour	8.0		6	5	30.0		0	0	0	0	0	06/03/09	01:34:15p	41.40961	-73.32867
46	Martha Balfour	0.2	Sand	7	1	0.0		0	0	0	0	0	06/03/09	01:38:43p	41.40835	-73.32738
47	Martha Balfour	0.8		7	2	5.0		0	0	0	0	0	06/03/09	01:40:27p	41.40837	-73.32741
48	Martha Balfour	1.0		7	3	10.0		1	2	0	0	0	06/03/09	01:42:39p	41.40838	-73.32750
49	Martha Balfour	1.1		7	4	20.0		2	5	0	0	0	06/03/09	01:44:29p	41.40846	-73.32758
50	Martha Balfour	1.9		7	5	30.0		2	3	0	0	0	06/03/09	01:46:41p	41.40848	-73.32771
51	Martha Balfour	2.0		7	6	40.0		2	3	0	0	0	06/03/09	01:48:05p	41.40846	-73.32784
52	Martha Balfour	2.0		7	7	50.0		2	2	0	1	0	06/03/09	01:49:39p	41.40844	-73.32798
53	Martha Balfour	2.2		7	8	60.0		2	2	0	0	0	06/03/09	01:51:35p	41.40848	-73.32808
54	Martha Balfour	2.5		7	9	70.0		2	1	0	0	0	06/03/09	01:53:18p	41.40849	-73.32824
55	Martha Balfour	3.0		7	10	80.0		1	0	0	0	0	06/03/09	01:54:41p	41.40853	-73.32833
56	Martha Balfour	0.4	Sand	8	1	0.0	nothing	0	0	0	0	0	06/03/09	01:58:18p	41.40718	-73.32916
57	Martha Balfour	0.5	Sand	8	2	5.0		0	0	0	0	0	06/03/09	01:59:58p	41.40720	-73.32915
58	Martha Balfour	1.0		8	3	10.0		0	1	0	0	0	06/03/09	02:01:06p	41.40727	-73.32914
59	Martha Balfour	1.1		8	4	20.0		2	2	0	0	0	06/03/09	02:02:29p	41.40737	-73.32914
60	Martha Balfour	1.5		8	5	30.0		2	2	0	0	0	06/03/09	02:03:44p	41.40746	-73.32907
61	Martha Balfour	2.0		8	6	40.0		2	0	0	0	0	06/03/09	02:04:54p	41.40756	-73.32905
62	Martha Balfour	2.1		8	7	50.0		1	3	0	0	0	06/03/09	02:05:57p	41.40763	-73.32900
63	Martha Balfour	3.0		8	8	70.0		0	2	0	0	0	06/03/09	02:08:14p	41.40782	-73.32910
64	Martha Balfour	2.5		8	9	60.0		0	2	0	0	0	06/03/09	02:09:05p	41.40769	-73.32907
65	Martha Balfour	3.0		8	10	80.0		0	2	0	0	0	06/03/09	02:11:13p	41.40789	-73.32900
66	Annette Russell	0.2	Sand	9	1	0.0	nothing	0	0	0	0	0	06/04/09	10:29:46a	41.40911	-73.33319
67	Annette Russell	1.0		9	2	5.0		1	3	0	0	0	06/04/09	10:32:59a	41.40913	-73.33312
68	Annette Russell	2.2		9	3	10.0		0	0	0	0	0	06/04/09	10:36:15a	41.40917	-73.33310
69	Annette Russell	0.2	Sand	10	1	0.0		0	0	0	0	0	06/04/09	10:42:09a	41.40963	-73.33479
70	Annette Russell	0.9		10	2	5.0		1	0	0	0	0	06/04/09	10:43:42a	41.40967	-73.33474
71	Annette Russell	2.0		10	3	10.0		1	0	0	0	0	06/04/09	10:45:27a	41.40971	-73.33473
72	Annette Russell	0.7	Rock	11	2	5.0		0	0	0	0	0	06/04/09	10:53:51a	41.41028	-73.33702
73	Annette Russell	2.4		11	3	10.0		0	0	0	0	0	06/04/09	10:55:39a	41.41029	-73.33708
74	Annette Russell	7.5		11	4	20.0		0	0	0	0	0	06/04/09	10:59:27a	41.41037	-73.33718
75	Annette Russell	0.2	Muck	12	1	0.0		0	0	0	0	0	06/04/09	11:03:49a	41.40976	-73.33863

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FID	SURVEYOR	DEPTH	SUBSTRATE	TRANSECT	POINTS	METERS	NOTES	EloCan	MyrSpi	NupVar	PotCri	PotFol	DATE	TIME	LATITUDE	LONGITUDE
76	Annette Russell	0.7		12	2	5.0		1	0	0	0	0	06/04/09	11:05:10a	41.40979	-73.33863
77	Annette Russell	1.1		12	3	10.0		3	0	0	0	0	06/04/09	11:07:19a	41.40985	-73.33859
78	Annette Russell	1.9		12	4	20.0		2	0	0	0	0	06/04/09	11:08:57a	41.40991	-73.33853
79	Annette Russell	2.6		12	5	30.0		2	0	0	0	0	06/04/09	11:10:17a	41.41000	-73.33849
80	Annette Russell	5.0		12	6	40.0		0	0	0	0	0	06/04/09	11:11:26a	41.41012	-73.33849
81	Annette Russell	7.0		12	7	50.0		0	0	0	0	0	06/04/09	11:12:50a	41.41020	-73.33842
82	Annette Russell	0.2	Sand	13	1	0.0		2	0	0	0	0	06/04/09	11:17:55a	41.40995	-73.34018
83	Annette Russell	0.2		13	2	5.0	unknown	0	0	0	0	1	06/04/09	11:25:09a	41.40999	-73.34021
84	Annette Russell	0.4		13	3	10.0		3	0	0	0	0	06/04/09	11:30:34a	41.41004	-73.34020
85	Annette Russell	1.0		13	4	20.0		2	0	0	0	0	06/04/09	11:33:33a	41.41012	-73.34025
86	Annette Russell	1.0		13	5	30.0		2	0	0	0	0	06/04/09	11:35:34a	41.41020	-73.34030
87	Annette Russell	1.0		13	6	40.0		2	0	0	0	0	06/04/09	11:36:56a	41.41031	-73.34036
88	Annette Russell	1.5		13	7	50.0		3	0	0	0	0	06/04/09	11:43:26a	41.41040	-73.34027
89	Annette Russell	1.9		13	8	60.0		3	0	0	0	0	06/04/09	11:45:08a	41.41050	-73.34037
90	Annette Russell	1.8		13	9	70.0		2	0	0	0	0	06/04/09	11:46:33a	41.41055	-73.34041
91	Annette Russell	1.5		13	10	80.0		2	0	0	0	0	06/04/09	11:48:17a	41.41062	-73.34055
92	Annette Russell	0.2	Muck	14	1	0.0		1	0	0	0	0	06/04/09	11:52:38a	41.41144	-73.34023
93	Annette Russell	0.9		14	2	5.0		3	1	0	0	0	06/04/09	11:55:53a	41.41140	-73.34020
94	Annette Russell	1.1		14	3	10.0		2	1	0	0	0	06/04/09	11:58:14a	41.41136	-73.34020
95	Annette Russell	1.7		14	4	20.0		1	0	0	0	0	06/04/09	11:59:36a	41.41129	-73.34011
96	Annette Russell	3.1		14	5	30.0		2	0	0	0	0	06/04/09	12:01:17p	41.41120	-73.34004
97	Annette Russell	6.0		14	6	40.0		0	0	0	0	0	06/04/09	12:02:26p	41.41112	-73.33997
98	Annette Russell	7.0		14	7	50.0		0	0	0	0	0	06/04/09	12:03:21p	41.41103	-73.33991
99	Annette Russell	7.5		14	8	60.0		0	0	0	0	0	06/04/09	12:04:27p	41.41097	-73.33990
100	Annette Russell	5.0		14	9	70.0		0	0	0	0	0	06/04/09	12:10:16p	41.41089	-73.33973
101	Annette Russell	6.0		14	10	80.0		0	0	0	0	0	06/04/09	12:10:49p	41.41084	-73.33973
102	Annette Russell	0.3	Rock	15	1	0.0	nothing	0	0	0	0	0	06/04/09	01:01:07p	41.41221	-73.33884
103	Annette Russell	0.7		15	2	5.0		1	2	0	0	0	06/04/09	01:04:02p	41.41219	-73.33880
104	Annette Russell	1.2		15	3	10.0		3	2	0	0	0	06/04/09	01:05:09p	41.41221	-73.33870
105	Annette Russell	5.5		15	4	20.0		0	0	0	0	0	06/04/09	01:06:45p	41.41215	-73.33857
106	Martha Balfour	0.1	Sand	16	1	0.0	nothing	0	0	0	0	0	06/04/09	01:11:46p	41.41308	-73.33966
107	Martha Balfour	1.0		16	2	5.0		2	0	0	0	0	06/04/09	01:13:50p	41.41311	-73.33961
108	Martha Balfour	1.5		16	3	10.0		2	0	0	0	0	06/04/09	01:15:29p	41.41314	-73.33958
109	Martha Balfour	7.5		16	4	20.0		0	0	0	0	0	06/04/09	01:16:51p	41.41317	-73.33947
110	Martha Balfour	0.1	Sand	17	1	0.0		0	0	0	0	0	06/04/09	01:52:18p	41.40766	-73.32788
111	Martha Balfour	0.2		17	2	5.0		0	0	0	0	0	06/04/09	01:53:59p	41.40767	-73.32795
112	Martha Balfour	0.5		17	3	10.0		0	0	0	0	0	06/04/09	01:55:21p	41.40773	-73.32799
113	Martha Balfour	0.9		17	4	20.0		0	2	0	0	0	06/04/09	01:56:23p	41.40778	-73.32807

Taunton Transects 2009 (page 4 of 4).

FID	SURVEYOR	DEPTH	SUBSTRATE	TRANSECT	POINTS	METERS	NOTES	EloCan	MyrSpi	NupVar	PotCri	PotFol	DATE	TIME	LATITUDE	LONGITUDE
114	Martha Balfour	1.0		17	5	30.0		1	5	0	0	0	06/04/09	01:57:37p	41.40780	-73.32822
115	Martha Balfour	1.5		17	6	40.0		1	5	0	0	0	06/04/09	01:59:29p	41.40789	-73.32826
116	Martha Balfour	1.8		17	7	50.0		2	2	0	0	0	06/04/09	02:01:33p	41.40793	-73.32838
117	Martha Balfour	2.0		17	8	60.0		0	1	0	0	0	06/04/09	02:02:59p	41.40803	-73.32843
118	Martha Balfour	2.2		17	9	70.0		1	2	0	0	0	06/04/09	02:03:53p	41.40810	-73.32850
119	Martha Balfour	3.0		17	10	80.0		1	1	0	0	0	06/04/09	02:05:03p	41.40813	-73.32866