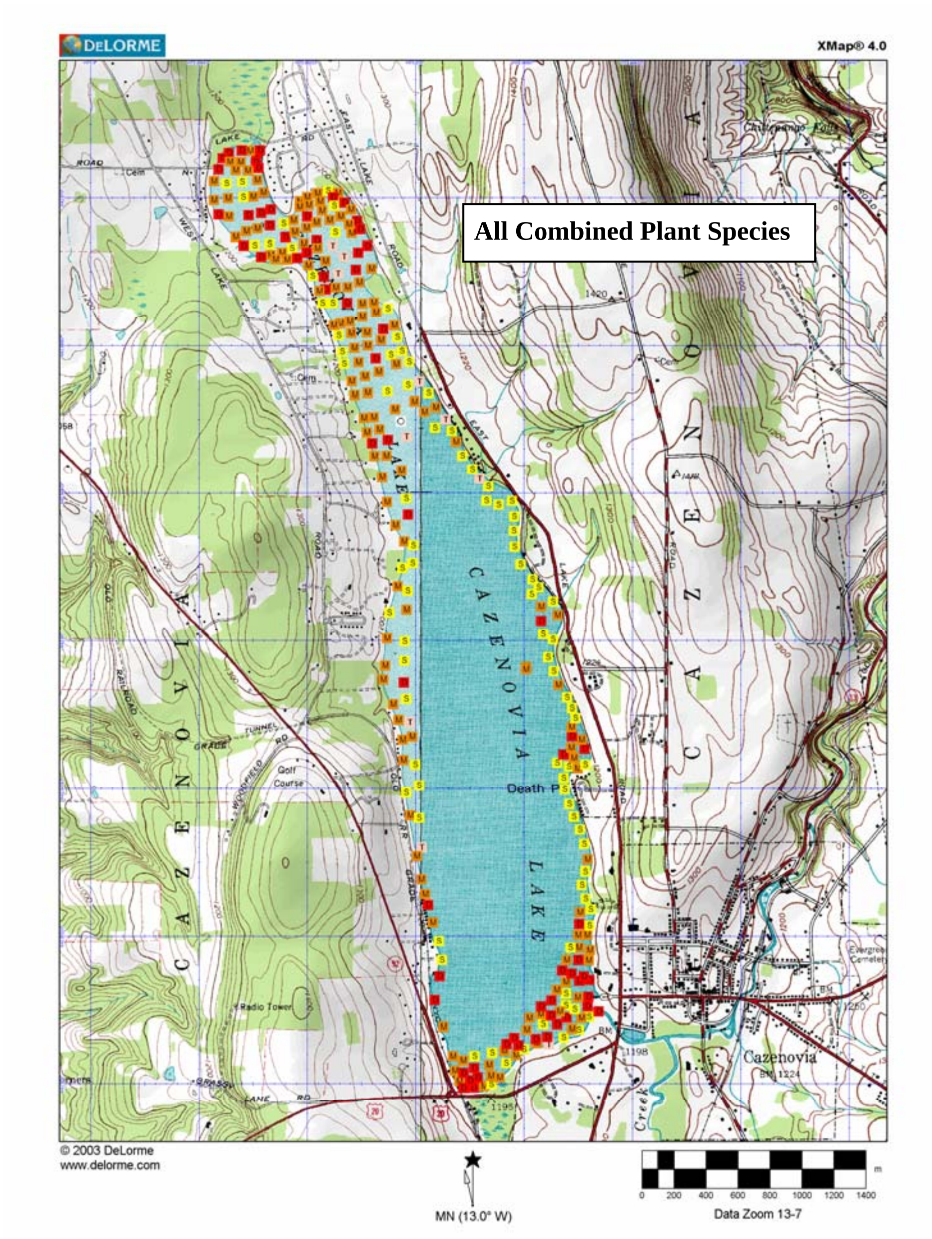
Cazenovia Lake Plant Community Response to the 2009 Application of the Herbicide Triclopyr to Control Eurasian Watermilfoil



Abundance - All Plant Species

Racine-Johnson Aquatic Ecologists

October 2009

Cover Map

We show on the cover a map of the location and total species abundance of the 302 sample points (SPs) in Cazenovia Lake that we surveyed after the herbicide treatment with triclopyr (Renovate®) in 2009. We measured species presence and abundance by two rake tosses at each SP location pre-determined by Allied Biological Inc., in their fall 2008 survey (Allied Biological Inc., 2008). The cover map also includes two additional locations identified in this report as 303 and 304 (sunken island) and sampled by Racine-Johnson Aquatic Ecologists.

Contents

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Introduction

This report summarizes the 2009 survey by Racine-Johnson Aquatic Ecologists for the Town of Cazenovia. In August 2009, we conducted a survey of the aquatic plant communities in Cazenovia Lake in order to describe and evaluate the impact of the 2009 herbicide treatment of the lake with triclopyr (Renovate®). The triclopyr treatment dates in 2009 were June 8 - June 10 and the partial lake herbicide application included areas in the northern half of the lake. See treatment areas on the Town of Cazenovia web site.
http://townofcazenovia.org/content/Generic/View/28:field=documents;/content/Documents/File/318.pdf

We report the results of our 2009 aquatic plant community study of Cazenovia Lake using a rake-toss method to determine plant species presence, location, and an estimate of species abundance. We contrast our August 2009 post-treatment results with Allied Biological's fall 2008 pre-treatment survey (Allied Biological Inc., 2008) in Cazenovia Lake.

Methods

To identify plant community structure and relative abundance in Cazenovia Lake we sampled and recorded aquatic plant species presence and abundance at 304 specific locations in 2009. The survey includes the original 302 sites chosen and sampled by Allied Biological Inc. in October 2008 as well as an additional 2 locations we identified (sunken island) that needs consideration for treatment (Figures 1a, b).

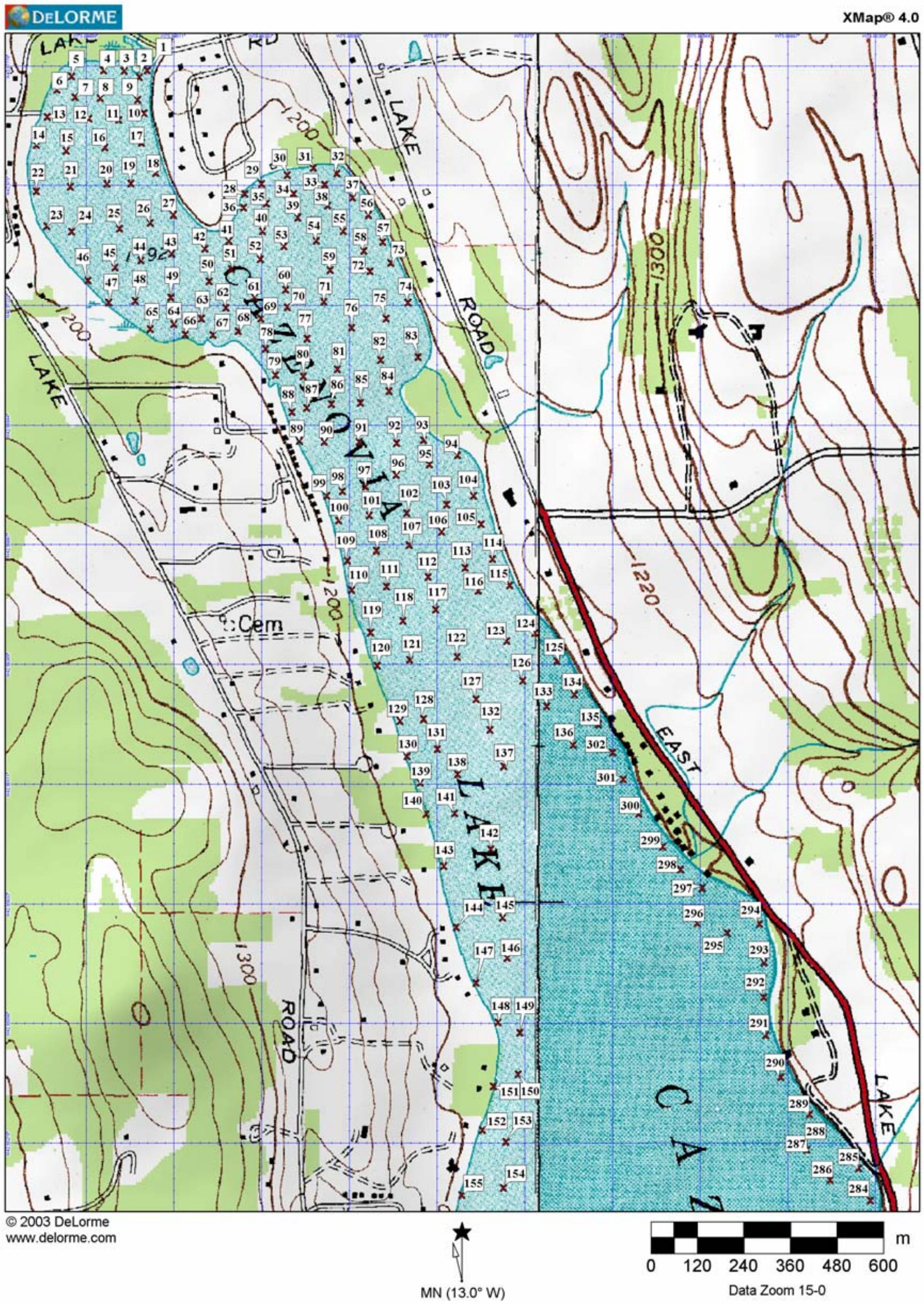


Figure 1a. Sample point (SP) locations in Cazenovia Lake where we collected rake-toss measurements from August 26 - September 8, 2009.

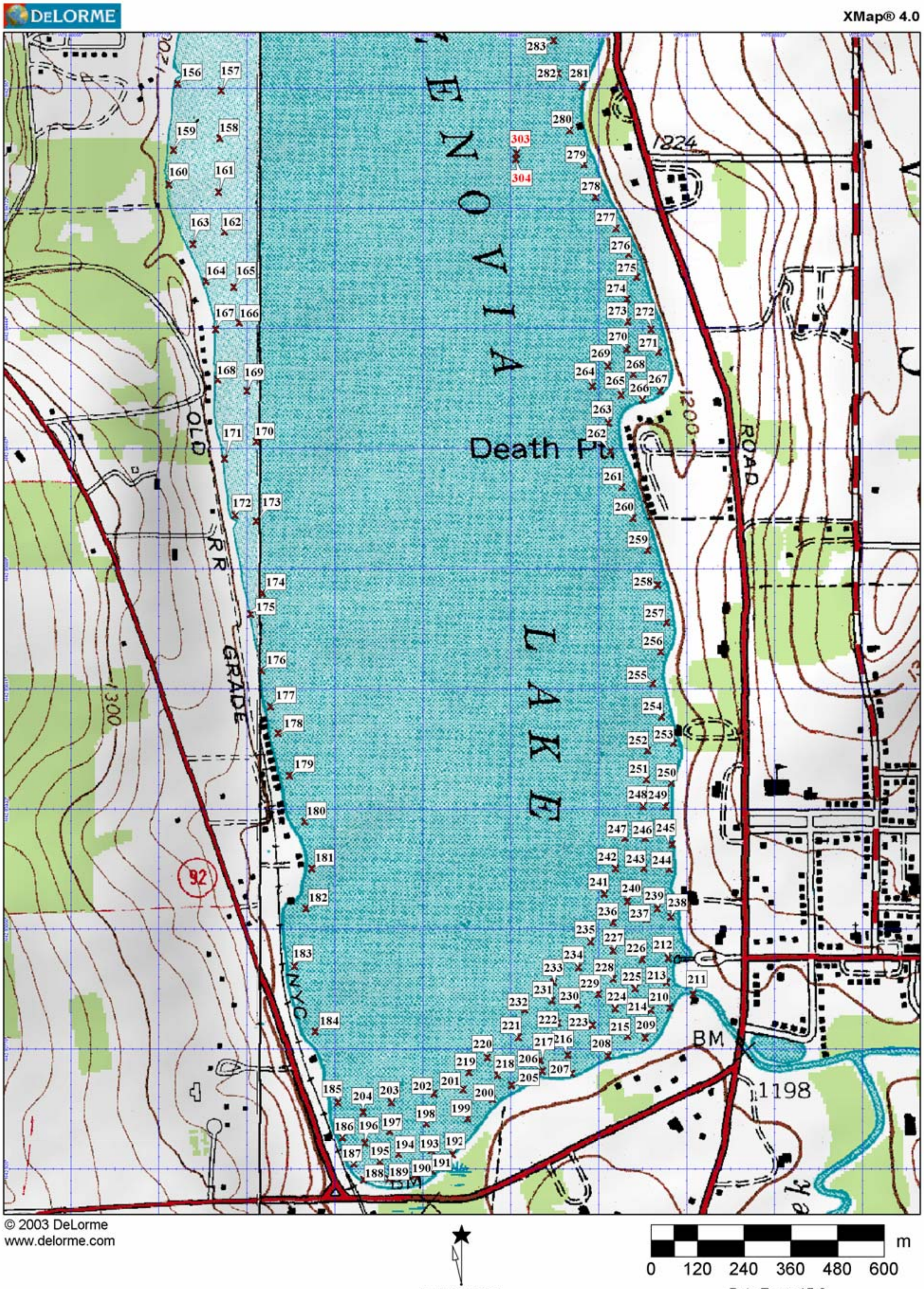


Figure 1b. Sample point (SP) locations in Cazenovia Lake where we collected rake-toss measurements from August 26 - September 8, 2009. The red type SPs are locations at “sunken island” added in 2009.

We use an enhanced modification of a basic point intercept rake-toss method (Madsen, 1999) where two randomly tossed rakes collect submersed aquatic plants at the locations chosen by Allied Biological. We used a hand held GPS to navigate to Allied Biological's 302 reported locations of 2008 using Allied Biological's chosen latitude and longitude coordinates and we assumed a North American Datum of 1983 (NAD83) at true north. At each location, we re-recorded latitude and longitude coordinates, measured and recorded lake depth with a pole and depth finder.

We brought the samples into the boat with a dual headed rake (Figure 2) and assigned an overall plant abundance estimate to the amount on the rake. We classified and recorded the entire rake sample as: "dense" - more than an armful and difficult to get into the boat, "medium" - an arm full, "sparse" - two hands full, "trace" - a small handful or less, or "zero" - a bare rake (Table 1). The field crew then separated each sample to individual species, analyzed the separations by recording the species identification (Borman *et al*. 1999, Crow and Hellquist 1999) and a percentage estimate of each species on site. We later entered all data into an MS Excel spreadsheet and listed the collected information in Table A.

Figure 2. Sample with dual headed rake and separation to species for an estimate of species percentage.

Table 1. Abundance categories used to describe rake-toss samples with the assumed mean dry weight values (g / m^2) and ranges used in spreadsheet processing of field data to obtain an estimate of abundance for individual species or grouping of species (Tables A, B).

Abundance Categories	Rake-toss Abundance Number	Dry Weight (g/m^2) Ranges associated with Total Plants Abundance	Mean (g/m^2)	Dry Weight (g/m^2) Ranges associated with Single Species Abundance
"O" = no plant(s)	0	0.0	0.0	same
"T" = trace plant(s)	1	~0.0001 - 0.9999	0.5	same
"S" = sparse plant(s)	2	~1.0000 - 24.9999	13.0	same
"M" = medium plant(s)	3	~25.0000 - 99.9999	62.5	same
"D" = dense plant(s)	4	~100.0000 - 400.0000+	250.0	same

To obtain abundance values for tables and maps we averaged the two field estimated rake abundance categories from the two rake tosses (Table A) with corresponding number values (Table 1) to produce a mean value for the two all plant species rake tosses at location and list in Table B and Figure 4.

To analyze the abundance data using Table 1, we previously constructed Table 1 by using data collected from an earlier study where we compared the "rake-toss" estimates at specific locations to absolute dry biomass data collected from the same location at the same time (Racine - Johnson 2007). From this quadrat sampling, we are able to report the results in Figure 3, as the best-fit regression line. We used 18 lake locations and collected five $0.25m^2$ quadrat samples from each location for a total of 90 biomass samples. We calculated a mean biomass dry weight (g / m^2) for each of the 18 locations and that mean was regressed with the mean of the two rake-toss estimates at each location (Figure 3).

Table 1 displays the resulting assumptions and values from which we estimated our species abundance (Table B) and constructed our maps of species abundance (Table C). We calculated single species abundance using the mean biomass for a determined abundance category (Table 1) and the field percent estimate recorded in this survey to assign a weighted species abundance category. Using the relationships in Table 1 and the 2009 rake-toss data sets we calculated mean species abundances for each location sampled.

We created a summary of the results (Table B) and additionally placed the resulting abundance values on individual species maps for each sampled location to create a visual record of the relative species abundance estimate (Figures 4 and 5 - 34).

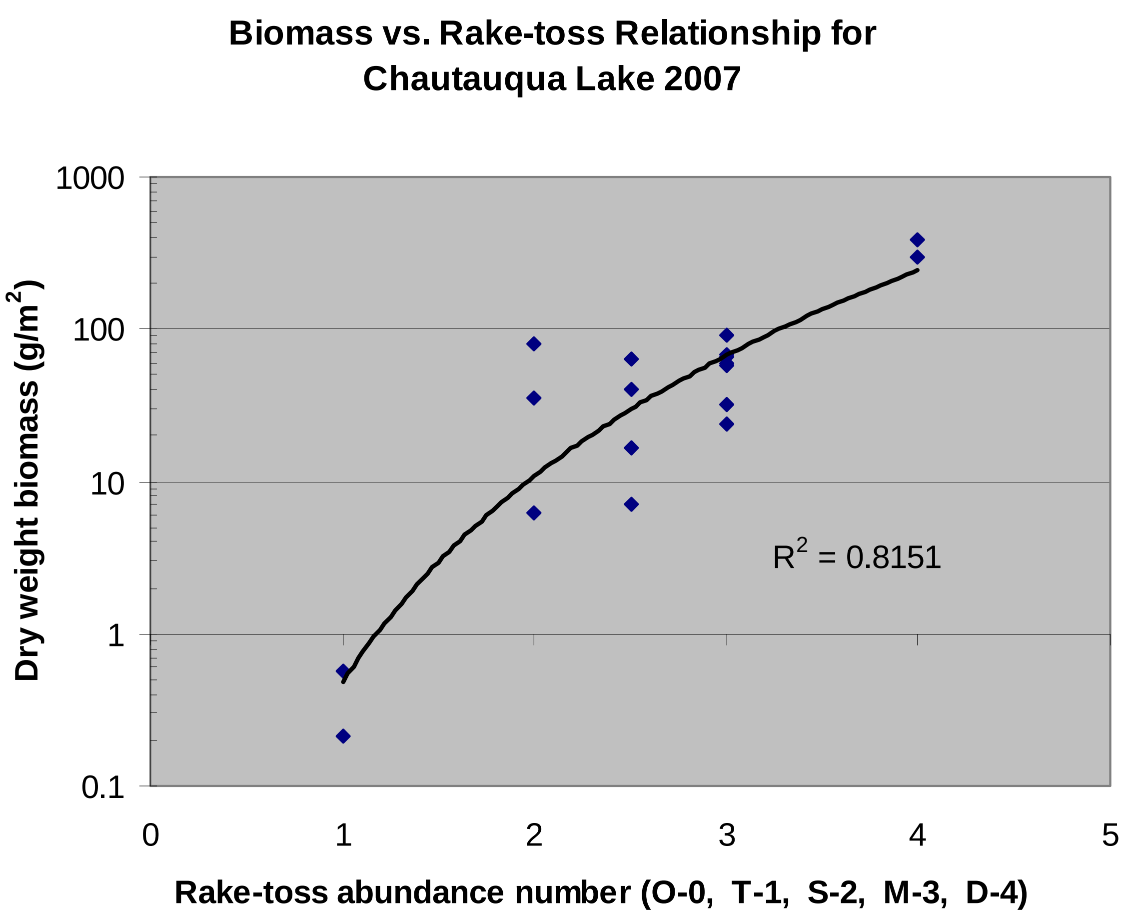


Figure 3. Best-fit line to describe the relationship between estimates made with the rake-toss method and biomass measures in a previous study at the same locations and times (Racine - Johnson 2007).

Results

We summarize and display the results of our 2009 aquatic plant species monitoring at Cazenovia Lake in the text, tables and figures that follow.

We list the primary results of this 2009 survey in Table 2 (page 14) and compare to the plant survey results reported by Allied Biological Inc., in 2008. Both surveys sampled the same 302 locations and reported species found at the selected locations. Table 2 lists the number of locations out of a possible 302 where Allied Biological in 2008 and Racine-Johnson in 2009 identified at least one individual species. The % column lists the percentage that the number of locations with the species present is out of total 302 measured locations.

Table 3 (page 15) shows the breakdown of Table 2 totals for each plant species listed into the abundance categories of dense, medium, sparse, trace or zero.

Table 4 (page 17) lists the lake depth recorded by Racine-Johnson from August 26 - September 8, 2009 at each of the sampled locations.

Table A (page 21) reports the field results of our rake-toss sampling on the lake from August 26 - September 8, 2009 at each of the sampled locations.

Table B (page 43) is our conversion of Table A's rake-toss data to abundance categories of dense, medium, sparse, trace or zero for each species.

Table C (page 54) is an aquatic plant species' presence at each location and totaled for all sampled locations.

Figures 4 and 5 - 34 show a visual location on a lake map of the relative abundance and location both for all plant species in Figure 4 (page 16) and individual species in Figures 5- 34 (pages 65 - 94).

Major findings are:

The target species *Myriophyllum spicatum* (Eurasian watermilfoil) presence in the lake is reduced significantly as shown in Table 2, with 281 locations reported present by Allied Biological in 2008 and 122 locations reported in this report for 2009.

The target species *Myriophyllum spicatum* (Eurasian watermilfoil) abundance in the lake is reduced significantly as shown in Table 3, with 60% of the 281 locations reported to have *M. spicatum* in 2008 categorized to be dense or medium while in 2009 we report 14% of 122 locations with *M. spicatum* to be dense or medium.

The aquatic plant community of Cazenovia Lake is a very diverse and species rich plant assemblage with Allied Biological reporting 28 species identified with a mean of 5.1species per sampled location in the pre-treatment survey and we report 36 species identified with a mean of 7.9 species per sampled location after a partial lake treatment (Table 2).

The 2008 treatment with triclopyr appears to not have had a negative effect on the overwhelming number of non-target plant species, with the sensitive species *Megalodonta beckii* (water marigold) remaining in the treatment area as of our 2009 survey.

The only species that may have decreased in a small, but maybe not significantly measurable way, at the time of our 2009 survey would be *Nymphaea odorata* (white water lily) and *Myriophyllum sibiricum* (northern watermilfoil). Both species are sensitive to the herbicide triclopyr and a decline would be expected with treatment. *N. odorata* shows a decline of 34 to 5 locations where found from 2008 to 2009, in opposition to the trend for the majority of the species. *M. sibiricum* is more difficult to make the case that it declined since it was not recorded in the pre-survey. However, the species was reported earlier (Johnson *et al.* 2006) and we have observed the species for the last four years most notably in the north end boarding the Helen L. McNitt State Park, an area that has not managed aquatic plants by mechanical harvesting in the past. In this area, we did not observe *M. sibiricum* this year.

The dominant species recorded in the lake with our 2009 survey that were found at greater that 2/3 of the surveyed locations are *Ceratophyllum demersum* (coontail), *Elodea sp.* (elodea) and *Pithophora sp.* (benthic filamentous algae). These are all native species and play an important role in the ecology of the lake. *C. demersum* and *E. sp*. will likely increase to fill in the areas where *M. spicatum* has been controlled by the herbicide. The bottom dwelling benthic algae *Pithophora* appears to cover a large portion of the lake bottom with a blanket and probably is very important to the nutrient management of the lake because of its extensive coverage.

An increase in two non-natives *Potamogeton crispus* (curly-leaf pondweed) and *Nitellopsis obtusa* (starry stonewort) is also an expected increase that is likely to continue with new areas open to colonization with the decline of *M. spicatum* and the competition it provided other species. The *N. obtusa* was likely present in the lake at the north end before the 2008 treatment but not noticeable because of the extensive growth of *M. spicatum, C. demersum* and *N. odorata*. With the decline of *M. spicatum* and *N. odorata* in that location the probability of new growth of *N. obtusa* increased.

The very positive high native plant species numbers (richness) present in Cazenovia Lake constitute a very diverse aquatic plant (macrophyte) structure which provides plant community stability that should slow invasion by non-native plant species.

We need to make one taxonomic clarification as to the listing of *Elodea sp.* in this report. Allied Biological reports the elodea in their 2008 report as *E. canadensis* and we agree with that identification. However, we also found what appeared to be *Elodea nuttallii* in several locations and these two species are often difficult to differentiate without genetic testing. Therefore, we list any elodea we find as Elodea sp. in this lake as well as most other lakes in New York.

The Allied Biological report from their fall 2008 aquatic plant survey has an excellent description of plant species with photos of each species in Cazenovia Lake. We would refer those interested in identification to refer to the Allied Biological report. Following, we describe five important species in Cazenovia Lake that the Allied Biological report does not address.

Myriophyllum sibiricum - northern watermilfoil

Myriophyllum sibiricum (northern watermilfoil) is a native aquatic macrophyte that has feather-like leaves, arranged normally in whorls of four and has 5-11 pairs of leaflets on each leaf. Apical stems appear greener and leaves are more rigid than *Myriophyllum spicatum* (Eurasian watermilfoil) and it is appears stiffer when removed from the water while *M. spicatum* tends to collapse. Small, reddish flowers arranged in whorls around a slender stem similar to *M. spicatum* emerge above the water's surface. In the fall, thick winter buds form at the base of the stem or at the growing tips of the plant that look like miniature plastic Christmas trees. *M. spicatum* does not produce these winter buds. The foliage of *M. sibiricum* traps detritus, provides invertebrate habitat, and provides shade, shelter and foraging opportunities for fish.

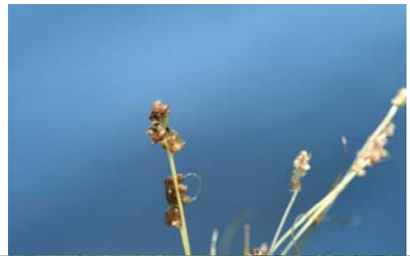
Najas guadalupensis **-** southern naiad

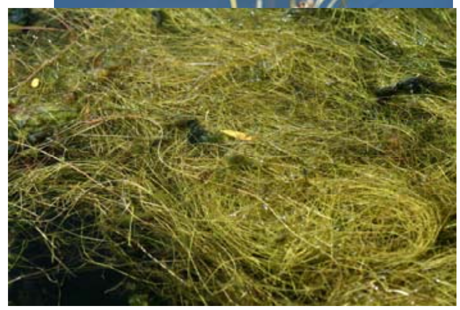
Najas guadalupensis (southern naiad) is an annual plant that has long stems with many branches. The leaves are opposite, narrow and clustered near the end of the stem. *N. guadalupensis* can be difficult to distinguish from *Najas flexilis*, but *N. guadalupensis* has leaves that are wider and less pointed than *N. flexilis*. The most effective way of distinguishing these species is through their seeds. The seeds of *N. guadalupensis* have a pitted appearance and those of *N. flexilis* appear smooth. *N. guadalupensis* is an important food source for waterfowl when present and provides shelter for small fish and insects.

Nitellopsis obtusa **-** starry stonewort

Nitellopsis obtusa (starry stonewort), a macro algae, is a non-native invader that looks similar to nitella, a native macro algae. The plant lacks roots and leaves with its main branches growing out of white holdfasts in the sediment, producing long un-even jointed side branches. These branches emerge in whorls and can feel smooth to the touch. *N. obtusa* can be short and bushy forming a mat in shallow water or grow tall with less tangled branches in deeper water. This plant also produces small white calcareous asexual reproductive bodies, resembling a star, which forms new growth the following season.

Potamogeton pusillus - small pondweed





Potamogeton pusillus (small pondweed) is a slender native pondweed that is an early dominant, flowering early in the spring at a similar time as *Potamogeton crispus*, the non-native invasive. *P. pusillus* produces fruits and many winter buds (turions) that mature by early summer with the plant dying back shortly after producing seeds and turions. This species can be confused with *Potamogeton foliosus* (leafy pondweed) because of their similar leaves; however, *P. pusillus* has tiny glands at the leaf nodes. *P. pusillus* produces few seeds that appear smooth while *P. foliosus* produces many seeds with a distinct toothed keel. *P. pusillus* forms extensive beds providing food and cover for fish and invertebrates.

Stuckenia vaginata - sheathed pondweed

Stuckenia vaginata (sheathed pondweed) is a perennial that has thread-like to narrowly ribbon-like alternating leaves with a blunt, obtuse tip. Often the leaves spread out to form a bush-like appearance. We distinguish *S. vaginata* from a very close look-alike *Stuckenia pectinata* (sago pondweed) by the inflated sheaths of its stipules and the lack of a beak, or slight beak, of its seeds. In contrast, *S. pectinata* has pointed leaves and seeds that have a well-defined beak. This species is an important food source for waterfowl and many other aquatic animals.

Table 2. Species list and number of locations (SPs) out of the 302 total sampled locations where we found a species in 2009 contrasted to Allied Biological's documented species and number of locations (SPs) they found a species in 2008 (Allied Biological 2008).

Scientific Name	Common Name	Allied Biological 2008		Racine-Johnson 2009	
		locations	%	locations	%
Callitriche hermaphroditica	autumnal water starwort	1	0.33	1	0.33
Ceratophyllum demersum	coontail, hornwort	187	62	248	82
Chara vulgaris	chara, muskgrass	99	33	129	43
Elodea sp.	elodea, common waterweed	129	43	203	67
Fontinalis sp.	water moss	3	0.99	64	21
Hypericum ellipticum	St. John's-wort	0	0	1	0.33
Lemna minor	small duckweed	3	0.99	3	0.99
Lemna trisulca	forked duckweed, star duckweed	6	2	50	17
Megalodonta beckii	water marigold	29	10	28	9
Myriophyllum sibiricum	northern watermilfoil	0	0	9	3
Myriophyllum spicatum	**Eurasian watermilfoil**	**281**	**93**	**122**	**40**
Najas flexilis	slender naiad, bushy naiad	60	20	46	15
Najas guadalupensis	southern naiad	0	0	125	41
Nitella flexilis	nitella, stonewort	0	0	24	8
Nitellopsis obtusa	**starry stonewort**	**0**	**0**	**12**	**4**
Nuphar variegata	spatterdock	12	4	10	3
Nymphaea odorata	white water lily	34	11	5	2
Polygonum amphibium	water smartweed	0	0	1	0.33
Potamogeton amplifolius	bass weed, large-leaf pondweed	26	9	71	24
Potamogeton crispus	**curly-leaf pondweed**	**14**	**5**	**46**	**15**
Potamogeton foliosus	leafy pondweed	8	3	23	8
Potamogeton gramineus	variable pondweed	12	4	46	15
Potamogeton illinoensis	Illinois pondweed	95	31	150	50
Potamogeton praelongus	white-stem pondweed	17	6	28	9
Potamogeton pusillus	small pondweed	0	0	41	14
Potamogeton richardsonii	clasping-leaf pondweed	6	2	12	4
Potamogeton zosteriformis	flat-stem pondweed	98	32	181	60
Ranunculus trichophyllus	white water crowfoot	28	9	49	16
Spirodela polyrhiza	great duckweed	1	0.33	4	1
Stuckenia pectinata	sago pondweed	37	12	52	17
Stuckenia vaginata	sheathed pondweed	0	0	57	19
Utricularia vulgaris	common bladderwort	4	1	12	4
Vallisneria americana	wild celery, eel grass, tapegrass	161	53	171	57
Wolffia columbiana	watermeal	6	2	4	1
Zosterella dubia	water stargrass	116	38	104	34
Pithophora sp.	benthic filamentous algae	65	22	243	80
Total locations sampled		302		302	
Total species occurrence for all sampled locations		1538		2375	
Average number of species per sampled location		5.09		7.86	
Species Richness (number of individual species identified)		28		36	

Table 3. Comparison of the number of locations where a species occurred and then classified into an abundance category for the 302 sample points (SPs) in 2008 and 2009. The % is # of locations at an abundance a species was found / total # of lake locations the species was found.

Scientific Name	Common Name	Trace Abundance				Sparse Abundance				Medium Abundance				Dense Abundance			
		Allied Biological 2008		Racine-Johnson 2009		Allied Biological 2008		Racine-Johnson 2009		Allied Biological 2008		Racine-Johnson 2009		Allied Biological 2008		Racine-Johnson 2009	
		location	%	location	%	location	%	location	%	location	%	location	%	location	%	location	%
Callitriche hermaphroditica	autumnal water starwort	1	100	0	0	0	0	1	100	0	0	0	0	0	0	0	0
Ceratophyllum demersum	coontail, hornwort	58	31	46	19	70	37	129	52	41	22	53	21	18	10	20	8
Chara vulgaris	chara, muskgrass	34	34	38	29	44	44	73	57	19	19	16	12	2	2	2	2
Elodea sp.	elodea, common waterweed	80	62	76	37	45	35	118	58	3	2	9	4	1	1	0	0
Fontinalis sp.	water moss	1	33	54	84	2	67	9	14	0	0	1	2	0	0	0	0
Hypericum ellipticum	St. John's-wort	0	0	1	100	0	0	0	0	0	0	0	0	0	0	0	0
Lemna minor	small duckweed	1	33	2	67	1	33	1	33	1	33	0	0	0	0	0	0
Lemna trisulca	forked duckweed, star duckweed	6	100	44	88	0	0	6	12	0	0	0	0	0	0	0	0
Megalodonta beckii	water marigold	15	52	11	39	11	38	16	57	3	10	1	4	0	0	0	0
Myriophyllum sibiricum	northern watermilfoil	0	0	7	78	0	0	2	22	0	0	0	0	0	0	0	0
Myriophyllum spicatum	**Eurasian watermilfoil**	**48**	**17**	**38**	**31**	**63**	**22**	**67**	**55**	**94**	**33**	**15**	**12**	**76**	**27**	**2**	**2**
Najas flexilis	slender naiad, bushy naiad	51	85	35	76	8	13	11	24	1	2	0	0	0	0	0	0
Najas guadalupensis	southern naiad	0	0	92	74	0	0	33	26	0	0	0	0	0	0	0	0
Nitella flexilis	nitella, stonewort	0	0	14	58	0	0	10	42	0	0	0	0	0	0	0	0
Nitellopsis obtusa	**starry stonewort**	**0**	**0**	**3**	**25**	**0**	**0**	**8**	**67**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**8**
Nuphar variegata	spatterdock	4	33	4	40	5	42	6	60	2	17	0	0	1	8	0	0
Nymphaea odorata	white water lily	24	71	3	60	10	29	2	40	0	0	0	0	0	0	0	0
Polygonum amphibium	water smartweed	0	0	0	0	0	0	1	100	0	0	0	0	0	0	0	0
Potamogeton amplifolius	bass weed, large-leaf pondweed	11	42	13	18	12	46	52	73	3	12	5	7	0	0	1	1
Potamogeton crispus	**curly-leaf pondweed**	**14**	**100**	**35**	**76**	**0**	**0**	**11**	**24**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Potamogeton foliosus	leafy pondweed	8	100	20	87	0	0	3	13	0	0	0	0	0	0	0	0
Potamogeton gramineus	variable pondweed	12	100	26	57	0	0	20	43	0	0	0	0	0	0	0	0
Potamogeton illinoensis	Illinois pondweed	57	60	27	18	30	32	109	73	8	8	14	9	0	0	0	0
Potamogeton praelongus	white-stem pondweed	15	88	11	39	2	12	17	61	0	0	0	0	0	0	0	0
Potamogeton pusillus	small pondweed	0	0	31	76	0	0	10	24	0	0	0	0	0	0	0	0
Potamogeton richardsonii	clasping-leaf pondweed	6	100	5	42	0	0	7	58	0	0	0	0	0	0	0	0
Potamogeton zosteriformis	flat-stem pondweed	89	91	96	53	8	8	84	46	1	1	1	1	0	0	0	0
Ranunculus trichophyllus	white water crowfoot	25	89	29	59	3	11	20	41	0	0	0	0	0	0	0	0
Spirodela polyrhiza	great duckweed	0	0	4	100	0	0	0	0	1	100	0	0	0	0	0	0
Stuckenia pectinata	sago pondweed	20	54	24	46	13	35	28	54	4	11	0	0	0	0	0	0
Stuckenia vaginata	sheathed pondweed	0	0	20	35	0	0	35	61	0	0	2	4	0	0	0	0
Utricularia vulgaris	common bladderwort	3	75	4	33	0	0	8	67	1	25	0	0	0	0	0	0
Vallisneria americana	wild celery, eel grass, tapegrass	120	75	85	50	39	24	86	50	2	1	0	0	0	0	0	0
Wolffia columbiana	watermeal	3	50	3	75	1	17	1	25	2	33	0	0	0	0	0	0
Zosterella dubia	water stargrass	66	57	55	53	37	32	49	47	11	9	0	0	2	2	0	0
Pithophora sp.	benthic filamentous algae	39	60	53	22	22	34	184	76	4	6	6	2	0	0	0	0
Total locations sampled		302		302		302		302		302		302		302		302	
Total species occurrence per abundance category		811		1009		426		1217		201		123		100		26	
Average number of species per abundance category		2.69		3.34		1.41		4.03		0.67		0.41		0.33		0.09	
Richness per abundance category		22		34		15		34		13		11		5		5	

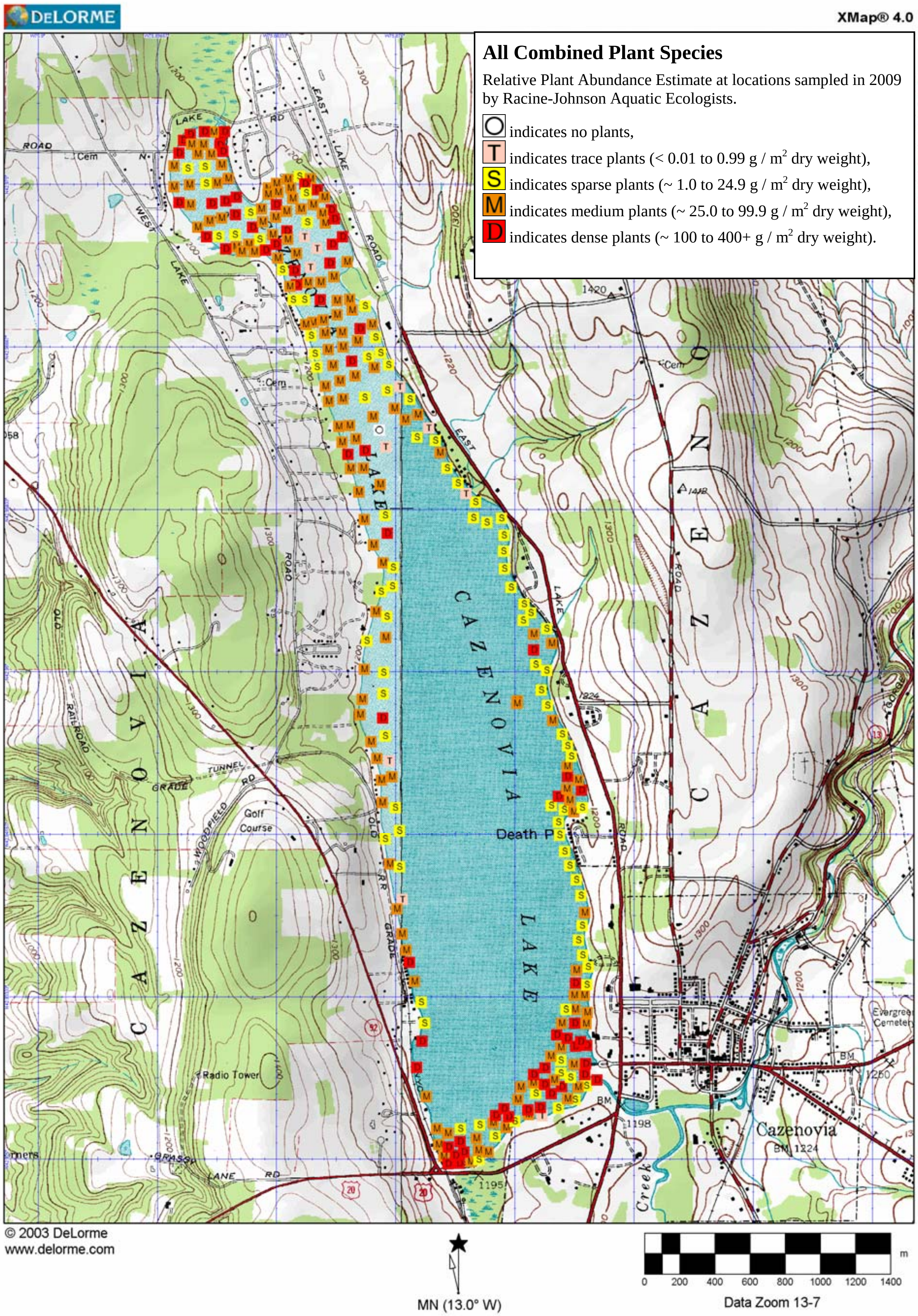


Figure 4. All combined plant species map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

Table 4. Lake depths at 304 (SPs) in Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009.

Sample Point (SP)	Latitude	Longitude	Depth (ft) on date	Depth (m) on date
C1	42.9776517	75.8871200	1.0	0.3
C2	42.9775198	75.8872126	1.6	0.5
C3	42.9776614	75.8876990	3.3	1.0
C4	42.9776742	75.8883369	3.3	1.0
C5	42.3977542	75.8893554	3.9	1.2
C6	42.9772273	75.8898137	3.3	1.0
C7	42.9770512	75.8892474	5.9	1.8
C8	42.9770271	75.8884454	7.5	2.3
C9	42.9769913	75.8872600	5.2	1.6
C10	42.9766792	75.8870589	3.3	1.0
C11	42.9765257	75.8878652	10.5	3.2
C12	42.9765540	75.8888094	9.0	2.8
C13	42.9765976	75.8901296	4.1	1.3
C14	42.9759387	75.8904761	3.6	1.1
C15	42.9758036	75.8895223	9.0	2.8
C16	42.9758839	75.8883072	10.8	3.3
C17	42.9759918	75.8871470	7.5	2.3
C18	42.9752870	75.8866842	4.9	1.5
C19	42.9750457	75.8874802	11.2	3.4
C20	42.9750334	75.8882365	10.5	3.2
C21	42.9749651	75.8893911	10.2	3.1
C22	42.9748581	75.8904700	4.3	1.3
C23	42.9740548	75.8901428	4.9	1.5
C24	42.9739341	75.8893533	8.5	2.6
C25	42.9740021	75.8878303	11.5	3.5
C26	42.9741368	75.8868632	11.5	3.5
C27	42.9743156	75.8861365	1.3	0.4
C28	42.9748021	75.8838658	4.3	1.3
C29	42.9750385	75.8833280	3.9	1.2
C30	42.9752415	75.8825262	3.3	1.0
C31	42.9754028	75.8816964	3.3	1.0
C32	42.9752738	75.8809542	3.9	1.2
C33	42.9750154	75.8813339	5.2	1.6
C34	42.9748007	75.8823264	6.6	2.0
C35	42.9745808	75.8831918	5.7	1.8
C36	42.9744812	75.8839023	4.6	1.4
C37	42.9747170	75.8804605	3.6	1.1
C38	42.9745272	75.8812385	7.2	2.2
C39	42.9742522	75.8821871	8.9	2.7
C40	42.9739459	75.8833035	7.4	2.3
C41	42.9737157	75.8843690	5.9	1.8
C42	42.9735318	75.8851375	5.7	1.8
C43	42.9734209	75.8861874	10.8	3.3
C44	42.9732563	75.8871586	13.1	4.0
C45	42.9730965	75.8879853	10.8	3.3
C46	42.9727927	75.8888289	3.6	1.1
C47	42.9722803	75.8881861	3.0	0.9
C48	42.9723151	75.8873411	9.2	2.8
C49	42.9723966	75.8862069	10.5	3.2
C50	42.9727738	75.8849941	10.5	3.2
C51	42.9730606	75.8842895	11.5	3.5
C52	42.9732875	75.8833700	10.8	3.3
C53	42.9735879	75.8826265	11.5	3.5
C54	42.9737212	75.8815971	11.5	3.5
C55	42.9739382	75.8807551	10.5	3.2
C56	42.9743169	75.8799511	4.3	1.3
C57	42.9736845	75.8794947	3.3	1.0
C58	42.9734881	75.8801008	7.2	2.2
C59	42.9730344	75.8811633	17.4	5.3
C60	42.9725813	75.8825812	14.8	4.5
C61	42.9724011	75.8835660	12.5	3.8
C62	42.9721624	75.8844711	13.5	4.1
C63	42.9719054	75.8852373	10.8	3.3
C64	42.9717794	75.8861146	7.9	2.4
C65	42.9716586	75.8868663	5.2	1.6
C66	42.9715393	75.8857554	3.9	1.2
C67	42.9715242	75.8848803	3.9	1.2
C68	42.9716138	75.8840747	6.9	2.1
C69	42.9719020	75.8833566	13.1	4.0
C70	42.9721660	75.8825192	13.5	4.1
C71	42.9722997	75.8813674	16.4	5.0
C72	42.9730035	75.8799040	7.4	2.3
C73	42.9732028	75.8792463	2.6	0.8
C74	42.9722799	75.8787055	3.0	0.9
C75	42.9719080	75.8793918	7.2	2.2
C76	42.9716923	75.8804835	19.7	6.0
C77	42.9714348	75.8818995	14.8	4.5
C78	42.9712043	75.8832194	6.6	2.0
C79	42.9705937	75.8828932	4.3	1.3
C80	42.9705660	75.8820202	11.5	3.5
C81	42.9707304	75.8809406	19.0	5.8
C82	42.9712400	75.8795300	13.1	4.0
C83	42.9710137	75.8783806	2.6	0.8
C84	42.9702305	75.8792937	2.3	0.7
C85	42.9699584	75.8802035	10.5	3.2
C86	42.9699251	75.8811233	11.5	3.5
C87	42.9698364	75.8819048	10.2	3.1
C88	42.9697445	75.8823727	3.6	1.1
C89	42.9690662	75.8821374	3.6	1.1
C90	42.9690518	75.8813570	10.2	3.1
C91	42.9690485	75.8802482	9.8	3.0
C92	42.9690193	75.8790655	5.9	1.8
C93	42.9690882	75.8782033	3.6	1.1
C94	42.9687384	75.8771237	2.6	0.8
C95	42.9685280	75.8780253	5.7	1.8
C96	42.9682861	75.8790745	6.9	2.1
C97	42.9680104	75.8800484	11.2	3.4
C98	42.9679045	75.8807838	10.8	3.3
C99	42.9677924	75.8812760	6.6	2.0
C100	42.9672178	75.8808920	3.3	1.0
C101	42.9673340	75.8799290	4.3	1.3
C102	42.9673922	75.8787366	9.0	2.8
C103	42.9675851	75.8774752	11.5	3.5
C104	42.9677963	75.8766177	3.3	1.0
C105	42.9671260	75.8763860	4.6	1.4
C106	42.9669547	75.8776315	8.5	2.6
C107	42.9666414	75.8786547	10.5	3.2
C108	42.9665132	75.8797000	6.9	2.1
C109	42.9662921	75.8806225	3.6	1.1
C110	42.9656107	75.8804896	3.3	1.0
C111	42.9656859	75.8793787	6.9	2.1
C112	42.9659134	75.8780624	11.8	3.6
C113	42.9661259	75.8768841	8.2	2.5
C114	42.9663321	75.8760186	3.3	1.0
C115	42.9657158	75.8754783	3.3	1.0
C116	42.9655924	75.8764797	10.5	3.2
C117	42.9651539	75.8778159	13.8	4.2
C118	42.9648903	75.8788614	7.2	2.2
C119	42.9646217	75.8798919	3.0	0.9
C120	42.9638469	75.8796666	2.3	0.7
C121	42.9639872	75.8786539	8.5	2.6
C122	42.9640562	75.8771422	19.0	5.8
C123	42.9644194	75.8755740	12.5	3.8
C124	42.9646037	75.8746784	4.9	1.5
C125	42.9639509	75.8739917	5.6	1.7
C126	42.9634950	75.8750705	20.7	6.3
C127	42.9630000	75.8769000	16.4	5.0
C128	42.9626120	75.8782140	9.2	2.8
C129	42.9625696	75.8789486	3.3	1.0
C130	42.9617547	75.8787332	2.6	0.8
C131	42.9619178	75.8777670	8.5	2.6
C132	42.9623696	75.8761069	24.6	7.5
C133	42.9629026	75.8743124	19.7	6.0
C134	42.9631780	75.8734217	8.5	2.6
C135	42.9624910	75.8726693	3.9	1.2
C136	42.9620143	75.8734742	23.0	7.0
C137	42.9615194	75.8756677	26.2	8.0
C138	42.9613350	75.8771279	8.5	2.6
C139	42.9611392	75.8783091	3.0	0.9
C140	42.9604037	75.8781300	3.3	1.0
C141	42.9604313	75.8772190	7.5	2.3
C142	42.9595200	75.8764300	9.8	3.0
C143	42.9592033	75.8775669	4.9	1.5
C144	42.9577861	75.8771686	3.3	1.0
C145	42.9580153	75.8757095	18.7	5.7
C146	42.9570793	75.8755557	12.5	3.8
C147	42.9564934	75.8765373	3.3	1.0
C148	42.9555737	75.8758508	4.6	1.4
C149	42.9553325	75.8751604	13.5	4.1
C150	42.9543763	75.8752152	16.4	5.0
C151	42.9540917	75.8759959	3.9	1.2
C152	42.9530739	75.8763460	5.2	1.6
C153	42.9528001	75.8755924	14.4	4.4

Table 4. (continued) Lake depths at 304 (SPs) in Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009.

Sample Point (SP)	Latitude	Longitude	Depth (ft) on date	Depth (m) on date
C154	42.9517314	75.8756775	14.8	4.5
C155	42.9515621	75.8770018	4.6	1.4
C156	42.9501003	75.8771800	4.9	1.5
C157	42.9499453	75.8758167	14.8	4.5
C158	42.9488451	75.8758542	18.7	5.7
C159	42.9485702	75.8773244	3.9	1.2
C160	42.9477748	75.8774691	3.3	1.0
C161	42.9475917	75.8758985	16.4	5.0
C162	42.9466809	75.8757081	16.4	5.0
C163	42.9463853	75.8767040	3.9	1.2
C164	42.9455270	75.8762902	4.3	1.3
C165	42.9453926	75.8754122	16.4	5.0
C166	42.9445793	75.8752376	16.4	5.0
C167	42.9444195	75.8759834	3.9	1.2
C168	42.9432615	75.8759196	3.9	1.2
C169	42.9429981	75.8750043	13.1	4.0
C170	42.9418304	75.8747106	14.4	4.4
C171	42.9414247	75.8757080	3.6	1.1
C172	42.9401233	75.8753818	5.9	1.8
C173	42.9399862	75.8747074	12.5	3.8
C174	42.9383104	75.8745134	19.7	6.0
C175	42.9378280	75.8748873	4.9	1.5
C176	42.9365290	75.8745377	4.9	1.5
C177	42.9356912	75.8742594	6.2	1.9
C178	42.9350748	75.8740183	6.6	2.0
C179	42.9340912	75.8736567	5.9	1.8
C180	42.9330340	75.8731804	6.6	2.0
C181	42.9319435	75.8729477	3.6	1.1
C182	42.9310224	75.8731385	4.9	1.5
C183	42.9296870	75.8735046	4.3	1.3
C184	42.9281775	75.8728412	4.3	1.3
C185	42.9265321	75.8721240	3.6	1.1
C186	42.9257155	75.8719777	3.3	1.0
C187	42.9251137	75.8716250	3.3	1.0
C188	42.9247432	75.8713105	1.6	0.5
C189	42.9247633	75.8705188	4.3	1.3
C190	42.9248473	75.8697053	3.0	0.9
C191	42.9249537	75.8691506	1.6	0.5
C192	42.9253350	75.8685134	2.0	0.6
C193	42.9254278	75.8691747	2.6	0.8
C194	42.9253384	75.8702124	5.6	1.7
C195	42.9251966	75.8708516	6.2	1.9
C196	42.9255932	75.8712796	6.2	1.9
C197	42.9258669	75.8704864	9.5	2.9
C198	42.9260443	75.8693318	9.5	2.9
C199	42.9261590	75.8680249	3.0	0.9
C200	42.9266074	75.8672421	3.0	0.9
C201	42.9268322	75.8681775	6.2	1.9
C202	42.9267355	75.8690874	21.7	6.6
C203	42.9265298	75.8704384	21.3	6.5
C204	42.9263044	75.8713266	8.9	2.7
C205	42.9269275	75.8666465	2.6	0.8
C206	42.9272609	75.8656704	3.3	1.0
C207	42.9272046	75.8647433	2.0	0.6
C208	42.9276074	75.8635928	2.3	0.7
C209	42.9280257	75.8624262	2.3	0.7
C210	42.9287360	75.8616444	2.3	0.7
C211	42.9290362	75.8609012	4.3	1.3
C212	42.9298672	75.8616947	4.3	1.3
C213	42.9293169	75.8617527	4.3	1.3
C214	42.9286751	75.8622374	4.3	1.3
C215	42.9280719	75.8629649	3.6	1.1
C216	42.9276304	75.8648623	4.3	1.3
C217	42.9275007	75.8657391	4.3	1.3
C218	42.9271591	75.8670809	4.9	1.5
C219	42.9272279	75.8679933	7.5	2.3
C220	42.9275721	75.8674094	6.9	2.1
C221	42.9280387	75.8664313	5.9	1.8
C222	42.9283663	75.8651808	5.6	1.7
C223	42.9283248	75.8640916	5.9	1.8
C224	42.9287048	75.8633765	5.9	1.8
C225	42.9291712	75.8627416	5.2	1.6
C226	42.9298394	75.8625205	5.9	1.8
C227	42.9300432	75.8634367	6.6	2.0
C228	42.9293931	75.8634320	5.9	1.8
C229	42.9290467	75.8638968	5.9	1.8
C230	42.9287962	75.8645679	6.2	1.9
C231	42.9288844	75.8653688	6.2	1.9
C232	42.9286809	75.8662364	16.4	5.0
C233	42.9293157	75.8653118	16.4	5.0
C234	42.9296609	75.8645246	6.6	2.0
C235	42.9302548	75.8641371	7.2	2.2
C236	42.9307040	75.8634337	7.2	2.2
C237	42.9307769	75.8623902	6.6	2.0
C238	42.9308294	75.8616143	4.3	1.3
C239	42.9310206	75.8620352	5.9	1.8
C240	42.9311872	75.8629885	6.6	2.0
C241	42.9313612	75.8637149	18.0	5.5
C242	42.9319507	75.8633538	13.1	4.0
C243	42.9319545	75.8624648	6.6	2.0
C244	42.9319412	75.8616640	3.9	1.2
C245	42.9325091	75.8615757	3.9	1.2
C246	42.9326620	75.8624227	4.9	1.5
C247	42.9326586	75.8630601	26.2	8.0
C248	42.9333868	75.8624961	11.5	3.5
C249	42.9333855	75.8617886	4.9	1.5
C250	42.9339217	75.8616015	3.3	1.0
C251	42.9340037	75.8623891	10.8	3.3
C252	42.9346773	75.8623507	11.5	3.5
C253	42.9348463	75.8615364	1.6	0.5
C254	42.9354530	75.8619048	3.3	1.0
C255	42.9362220	75.8621920	3.6	1.1
C256	42.9369650	75.8619328	3.6	1.1
C257	42.9376351	75.8617442	3.6	1.1
C258	42.9385100	75.8620200	3.6	1.1
C259	42.9393098	75.8623483	3.3	1.0
C260	42.9400512	75.8628134	8.9	2.7
C261	42.9407720	75.8631556	3.3	1.0
C262	42.9416008	75.8635156	4.9	1.5
C263	42.9422533	75.8635878	4.9	1.5
C264	42.9430995	75.8640906	9.2	2.8
C265	42.9429013	75.8631802	5.6	1.7
C266	42.9426494	75.8625223	5.6	1.7
C267	42.9430003	75.8619454	4.9	1.5
C268	42.9433829	75.8627976	9.8	3.0
C269	42.9435759	75.8636029	10.8	3.3
C270	42.9439633	75.8630170	9.2	2.8
C271	42.9438943	75.8620015	5.2	1.6
C272	42.9444150	75.8622345	4.9	1.5
C273	42.9445962	75.8629703	11.8	3.6
C274	42.9451239	75.8629946	13.8	4.2
C275	42.9456313	75.8626944	5.2	1.6
C276	42.9461594	75.8629479	5.9	1.8
C277	42.9467601	75.8633492	5.6	1.7
C278	42.9474827	75.8640020	8.2	2.5
C279	42.9482380	75.8643577	6.6	2.0
C280	42.9490292	75.8648116	8.2	2.5
C281	42.9500374	75.8644200	4.3	1.3
C282	42.9503459	75.8651772	11.2	3.4
C283	42.9511007	75.8653115	13.1	4.0
C284	42.9514316	75.8640595	4.3	1.3
C285	42.9521846	75.8644271	2.3	0.7
C286	42.9519156	75.8653291	7.5	2.3
C287	42.9526089	75.8660617	13.8	4.2
C288	42.9530069	75.8655404	3.6	1.1
C289	42.9534451	75.8659849	5.6	1.7
C290	42.9543054	75.8668946	6.2	1.9
C291	42.9552720	75.8673729	7.2	2.2
C292	42.9561640	75.8674418	4.9	1.5
C293	42.9569735	75.8674162	5.6	1.7
C294	42.9578700	75.8675725	4.9	1.5
C295	42.9576552	75.8686008	8.5	2.6
C296	42.9578858	75.8695389	11.2	3.4
C297	42.9586886	75.8693850	6.9	2.1
C298	42.9591254	75.8700775	4.9	1.5
C299	42.9596503	75.8706272	6.9	2.1
C300	42.9604199	75.8713875	6.9	2.1
C301	42.9612187	75.8718822	8.2	2.5
C302	42.9618373	75.8722143	7.5	2.3
C303	42.9484900	75.8664800	9.8	3.0
C304	42.9483600	75.8665100	8.2	2.5

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Appendix

Table A. Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 sample points (SPs).

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Table B. Conversion of August 26 - September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

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Table C. Aquatic plant species' presence in Cazenovia Lake from two rake tosses on August 26, 27, 31 and September 2, 4, 8, 2009. Entries of "1" indicate species identified at that sample point (SP). Allied Biological chose the locations for (SPs) in October 2008.

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Figures 5 - 34. Individual species maps of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

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Table A. Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 sample points (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C1	1	42.9776800	75.8869600	1.0	1.0	0.3	D	1	81		3			0.01	0.01	2		**7**						2								0.01		1	2	0.01					0.01		**1**
	2						D	1	72		4			1	1			**5**						1	1							1		2	2	0.01			6		1	1	**1**
C2	1	42.9775198	75.8872126	1.0	1.6	0.5	D		85		1			0.01	0.01	1		**0.01**						0.01		1	**0.01**					0.01		1	1	0.01	1			1	0.01		**8**
	2						D		57		1			0.01	1			**1**								8			1	8	0.01	3		2	1	0.01			2	2	0.01	1	**12**
C3	1	42.9776614	75.8876990	2.0	3.3	1.0	M		87		2															2						0.01		2	2	0.01					0.01		**5**
	2						M		50		10				2			**1**					10			2				1		1		2					16	0.01		1	**4**
C4	1	42.9776742	75.8883369	2.0	3.3	1.0	D		30	20	2					10							0.01									0.01		30								4	**4**
	2						D		60	2	5				2								13			0.01	**2**							10			3			1	0.01	2	
C5	1	42.3977542	75.8893554	2.0	3.9	1.2	D		94		2												0.01			2								1									**1**
	2						D		65	1	10																			2	7			5	1		1		6			2	
C6	1	42.9772273	75.8898137	2.0	3.3	1.0	D		58	2	7	0.01			0.01	2		**4**			4	**2**					**0.01**			1	3			3	2				4			3	**5**
	2						D		60	0.01	20				1	1										8						1		3	3								**3**
C7	1	42.9770512	75.8892474	5.0	5.9	1.8	M		93							1					1						**1**	0.01						1									**3**
	2						S		84																		**5**							1	1								**9**
C8	1	42.9770271	75.8884454	6.0	7.5	2.3	M		60		5									3							**5**							2					5				**20**
	2						M		97																																		**3**
C9	1	42.9769913	75.8872600	4.0	5.2	1.6	D		92		0.01																**0.01**			1		2		2									**3**
	2						D		87		0.01				0.01												**1**					5		4	0.01								**3**
C10	1	42.9766792	75.8870589	2.0	3.3	1.0	D		7	2	3				0.01							**3**				35	**0.01**				15		15	5						5			**10**
	2						D		20	1	1				0.01											60								4						1			**13**
C11	1	42.9765257	75.8878652	10.0	10.5	3.2	M		30																							40											**30**
	2						M		70		3																					10		7									**10**
C12	1	42.9765540	75.8888094	4.0	9.0	2.8	S		15																									15									**70**
	2						M		70																									2									**28**
C13	1	42.9765976	75.8901296	3.0	4.1	1.3	D		40		3									0.01	1					30				10				1			4			10			**1**
	2						D		57		8									2						9				2		2		3	1		3			3			**10**
C14	1	42.9759387	75.8904761	3.0	3.6	1.1	M		20	20	10											**10**				20	**0.01**					5		5	5					0.01			**5**
	2						M		20	16	2	1				9				1		**3**	3			25			3			3		3			2						**9**

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C15	1	42.9758036	75.8895223	7.0	9.0	2.8	S		10																																		90
	2						S		20																						30												50
C16	1	42.9758839	75.8883072	10.0	10.8	3.3	S		70																																		30
	2						S		25		5																5							5									60
C17	1	42.9759918	75.8871470	6.0	7.5	2.3	M		25																	15								0.01									60
	2						S		50																																		50
C18	1	42.9752870	75.8866842	3.0	4.9	1.5	M		30		10															55																	5
	2						M		25		10															35	0.01							5									25
C19	1	42.9750457	75.8874802	11.0	11.2	3.4	S		60		0.01																							0.01									40
	2						D		92																	4								2									2
C20	1	42.9750334	75.8882365	11.0	10.5	3.2	S		90																																		10
	2						S		60																							3		7									30
C21	1	42.9749651	75.8893911	4.0	10.2	3.1	M		95																																		5
	2						M		70													2																					28
C22	1	42.9748581	75.8904700	3.0	4.3	1.3	M		25	25												50										0.01		0.01									
	2						M		30	30	2	2						1				9	5			10	1																10
C23	1	42.9740548	75.8901428	2.0	4.9	1.5	D		0.01		0.01											100																					
	2						D			1												99																					
C24	1	42.9739341	75.8893533	5.0	8.5	2.6	S		10													10																					80
	2						M															100																					
C25	1	42.9740021	75.8878303	12.0	11.5	3.5	D		95																									2				3					
	2						D		95																						3			2									
C26	1	42.9741368	75.8868632	4.0	11.5	3.5	D		98																					2													
	2						D		85		1				0.01												1			2				1									10
C27	1	42.9743156	75.8861365	3.0	1.3	0.4	D		40		5															25				1				3								1	25
	2						D		15		12															50	0.01							3									20
C28	1	42.9748021	75.8838658	2.0	4.3	1.3	S				2				0.01					1	2					20				2				2						30		1	40
	2						M			50		15								2						17			10						1					5			

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C29	1	42.9750385	75.8833280	4.0	3.9	1.2	M		36	5	5	0.01				1				2		5									5				1					5			35
	2						M		1	20	2	1								7		6				1				40				1						1			20
C30	1	42.9752415	75.8825262	3.0	3.3	1.0	M		10		25				0.01	0.01										30														5			30
	2						S		10	4	20	3			0.01	4		1		4						4								0.01						10			40
C31	1	42.9754028	75.8816964	3.0	3.3	1.0	S		17	0.01																				18				5									60
	2						S		3	2	2	1			1					0.01									6	15				10									60
C32	1	42.9752738	75.8809542	2.0	3.9	1.2	M		90		4																																6
	2						M		15	40	3									1									2	15				5			4			15			
C33	1	42.9750154	75.8813339	4.0	5.2	1.6	D		1	96																				3				0.01						0.01			
	2						D		2	80	1															5				10							1						1
C34	1	42.9748007	75.8823264	5.0	6.6	2.0	S		10	10	1	0.01														38								2					1	0.01			38
	2						M		20	35		2			1															25				2									15
C35	1	42.9745808	75.8831918	5.0	5.7	1.8	S		2	35		2			0.01							2								7				2									50
	2						M		4	20	4	5			0.01					1		2				28								2						4			30
C36	1	42.9744812	75.8839023	3.0	4.6	1.4	M		30	4	50									3						5						0.01								6			2
	2						M		10	60	2	8			0.01					8						0.01											8			4			
C37	1	42.9747170	75.8804605	3.0	3.6	1.1	M			95									1							3								1									
	2						D			99																				1													
C38	1	42.9745272	75.8812385	5.0	7.2	2.2	S		20		5																			30				5				0.01					40
	2						S		0.01		8															5				50	10		5				4			8			10
C39	1	42.9742522	75.8821871	4.0	8.9	2.7	S		10		3																							2									85
	2						M		30		3	1			1						1					30	1							3									30
C40	1	42.9739459	75.8833035	3.0	7.4	2.3	D		15		2															8				60													15
	2						M		8		6				0.01											30				30				6									20
C41	1	42.9737157	75.8843690	3.0	5.9	1.8	M		15		2				0.01											10								3									70
	2						S		10		30	2			0.01					4						1								3									50
C42	1	42.9735318	75.8851375	5.0	5.7	1.8	S		20																	40																	40
	2						S		10																	10																	80

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C43	1	42.9734209	75.8861874	5.0	10.8	3.3	D		90																									10													
	2						D		60		1																			20				1									18
C44	1	42.9732563	75.8871586	15.0	13.1	4.0	D		99		0.01																							1									
	2						T		95																									5									
C45	1	42.9730965	75.8879853	4.0	10.8	3.3	M		49																					49				1									1
	2						M		90																	3	1							6									
C46	1	42.9727927	75.8888289	2.0	3.6	1.1	M		20	10	20				10																				10							0.01	30
	2						M		40	10	15				2									1			2					15		3	5		2						5
C47	1	42.9722803	75.8881861	2.0	3.0	0.9	D		10	30	1				0.01	1					25		2			3								1	1							1	25
	2						M		2	40	10				0.01	8					2	3	10			7	1							5	1		1						10
C48	1	42.9723151	75.8873411	3.0	25.6	7.8	S		30																	10																	60
	2						S		75		2															4					3			4									12
C49	1	42.9723966	75.8862069	14.0	10.5	3.2	S		97		1																1					0.01		1									
	2						S		95		1																							4									
C50	1	42.9727738	75.8849941	4.0	10.5	3.2	M		90		0.01																											5					5
	2						D		80		0.01																							0.01									20
C51	1	42.9730606	75.8842895	5.0	11.5	3.5	M		45		5																			45				0.01									5
	2						M		80			0.01															2										5	3					10
C52	1	42.9732875	75.8833700	4.0	10.8	3.3	M		95		1									0.01														1					0.01				3
	2						M		90																									2			5						3
C53	1	42.9735879	75.8826265	3.0	11.5	3.5	M		98																									2									0.01
	2						M		90		1																							4				5					0.01
C54	1	42.9737212	75.8815971	13.0	11.5	3.5	M		95		5				0.01																												
	2						M		95		3																1																1
C55	1	42.9739382	75.8807551	4.0	10.5	3.2	M		80		1				0.01					0.01														1									18
	2						M		85																									5									10
C56	1	42.9743169	75.8799511	2.0	4.3	1.3	S		30	10																				50										0.01		0.01	10
	2						M		0.01	75																5				20										0.01			0.01

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C57	1	42.9736845	75.8794947	2.0	3.3	1.0	D			100																																	
	2						M		4	25	5				1											50								3								2	10
C58	1	42.9734881	75.8801008	3.0	7.2	2.2	M		15		1															60				10													14
	2						M		10		5															30				30				5						10			10
C59	1	42.9730344	75.8811633	19.0	17.4	5.3	S		90			5																															5
	2						T		85		5	10																															
C60	1	42.9725813	75.8825812	16.0	14.8	4.5	D		100																									0.01									
	2						D		97		1																							2									
C61	1	42.9724011	75.8835660	12.0	12.5	3.8	M		90		0.01																							5									5
	2						M		95		1																1							3									
C62	1	42.9721624	75.8844711	15.0	13.5	4.1	S		95		0.01																0.01					1		2									2
	2						S		40		5				1												10										1						43
C63	1	42.9719054	75.8852373	5.0	10.8	3.3	M		45		0.01															5					5												45
	2						M		80						1											10	4							0.01									5
C64	1	42.9717794	75.8861146	3.0	7.9	2.4	M		60													2																					38
	2						S		95																																		5
C65	1	42.9716586	75.8868663	2.0	5.2	1.6	M		70		30				0.01								0.01																				
	2						D		40	15	15	2			10												5					2	2	2	5								2
C66	1	42.9715393	75.8857554	2.0	3.9	1.2	S		15	7	15																	8						0.01	0.01		8			7		0.01	40
	2						D		5	90	1																						2				2						
C67	1	42.9715242	75.8848803	3.0	3.9	1.2	M		20	40	10						1			1										10			5				5		2	6			
	2						M		1	75	1								2	7									2			2	5				4			1			
C68	1	42.9716138	75.8840747	3.0	6.9	2.1	D		60		3				0.01																			2									35
	2						M		20	6	20				0.01					2						10				20				10	2					0.01			10
C69	1	42.9719020	75.8833566	13.0	13.1	4.0	M		94		1																0.01							2									3
	2						D		90		3	0.01			0.01																	0.01		6									1
C70	1	42.9721660	75.8825192	13.0	13.5	4.1	T		60			10															0.01							20								0.01	10
	2						D		80		2	15																						2									1

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C71	1	42.9722997	75.8813674	20.0	16.4	5.0	T					33																						34									33
	2						T		93			1								5																							1
C72	1	42.9730035	75.8799040	5.0	7.4	2.3	S		60		5																							5									30
	2						M		4		4															70				10				0.01				1		1			10
C73	1	42.9732028	75.8792463	2.0	2.6	0.8	D			100																																	
	2						D		1	91	1																		5	1				1									
C74	1	42.9722799	75.8787055	3.0	3.0	0.9	D		3	30	0.01									2						30				25										5			5
	2						M		10	60	2															10				5	5									8			
C75	1	42.9719080	75.8793918	5.0	7.2	2.2	M		15		15																1							1									68
	2						D		35		9				0.01											35								1									20
C76	1	42.9716923	75.8804835	21.0	19.7	6.0	O																																				
	2						T		100																																		
C77	1	42.9714348	75.8818995	14.0	14.8	4.5	M		100		0.01																																
	2						M		77			18																				2											3
C78	1	42.9712043	75.8832194	3.0	6.6	2.0	M		35		5															30																	30
	2						M		70		3				0.01											9					7			1									10
C79	1	42.9705937	75.8828932	2.0	4.3	1.3	S			20																20				20										10			30
	2						S		30	1	2	1			1			1								21														2		1	40
C80	1	42.9705660	75.8820202	3.0	11.5	3.5	D		95		1																							1									3
	2						D		85		1																2					2		3			2						5
C81	1	42.9707304	75.8809406	21.0	19.0	5.8	T		70																																		30
	2						O																																				
C82	1	42.9712400	75.8795300	4.0	13.1	4.0	D		100		0.01																										0.01						0.01
	2						D		96																							0.01		2									2
C83	1	42.9710137	75.8783806	2.0	2.6	0.8	M		50	30	2																			10				2				2		2			2
	2						M		20	40	0.01				2	5														10				3						10			10
C84	1	42.9702305	75.8792937	2.0	2.3	0.7	S		0.01	3	40									0.01														4						10		3	40
	2						M		30	3	30				1					5												0.01		6						5		10	10

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C85	1	42.9699584	75.8802035	6.0	10.5	3.2	M		95		2																							3									
	2						S		40																					40													20
C86	1	42.9699251	75.8811233	7.0	11.5	3.5	D		98																		0.01							2									
	2						S		89																		3							7			0.01						1
C87	1	42.9698364	75.8819048	5.0	10.2	3.1	D		45		1				0.01																			3			6						45
	2						M		75		2				1					1							1							4	2		6						8
C88	1	42.9697445	75.8823727	3.0	3.6	1.1	M		3	3	4				1					3										40				3								3	40
	2						M		20	5	2				1					1										20		1					15			10		0.01	25
C89	1	42.9690662	75.8821374	2.0	3.6	1.1	S		10		0.01									0.01						30											15			15			30
	2						S		1	15	16	1			1					2						2					15	3		1	2					10		1	30
C90	1	42.9690518	75.8813570	4.0	10.2	3.1	S		45		3	0.01																						1			3		3				45
	2						S		46		1				2																											1	50
C91	1	42.9690485	75.8802482	4.0	9.8	3.0	M		70		0.01																																30
	2						D		90		1															4								0.01									5
C92	1	42.9690193	75.8790655	4.0	5.9	1.8	M		1	0.01	1	40						5		1							0.01			9				1						1		1	40
	2						M		6	5	3	20			0.01					1	0.01		2			20	1							1						1		20	20
C93	1	42.9690882	75.8782033	3.0	3.6	1.1	M			65					0.01				10	10																				5			10
	2						S		2	2	0.01									2																				2		2	90
C94	1	42.9687384	75.8771237	2.0	2.6	0.8	S			98									1															1									
	2						S			82									10	8																							
C95	1	42.9685280	75.8780253	2.0	5.7	1.8	M		2	1	2								1	1										74										2		2	15
	2						M		2	20	11									2										30		1								2		2	30
C96	1	42.9682861	75.8790745	6.0	6.9	2.1	M		40								1													15				1			3						40
	2						S		15	45		5			0.01				1	2									15													2	15
C97	1	42.9680104	75.8800484	4.0	11.2	3.4	M		48		0.01						1			0.01										20				1									30
	2						M		45																		6		2					2									45
C98	1	42.9679045	75.8807838	3.0	10.8	3.3	M		50						0.01				0.01																				20				30
	2						S		35		10																			35													20

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C99	1	42.9677924	75.8812760	2.0	6.6	2.0	M		19		0.01				0.01																			1									**80**
	2						S		40																																		**60**
C100	1	42.9672178	75.8808920	2.0	3.3	1.0	S		60											0.01																				0.01			**40**
	2						S		25		9																													25		1	**40**
C101	1	42.9673340	75.8799290	7.0	4.3	1.3	M		2		2				0.01					0.01															0.01					2		1	**93**
	2						M		15		3									3																				8		1	**70**
C102	1	42.9673922	75.8787366	4.0	9.0	2.8	M		50		3									0.01										22				3									**22**
	2						M		35		3	4								3										20													**35**
C103	1	42.9675851	75.8774752	7.0	11.5	3.5	D		40						0.01															5	20							5					**30**
	2						M		40		2																			8								40					**10**
C104	1	42.9677963	75.8766177	1.0	3.3	1.0	M		0.01	96																	**0.01**								2					2			
	2						M		2	60									1											30		1								5		1	
C105	1	42.9671260	75.8763860	3.0	4.6	1.4	S		10	48	15									15								1							1					10			
	2						S		30	3	10									3									5					2						5		2	**40**
C106	1	42.9669547	75.8776315	7.0	8.5	2.6	D		1	0.01	0.01	98			0.01					0.01														0.01				1		0.01			
	2						S		1	4		74								1									4											11			**5**
C107	1	42.9666414	75.8786547	9.0	10.5	3.2	S		30		3									1										3				3				20					**40**
	2						D		60		5				1					1										20	2						2	4					**5**
C108	1	42.9665132	75.8797000	6.0	6.9	2.1	M		40						0.01															20				0.01						0.01			**40**
	2						S		20											3										15				2						10			**50**
C109	1	42.9662921	75.8806225	2.0	3.6	1.1	S		5		45									4							**45**															1	
	2						S		40	5	10									5							**10**							6	3							1	**20**
C110	1	42.9656107	75.8804896	2.0	3.3	1.0	S		35	60	0.01				0.01															0.01		2								3		0.01	
	2						S		40	6	3	8								0.01														1	2					10			**30**
C111	1	42.9656859	75.8793787	4.0	6.9	2.1	M		20											0.01							**0.01**			20								20		20			**20**
	2						S		40																																		**60**
C112	1	42.9659134	75.8780624	10.0	11.8	3.6	D		98						1																												**1**
	2						M		97																									3									

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C113	1	42.9661259	75.8768841	8.0	8.2	2.5	S		2	20	2	50								2										20								2		2			
	2						S		4	25		5								4							3			15				4			5			10		25	
C114	1	42.9663321	75.8760186	3.0	3.3	1.0	S		20	5	10									10						5		10		15								10		0.01			15
	2						S		35	5	5	5			2					8																				5			35
C115	1	42.9657158	75.8754783	3.0	3.3	1.0	S			50									5	0.01																				0.01			45
	2						T			80								3	3									4						2				1		4			3
C116	1	42.9655924	75.8764797	11.6	10.5	3.2	M		35											2										3			30										30
	2						M		30	1		1								2										30				3			10			3			20
C117	1	42.9651539	75.8778159	8.0	13.8	4.2	S		70																																		30
	2						M		70																					4		1		4								1	20
C118	1	42.9648903	75.8788614	4.0	7.2	2.2	M		35		2																			30	3												30
	2						M		29			1																		30													40
C119	1	42.9646217	75.8798919	2.0	3.0	0.9	M		5	60	0.01	0.01														35														0.01			
	2						M		30	30	2	2							1							28					4									2		1	0.01
C120	1	42.9638469	75.8796666	2.0	2.3	0.7	M		3	45	45									1	1		0.01															0.01		5			
	2						M		10	20	15								10	10			8				1	1	5			1		2			2			10		5	0.01
C121	1	42.9639872	75.8786539	3.0	8.5	2.6	M		60		0.01	0.01																		20													20
	2						M		60			3																		7													30
C122	1	42.9640562	75.8771422	21.0	19.0	5.8	S		99																		1																
	2						S		100																																		
C123	1	42.9644194	75.8755740	6.0	12.5	3.8	S		0.01											0.01										55								44		1			0.01
	2						S		45	1																				45		1						0.01		5			3
C124	1	42.9646037	75.8746784	3.0	4.9	1.5	T											30		10																				30		30	
	2						T																																	30		70	
C125	1	42.9639509	75.8739917	2.0	5.6	1.7	T			30									40																					30			
	2						S		15	15		1								10									9														50
C126	1	42.9634950	75.8750705	21.0	20.7	6.3	M		90																									0.01									10
	2						S		100																																		

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Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C127	1	42.9630000	75.8769000	19.0	16.4	5.0	M		55																																		45
	2						S		40																																		60
C128	1	42.9626120	75.8782140	5.0	9.2	2.8	M		50		5																			15								10					20
	2						M		60		0.01																			25							5	5					5
C129	1	42.9625696	75.8789486	2.0	3.3	1.0	M			50																0.01				40										10			
	2						M			15	2															30			15	30										8			
C130	1	42.9617547	75.8787332	2.0	2.6	0.8	M			70									0.01											25										5			
	2						S			92		1									7																						
C131	1	42.9619178	75.8777670	7.0	8.5	2.6	M		5		0.01									5										45				0.01									45
	2						S		20		1	6								1							2			20													50
C132	1	42.9623696	75.8761069	25.0	24.6	7.5	O																																				
	2						O																																				
C133	1	42.9629026	75.8743124	17.0	19.7	6.0	M		0.01	0.01																					60									0.01			40
	2						S		45	3										1										45										1			5
C134	1	42.9631780	75.8734217	4.0	8.5	2.6	M		60	25										10																							5
	2						M		85	5		2								5																				0.01			3
C135	1	42.9624910	75.8726693	3.0	3.9	1.2	T																																	50		50	
	2						T			60																														38		1	1
C136	1	42.9620143	75.8734742	25.0	23.0	7.0	M		40																																		60
	2						T		100																																		
C137	1	42.9615194	75.8756677	25.0	26.2	8.0	S																																				100
	2						O																																				
C138	1	42.9613350	75.8771279	4.0	8.5	2.6	M		70																					20													10
	2						D		35									10												35								15					5
C139	1	42.9611392	75.8783091	2.0	3.0	0.9	D			95																														5			
	2						M			94									2											1										2			1
C140	1	42.9604037	75.8781300	1.0	3.3	1.0	M		1	92									1				5												1								
	2						M		6	80	6								2	2									2											2		0.01	

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Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C141	1	42.9604313	75.8772190	4.0	7.5	2.3	M		10		5																			35			5							5		0.01	**40**
	2						M		10		2	3																		40									5				**40**
C142	1	42.9595200	75.8764300	12.0	9.8	3.0	M		50									**15**												20													**15**
	2						M		25									**10**		2										35							10						**18**
C143	1	42.9592033	75.8775669	2.0	4.9	1.5	M			95											1									2										2			
	2						M			60																				39				1									
C144	1	42.9577861	75.8771686	2.0	3.3	1.0	S		1	38	10							**1**												30										10			**10**
	2						M			80	9																			10										1			**0.01**
C145	1	42.9580153	75.8757095	8.0	18.7	5.7	S																																				**100**
	2						S		35											5																							**60**
C146	1	42.9570793	75.8755557	8.0	12.5	3.8	D		97																									1						1			**1**
	2						D		100																																		
C147	1	42.9564934	75.8765373	2.0	3.3	1.0	M		0.01		30							**30**												8										12		8	**12**
	2						M		15	5	15							**10**	1	6									7	8					2			1		5		20	**5**
C148	1	42.9555737	75.8758508	3.0	4.6	1.4	S											**25**												25				5				15		5			**25**
	2						M				15							**5**								30			2								5			5		20	**18**
C149	1	42.9553325	75.8751604	12.0	13.5	4.1	S		50									**10**		10																							**30**
	2						S		15		2																			80													**3**
C150	1	42.9543763	75.8752152	15.0	16.4	5.0	S			1																														0.01			**99**
	2						S			5																														5			**90**
C151	1	42.9540917	75.8759959	3.0	3.9	1.2	T											**50**																						50			
	2						M											**20**			18																					60	**2**
C152	1	42.9530739	75.8763460	3.0	5.2	1.6	M											**90**												2													**8**
	2						S		3	3	30							**10**		5	2											2								5		30	**10**
C153	1	42.9528001	75.8755924	12.0	14.4	4.4	S		95											0.01																							**5**
	2						S																																	5			**95**
C154	1	42.9517314	75.8756775	16.0	14.8	4.5	S																																				**100**
	2						M																																				**100**

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C155	1	42.9515621	75.8770018	3.0	4.6	1.4	S											**60**																						15		25	
	2						S				10							**40**																						10		40	
C156	1	42.9501003	75.8771800	2.0	4.9	1.5	M		12	3	3	0.01						**50**		10														4								8	**10**
	2						M		5		5							**35**		1															4					10		35	**5**
C157	1	42.9499453	75.8758167	10.0	14.8	4.5	S		25																																		**75**
	2						S		5																					15				10									**70**
C158	1	42.9488451	75.8758542	18.0	18.7	5.7	M		40																																		**60**
	2						T																																				**100**
C159	1	42.9485702	75.8773244	3.0	3.9	1.2	M									0.01		**40**												20				10								20	**10**
	2						M		15		10		2			3		**30**												10				1	2		1			10		15	**1**
C160	1	42.9477748	75.8774691	2.0	3.3	1.0	M		15							40	1	**2**												30					2					5		5	
	2						M			90							2													7				1			0.01						
C161	1	42.9475917	75.8758985	17.0	16.4	5.0	D		99																																		**1**
	2						M		90									**5**																									**5**
C162	1	42.9466809	75.8757081	18.0	16.4	5.0	M		70																													30					
	2						T		90																																		**10**
C163	1	42.9463853	75.8767040	2.0	3.9	1.2	S			40								**10**		10										20										10		10	
	2						M		5	30	7	5						**8**	5							10			20	10													
C164	1	42.9455270	75.8762902	2.0	4.3	1.3	S			0.01	10	0.01						**40**												18										2		10	**20**
	2						M			3	2							**30**	3										20											12		10	**20**
C165	1	42.9453926	75.8754122	10.0	16.4	5.0	O																																				
	2						S		60																																		**40**
C166	1	42.9445793	75.8752376	12.0	16.4	5.0	D		90																																		**10**
	2						S		70																					0.01													**30**
C167	1	42.9444195	75.8759834	3.0	3.9	1.2	S				14							**14**																						14		8	**50**
	2						M		10		5							**30**	1										20											15		9	**10**
C168	1	42.9432615	75.8759196	4.0	3.9	1.2	S			5	3							**50**	5									2												5		30	
	2						M			4	5							**25**	4										5											10		40	**7**

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C169	1	42.9429981	75.8750043	9.0	13.1	4.0	T																																				100
	2						S		50									0.01																									50
C170	1	42.9418304	75.8747106	17.0	14.4	4.4	S				0.01																																100
	2						S		45																																		55
C171	1	42.9414247	75.8757080	2.0	3.6	1.1	S			0.01								60												5										5		20	10
	2						S											70																								30	
C172	1	42.9401233	75.8753818	4.0	5.9	1.8	S				0.01							90																									10
	2						M				0.01							93																1				2				2	2
C173	1	42.9399862	75.8747074	17.0	12.5	3.8	T		50																					50													
	2						M		70																					20				10									
C174	1	42.9383104	75.8745134	14.0	19.7	6.0	T																																				100
	2						O																																				
C175	1	42.9378280	75.8748873	3.0	4.9	1.5	M		30									15												20							15			5		5	10
	2						M		30		5							15												30			10	4						3			3
C176	1	42.9365290	75.8745377	3.0	4.9	1.5	M											20												80													
	2						M		50		5							10												30				1						2			2
C177	1	42.9356912	75.8742594	3.0	6.2	1.9	S		40		1							5												40				0.01								0.01	14
	2						M		50		5							4									3			20				5						5		3	5
C178	1	42.9350748	75.8740183	4.0	6.6	2.0	D		50									3												41					3					0.01			3
	2						D		35		5							3												35				2				5				5	10
C179	1	42.9340912	75.8736567	3.0	5.9	1.8	M		42		3							4												42							2			2			5
	2						M		30		15							10												15				2	2			10		4		2	10
C180	1	42.9330340	75.8731804	4.0	6.6	2.0	S			0.01	15					15		8												30										2			30
	2						S				21					3										10				60					3								3
C181	1	42.9319435	75.8729477	2.0	3.6	1.1	S		2	60																				35										0.01			3
	2						S			55	2								2	12									11	12							3			3			
C182	1	42.9310224	75.8731385	3.0	4.9	1.5	M		3		4							80								5								3									5
	2						D		26		16							27								27								2						2			

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C183	1	42.9296870	75.8735046	3.0	4.3	1.3	D		10		5						0.01	**50**												20				0.01	0.01		5	0.01		5			**5**
	2						M		6		3							**50**								9				12										8			**12**
C184	1	42.9281775	75.8728412	2.0	4.3	1.3	S			3	20						10	**3**																						20		40	**4**
	2						M		15		4							**40**								15		1		15				2						8			
C185	1	42.9265321	75.8721240	2.0	3.6	1.1	S		10	0.01	10					5		**10**		5										10												10	**40**
	2						M		10	2	6							**10**											4	41					4			10		2		4	**7**
C186	1	42.9257155	75.8719777	3.0	3.3	1.0	M		30		20					5		**30**		0.01										2				1	5					5		1	**1**
	2						M		20		20					20		**20**		2											1			5	7					3		2	**0.01**
C187	1	42.9251137	75.8716250	2.0	3.3	1.0	M		6		40							**30**								15									4								**5**
	2						M		5		35					5		**15**		1						5								7	2					5		5	**15**
C188	1	42.9247432	75.8713105	1.0	1.6	0.5	M				3							**20**	3														3		20							1	**50**
	2						D		40		3			0.01		1		**25**						1					1					0.01	25	0.01				0.01		1	**3**
C189	1	42.9247633	75.8705188	1.0	4.3	1.3	D		50		20					2		**5**								3	**1**			2				10	1							1	**5**
	2						D		83		2							**5**																5									**5**
C190	1	42.9248473	75.8697053	1.0	3.0	0.9	M		5		70							**10**		0.01								0.01						1	2					5		2	**5**
	2						M		15	3	52							**15**								3								5	3							4	
C191	1	42.9249537	75.8691506	0.5	1.6	0.5	S		1	90	1	0.01						**1**	3										3		1												
	2						S		8	22	6							**4**	8	2								2	6						38								**4**
C192	1	42.9253350	75.8685134	0.5	2.0	0.6	S			99									0.01	1																							
	2						M			90									5																								**5**
C193	1	42.9254278	75.8691747	1.0	2.6	0.8	M		0.01	60									6	4									30														
	2						M			90									4	2									4														
C194	1	42.9253384	75.8702124	5.0	5.6	1.7	D		15		30							**30**									**0.01**							10									**15**
	2						D		8		15							**60**																10						1		1	**5**
C195	1	42.9251966	75.8708516	3.0	6.2	1.9	M		30		5							**20**												1				3	0.01					10		1	**30**
	2						D		20		7							**30**								20				20				2								1	**0.01**
C196	1	42.9255932	75.8712796	3.0	6.2	1.9	D		30		30							**35**												2				3									
	2						D		32		10							**15**								20				20				3									

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C197	1	42.9258669	75.8704864	4.0	9.5	2.9	D		60		3																					30	3			4									
	2						D		40		10							40																		4						6			
C198	1	42.9260443	75.8693318	7.0	9.5	2.9	M		60									30									5							5									
	2						M		24									38													38												
C199	1	42.9261590	75.8680249	1.0	3.0	0.9	S			80									15	5																							
	2						S			30										50							5			15													
C200	1	42.9266074	75.8672421	2.0	3.0	0.9	S			75	2							5	15	3																							
	2						M			13								40	13	4									8									10		8			4
C201	1	42.9268322	75.8681775	3.0	6.2	1.9	M		20		3							3												30				1			20			3			20
	2						M				1							50												30				6			3						10
C202	1	42.9267355	75.8690874	25.0	21.7	6.6	S		99																																		1
	2						S		98											2																							
C203	1	42.9265298	75.8704384	24.0	21.3	6.5	S		30																																		70
	2						S		98																																		2
C204	1	42.9263044	75.8713266	3.0	8.9	2.7	M		20									80																									
	2						M		2									98																									
C205	1	42.9269275	75.8666465	1.0	2.6	0.8	S			35								5	45	5									5											5			
	2						S			94									6																								
C206	1	42.9272609	75.8656704	2.0	3.3	1.0	S			98									0.01	1										1													
	2						M		1	4								30	9	3										45										5			3
C207	1	42.9272046	75.8647433	1.0	2.0	0.6	T		20	40	5							15	20																								
	2						T			75								13	7										3									2					
C208	1	42.9276074	75.8635928	1.0	2.3	0.7	S			90									5										5														
	2						S			80									10										10														
C209	1	42.9280257	75.8624262	2.0	2.3	0.7	S			90											5								5														
	2						S			80										2	13								3									2					
C210	1	42.9287360	75.8616444	1.0	2.3	0.7	S			88								2	3										3			0.01		2									2
	2						S			85									9	0.01									6														

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C211	1	42.9290362	75.8609012	2.0	4.3	1.3	D		35		35							**15**		1	5	**5**							1	1				1	1					0.01			
	2						M		12		66							**12**								2	**2**							2						2			**2**
C212	1	42.9298672	75.8616947	3.0	4.3	1.3	D		5	0.01	15							**50**	0.01	1										5		1		2				1		5		15	
	2						M			3	3	5						**60**		3									10			1						3				7	**5**
C213	1	42.9293169	75.8617527	2.0	4.3	1.3	D		20	1	20					20		**15**		1						3			1	5		1		1	1			1		5		5	
	2						D		40		25					13		**9**		0.01										8		0.01		2						2		1	
C214	1	42.9286751	75.8622374	4.0	4.3	1.3	M		5	0.01	60							**10**		0.01								0.01				0.01		5	5							10	**5**
	2						M		8		62							**2**																10						7		3	**8**
C215	1	42.9280719	75.8629649	3.0	3.6	1.1	M			85	0.01						0.01	**3**			2								10														
	2						M			34	1						3	**7**	3	7									35											10			
C216	1	42.9276304	75.8648623	3.0	4.3	1.3	D		9		1							**79**		0.01										5			5	1									
	2						D			20								**50**								5			15					5				5					
C217	1	42.9275007	75.8657391	3.0	4.3	1.3	M											**90**		0.01																				10		0.01	
	2						D											**95**																						5			
C218	1	42.9271591	75.8670809	3.0	4.9	1.5	M		1	7	3							**70**		1										7				3				6		1		1	
	2						D		10		3							**80**		1										4													**2**
C219	1	42.9272279	75.8679933	3.0	7.5	2.3	D		55		0.01							**5**												20				5				10		5			
	2						D		15									**50**												25										4			**6**
C220	1	42.9275721	75.8674094	3.0	6.9	2.1	D		48		0.01																			40	2			0.01						0.01			**10**
	2						M		35		10							**2**												35				3									**15**
C221	1	42.9280387	75.8664313	3.0	5.9	1.8	S					0.01																		80													**20**
	2						M					5						**5**								20				50								15					**5**
C222	1	42.9283663	75.8651808	4.0	5.6	1.7	S				15							**40**																40									**5**
	2						S				2							**45**								8				30								5					**10**
C223	1	42.9283248	75.8640916	4.0	5.9	1.8	M		5		10							**45**												15				5				10		10			
	2						D		3		10							**60**		2										23										2			
C224	1	42.9287048	75.8633765	5.0	5.9	1.8	M			10	40							**6**		4								0.01						20						10		4	**6**
	2						D			1	40							**20**		4												2		10						15			**8**

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C225	1	42.9291712	75.8627416	5.0	5.2	1.6	S			20	0.01							**10**																20									**50**
	2						S			3	30	2																				2		30	10							3	**20**
C226	1	42.9298394	75.8625205	5.0	5.9	1.8	M				40																			20				10	5							5	**20**
	2						M		5		20	0.01						**15**												35				10				5					**10**
C227	1	42.9300432	75.8634367	5.0	6.6	2.0	S				2																							3									**95**
	2						T					5																															**95**
C228	1	42.9293931	75.8634320	5.0	5.9	1.8	T		15		15																							10									**60**
	2						M				40							**8**									**2**							10						10		10	**20**
C229	1	42.9290467	75.8638968	4.0	5.9	1.8	M				20							**20**												25				5								15	**15**
	2						M		6		4	1						**10**												25		0.01		8				25		8		1	**12**
C230	1	42.9287962	75.8645679	3.0	6.2	1.9	M			38								**2**												60										0.01		0.01	
	2						D		5		5							**60**								5				15				1						2			**7**
C231	1	42.9288844	75.8653688	6.0	6.2	1.9	S		5																					70				5						5			**15**
	2						M					1														25				60								2		3			**9**
C232	1	42.9286809	75.8662364	12.0	16.4	5.0	D		100									**0.01**												0.01				0.01									
	2						S		85									**10**												1				3						1			
C233	1	42.9293157	75.8653118	12.0	16.4	5.0	D		65		7																			8				5				15		0.01			
	2						D		60		3																			4				2				30		1			
C234	1	42.9296609	75.8645246	3.0	6.6	2.0	M				25							**3**												20				6				15				1	**30**
	2						D		20		20							**15**								7				16				5			5	7		1			**4**
C235	1	42.9302548	75.8641371	3.0	7.2	2.2	M		37		20																			0.01				3				10					**30**
	2						M		15		10							**3**												25				10			10	7					**20**
C236	1	42.9307040	75.8634337	4.0	7.2	2.2	M		40		5							**20**												15													**20**
	2						M		50		10	2						**10**												1				2			1	8		1			**15**
C237	1	42.9307769	75.8623902	4.0	6.6	2.0	M		35		5							**35**												15				5				3					**2**
	2						D		20		20							**20**		4										9				3			4	5		2		2	**11**
C238	1	42.9308294	75.8616143	3.0	4.3	1.3	M			93	5																			2													
	2						D		5		8	2				30		**20**		0.01									10					5			8			5		2	**5**

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C239	1	42.9310206	75.8620352	2.0	5.9	1.8	M		20		20					2		10								30								8						8			2
	2						D		5		27					7		15								40				3										3			
C240	1	42.9311872	75.8629885	5.0	6.6	2.0	M		1		4							30												50													15
	2						D		2		8							15								25				20				3				17					10
C241	1	42.9313612	75.8637149	10.0	18.0	5.5	D		97									1																				1		1			
	2						D		100																																		
C242	1	42.9319507	75.8633538	15.0	13.1	4.0	D		65									1																1				33					
	2						S		100																																		
C243	1	42.9319545	75.8624648	3.0	6.6	2.0	M		25		20							25												20				3				2		2			3
	2						D		35		7	1						23		1										7				1			7	7		1			10
C244	1	42.9319412	75.8616640	2.0	3.9	1.2	M		2	10	10					1		10	10	20								5		10				5	2					5		5	5
	2						S		3	20	7	1						3		3									46											7			10
C245	1	42.9325091	75.8615757	2.0	3.9	1.2	S			90								2																								2	6
	2						M			83	2							2	7	2										1							2						1
C246	1	42.9326620	75.8624227	4.0	4.9	1.5	M		10		10					10		45		4										15										2		4	
	2						M		5		15							30												40				5								5	
C247	1	42.9326586	75.8630601	25.0	26.2	8.0	T																																				100
	2						S																																				100
C248	1	42.9333868	75.8624961	7.0	11.5	3.5	M		30		15							15										0.01		30				2			5			3			
	2						M		40		10															5				10				5			20	0.01		10			
C249	1	42.9333855	75.8617886	3.0	4.9	1.5	M		3	30											60							2															5
	2						M			2	3							3	2	43								0.01						3						2		40	2
C250	1	42.9339217	75.8616015	2.0	3.3	1.0	S			20								5		15																						40	20
	2						S		1	70		5						5	4	4											3									3			5
C251	1	42.9340037	75.8623891	10.0	10.8	3.3	D		85									2												10				2			1						
	2						M		99	1																																	
C252	1	42.9346773	75.8623507	12.0	11.5	3.5	M		60		5							5												25				3			2						
	2						M		50		5							3												35				5						2			

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C253	1	42.9348463	75.8615364	2.0	1.6	0.5	S			2											38																						60
	2						S		3	45	1							0.01	3										3														45
C254	1	42.9354530	75.8619048	3.0	3.3	1.0	S											10		10																				10		17	53
	2						S			15										5																				10			70
C255	1	42.9362220	75.8621920	4.0	3.6	1.1	S		3		5						3	5																			4			10			70
	2						S				5							1		2									15					2						25			50
C256	1	42.9369650	75.8619328	4.0	3.6	1.1	S		4									4		2																							90
	2						S		3	10										2																				40			45
C257	1	42.9376351	75.8617442	4.0	3.6	1.1	M		2	15	10						5		10	15									15											3		5	20
	2						M		3	60	3									3	20							3												0.01		5	3
C258	1	42.9385100	75.8620200	3.0	3.6	1.1	S			10	10																			25										25		20	10
	2						S			5	10									4						0.01				25				5						1		0.01	50
C259	1	42.9393098	75.8623483	2.0	3.3	1.0	S			10								20										20												20			30
	2						S		10		5									2										20										1		2	60
C260	1	42.9400512	75.8628134	0.0	8.9	2.7	S				25							5		5																				25		15	25
	2						S				8																			60				5						5		2	20
C261	1	42.9407720	75.8631556	3.0	3.3	1.0	S			35	20										10																			35			
	2						S			40	3									2																	1			14			40
C262	1	42.9416008	75.8635156	5.0	4.9	1.5	S			50									2																					30			18
	2						S		3	19	0.01							5	8	8									2					2						10		3	40
C263	1	42.9422533	75.8635878	5.0	4.9	1.5	S			2	6					6				6										40													40
	2						S		1		15	3						12		3						11								15						10			30
C264	1	42.9430995	75.8640906	7.0	9.2	2.8	S		15																					50							30						5
	2						S		3									10		2										60							20			0.01			5
C265	1	42.9429013	75.8631802	3.0	5.6	1.7	S		5	0.01	10							10												30				5						5			35
	2						S		4		4	1				2		15								35				10				2	5					2			20
C266	1	42.9426494	75.8625223	3.0	5.6	1.7	S			30	4	1						10	11	10									3						15					1			15
	2						M		5	20	10							5	10	10				10						10					5					5			10

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C267	1	42.9430003	75.8619454	2.0	4.9	1.5	S		2	95								**1**			2													0.01									
	2						S			95								**2**			2									1													
C268	1	42.9433829	75.8627976	6.0	9.8	3.0	M		15		8							**3**								6				40				6						7			**15**
	2						M		4		5							**15**												70				2			4						
C269	1	42.9435759	75.8636029	7.0	10.8	3.3	D		50									**0.01**												40	5							5		0.01			
	2						D		60									**18**												2								20					
C270	1	42.9439633	75.8630170	4.0	9.2	2.8	M		50									**15**												20				0.01				15		0.01			
	2						M		75		3							**11**												11													
C271	1	42.9438943	75.8620015	2.0	5.2	1.6	M		3		15					1		**30**												30				10						1			**10**
	2						D		1		10							**70**												4		1		1						6			**7**
C272	1	42.9444150	75.8622345	4.0	4.9	1.5	M		16	5								**30**		3										30				5						3		3	**5**
	2						M		9		4							**35**		2										35				9						4			**2**
C273	1	42.9445962	75.8629703	9.0	11.8	3.6	D		80									**1**		1										15				2						1			
	2						M		95									**5**																									
C274	1	42.9451239	75.8629946	14.0	13.8	4.2	M		80		0.01																			10	10												
	2						M		45																					45	10												
C275	1	42.9456313	75.8626944	3.0	5.2	1.6	T		15		15							**7**		7														8						0.01		40	**8**
	2						S											**10**		15										5				45						5		5	**15**
C276	1	42.9461594	75.8629479	2.0	5.9	1.8	S											**10**		20														25								20	**25**
	2						S				20							**25**		15																				5		25	**10**
C277	1	42.9467601	75.8633492	2.0	5.6	1.7	S											**60**																								40	
	2						S				15							**35**		7																				8		35	
C278	1	42.9474827	75.8640020	5.0	8.2	2.5	M		30											30										30			0.01	0.01						0.01			**10**
	2						S		4									**1**		80										8				7									
C279	1	42.9482380	75.8643577	3.0	6.6	2.0	S				20									20																				5		55	
	2						S				40							**30**																						25		5	
C280	1	42.9490292	75.8648116	3.0	8.2	2.5	S		3	20	20								10	10														10						3		4	**20**
	2						T			3																														1			**96**

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C281	1	42.9500374	75.8644200	2.0	4.3	1.3	S		5	85										10																				0.01		0.01	
	2						S			96																														2			**2**
C282	1	42.9503459	75.8651772	10.0	11.2	3.4	S		85										1											0.01				5				4		5			
	2						S		94											2																		4					
C283	1	42.9511007	75.8653115	11.0	13.1	4.0	M		80											0.01										15										5			
	2						D		92																					7												1	
C284	1	42.9514316	75.8640595	2.0	4.3	1.3	M		20	3	3					5				20														2				5		40		2	
	2						M		10	20	20					10				20															2			6		4		8	
C285	1	42.9521846	75.8644271	2.0	2.3	0.7	T												20																					70		10	
	2						S														60																			40			
C286	1	42.9519156	75.8653291	7.0	7.5	2.3	S		10	0.01		10				0.01																								10			**70**
	2						M		0.01		10	20																		60										0.01			**10**
C287	1	42.9526089	75.8660617	11.0	13.8	4.2	T		95	5																																	
	2						S			5																				40										15			**40**
C288	1	42.9530069	75.8655404	2.0	3.6	1.1	S		0.01																															70		25	**5**
	2						T				5																													45			**50**
C289	1	42.9534451	75.8659849	3.0	5.6	1.7	S			0.01								**5**															75							5		10	**5**
	2						T			20																						10								50		10	**10**
C290	1	42.9543054	75.8668946	3.0	6.2	1.9	S			39										20	1																			20			**20**
	2						S			20	6	12								20	10																			12			**20**
C291	1	42.9552720	75.8673729	3.0	7.2	2.2	S			35										5								5			50									5			
	2						T			7	15									15																				60			**3**
C292	1	42.9561640	75.8674418	3.0	4.9	1.5	S			70	8				0.01					8	3							0.01		8												0.01	**3**
	2						S			60	3									4									30											1		0.01	**2**
C293	1	42.9569735	75.8674162	2.0	5.6	1.7	S				5																			45								45		0.01			**5**
	2						S			11	11	0.01								8										35												0.01	**35**
C294	1	42.9578700	75.8675725	3.0	4.9	1.5	S		0.01	50	10									0.01	10							0.01		3								10		7			**10**
	2						S			7	12	2						**2**			12										40									3		10	**12**

Table A. (continued) Results of a two rake-toss sampling of Cazenovia Lake on August 26, 27, 31 and September 2, 4, 8, 2009 at 304 (SPs).

Sample Point (SP)	Rake toss #	Latitude	Longitude	Depth (ft) 2008 - Allied	Depth (ft) 2009 - Racine J	Depth (m) 2009 - Racine J	Rake Abundance	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C295	1	42.9576552	75.8686008	9.0	8.5	2.6	S			20										0.01										55										25			
	2						T													90												10											
C296	1	42.9578858	75.8695389	11.0	11.2	3.4	S											50																20						20			10
	2						S		4									68		3																				23			2
C297	1	42.9586886	75.8693850	5.0	6.9	2.1	S			15		0.01								2								3						30						0.01			50
	2						S		1	1	20	3								3								0.01		2										0.01			70
C298	1	42.9591254	75.8700775	2.0	4.9	1.5	T		100																																		
	2						T			50																														50			
C299	1	42.9596503	75.8706272	3.0	6.9	2.1	S		5	33									5	5								2		2								2		2			44
	2						S			8	3	2								2																							85
C300	1	42.9604199	75.8713875	3.0	6.9	2.1	S		30	20										5																							45
	2						S		4	20		0.01								0.01									15					1						0.01			60
C301	1	42.9612187	75.8718822	3.0	8.2	2.5	S		68											1														1						0.01			30
	2						M		100																																		
C302	1	42.9618373	75.8722143	4.0	7.5	2.3	S																					15		80													5
	2						S			50	20																	10															20
C303	1	42.9484900	75.8664800		9.8	3.0	M											100																									
	2						M											100																									
C304	1	42.9483600	75.8665100		8.2	2.5	M											100																									
	2						M											100																									

Table B. Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C1	42.9776800	75.8869600	D	4.0	S	D		S			S	S	S		S						S	S							S		S	S	T			S		S	S	S
C2	42.9775198	75.8872126	D	4.0		D		S			T	S	S		S						T		S	T		S	S	T	S		S	S	T	S		S	S	T	S	S
C3	42.9776614	75.8876990	M	3.0		M		S				T			T					S			S				T		T		S	T	T			S	T	T	T	S
C4	42.9776742	75.8883369	D	4.0		D	M	S				S	S							S			T	S					T		M			S			S	T	S	S
C5	42.3977542	75.8893554	D	4.0		D	S	S												T			S				S	S			S	S		S		S			S	S
C6	42.9772273	75.8898137	D	4.0		D	S	M	T			S	S		S			S	S				S	T			S	S	S		S	S				S			S	S
C7	42.9770512	75.8892474	M	2.5		S							T					T						T	T						T	T								S
C8	42.9770271	75.8884454	M	3.0		M		S									T							S							T					S				S
C9	42.9769913	75.8872600	D	4.0		D		T				T												S			S		S		S	T								S
C10	42.9766792	75.8870589	D	4.0		M	S	S				T							S				D	T				S		S	S						S			M
C11	42.9765257	75.8878652	M	3.0		M		T																					S		S									S
C12	42.9765540	75.8888094	M	2.5		S																									S									S
C13	42.9765976	75.8901296	D	4.0		D		S									S	S					M				S		S		S	S		S			S			S
C14	42.9759387	75.8904761	M	3.0		S	S	S	T				S				T		S	T			S	T		T			S		S	S		T			T			S
C15	42.9758036	75.8895223	S	2.0		S																						S												S
C16	42.9758839	75.8883072	S	2.0		S		T																T							T									S
C17	42.9759918	75.8871470	M	2.5		S																	S								T									S
C18	42.9752870	75.8866842	M	3.0		S		S															M	T							S									S
C19	42.9750457	75.8874802	M	3.0		M		T															S								T									S
C20	42.9750334	75.8882365	S	2.0		S																							T		T									S
C21	42.9749651	75.8893911	M	3.0		M													T																					S
C22	42.9748581	75.8904700	M	3.0		S	S	T	T						T				S	S			S	T					T		T									S
C23	42.9740548	75.8901428	D	4.0		T	S	T											D																					
C24	42.9739341	75.8893533	M	2.5		S													S																					S
C25	42.9740021	75.8878303	D	4.0		D																						S			S				S					
C26	42.9741368	75.8868632	D	4.0		D		S				T												S			S				S									S
C27	42.9743156	75.8861365	D	4.0		M		S															M	T			S				S								S	M
C28	42.9748021	75.8838658	M	2.5			S	T	S			T					T	T					S			S	T				T	T					S		T	S
C29	42.9750385	75.8833280	M	3.0		S	S	S	T				T				S		S				T				S	S			T	T					S			S
C30	42.9752415	75.8825262	M	2.5		S	T	S	T			T	T		T		T						S								T						S			S

Table B. (continued) Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C31	42.9754028	75.8816964	S	2.0		S	T	T	T			T					T									T	S				T									S
C32	42.9752738	75.8809542	M	3.0		M	S	S									T									T	S				S			S			S			S
C33	42.9750154	75.8813339	D	4.0		S	D	S															S				S				T			S			T			S
C34	42.9748007	75.8823264	M	2.5		S	S	T	T			T											S				S				T					T	T			S
C35	42.9745808	75.8831918	M	2.5		T	S	T	T			T					T		T				S				T				T						T			S
C36	42.9744812	75.8839023	M	3.0		S	S	S	S			T					S						S						T					S			S			T
C37	42.9747170	75.8804605	D	3.5			M									T							S				T				T									
C38	42.9745272	75.8812385	S	2.0		S		T															T				S	T		T	T			T	T		T			S
C39	42.9742522	75.8821871	M	2.5		S		T	T			T						T					S	T							T									S
C40	42.9739459	75.8833035	D	3.5		S		S				T											S				M				S									S
C41	42.9737157	75.8843690	M	2.5		S		S	T			T					T						S								T									S
C42	42.9735318	75.8851375	S	2.0		S																	S																	S
C43	42.9734209	75.8861874	D	4.0		D		S																			M				S									S
C44	42.9732563	75.8871586	M	2.5		S		T																							T									
C45	42.9730965	75.8879853	M	3.0		M																	T	T			S				S									T
C46	42.9727927	75.8888289	M	3.0		S	S	S				S									T			T					S		T	S		T					T	S
C47	42.9722803	75.8881861	D	3.5		S	M	S				T	S					S	S	S			S	T							S	T		T					T	S
C48	42.9723151	75.8873411	S	2.0		S		T															T					T			T									S
C49	42.9723966	75.8862069	S	2.0		S		T																T					T		T									
C50	42.9727738	75.8849941	D	3.5		M		T																							T				S					S
C51	42.9730606	75.8842895	M	3.0		M		S	T															T			S				T			S	T					S
C52	42.9732875	75.8833700	M	3.0		M		T									T														T			S		T				S
C53	42.9735879	75.8826265	M	3.0		M		T																							S				S					T
C54	42.9737212	75.8815971	M	3.0		M		S				T												T																T
C55	42.9739382	75.8807551	M	3.0		M		T				T					T														S									S
C56	42.9743169	75.8799511	M	2.5		S	S																T				S										T		T	S
C57	42.9736845	75.8794947	D	3.5		S	M	S				T											S								S								T	S
C58	42.9734881	75.8801008	M	3.0		S		S															M				S				S						S			S
C59	42.9730344	75.8811633	S	1.5		T		T	T																															T
C60	42.9725813	75.8825812	D	4.0		D		S																							S									

Table B. (continued) Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C61	42.9724011	75.8835660	M	3.0		M		T																T							S									S
C62	42.9721624	75.8844711	S	2.0		S		T				T												T					T		T			T						S
C63	42.9719054	75.8852373	M	3.0		M		T				T											S	S				S			T									S
C64	42.9717794	75.8861146	M	2.5		S													T																					S
C65	42.9716586	75.8868663	D	3.5		M	S	S	T			S								T				S					T	T	T	S								T
C66	42.9715393	75.8857554	M	3.0		S	M	S																	S					T	T	T		S			S		T	S
C67	42.9715242	75.8848803	M	3.0		S	M	S						T		T	S									T	S		T	S				S		T	S			
C68	42.9716138	75.8840747	D	3.5		M	S	S				T					T						S				S				S	T					T			S
C69	42.9719020	75.8833566	D	3.5		M		S	T			T												T					T		S									S
C70	42.9721660	75.8825192	M	2.5		S		T	S															T							S								T	S
C71	42.9722997	75.8813674	T	1.0		T			T								T														T									T
C72	42.9730035	75.8799040	M	2.5		S		S															S				S				T				T		T			S
C73	42.9732028	75.8792463	D	4.0		S	D	S																		S	S				S									
C74	42.9722799	75.8787055	D	3.5		S	M	S									T						S				S	S									S			S
C75	42.9719080	75.8793918	D	3.5		S		S				T											S	T							T									M
C76	42.9716923	75.8804835	T	0.5		T																																		
C77	42.9714348	75.8818995	M	3.0		M		T	S																				T											T
C78	42.9712043	75.8832194	M	3.0		M		S				T											S					S			T									S
C79	42.9705937	75.8828932	S	2.0		S	S	T	T			T			T								S				S										T		T	S
C80	42.9705660	75.8820202	D	4.0		D		S																S					S		S			S						S
C81	42.9707304	75.8809406	T	0.5		T																																		T
C82	42.9712400	75.8795300	D	4.0		D		T																					T		S			T						S
C83	42.9710137	75.8783806	M	3.0		S	S	T				T	S														S				S				T		S			S
C84	42.9702305	75.8792937	M	2.5		S	T	S				T					T												T		S						S		S	S
C85	42.9699584	75.8802035	M	2.5		S		T																			S				T									S
C86	42.9699251	75.8811233	M	3.0		M																		T							S			T						T
C87	42.9698364	75.8819048	D	3.5		M		S				T					T							T							S	T		S						M
C88	42.9697445	75.8823727	M	3.0		S	S	S				T					S										S		T		T			S			S		T	S
C89	42.9690662	75.8821374	S	2.0		T	T	S	T			T					T						S					T	T		T	T		T			S		T	S
C90	42.9690518	75.8813570	S	2.0		S		T	T			T																			T			T		T			T	S

Table B. (continued) Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C91	42.9690485	75.8802482	D	3.5		M		T															S								T									S
C92	42.9690193	75.8790655	M	3.0		S	S	S	S			T			S		T	T		T			S	T			S				T						T		S	S
C93	42.9690882	75.8782033	M	2.5		T	S	T				T				S	S																				T		T	S
C94	42.9687384	75.8771237	S	2.0			S									T	T														T									
C95	42.9685280	75.8780253	M	3.0		S	S	S								T	T										M		T								S		S	S
C96	42.9682861	75.8790745	M	2.5		S	S		T			T		T		T	T									S	S				T			T					T	S
C97	42.9680104	75.8800484	M	3.0		M		T						T			T							S		T	S				T									S
C98	42.9679045	75.8807838	M	2.5		S		S				T				T											S									S				S
C99	42.9677924	75.8812760	M	2.5		S		T				T																			T									S
C100	42.9672178	75.8808920	S	2.0		S		T									T																				S		T	S
C101	42.9673340	75.8799290	M	3.0		S		S				T					T															T					S		T	M
C102	42.9673922	75.8787366	M	3.0		M		S	S								T										S				T									S
C103	42.9675851	75.8774752	D	3.5		M		T				T															S	S							S					S
C104	42.9677963	75.8766177	M	3.0		T	M									T								T			S		T			T					S		T	
C105	42.9671260	75.8763860	S	2.0		S	S	S									S								T	T					T	T					T		T	S
C106	42.9669547	75.8776315	M	3.0		T	S	T	M			T					T									S					T				T		S			S
C107	42.9666414	75.8786547	M	3.0		M		S				T					T										S	T			T			T	S					S
C108	42.9665132	75.8797000	M	2.5		S						T					T										S				T						S			S
C109	42.9662921	75.8806225	S	2.0		S	T	S									T							S							T	T							T	S
C110	42.9656107	75.8804896	S	2.0		S	S	T	T			T					T										T		T		T	T					T		T	S
C111	42.9656859	75.8793787	M	2.5		S											T							T			S								S		S			S
C112	42.9659134	75.8780624	D	3.5		M						T																			S									T
C113	42.9661259	75.8768841	S	2.0		T	S	T	S								T							T			S				T			T	T		T		S	
C114	42.9663321	75.8760186	S	2.0		S	T	T	T			T					S						T		T		T								T		T			S
C115	42.9657158	75.8754783	S	1.5			T								T	T	T								T						T				T		T			T
C116	42.9655924	75.8764797	M	3.0		S	T		T								S										S			S	T			S			T			S
C117	42.9651539	75.8778159	M	2.5		S																					T		T		T								T	S
C118	42.9648903	75.8788614	M	3.0		S		T	T																		S	T												S
C119	42.9646217	75.8798919	M	3.0		S	M	T	T							T							S					S									T		T	T
C120	42.9638469	75.8796666	M	3.0		S	S	S								S	S	T		S				T	T	S			T		T			T	T		S		S	T

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Table B. (continued) Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C121	42.9639872	75.8786539	M	3.0		M		T	T																		S													S
C122	42.9640562	75.8771422	S	2.0		S																		T																
C123	42.9644194	75.8755740	S	2.0		S	T										T										S		T						S		T			T
C124	42.9646037	75.8746784	T	1.0											T		T																				T		T	
C125	42.9639509	75.8739917	S	1.5		T	T		T							T	T									T											T			T
C126	42.9634950	75.8750705	M	2.5		S																									T									S
C127	42.9630000	75.8769000	M	2.5		S																																		S
C128	42.9626120	75.8782140	M	3.0		M		S																			S							S	S					S
C129	42.9625696	75.8789486	M	3.0			S	T															S			S	S										S			
C130	42.9617547	75.8787332	M	2.5			S		T							T		T									S										T			
C131	42.9619178	75.8777670	M	2.5		S		T	T								T							T			S				T									S
C132	42.9623696	75.8761069	O	0.0																																				
C133	42.9629026	75.8743124	M	2.5		S	T										T										S	S									T			S
C134	42.9631780	75.8734217	M	3.0		M	S		T								S																				T			S
C135	42.9624910	75.8726693	T	1.0			T																														T		T	T
C136	42.9620143	75.8734742	S	2.0		S																																		S
C137	42.9615194	75.8756677	T	1.0																																				T
C138	42.9613350	75.8771279	D	3.5		M									S												M								S					S
C139	42.9611392	75.8783091	D	3.5			M									T											T										S			T
C140	42.9604037	75.8781300	M	3.0		S	M	S								T	T			S						T						T					T		T	
C141	42.9604313	75.8772190	M	3.0		S		S	T																		S			S						S	S		T	S
C142	42.9595200	75.8764300	M	3.0		S									S		T										S							S						S
C143	42.9592033	75.8775669	M	3.0			M											T									S				T						T			
C144	42.9577861	75.8771686	M	2.5		T	S	S							T												S										S			S
C145	42.9580153	75.8757095	S	2.0		S											T																							S
C146	42.9570793	75.8755557	D	4.0		D																									S						S			S
C147	42.9564934	75.8765373	M	3.0		S	S	S							S	T	S									S	S					T			T		S		S	S
C148	42.9555737	75.8758508	M	2.5				S							S								S			T	S				T			T	S		S		S	S
C149	42.9553325	75.8751604	S	2.0		S		T							T		T										S													S
C150	42.9543763	75.8752152	S	2.0			T																														T			S

Table B. (continued) Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C151	42.9540917	75.8759959	S	2.0											S			S																			S		S	T
C152	42.9530739	75.8763460	M	2.5		T	T	S							S		T	T									T		T								T		S	S
C153	42.9528001	75.8755924	S	2.0		S											T																				T			S
C154	42.9517314	75.8756775	M	2.5																																				S
C155	42.9515621	75.8770018	S	2.0				T							S																						S		S	
C156	42.9501003	75.8771800	M	3.0		S	T	S	T						M		S														S	S					S		S	S
C157	42.9499453	75.8758167	S	2.0		S																					T				T									S
C158	42.9488451	75.8758542	S	2.0		S																																		S
C159	42.9485702	75.8773244	M	3.0		S		S		T			T		S												S				S	T		T			S		S	S
C160	42.9477748	75.8774691	M	3.0		S	M						S	T	T												S				T	T		T			S		S	
C161	42.9475917	75.8758985	D	3.5		M									S																									S
C162	42.9466809	75.8757081	S	2.0		S																													S					T
C163	42.9463853	75.8767040	M	2.5		T	S	T	T						S	T	S						S			S	S										S		S	
C164	42.9455270	75.8762902	M	2.5			T	S	T						S	T										S	S										S		S	S
C165	42.9453926	75.8754122	T	1.0		T																																		T
C166	42.9445793	75.8752376	M	3.0		M																					T													S
C167	42.9444195	75.8759834	M	2.5		S		S							S	T										S											S		S	S
C168	42.9432615	75.8759196	M	2.5			S	T							S	S									T	T											S		S	T
C169	42.9429981	75.8750043	S	1.5		T									T																									T
C170	42.9418304	75.8747106	S	2.0		S		T																																S
C171	42.9414247	75.8757080	S	2.0			T								S												T										T		S	T
C172	42.9401233	75.8753818	M	2.5				T							S																T				T				T	S
C173	42.9399862	75.8747074	S	2.0		S																					S				T									
C174	42.9383104	75.8745134	T	0.5																																				T
C175	42.9378280	75.8748873	M	3.0		S		S							S												S			S	S			S			S		S	S
C176	42.9365290	75.8745377	M	3.0		S		S							S												M				T						T			T
C177	42.9356912	75.8742594	M	2.5		S		T							S									T			S				T						T		T	S
C178	42.9350748	75.8740183	D	4.0		D		S							S												M				S	S			S		T		S	S
C179	42.9340912	75.8736567	M	3.0		S		S							S												S				T	T		T	S		S		T	S
C180	42.9330340	75.8731804	S	2.0			T	S					S		T								T				S					T					T			S

Table B. (continued) Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C181	42.9319435	75.8729477	S	2.0		T	S	T								T	T									T	S							T			T			T
C182	42.9310224	75.8731385	D	3.5		S		S							M								S								S						T			S
C183	42.9296870	75.8735046	D	3.5		S		S						T	M								S				S				T	T		S	T		S			S
C184	42.9281775	75.8728412	M	2.5		S	T	S						S	S								S		T		S				T						S		S	T
C185	42.9265321	75.8721240	M	2.5		S	T	S					T		S		T									T	S					T			S		T		S	S
C186	42.9257155	75.8719777	M	3.0		S		S					S		S		T										T	T			S	S					S		T	T
C187	42.9251137	75.8716250	M	3.0		S		S					S		S		T						S								S	S					S		S	S
C188	42.9247432	75.8713105	D	3.5		S		S			T		T		S	S					T					T				S	T	S	T				T		T	M
C189	42.9247633	75.8705188	D	4.0		D		M					S		S								S	S			S				S	S							S	S
C190	42.9248473	75.8697053	M	3.0		S	T	M							S		T						T		T						S	S					S		S	S
C191	42.9249537	75.8691506	S	2.0		T	S	T	T						T	T	T								T	T		T				S								T
C192	42.9253350	75.8685134	M	2.5			S									T	T																							T
C193	42.9254278	75.8691747	M	3.0		T	M									S	S									S														
C194	42.9253384	75.8702124	D	4.0		M		M							D									T							S						S		S	S
C195	42.9251966	75.8708516	D	3.5		S		S							S								S				S				S	T					S		T	S
C196	42.9255932	75.8712796	D	4.0		M		M							M								S				M				S									
C197	42.9258669	75.8704864	D	4.0		D		S							M												M	S			S						S			
C198	42.9260443	75.8693318	M	3.0		M									S									S				S			S									
C199	42.9261590	75.8680249	S	2.0			S									T	S							T			T													
C200	42.9266074	75.8672421	M	2.5			S	T							S	S	T									T									S		T			T
C201	42.9268322	75.8681775	M	3.0		S		S							S												S				S			S			T			S
C202	42.9267355	75.8690874	S	2.0		S											T																							T
C203	42.9265298	75.8704384	S	2.0		S																																		S
C204	42.9263044	75.8713266	M	3.0		S									M																									
C205	42.9269275	75.8666465	S	2.0			S								T	S	T									T											T			
C206	42.9272609	75.8656704	M	2.5		T	S								S	S	T										S										T			T
C207	42.9272046	75.8647433	T	1.0		T	T	T							T	T										T									T					
C208	42.9276074	75.8635928	S	2.0			S									T										T														
C209	42.9280257	75.8624262	S	2.0			S										T	S								T									T					
C210	42.9287360	75.8616444	S	2.0			S								T	T	T									T			T		T									T

Table B. (continued) Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C211	42.9290362	75.8609012	D	3.5		S		M							S		T	S	S				T	T		T	T				S	T					S			T
C212	42.9298672	75.8616947	D	3.5		S	S	S	S						M	T	S									S	S		T		T				S		S		S	S
C213	42.9293169	75.8617527	D	4.0		M	S	M					M		M		S						S			S	S		S		S	S			S		S		S	
C214	42.9286751	75.8622374	M	3.0		S	T	M							S		T								T				T		S	S					S		S	S
C215	42.9280719	75.8629649	M	3.0			M	T						T	S	T	S	T								S											S			
C216	42.9276304	75.8648623	D	4.0		S	S	S							D		T						S			S	S			S	S				S					
C217	42.9275007	75.8657391	D	3.5											M		T																				S		T	
C218	42.9271591	75.8670809	D	3.5		S	S	S							M		T										S				S				S		T		T	T
C219	42.9272279	75.8679933	D	4.0		M		T							M												M				S				S		S			S
C220	42.9275721	75.8674094	D	3.5		M		S							T												M	T			S						T			S
C221	42.9280387	75.8664313	M	2.5					T						T								S				S								S					S
C222	42.9283663	75.8651808	S	2.0				S							S								T				S				S				T					T
C223	42.9283248	75.8640916	D	3.5		S		S							M		T										S				S				S		S			
C224	42.9287048	75.8633765	D	3.5			S	M							S		S								T				T		S						S		S	S
C225	42.9291712	75.8627416	S	2.0			S	S	T						T														T		S	T							T	S
C226	42.9298394	75.8625205	M	3.0		S		S	T						S												S				S	S			S				S	S
C227	42.9300432	75.8634367	S	1.5				T	T																						T									T
C228	42.9293931	75.8634320	S	2.0		T		S							T									T							S						T		T	S
C229	42.9290467	75.8638968	M	3.0		S		S	T						S												S		T		S				S		S		S	S
C230	42.9287962	75.8645679	D	3.5		S	S	S							M								S				M				T						S		T	S
C231	42.9288844	75.8653688	M	2.5		T			T														S				S				T				T		T			S
C232	42.9286809	75.8662364	M	3.0		M									S												T				T						T			
C233	42.9293157	75.8653118	D	4.0		D		S																			S				S				M		S			
C234	42.9296609	75.8645246	D	3.5		S		S							S								S				S				S			S	S		T		T	S
C235	42.9302548	75.8641371	M	3.0		S		S							T												S				S			S	S					S
C236	42.9307040	75.8634337	M	3.0		M		S	T						S												S				T			T	S		T			S
C237	42.9307769	75.8623902	D	3.5		M		S							M		S										S				S			S	S		T		T	S
C238	42.9308294	75.8616143	D	3.5		S	M	S	T				S		S		T									S	T				S			S			S		T	S
C239	42.9310206	75.8620352	D	3.5		S		S					S		S								M				S				S						S			T
C240	42.9311872	75.8629885	D	3.5		S		S							S								S				M				S				S					S

Table B. (continued) Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C241	42.9313612	75.8637149	D	4.0		D									S																				S		S			
C242	42.9319507	75.8633538	M	3.0		M									T																T				S					
C243	42.9319545	75.8624648	D	3.5		M		S	T						S		T										S				S			S	S		S			S
C244	42.9319412	75.8616640	M	2.5		T	S	S	T				T		S	S	S								T	S	S				T	T					S		T	S
C245	42.9325091	75.8615757	M	2.5			S	T							T	T	T										T							T					T	T
C246	42.9326620	75.8624227	M	3.0		S		S					S		S		S										S				S						T		S	
C247	42.9326586	75.8630601	S	1.5																																				T
C248	42.9333868	75.8624961	M	3.0		S		S							S								S		T		S				S			S	T		S			
C249	42.9333855	75.8617886	M	3.0		T	S	T							T	T	S	S							T						T						T		S	S
C250	42.9339217	75.8616015	S	2.0		T	S		T						T	T	S											T									T		S	S
C251	42.9340037	75.8623891	D	3.5		M	T								T												S				T			T						
C252	42.9346773	75.8623507	M	3.0		M		S							S												S				S			T			T			
C253	42.9348463	75.8615364	S	2.0		T	S	T							T	T		S								T														S
C254	42.9354530	75.8619048	S	2.0			T								T		T																				S		S	S
C255	42.9362220	75.8621920	S	2.0		T		T						T	T		T									T					T			T			S			S
C256	42.9369650	75.8619328	S	2.0		T	T								T		T																				S			S
C257	42.9376351	75.8617442	M	3.0		S	S	S						S		S	S	S							T	S											T		S	S
C258	42.9385100	75.8620200	S	2.0			T	S									T						T				S				T						S		S	S
C259	42.9393098	75.8623483	S	2.0		T	T	T							S		T								S		S										S		T	S
C260	42.9400512	75.8628134	S	2.0				S							T		T										S				T						S		S	S
C261	42.9407720	75.8631556	S	2.0			S	S									T	T																T			S			S
C262	42.9416008	75.8635156	S	2.0		T	S	T							T	T	T									T					T						S		T	S
C263	42.9422533	75.8635878	S	2.0		T	T	S	T				T		T		T						T				S				T						T			S
C264	42.9430995	75.8640906	S	2.0		S									T		T										S							S			T			T
C265	42.9429013	75.8631802	S	2.0		T	T	T	T				T		S								S				S				T	T					T			S
C266	42.9426494	75.8625223	M	2.5		T	S	S	T						S	S	S				S					T	S					S					T			S
C267	42.9430003	75.8619454	S	2.0		T	S								T			T									T				T									
C268	42.9433829	75.8627976	M	3.0		S		S							S								S				M				S			S			S			S
C269	42.9435759	75.8636029	D	4.0		D									S												M	S							M		T			
C270	42.9439633	75.8630170	M	3.0		M		T							S												S				T				S		T			

Table B. (continued) Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C271	42.9438943	75.8620015	D	3.5		S		S					T		M												S		T		S						S			S
C272	42.9444150	75.8622345	M	3.0		S	S	S							S		S										S				S						S		T	S
C273	42.9445962	75.8629703	D	3.5		M									S		T										S				T						T			
C274	42.9451239	75.8629946	M	3.0		M		T																			S	S												
C275	42.9456313	75.8626944	S	1.5		T		T							T		T										T				T						T		T	T
C276	42.9461594	75.8629479	S	2.0				S							S		S														S						T		S	S
C277	42.9467601	75.8633492	S	2.0				T							S		T																				T		S	
C278	42.9474827	75.8640020	M	2.5		S									T		S										S			T	T						T			S
C279	42.9482380	75.8643577	S	2.0				S							S		S																				S		S	
C280	42.9490292	75.8648116	S	1.5		T	T	T								T	T														T						T		T	T
C281	42.9500374	75.8644200	S	2.0		T	S										T																				T		T	T
C282	42.9503459	75.8651772	S	2.0		S										T	T										T				T				T		T			
C283	42.9511007	75.8653115	D	3.5		M											T										S										S		T	
C284	42.9514316	75.8640595	M	3.0		S	S	S					S				S														T	T			S		S		S	
C285	42.9521846	75.8644271	S	1.5												T		T																			T		T	
C286	42.9519156	75.8653291	M	2.5		S	T	S	S				T														S										S			S
C287	42.9526089	75.8660617	S	1.5		T	T																				T										T			T
C288	42.9530069	75.8655404	S	1.5		T		T																													T		T	T
C289	42.9534451	75.8659849	S	1.5			T								T														T	T							T		T	T
C290	42.9543054	75.8668946	S	2.0			S	T	T								S	T																			S			S
C291	42.9552720	75.8673729	S	1.5			T	T									T								T			T									T			T
C292	42.9561640	75.8674418	S	2.0			S	T				T					T	T							T	S	T										T		T	T
C293	42.9569735	75.8674162	S	2.0			T	S	T								T										S								S		T		T	S
C294	42.9578700	75.8675725	S	2.0		T	S	S	T						T		T	S							T		T	S							T		T		T	S
C295	42.9576552	75.8686008	S	1.5			T										T										T		T								T			
C296	42.9578858	75.8695389	S	2.0		T									S		T														S						S			T
C297	42.9586886	75.8693850	S	2.0		T	S	S	T								T								T		T				S						T			S
C298	42.9591254	75.8700775	T	1.0		T	T																														T			
C299	42.9596503	75.8706272	S	2.0		T	S	T	T							T	T								T		T								T		T			S
C300	42.9604199	75.8713875	S	2.0		S	S		T								T									T					T						T			S

Table B. (continued) Conversion of August 26-September 8, 2009 rake-toss from Table A to abundance categories for each species at each (SP).

Sample Point (SP)	Latitude	Longitude	Rake Abundance	Abundance #	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	Myriophyllum spicatum	Najas flexilis	Najas guadalupensis	Nitella flexilis	Nitellopsis obtusa	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	Potamogeton crispus	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	benthic filamentous algae
C301	42.9612187	75.8718822	M	2.5		S											T														T						T			S
C302	42.9618373	75.8722143	S	2.0			S	S																	S		S													S
C303	42.9484900	75.8664800	M	3.0											M																									
C304	42.9483600	75.8665100	M	3.0											M																									

Table C. Aquatic plant species' presence in Cazenovia Lake from two rake tosses on August 26, 27, 31 and September 2, 4, 8, 2009. Entries of "1" indicate species identified at that sample point (SP). Allied Biological chose the locations for (SPs) in October 2008.

Sample Point (SP)	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	**Myriophyllum spicatum**	Najas flexilis	Najas guadalupensis	Nitella flexilis	**Nitellopsis obtusa**	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	**Potamogeton crispus**	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	**benthic filamentous algae**	Total	**Non-native Species**	Native Species	**floating filamentous algae**
C1	1	1		1			1	1	1		**1**						1	1							1		1	1	1			1		1	1	**1**	17	**1**	16	**1**
C2		1		1			1	1	1		**1**						1		1	**1**		1	1	1	1		1	1	1	1		1	1	1	1	**1**	22	**2**	20	**1**
C3		1		1				1			**1**					1			1				1		1		1	1	1			1	1	1	1	**1**	16	**1**	15	
C4		1	1	1				1	1							1			1	**1**					1		1			1			1	1	1	**1**	15	**1**	14	
C5		1	1	1												1			1				1	1			1	1		1		1			1	**1**	13	**0**	13	**1**
C6		1	1	1	1			1	1		**1**			1	**1**				1	**1**			1	1	1		1	1				1			1	**1**	19	**3**	16	
C7		1							1					1						**1**	1						1	1								**1**	8	**1**	7	
C8		1		1									1							**1**							1					1				**1**	7	**1**	6	
C9		1		1				1												**1**			1		1		1	1								**1**	9	**1**	8	
C10		1	1	1				1							**1**				1	**1**				1		1	1						1			**1**	12	**2**	10	
C11		1		1																					1		1									**1**	5	**0**	5	
C12		1																									1									**1**	3	**0**	3	
C13		1		1									1	1					1				1		1		1	1		1			1			**1**	12	**0**	12	
C14		1	1	1	1				1				1		**1**	1			1	**1**		1			1		1	1		1			1			**1**	17	**2**	15	
C15		1																						1												**1**	3	**0**	3	
C16		1		1																**1**							1									**1**	5	**1**	4	
C17		1																	1								1									**1**	4	**0**	4	
C18		1		1															1	**1**							1									**1**	6	**1**	5	
C19		1		1															1								1									**1**	5	**0**	5	
C20		1																							1		1									**1**	4	**0**	4	
C21		1													**1**																					**1**	3	**1**	2	
C22		1	1	1	1						**1**				**1**	1			1	**1**					1		1									**1**	12	**3**	9	
C23		1	1	1											**1**																						4	**1**	3	
C24		1													**1**																					**1**	3	**1**	2	
C25		1																						1			1				1						4	**0**	4	
C26		1		1				1												**1**			1				1									**1**	7	**1**	6	
C27		1		1															1	**1**			1				1								1	**1**	8	**1**	7	
C28			1	1	1			1					1	1					1			1	1				1	1					1		1	**1**	14	**0**	14	
C29		1	1	1	1				1				1		**1**				1				1	1			1	1					1			**1**	14	**1**	13	
C30		1	1	1	1			1	1		**1**		1						1								1						1			**1**	12	**1**	11	

Table C. (continued) Aquatic plant species' presence in Cazenovia Lake from two rake tosses on August 26, 27, 31 and September 2, 4, 8, 2009. Entries of "1" indicate species identified at that sample point (SP). Allied Biological chose the locations for (SPs) in October 2008.

Sample Point (SP)	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	**Myriophyllum spicatum**	Najas flexilis	Najas guadalupensis	Nitella flexilis	**Nitellopsis obtusa**	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	**Potamogeton crispus**	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	**benthic filamentous algae**	Total	**Non-native Species**	Native Species	**floating filamentous algae**
C31		1	1	1	1			1					1									1	1				1									**1**	10	**0**	10	
C32		1	1	1									1									1	1				1			1			1			**1**	10	**0**	10	
C33		1	1	1															1				1				1			1			1			**1**	9	**0**	9	
C34		1	1	1	1			1											1				1				1					1	1			**1**	11	**0**	11	
C35		1	1	1	1			1					1		**1**				1				1				1						1			**1**	12	**1**	11	
C36		1	1	1	1			1					1						1						1					1			1			**1**	11	**0**	11	
C37			1									1							1				1				1										5	**0**	5	
C38		1		1															1				1	1		1	1			1	1		1			**1**	11	**0**	11	
C39		1		1	1			1						1					1	**1**							1									**1**	9	**1**	8	
C40		1		1				1											1				1				1									**1**	7	**0**	7	
C41		1		1	1			1					1						1								1									**1**	8	**0**	8	
C42		1																	1																	**1**	3	**0**	3	
C43		1		1																			1				1									**1**	5	**0**	5	
C44		1		1																							1										3	**0**	3	
C45		1																	1	**1**			1				1									**1**	6	**1**	5	
C46		1	1	1				1									1			**1**					1		1	1		1					1	**1**	12	**1**	11	
C47		1	1	1				1	1					1	**1**	1			1	**1**							1	1		1					1	**1**	15	**2**	13	
C48		1		1															1					1			1									**1**	6	**0**	6	
C49		1		1																**1**					1		1										5	**1**	4	
C50		1		1																							1				1					**1**	5	**0**	5	
C51		1		1	1															**1**			1				1			1	1					**1**	9	**1**	8	
C52		1		1									1														1			1		1				**1**	7	**0**	7	
C53		1		1																							1				1					**1**	5	**0**	5	
C54		1		1				1												**1**																**1**	5	**1**	4	
C55		1		1				1					1														1									**1**	6	**0**	6	
C56		1	1																1				1										1		1	**1**	7	**0**	7	
C57		1	1	1				1											1								1								1	**1**	8	**0**	8	
C58		1		1															1				1				1						1			**1**	7	**0**	7	
C59		1		1	1																															**1**	4	**0**	4	
C60		1		1																							1										3	**0**	3	

Table C. (continued) Aquatic plant species' presence in Cazenovia Lake from two rake tosses on August 26, 27, 31 and September 2, 4, 8, 2009. Entries of "1" indicate species identified at that sample point (SP). Allied Biological chose the locations for (SPs) in October 2008.

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C61		1		1																**1**							1									**1**	5	**1**	4	
C62		1		1				1												**1**					1		1			1						**1**	8	**1**	7	
C63		1		1				1											1	**1**				1			1									**1**	8	**1**	7	
C64		1													**1**																					**1**	3	**1**	2	
C65		1	1	1	1			1								1				**1**					1	1	1	1								**1**	12	**1**	11	
C66		1	1	1																	1					1	1	1		1			1		1	**1**	11	**0**	11	
C67		1	1	1						1		1	1									1	1		1	1				1		1	1				13	**0**	13	
C68		1	1	1				1					1						1				1				1	1					1			**1**	11	**0**	11	
C69		1		1	1			1												**1**					1		1									**1**	8	**1**	7	
C70		1		1	1															**1**							1								1	**1**	7	**1**	6	
C71		1			1								1														1									**1**	5	**0**	5	
C72		1		1															1				1				1				1		1			**1**	8	**0**	8	
C73		1	1	1																		1	1				1										6	**0**	6	
C74		1	1	1									1						1				1	1									1			**1**	9	**0**	9	
C75		1		1				1											1	**1**							1									**1**	7	**1**	6	
C76		1																																			1	**0**	1	
C77		1		1	1																				1											**1**	5	**0**	5	
C78		1		1				1											1					1			1									**1**	7	**0**	7	
C79		1	1	1	1			1			**1**								1				1										1		1	**1**	11	**1**	10	
C80		1		1																**1**					1		1			1						**1**	7	**1**	6	
C81		1																																		**1**	2	**0**	2	
C82		1		1																					1		1			1						**1**	6	**0**	6	
C83		1	1	1				1	1														1				1				1		1			**1**	10	**0**	10	
C84		1	1	1				1					1												1		1						1		1	**1**	10	**0**	10	
C85		1		1																			1				1									**1**	5	**0**	5	
C86		1																		**1**							1			1						**1**	5	**1**	4	
C87		1		1				1					1							**1**							1	1		1						**1**	9	**1**	8	
C88		1	1	1				1					1										1		1		1			1			1		1	**1**	12	**0**	12	
C89		1	1	1	1			1					1						1					1	1		1	1		1			1		1	**1**	15	**0**	15	
C90		1		1	1			1																			1			1		1			1	**1**	9	**0**	9	

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C91		1		1															1								1									**1**	5	**0**	5	
C92		1	1	1	1			1			**1**		1	1		1			1	**1**			1				1						1		1	**1**	16	**2**	14	
C93		1	1	1				1				1	1																				1		1	**1**	9	**0**	9	
C94			1									1	1														1										4	**0**	4	
C95		1	1	1								1	1										1		1								1		1	**1**	10	**0**	10	
C96		1	1		1			1		1		1	1									1	1				1			1					1	**1**	13	**0**	13	
C97		1		1						1			1							**1**		1	1				1									**1**	9	**1**	8	
C98		1		1				1				1											1									1				**1**	7	**0**	7	
C99		1		1				1																			1									**1**	5	**0**	5	
C100		1		1									1																				1		1	**1**	6	**0**	6	
C101		1		1				1					1															1					1		1	**1**	8	**0**	8	
C102		1		1	1								1										1				1									**1**	7	**0**	7	
C103		1		1				1															1	1							1					**1**	7	**0**	7	
C104		1	1									1								**1**			1		1			1					1		1		9	**1**	8	
C105		1	1	1									1								1	1					1	1					1		1	**1**	11	**0**	11	
C106		1	1	1	1			1					1									1					1				1		1			**1**	11	**0**	11	
C107		1		1				1					1										1	1			1			1	1					**1**	10	**0**	10	
C108		1						1					1										1				1						1			**1**	7	**0**	7	
C109		1	1	1									1							**1**							1	1							1	**1**	9	**1**	8	
C110		1	1	1	1			1					1										1		1		1	1					1		1	**1**	13	**0**	13	
C111		1											1							**1**			1								1		1			**1**	7	**1**	6	
C112		1						1																			1									**1**	4	**0**	4	
C113		1	1	1	1								1							**1**			1				1			1	1		1		1		12	**1**	11	
C114		1	1	1	1			1					1						1		1		1								1		1			**1**	12	**0**	12	
C115			1								**1**	1	1								1						1				1		1			**1**	9	**1**	8	
C116		1	1		1								1										1			1	1			1			1			**1**	10	**0**	10	
C117		1																					1		1		1								1	**1**	6	**0**	6	
C118		1		1	1																		1	1												**1**	6	**0**	6	
C119		1	1	1	1							1							1					1									1		1	**1**	10	**0**	10	
C120		1	1	1								1	1	1		1				**1**	1	1			1		1			1	1		1		1	**1**	17	**1**	16	

Table C. (continued) Aquatic plant species' presence in Cazenovia Lake from two rake tosses on August 26, 27, 31 and September 2, 4, 8, 2009. Entries of "1" indicate species identified at that sample point (SP). Allied Biological chose the locations for (SPs) in October 2008.

Sample Point (SP)	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	**Myriophyllum spicatum**	Najas flexilis	Najas guadalupensis	Nitella flexilis	**Nitellopsis obtusa**	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	**Potamogeton crispus**	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polythiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	**benthic filamentous algae**	Total	**Non-native Species**	Native Species	**floating filamentous algae**
C121		1		1	1																		1													**1**	5	**0**	5	
C122		1																		**1**																	2	**1**	1	
C123		1	1										1										1		1						1		1			**1**	8	**0**	8	
C124											**1**		1																				1		1		4	**1**	3	
C125		1	1		1							1	1									1											1			**1**	8	**0**	8	
C126		1																									1									**1**	3	**0**	3	
C127		1																																		**1**	2	**0**	2	
C128		1		1																			1							1	1					**1**	6	**0**	6	
C129			1	1															1			1	1										1				6	**0**	6	
C130			1		1							1		1									1										1				6	**0**	6	
C131		1		1	1								1							**1**			1				1									**1**	8	**1**	7	
C132																																					0	**0**	0	
C133		1	1										1										1	1									1			**1**	7	**0**	7	
C134		1	1		1								1																				1			**1**	6	**0**	6	
C135			1																														1		1	**1**	4	**0**	4	
C136		1																																		**1**	2	**0**	2	
C137																																				**1**	1	**0**	1	
C138		1									**1**												1								1					**1**	5	**1**	4	
C139			1									1											1										1			**1**	5	**0**	5	
C140		1	1	1								1	1			1						1						1					1		1		10	**0**	10	
C141		1		1	1																		1			1						1	1		1	**1**	9	**0**	9	
C142		1									**1**		1										1							1						**1**	6	**1**	5	
C143			1											1									1				1						1				5	**0**	5	
C144		1	1	1							**1**												1										1			**1**	7	**1**	6	
C145		1											1																							**1**	3	**0**	3	
C146		1																									1						1			**1**	4	**0**	4	
C147		1	1	1							**1**	1	1									1	1					1			1		1		1	**1**	13	**1**	12	
C148				1							**1**								1			1	1				1			1	1		1		1	**1**	11	**1**	10	
C149		1		1							**1**		1										1													**1**	6	**1**	5	
C150			1																														1			**1**	3	**0**	3	

Table C. (continued) Aquatic plant species' presence in Cazenovia Lake from two rake tosses on August 26, 27, 31 and September 2, 4, 8, 2009. Entries of "1" indicate species identified at that sample point (SP). Allied Biological chose the locations for (SPs) in October 2008.

Sample Point (SP)	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	**Myriophyllum spicatum**	Najas flexilis	Najas guadalupensis	Nitella flexilis	**Nitellopsis obtusa**	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	**Potamogeton crispus**	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	**benthic filamentous algae**	Total	**Non-native Species**	Native Species	**floating filamentous algae**
C151											**1**			1																			1		1	**1**	5	**1**	4	
C152		1	1	1							**1**		1	1									1		1								1		1	**1**	11	**1**	10	
C153		1											1																				1			**1**	4	**0**	4	
C154																																				**1**	1	**0**	1	
C155				1							**1**																						1		1		4	**1**	3	
C156		1	1	1	1						**1**		1														1	1					1		1	**1**	11	**1**	10	
C157		1																					1				1									**1**	4	**0**	4	
C158		1																																		**1**	2	**0**	2	
C159		1		1		1			1		**1**												1				1	1		1			1		1	**1**	12	**1**	11	
C160		1	1						1	1	**1**												1				1	1		1			1		1		11	**1**	10	
C161		1									**1**																									**1**	3	**1**	2	
C162		1																													1					**1**	3	**0**	3	
C163		1	1	1	1						**1**	1	1						1			1	1										1		1		12	**1**	11	
C164			1	1	1						**1**	1										1	1										1		1	**1**	10	**1**	9	
C165		1																																		**1**	2	**0**	2	
C166		1																					1													**1**	3	**0**	3	
C167		1		1							**1**	1										1											1		1	**1**	8	**1**	7	
C168			1	1							**1**	1									1	1											1		1	**1**	9	**1**	8	
C169		1									**1**																									**1**	3	**1**	2	
C170		1		1																																**1**	3	**0**	3	
C171			1								**1**												1										1		1	**1**	6	**1**	5	
C172				1							**1**																1				1				1	**1**	6	**1**	5	
C173		1																					1				1										3	**0**	3	
C174																																				**1**	1	**0**	1	
C175		1		1							**1**												1			1	1			1			1		1	**1**	10	**1**	9	
C176		1		1							**1**												1				1						1			**1**	7	**1**	6	
C177		1		1							**1**									**1**			1				1						1		1	**1**	9	**2**	7	
C178		1		1							**1**												1				1	1			1		1		1	**1**	10	**1**	9	
C179		1		1							**1**												1				1	1		1	1		1		1	**1**	11	**1**	10	
C180			1	1					1		**1**								1				1					1					1			**1**	9	**1**	8	

Table C. (continued) Aquatic plant species' presence in Cazenovia Lake from two rake tosses on August 26, 27, 31 and September 2, 4, 8, 2009. Entries of "1" indicate species identified at that sample point (SP). Allied Biological chose the locations for (SPs) in October 2008.

Sample Point (SP)	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	**Myriophyllum spicatum**	Najas flexilis	Najas guadalupensis	Nitella flexilis	**Nitellopsis obtusa**	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	**Potamogeton crispus**	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	**benthic filamentous algae**	Total	**Non-native Species**	Native Species	**floating filamentous algae**
C181		1	1	1								1	1									1	1							1			1			**1**	10	**0**	10	
C182		1		1							**1**								1								1						1			**1**	7	**1**	6	
C183		1		1						1	**1**								1				1				1	1		1	1		1			**1**	12	**1**	11	
C184		1	1	1						1	**1**								1		1		1				1						1		1	**1**	12	**1**	11	
C185		1	1	1					1		**1**		1									1	1					1			1		1		1	**1**	13	**1**	12	
C186		1		1					1		**1**		1										1	1			1	1					1		1	**1**	12	**1**	11	
C187		1		1					1		**1**		1						1								1	1					1		1	**1**	11	**1**	10	
C188		1		1			1		1		**1**	1					1					1				1	1	1	1				1		1	**1**	15	**1**	14	**1**
C189		1		1					1		**1**								1	**1**			1				1	1							1	**1**	11	**2**	9	
C190		1	1	1							**1**		1						1		1						1	1					1		1	**1**	12	**1**	11	
C191		1	1	1	1						**1**	1	1								1	1		1				1								**1**	12	**1**	11	
C192			1									1	1																							**1**	4	**0**	4	
C193		1	1									1	1									1															5	**0**	5	
C194		1		1							**1**									**1**							1						1		1	**1**	8	**2**	6	
C195		1		1							**1**								1				1				1	1					1		1	**1**	10	**1**	9	
C196		1		1							**1**								1				1				1										6	**1**	5	
C197		1		1							**1**												1	1			1						1				7	**1**	6	
C198		1									**1**									**1**				1			1										5	**2**	3	
C199			1									1	1							**1**			1														5	**1**	4	
C200			1	1							**1**	1	1									1									1		1			**1**	9	**1**	8	
C201		1		1							**1**												1				1			1			1			**1**	8	**1**	7	
C202		1											1																							**1**	3	**0**	3	
C203		1																																		**1**	2	**0**	2	
C204		1									**1**																										2	**1**	1	
C205			1								**1**	1	1									1											1				6	**1**	5	
C206		1	1								**1**	1	1										1										1			**1**	8	**1**	7	
C207		1	1	1							**1**	1										1									1						7	**1**	6	
C208			1									1										1															3	**0**	3	
C209			1										1	1								1									1						5	**0**	5	
C210			1								**1**	1	1									1			1		1									**1**	8	**1**	7	

Table C. (continued) Aquatic plant species' presence in Cazenovia Lake from two rake tosses on August 26, 27, 31 and September 2, 4, 8, 2009. Entries of "1" indicate species identified at that sample point (SP). Allied Biological chose the locations for (SPs) in October 2008.

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C211		1		1							**1**		1	1	**1**				1	**1**		1	1				1	1					1			**1**	14	**3**	11	**1**
C212		1	1	1	1						**1**	1	1									1	1		1		1				1		1		1	**1**	15	**1**	14	
C213		1	1	1					1		**1**		1						1			1	1		1		1	1			1		1		1		15	**1**	14	
C214		1	1	1							**1**		1								1				1		1	1					1		1	**1**	12	**1**	11	
C215			1	1						1	**1**	1	1	1								1											1				9	**1**	8	
C216		1	1	1							**1**		1						1			1	1			1	1				1						11	**1**	10	
C217											**1**		1																				1		1		4	**1**	3	
C218		1	1	1							**1**		1										1				1				1		1		1	**1**	11	**1**	10	
C219		1		1							**1**												1				1				1		1			**1**	8	**1**	7	
C220		1		1							**1**												1	1			1						1			**1**	8	**1**	7	
C221					1						**1**								1				1								1					**1**	6	**1**	5	
C222				1							**1**								1				1				1				1					**1**	7	**1**	6	
C223		1		1							**1**		1										1				1				1		1				8	**1**	7	
C224			1	1							**1**		1								1				1		1						1		1	**1**	10	**1**	9	
C225			1	1	1						**1**														1		1	1							1	**1**	9	**1**	8	
C226		1		1	1						**1**												1				1	1			1				1	**1**	10	**1**	9	
C227				1	1																						1									**1**	4	**0**	4	
C228		1		1							**1**									**1**							1						1		1	**1**	8	**2**	6	
C229		1		1	1						**1**												1		1		1				1		1		1	**1**	11	**1**	10	
C230		1	1	1							**1**								1				1				1						1		1	**1**	10	**1**	9	
C231		1			1														1				1				1				1		1			**1**	8	**0**	8	
C232		1									**1**												1				1						1				5	**1**	4	
C233		1		1																			1				1				1		1				6	**0**	6	
C234		1		1							**1**								1				1				1			1	1		1		1	**1**	11	**1**	10	
C235		1		1							**1**												1				1			1	1					**1**	8	**1**	7	
C236		1		1	1						**1**												1				1			1	1		1			**1**	10	**1**	9	
C237		1		1							**1**		1										1				1			1	1		1		1	**1**	11	**1**	10	
C238		1	1	1	1				1		**1**		1									1	1				1			1			1		1	**1**	14	**1**	13	
C239		1		1					1		**1**								1				1				1						1			**1**	9	**1**	8	
C240		1		1							**1**								1				1				1				1					**1**	8	**1**	7	

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C241		1									**1**																				1		1				4	**1**	3	
C242		1									**1**																1				1						4	**1**	3	
C243		1		1	1						**1**		1										1				1			1	1		1			**1**	11	**1**	10	
C244		1	1	1	1				1		**1**	1	1								1	1	1				1	1					1		1	**1**	16	**1**	15	
C245			1	1							**1**	1	1										1							1					1	**1**	9	**1**	8	
C246		1		1					1		**1**		1										1				1						1		1		9	**1**	8	
C247																																				**1**	1	**0**	1	
C248		1		1							**1**								1		1		1				1			1	1		1				10	**1**	9	
C249		1	1	1							**1**	1	1	1							1						1						1		1	**1**	12	**1**	11	
C250		1	1		1						**1**	1	1											1									1		1	**1**	10	**1**	9	
C251		1	1								**1**												1				1			1							6	**1**	5	
C252		1		1							**1**												1				1			1			1				7	**1**	6	
C253		1	1	1							**1**	1		1								1														**1**	8	**1**	7	
C254			1								**1**		1																				1		1	**1**	6	**1**	5	
C255		1		1						1	**1**		1									1					1			1			1			**1**	10	**1**	9	
C256		1	1								**1**		1																				1			**1**	6	**1**	5	
C257		1	1	1						1		1	1	1							1	1											1		1	**1**	12	**0**	12	
C258			1	1									1						1				1				1						1		1	**1**	9	**0**	9	
C259		1	1	1							**1**		1								1		1										1		1	**1**	10	**1**	9	
C260				1							**1**		1										1				1						1		1	**1**	8	**1**	7	
C261			1	1									1	1																1			1			**1**	7	**0**	7	
C262		1	1	1							**1**	1	1									1					1						1		1	**1**	11	**1**	10	
C263		1	1	1	1				1		**1**		1						1				1				1						1			**1**	12	**1**	11	
C264		1									**1**		1										1							1			1			**1**	7	**1**	6	
C265		1	1	1	1				1		**1**								1				1				1	1					1			**1**	12	**1**	11	
C266		1	1	1	1						**1**	1	1				1					1	1					1					1			**1**	13	**1**	12	
C267		1	1								**1**			1									1				1										6	**1**	5	
C268		1		1							**1**								1				1				1			1			1			**1**	9	**1**	8	
C269		1									**1**												1	1							1		1				6	**1**	5	
C270		1		1							**1**												1				1				1		1				7	**1**	6	

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Sample Point (SP)	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	**Myriophyllum spicatum**	Najas flexilis	Najas guadalupensis	Nitella flexilis	**Nitellopsis obtusa**	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	**Potamogeton crispus**	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	**benthic filamentous algae**	Total	**Non-native Species**	Native Species	**floating filamentous algae**
C271		1		1					1		**1**												1		1		1						1			**1**	9	**1**	8	
C272		1	1	1							**1**		1										1				1						1		1	**1**	10	**1**	9	
C273		1									**1**		1										1				1						1				6	**1**	5	
C274		1		1																			1	1													4	**0**	4	
C275		1		1							**1**		1										1				1						1		1	**1**	9	**1**	8	
C276				1							**1**		1														1						1		1	**1**	7	**1**	6	
C277				1							**1**		1																				1		1		5	**1**	4	
C278		1									**1**		1										1			1	1						1			**1**	8	**1**	7	
C279				1							**1**		1																				1		1		5	**1**	4	
C280		1	1	1								1	1														1						1		1	**1**	9	**0**	9	
C281		1	1										1																				1		1	**1**	6	**0**	6	
C282		1										1	1										1				1				1		1				7	**0**	7	
C283		1											1										1										1		1		5	**0**	5	
C284		1	1	1					1				1														1	1			1		1		1		10	**0**	10	**1**
C285												1		1																			1		1		4	**0**	4	**1**
C286		1	1	1	1				1														1										1			**1**	8	**0**	8	
C287		1	1																				1										1			**1**	5	**0**	5	
C288		1		1																													1		1	**1**	5	**0**	5	
C289			1								**1**														1	1							1		1	**1**	7	**1**	6	
C290			1	1	1								1	1																			1			**1**	7	**0**	7	
C291			1	1									1								1			1									1			**1**	7	**0**	7	
C292			1	1				1					1	1							1	1	1										1		1	**1**	11	**0**	11	
C293			1	1	1								1										1								1		1		1	**1**	9	**0**	9	**1**
C294		1	1	1	1						**1**		1	1							1		1	1							1		1		1	**1**	14	**1**	13	**1**
C295			1										1										1		1								1				5	**0**	5	
C296		1									**1**		1														1						1			**1**	6	**1**	5	
C297		1	1	1	1								1								1		1				1						1			**1**	10	**0**	10	
C298		1	1																														1				3	**0**	3	
C299		1	1	1	1							1	1								1		1								1		1			**1**	11	**0**	11	
C300		1	1		1								1									1					1						1			**1**	8	**0**	8	

Table C. (continued) Aquatic plant species' presence in Cazenovia Lake from two rake tosses on August 26, 27, 31 and September 2, 4, 8, 2009. Entries of "1" indicate species identified at that sample point (SP). Allied Biological chose the locations for (SPs) in October 2008.

Sample Point (SP)	Callitriche hermaphroditica	Ceratophyllum demersum	Chara vulgaris	Elodea sp.	Fontinalis sp.	Hypericum ellipticum	Lemna minor	Lemna trisulca	Megalodonta beckii	Myriophyllum sibiricum	**Myriophyllum spicatum**	Najas flexilis	Najas guadalupensis	Nitella flexilis	**Nitellopsis obtusa**	Nuphar variegata	Nymphaea odorata	Polygonum amphibium	Potamogeton amplifolius	**Potamogeton crispus**	Potamogeton foliosus	Potamogeton gramineus	Potamogeton illinoensis	Potamogeton praelongus	Potamogeton pusillus	Potamogeton richardsonii	Potamogeton zosteriformis	Ranunculus trichophyllus	Spirodela polyrhiza	Stuckenia pectinata	Stuckenia vaginata	Utricularia vulgaris	Vallisneria americana	Wolffia columbiana	Zosterella dubia	**benthic filamentous algae**	Total	**Non-native Species**	Native Species	**floating filamentous algae**
C301		1											1														1						1			**1**	5	**0**	5	
C302			1	1																	1		1													**1**	5	**0**	5	
C303*											**1**																										1	**1**	0	
C304*											**1**																										1	**1**	0	
Total	1	248	129	203	64	1	3	50	28	9	**122**	46	125	24	**12**	10	5	1	71	**46**	23	46	150	28	41	12	181	49	4	52	57	12	171	4	104	**243**	2375	**180**	2195	9
*	1	248	129	203	64	1	3	50	28	9	**124**	46	125	24	**12**	10	5	1	71	**46**	23	46	150	28	41	12	181	49	4	52	57	12	171	4	104	**243**	2377	**182**	2195	**9**
% RJ	0.3	82	43	67	21	0.3	1	17	9	3	40	15	41	8	4	3	2	0.3	24	15	8	15	50	9	14	4	60	16	1	17	19	4	57	1	34	**80**				**3**
% AB	0.3	62	33	43	1.0		3	2	10		93	20				4	11		9	5	3	4	31	6		2	32	9	0.3	12		1	53	2	38	**22**				**3**

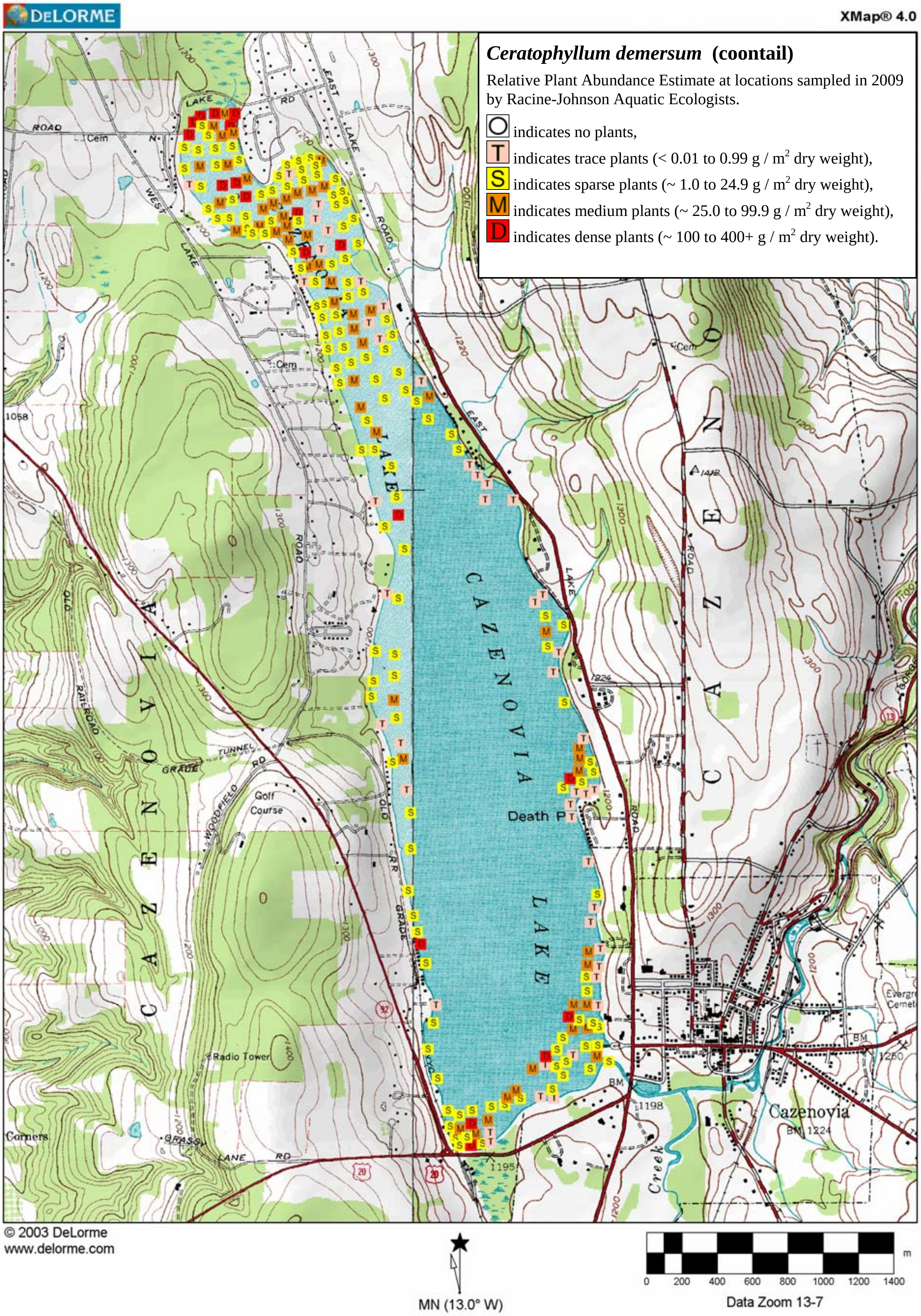

Figure 5. *Ceratophyllum demersum* (coontail) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

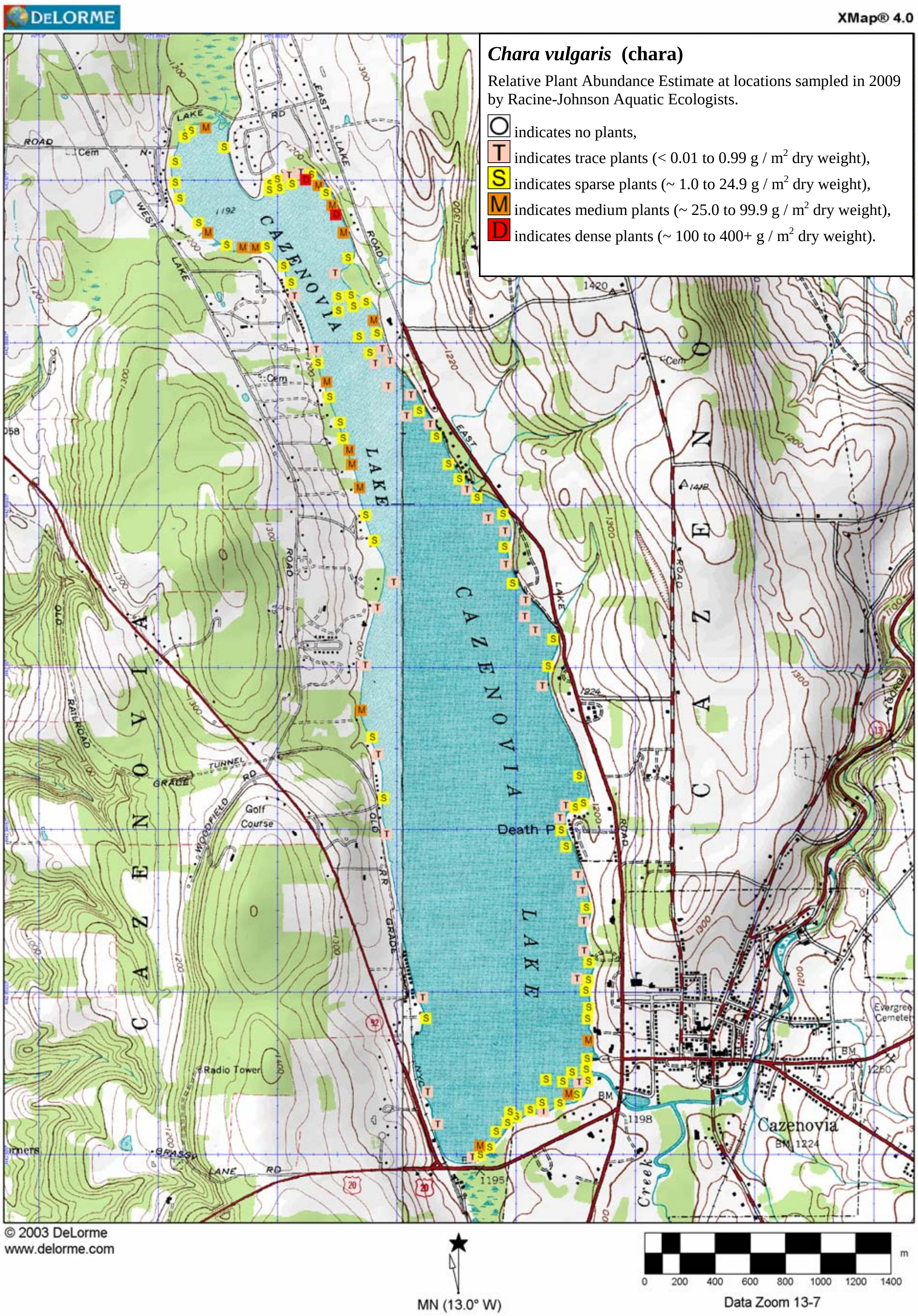

Figure 6. *Chara vulgaris* (chara) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

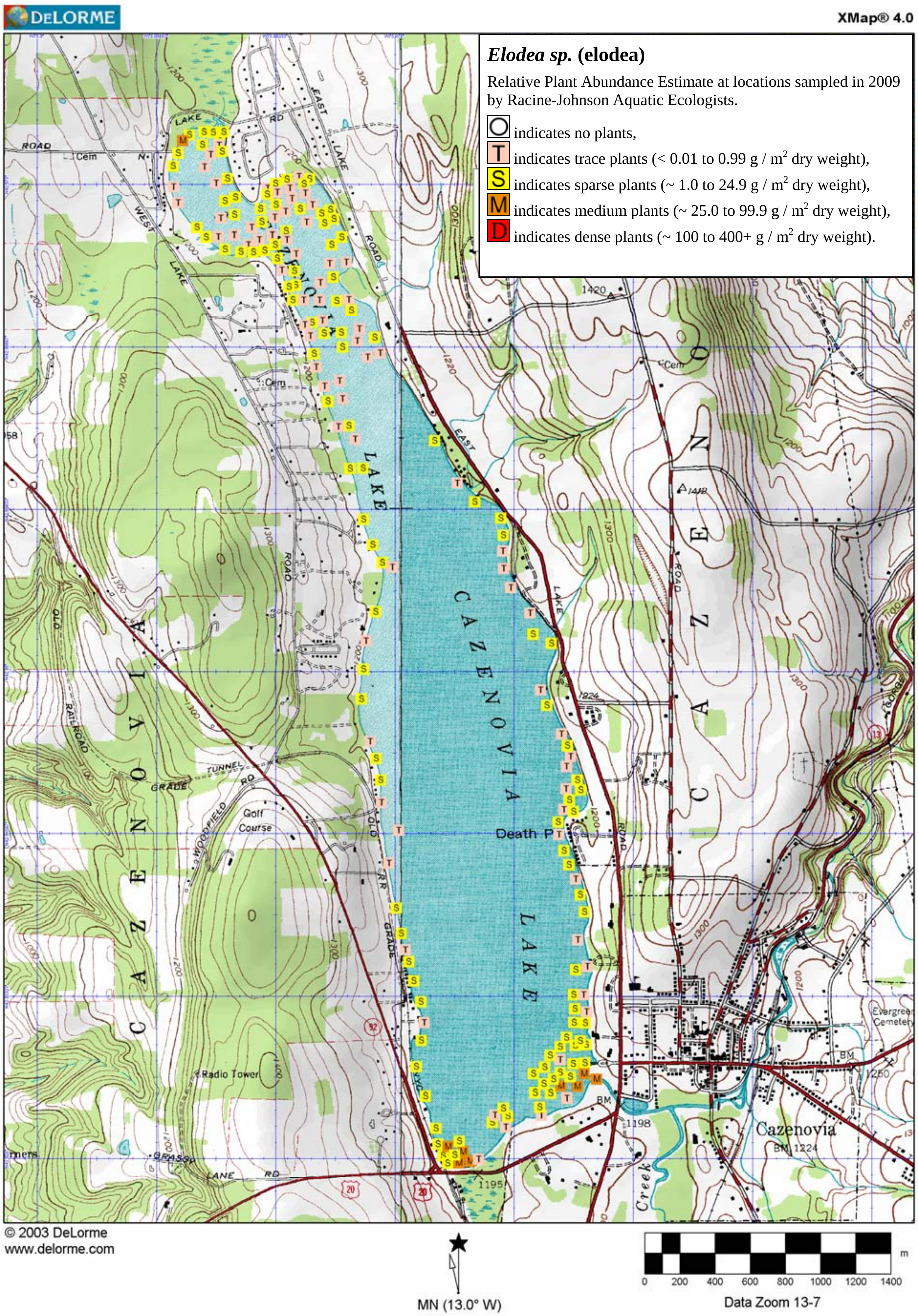

Figure 7. *Elodea sp.* (elodea) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

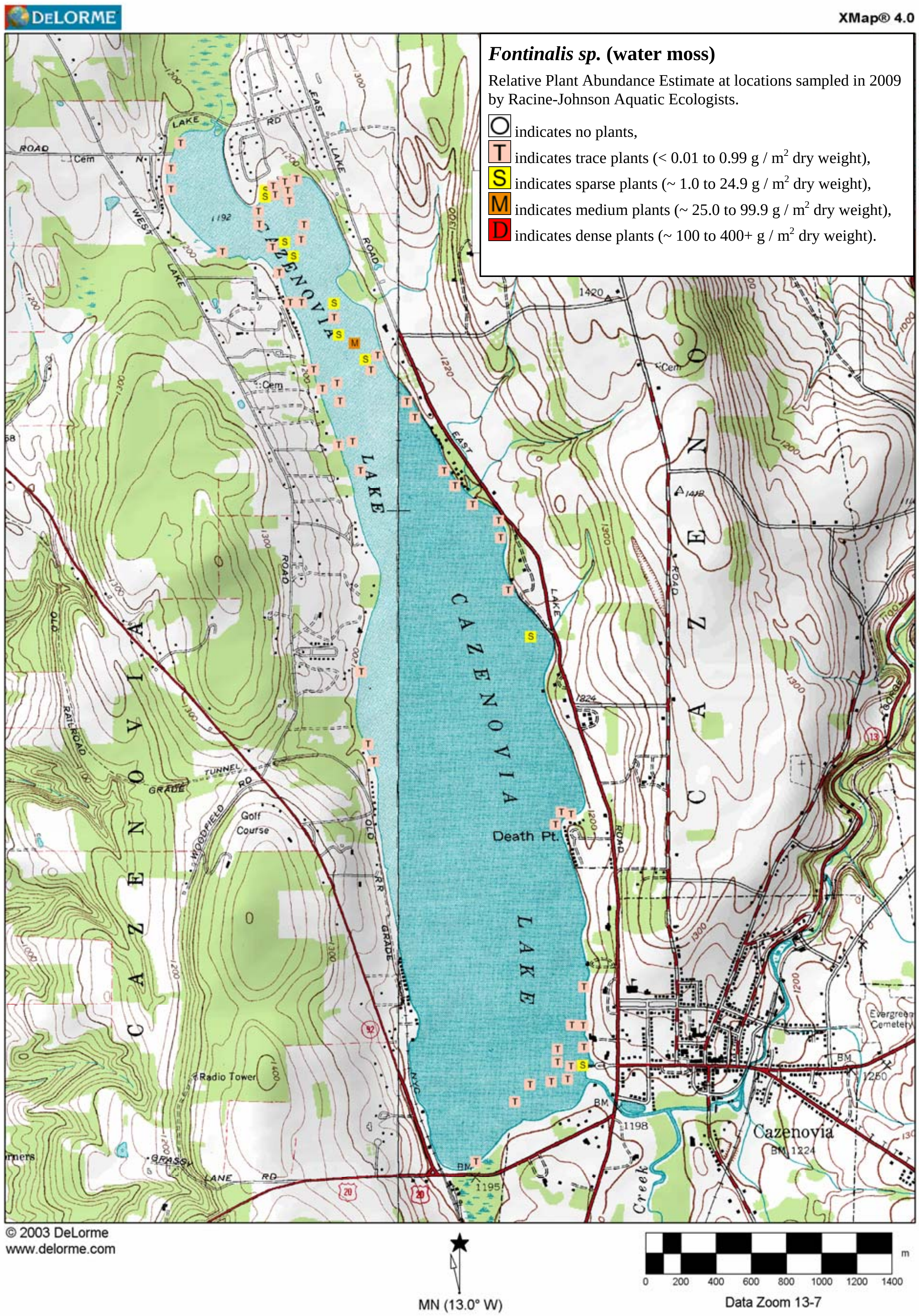

Figure 8. *Fontinalis sp.* (water moss) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

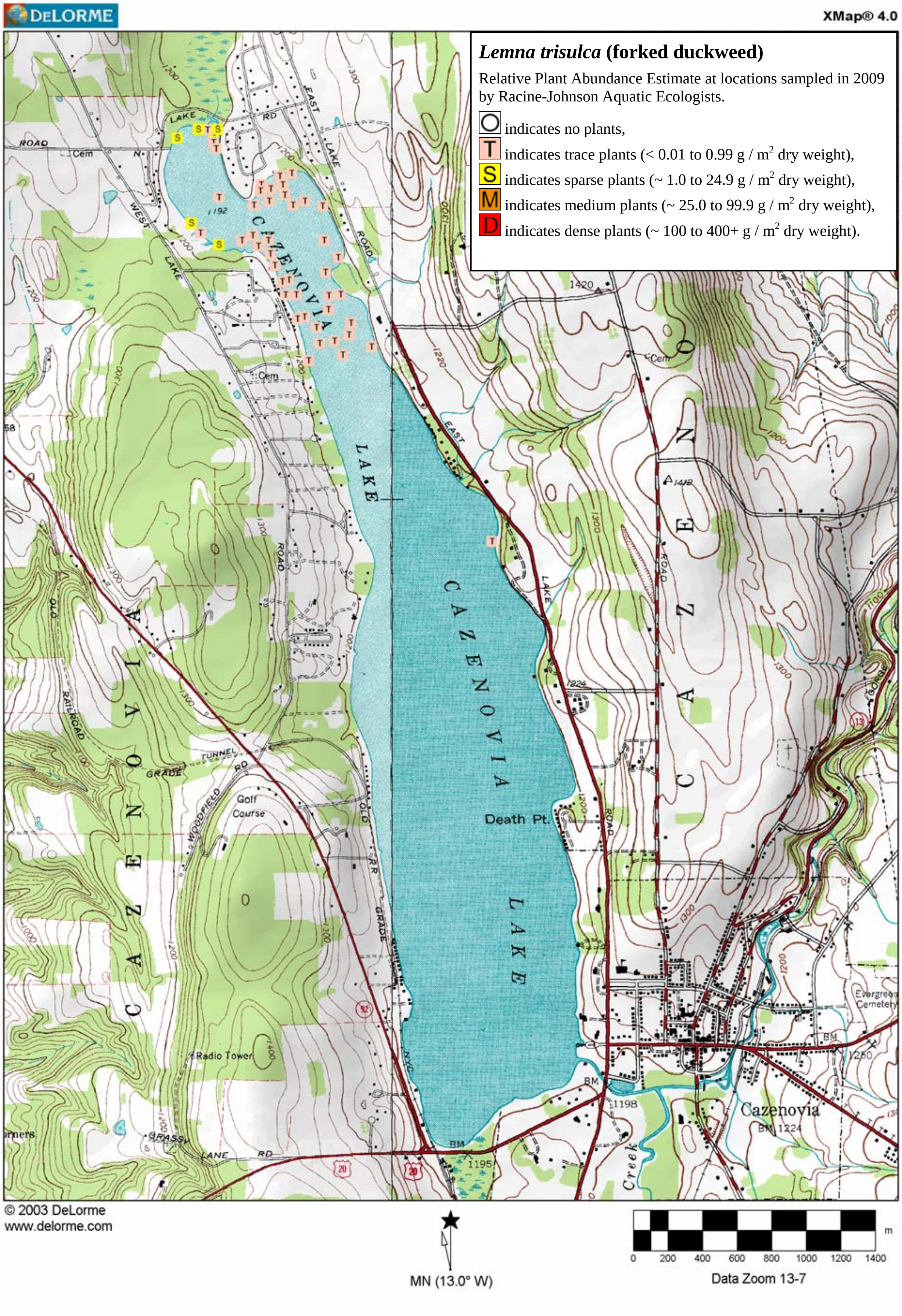

Figure 9. *Lemna trisulca* (forked duckweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

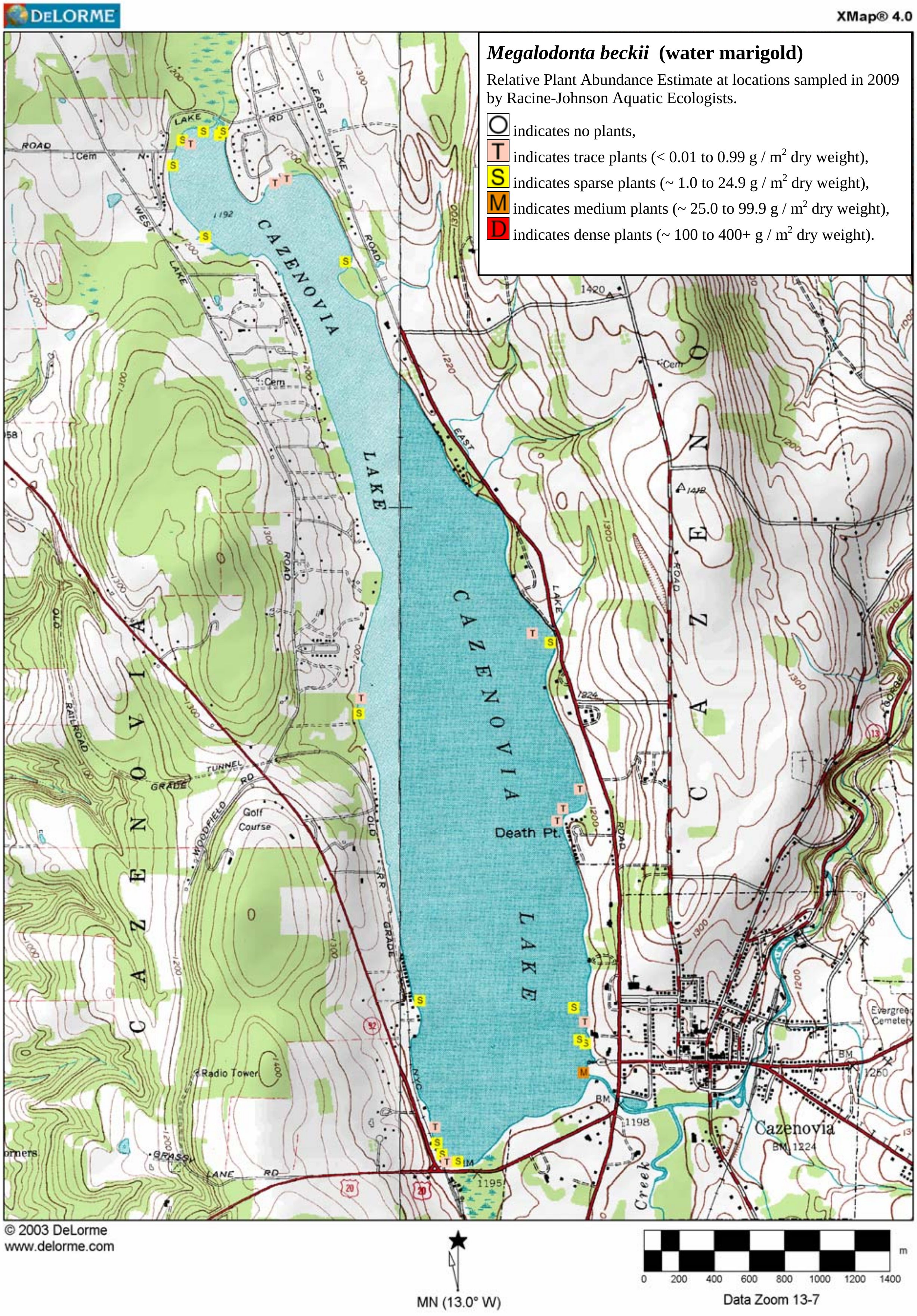

Figure 10. *Megalodonta beckii* (water marigold) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

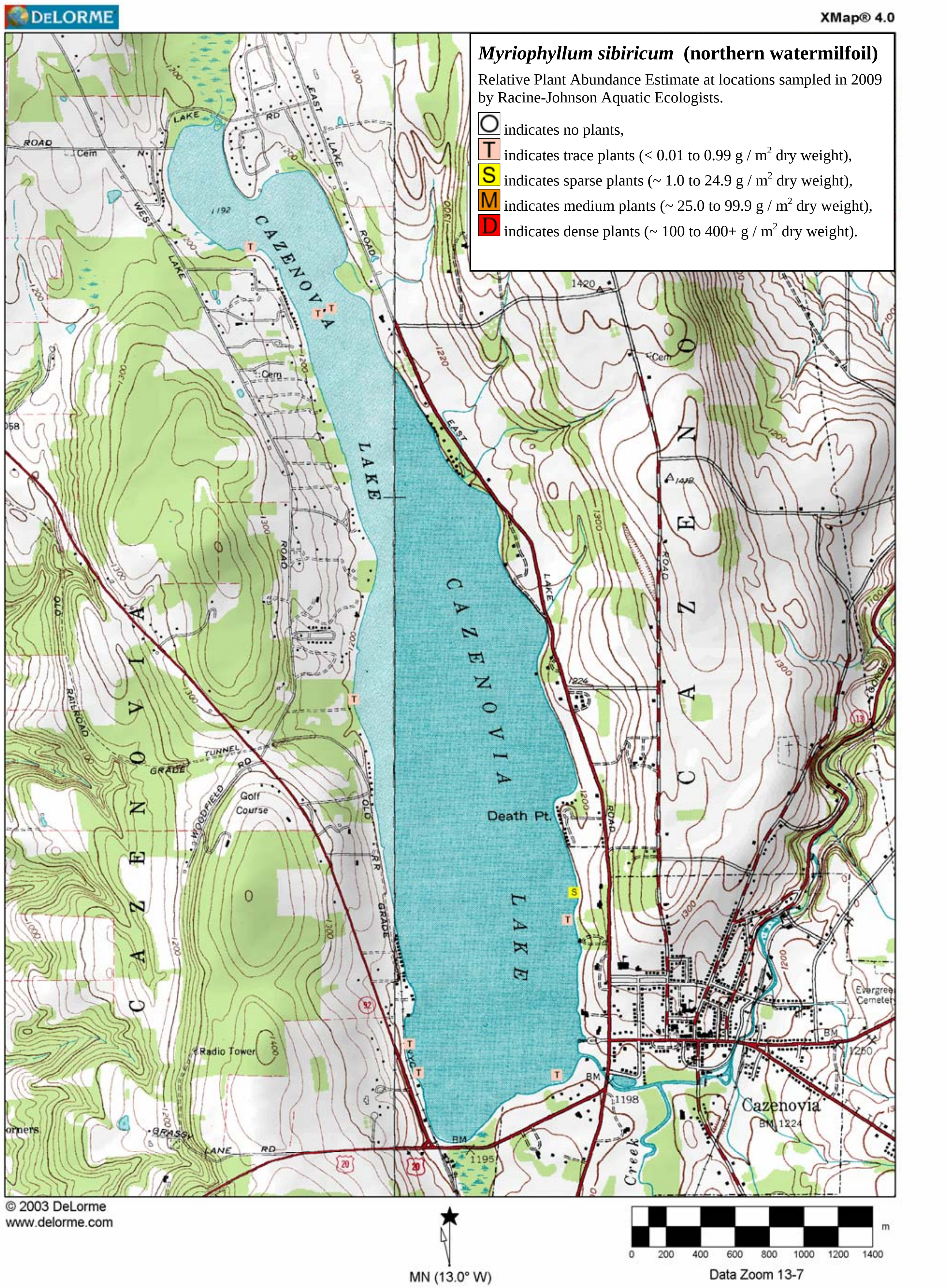

Figure 11. *Myriophyllum sibiricum* (northern watermilfoil) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

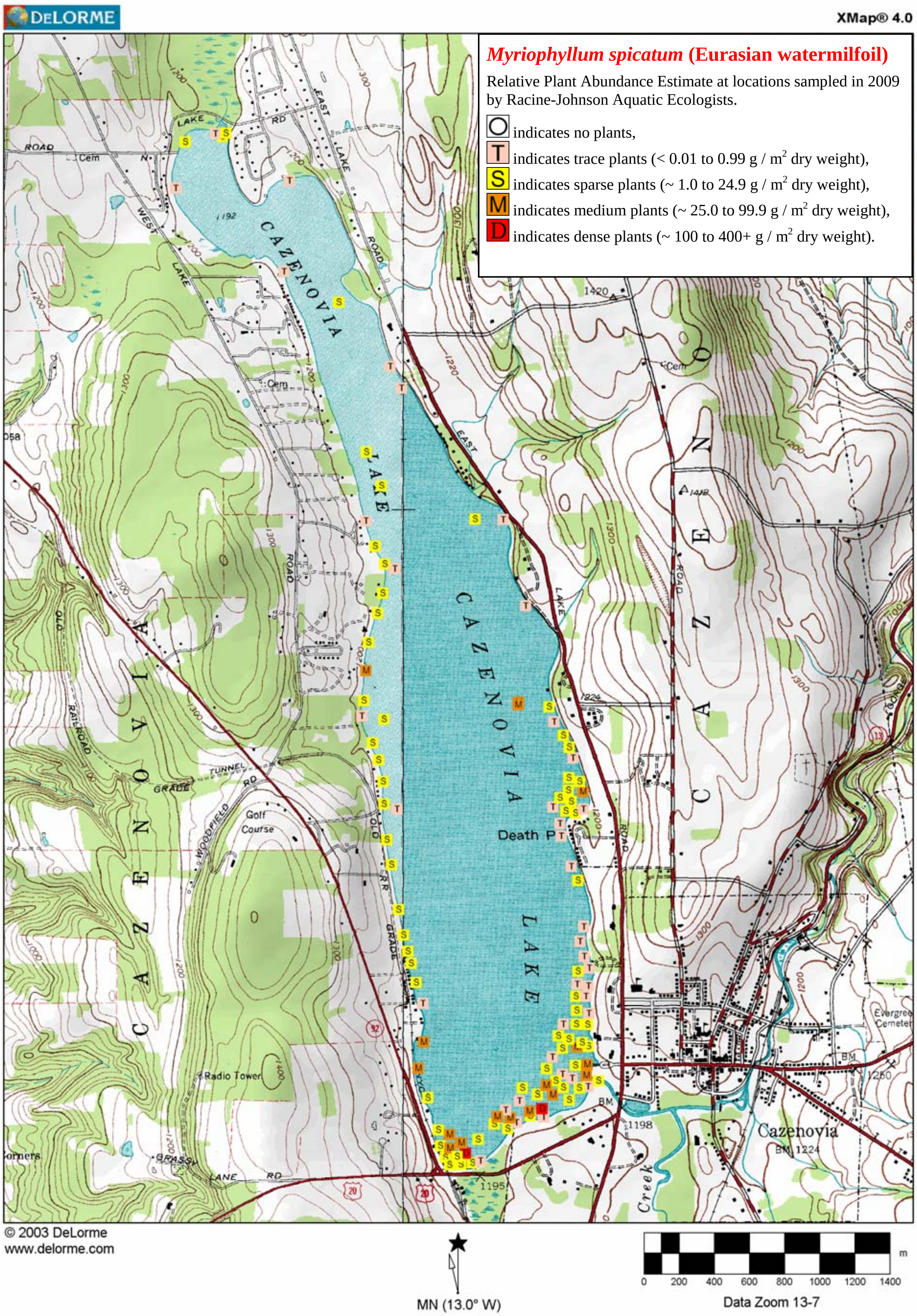

Figure 12. *Myriophyllum spicatum* (Eurasian watermilfoil) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

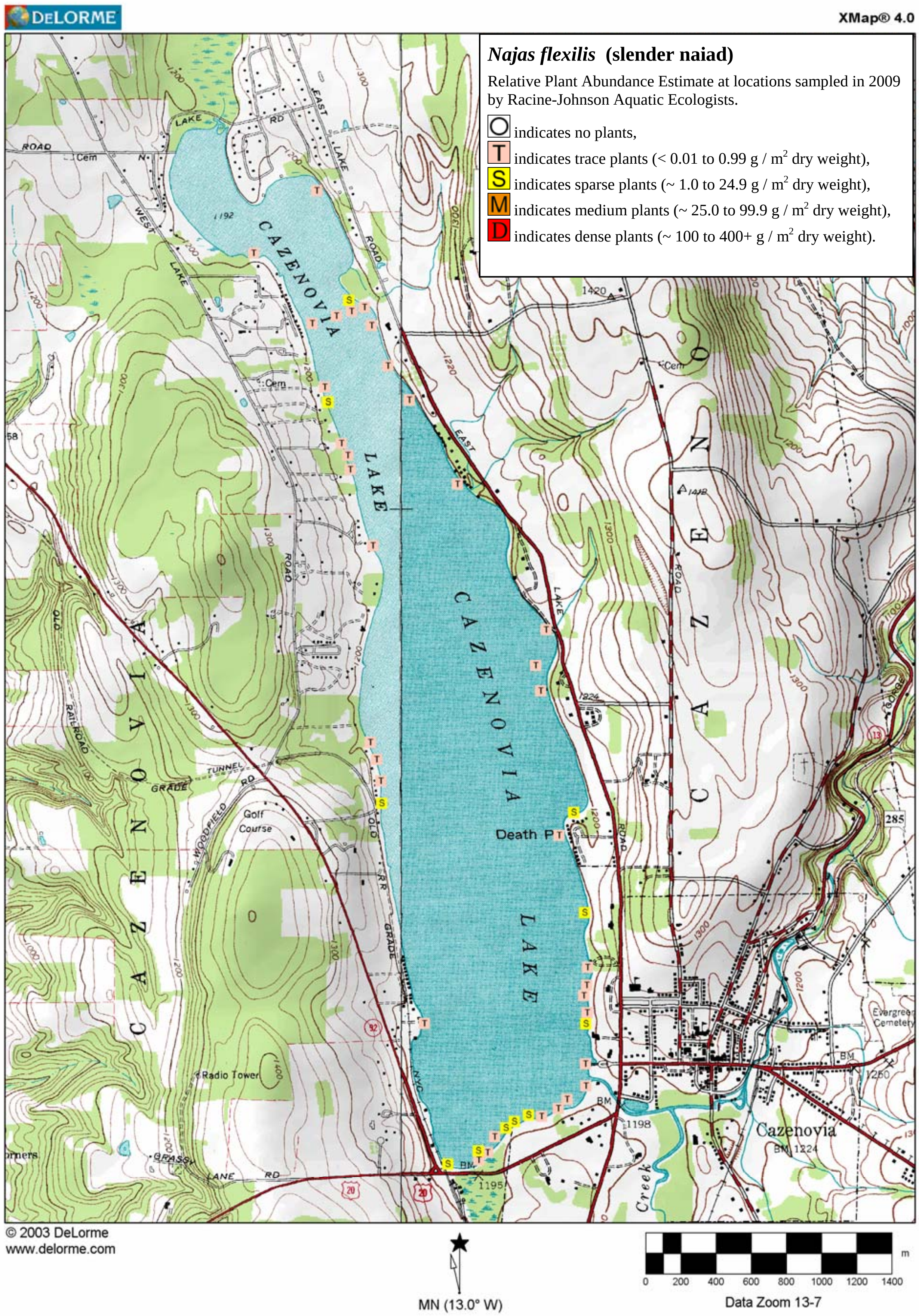

Figure 13. *Najas flexilis* (slender naiad) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

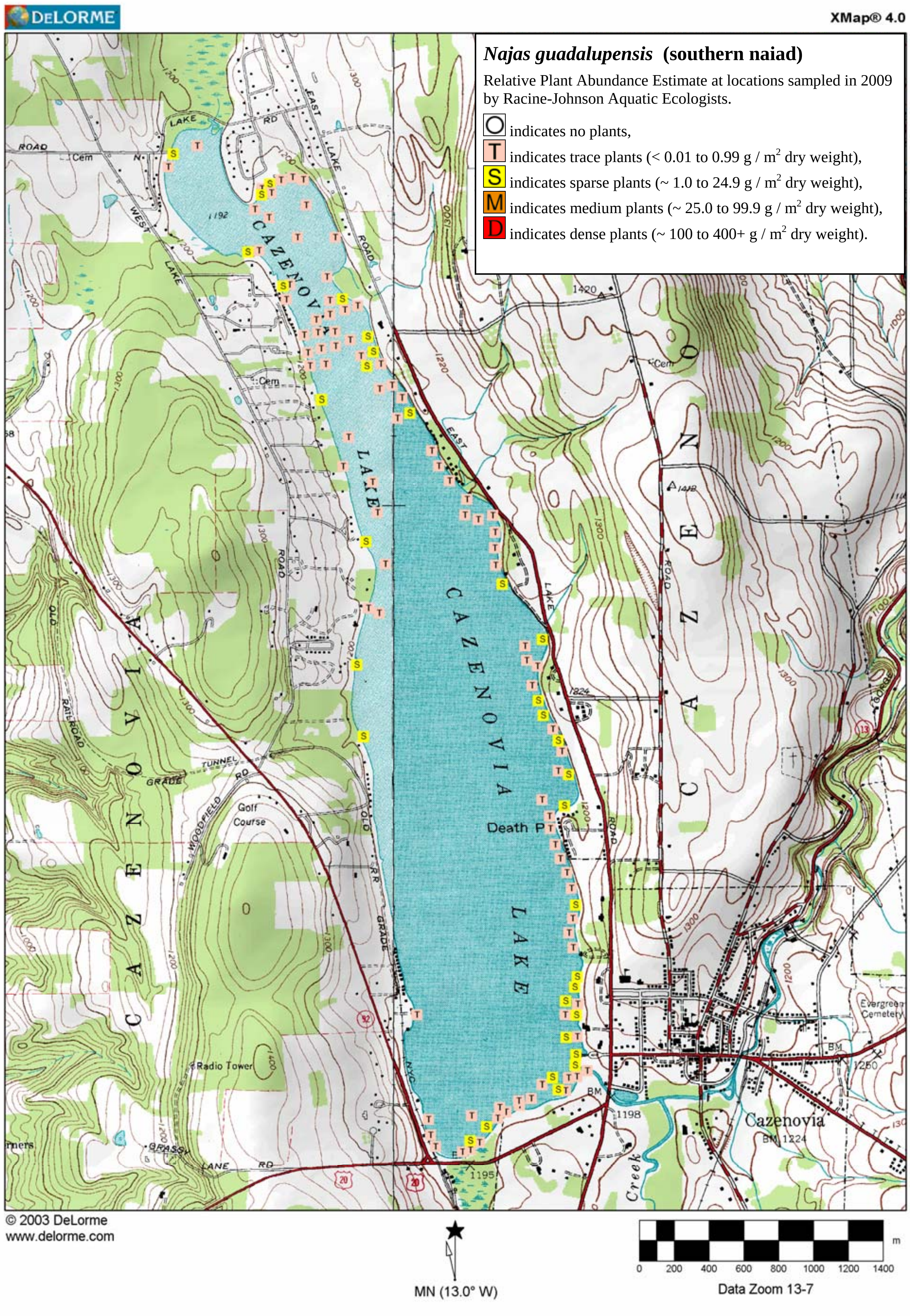

Figure 14. *Najas guadalupensis* (southern naiad) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

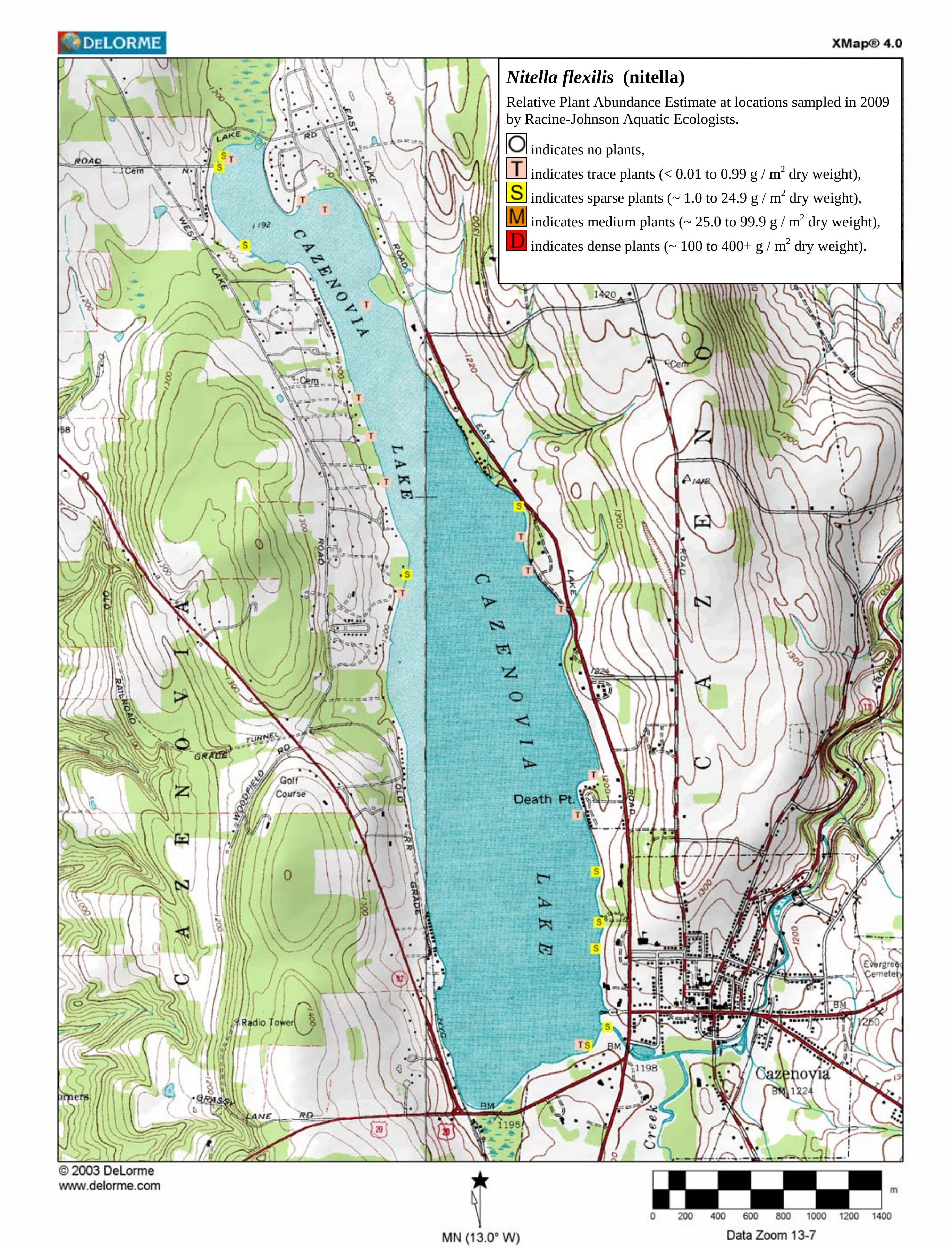

Figure 15. *Nitella flexilis* (nitella) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

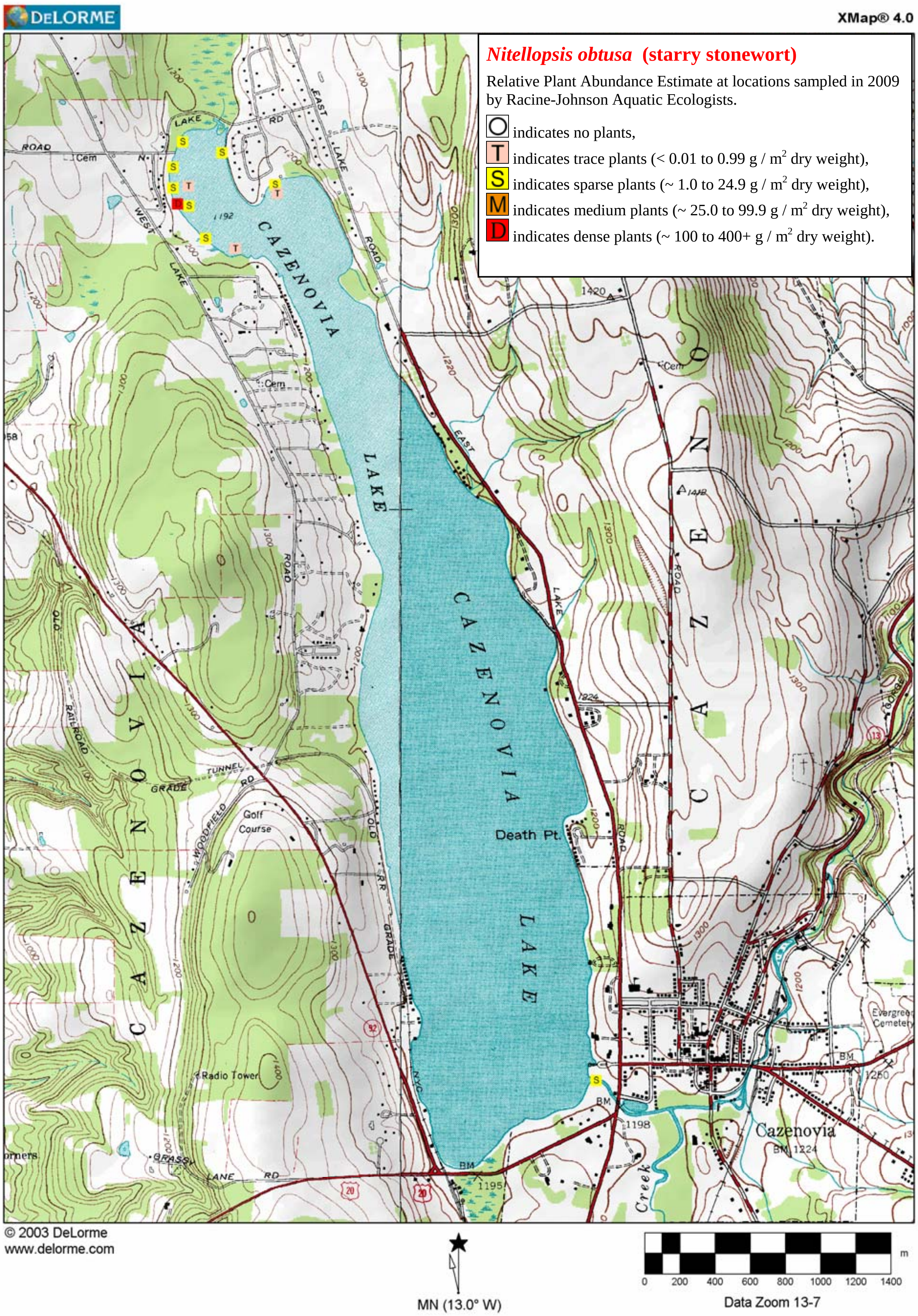

Figure 16. *Nitellopsis obtusa* (starry stonewort) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

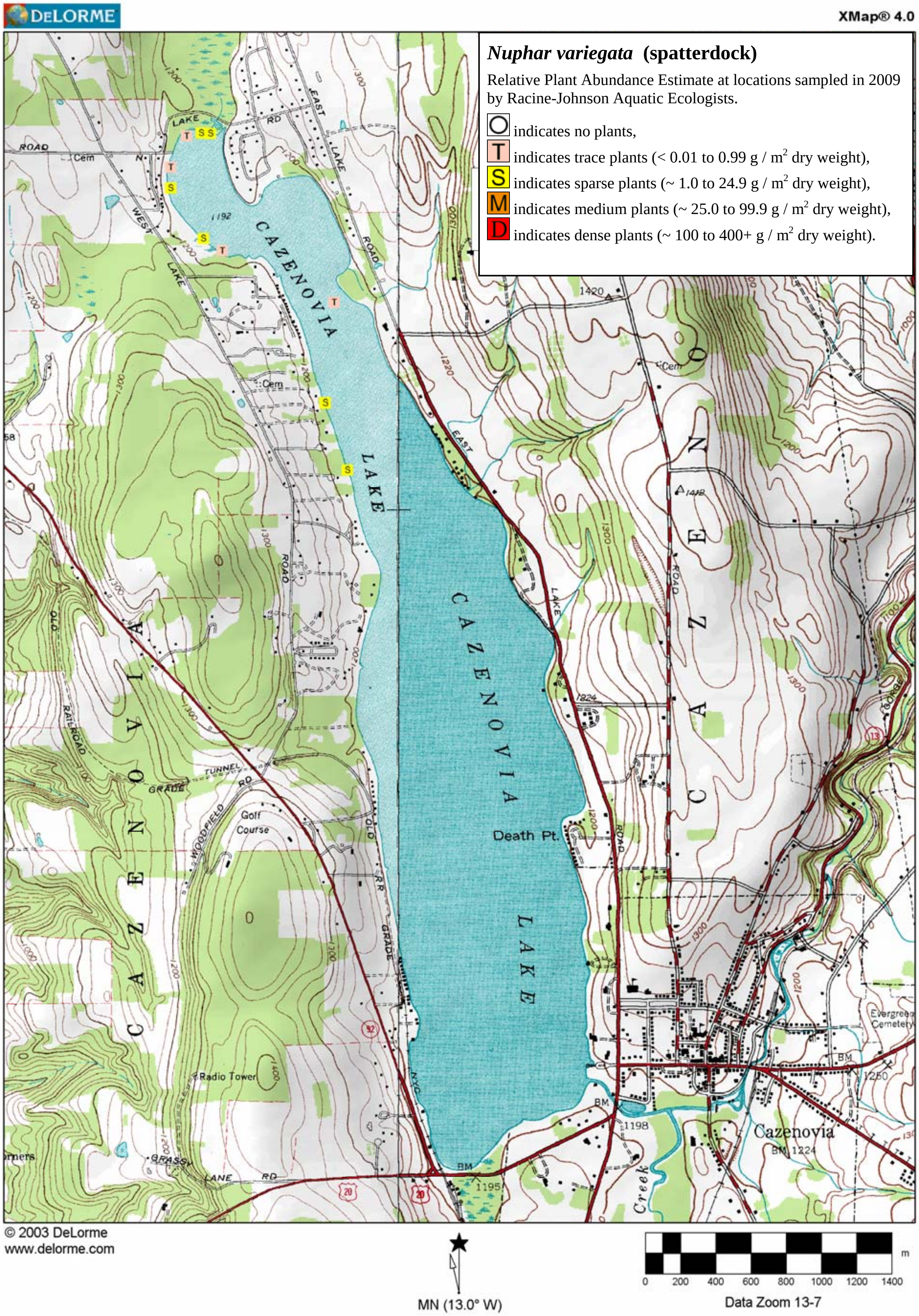

Figure 17. *Nuphar variegata* (spatterdock) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

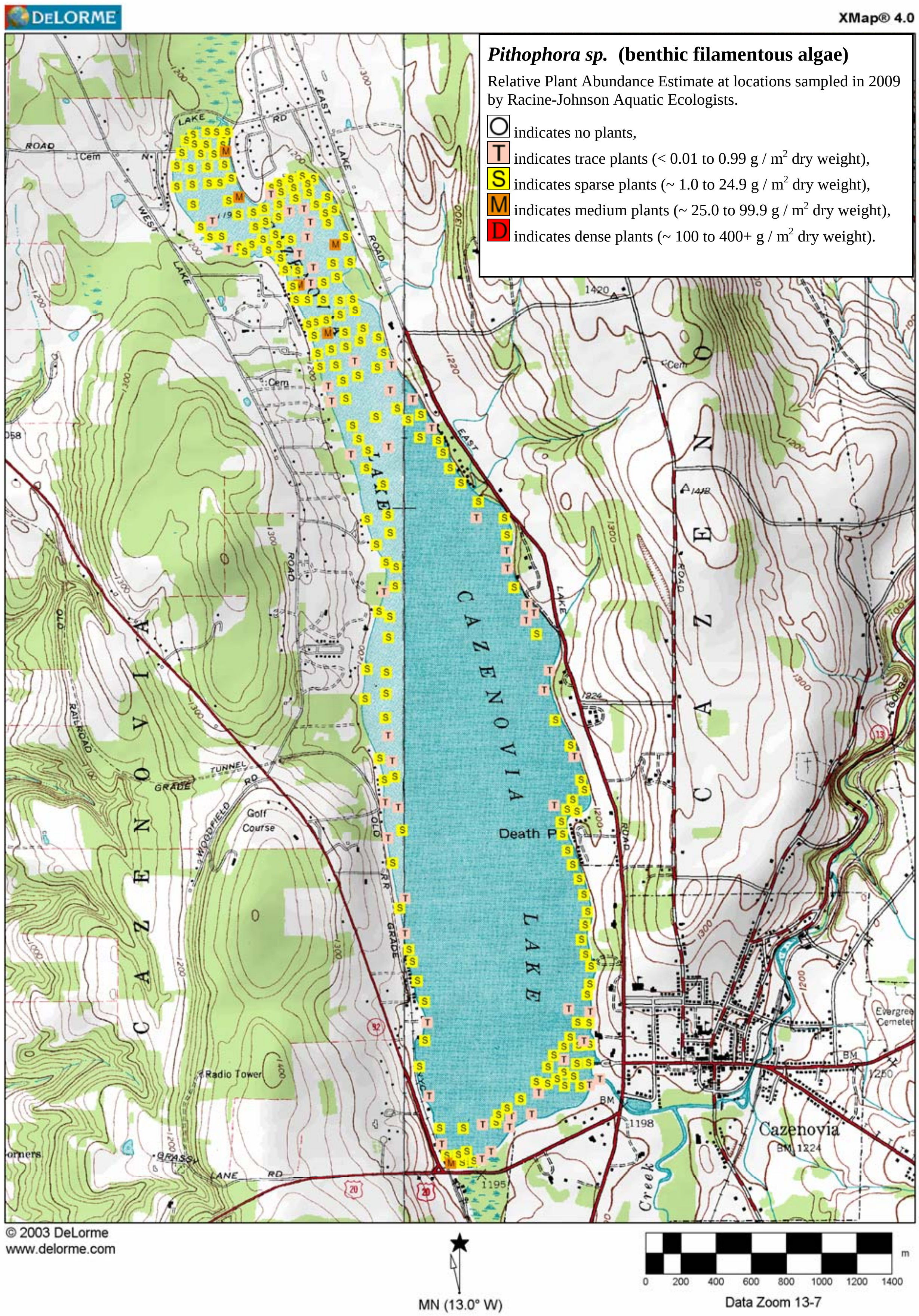

Figure 18. *Pithophora sp.* (benthic filamentous algae) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

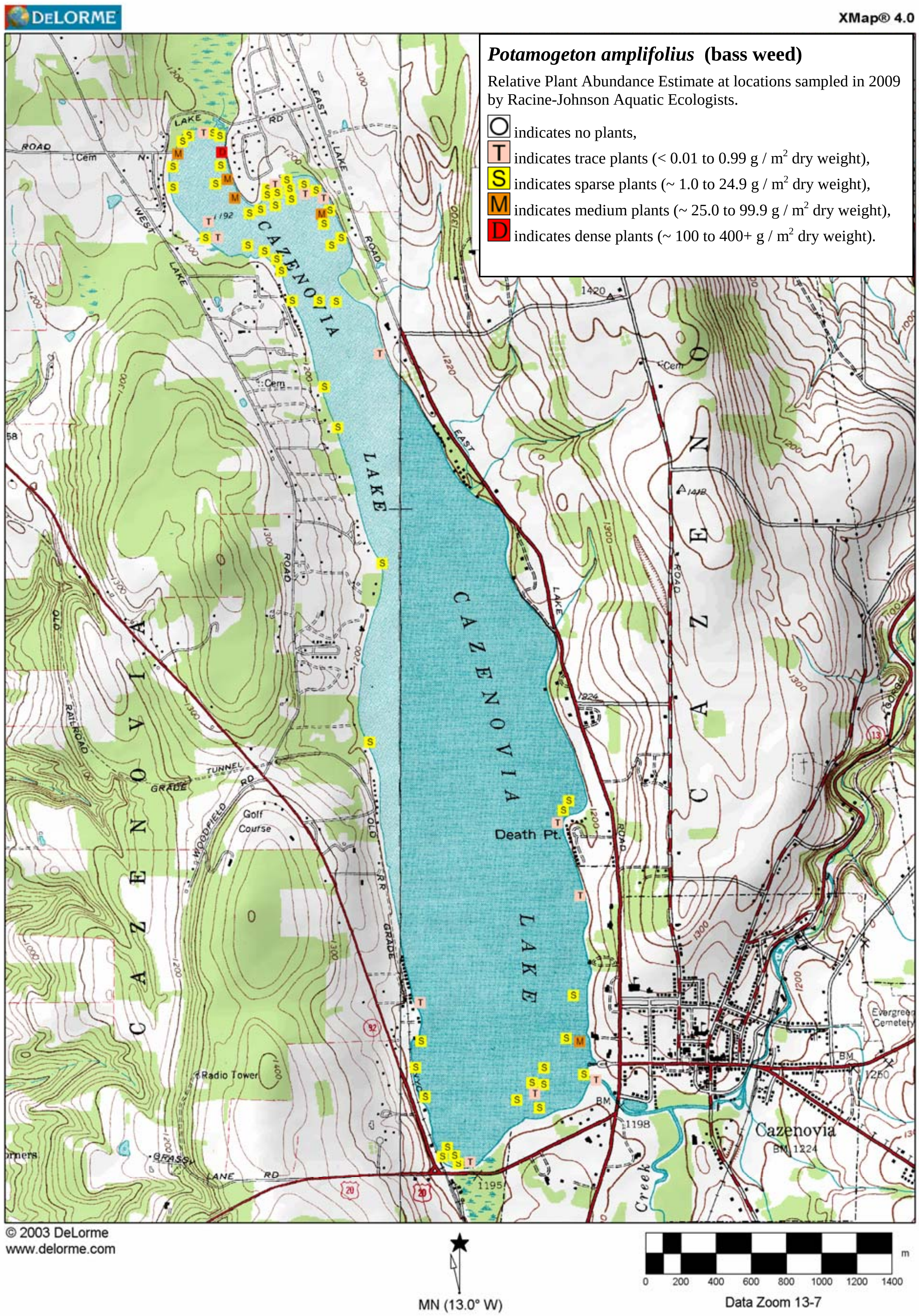

Figure 19. *Potamogeton amplifolius* (bass weed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

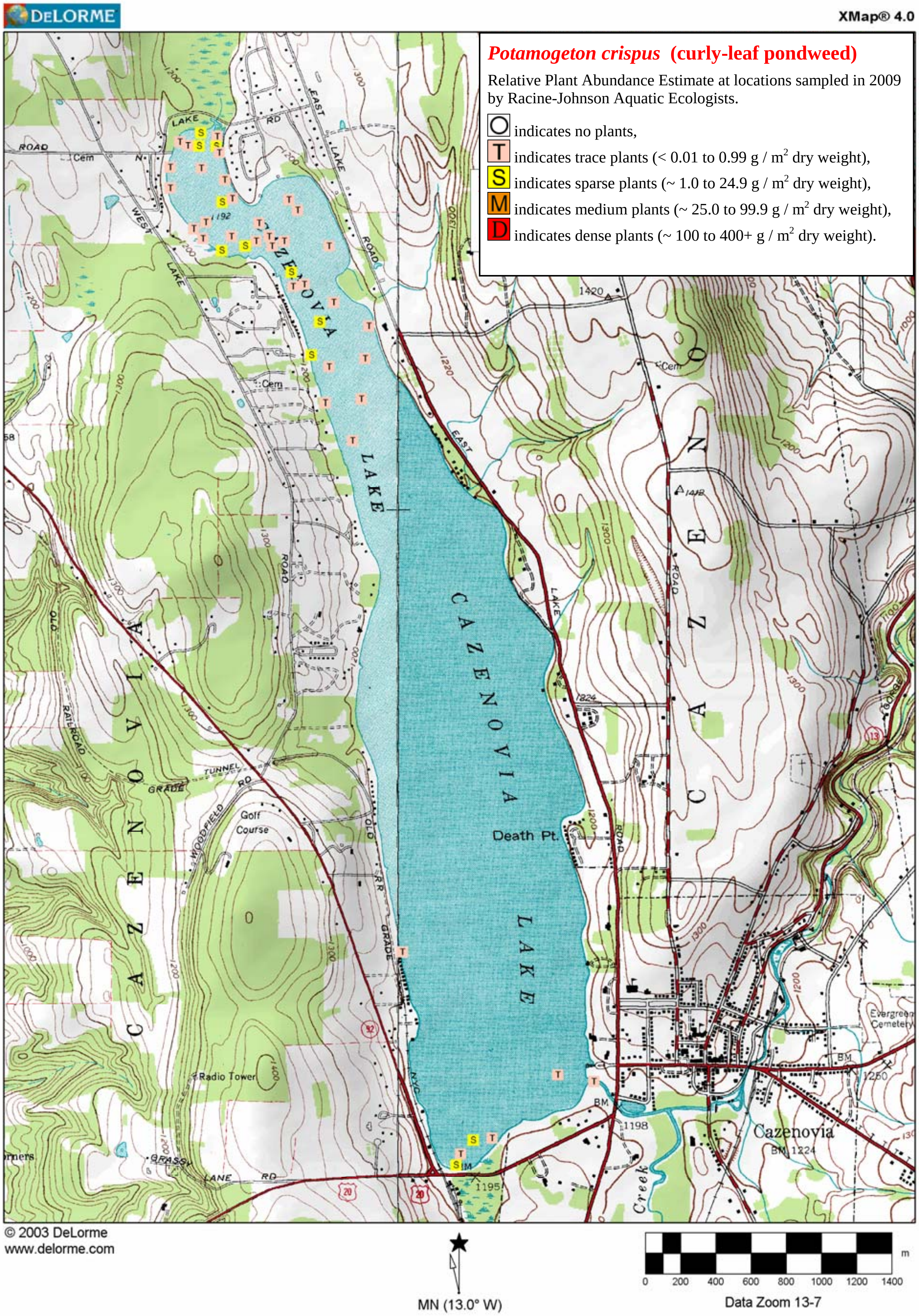

Figure 20. *Potamogeton crispus* (curly-leaf pondweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

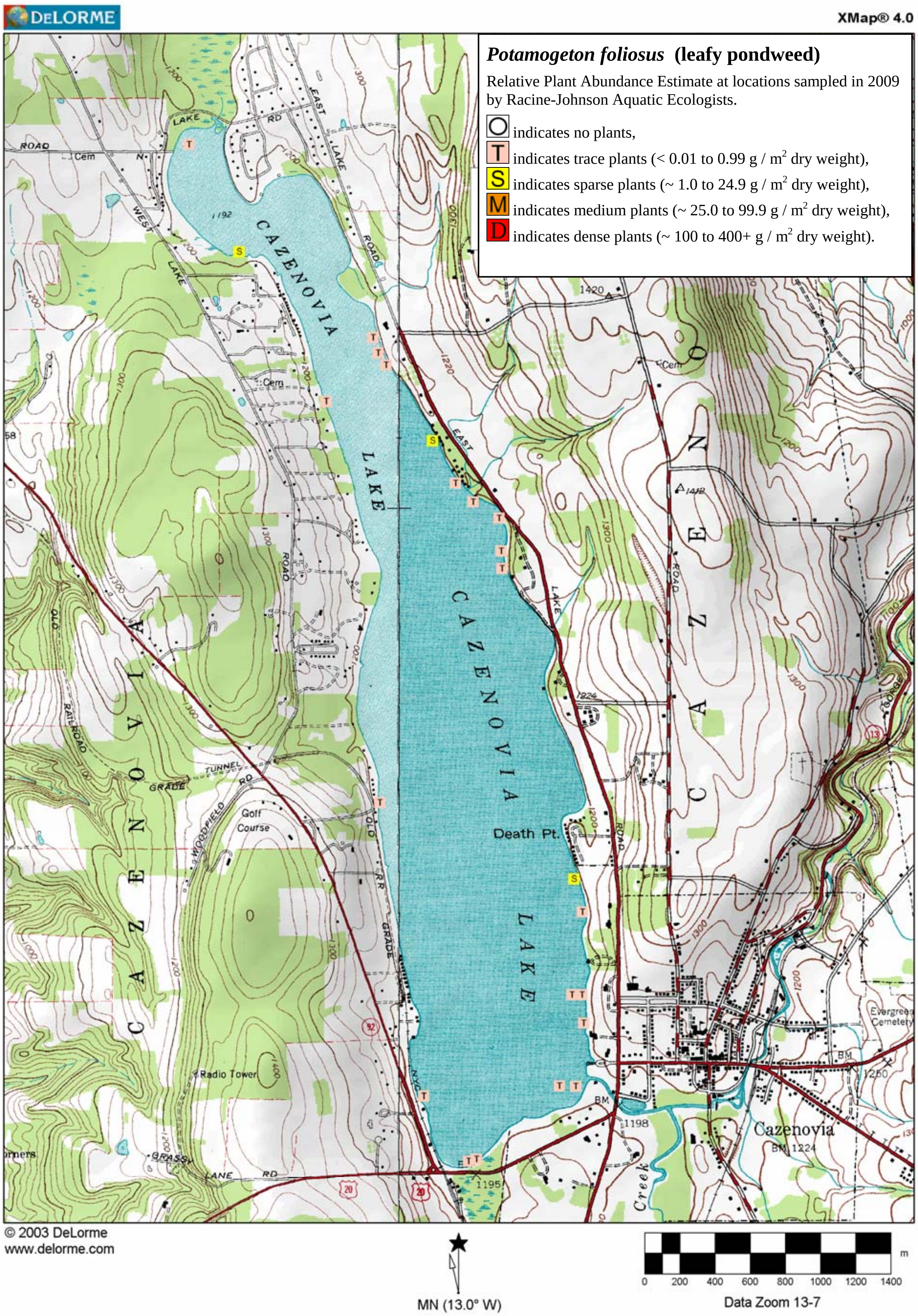

Figure 21. *Potamogeton foliosus* (leafy pondweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

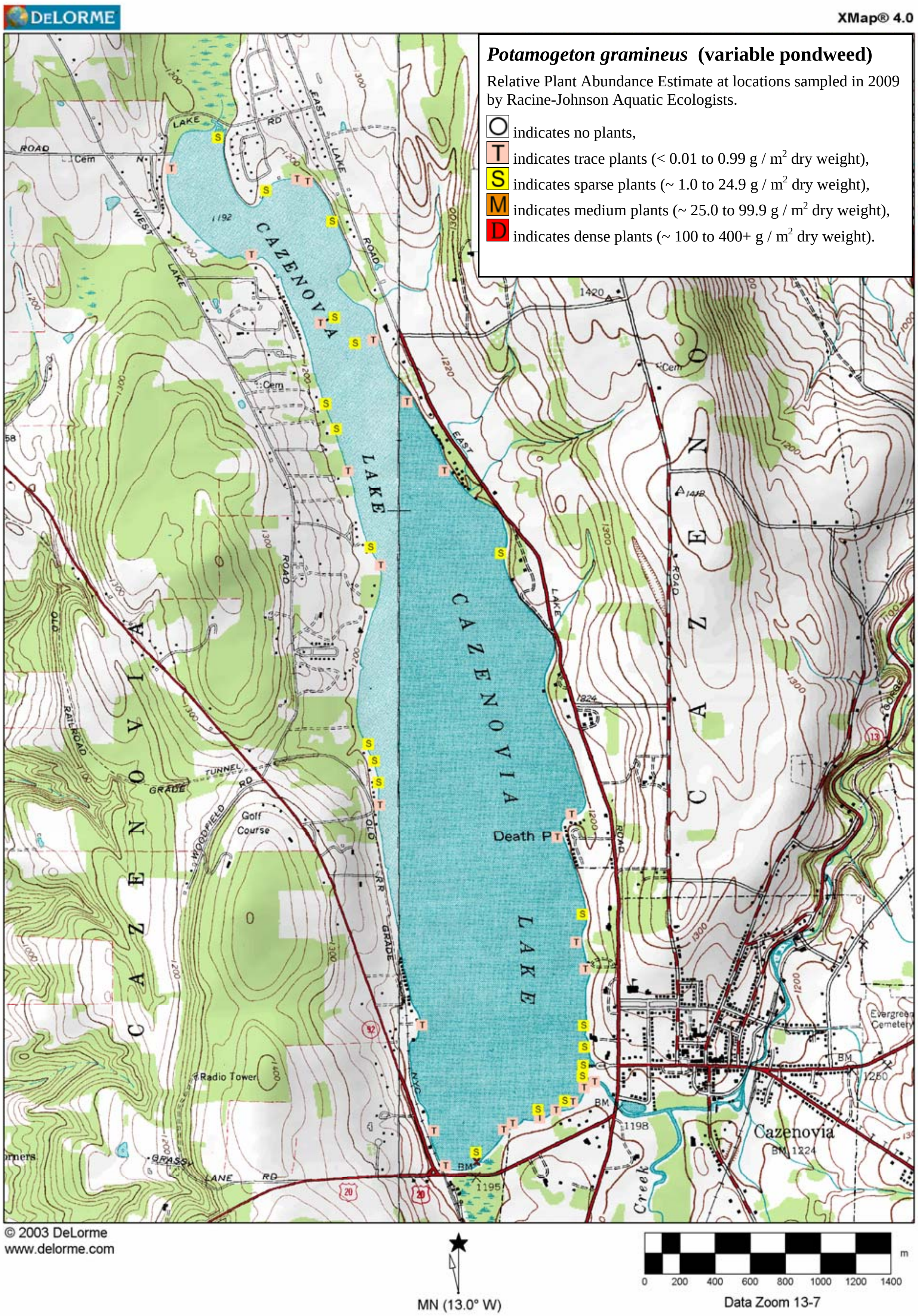

Figure 22. *Potamogeton gramineus* (variable pondweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

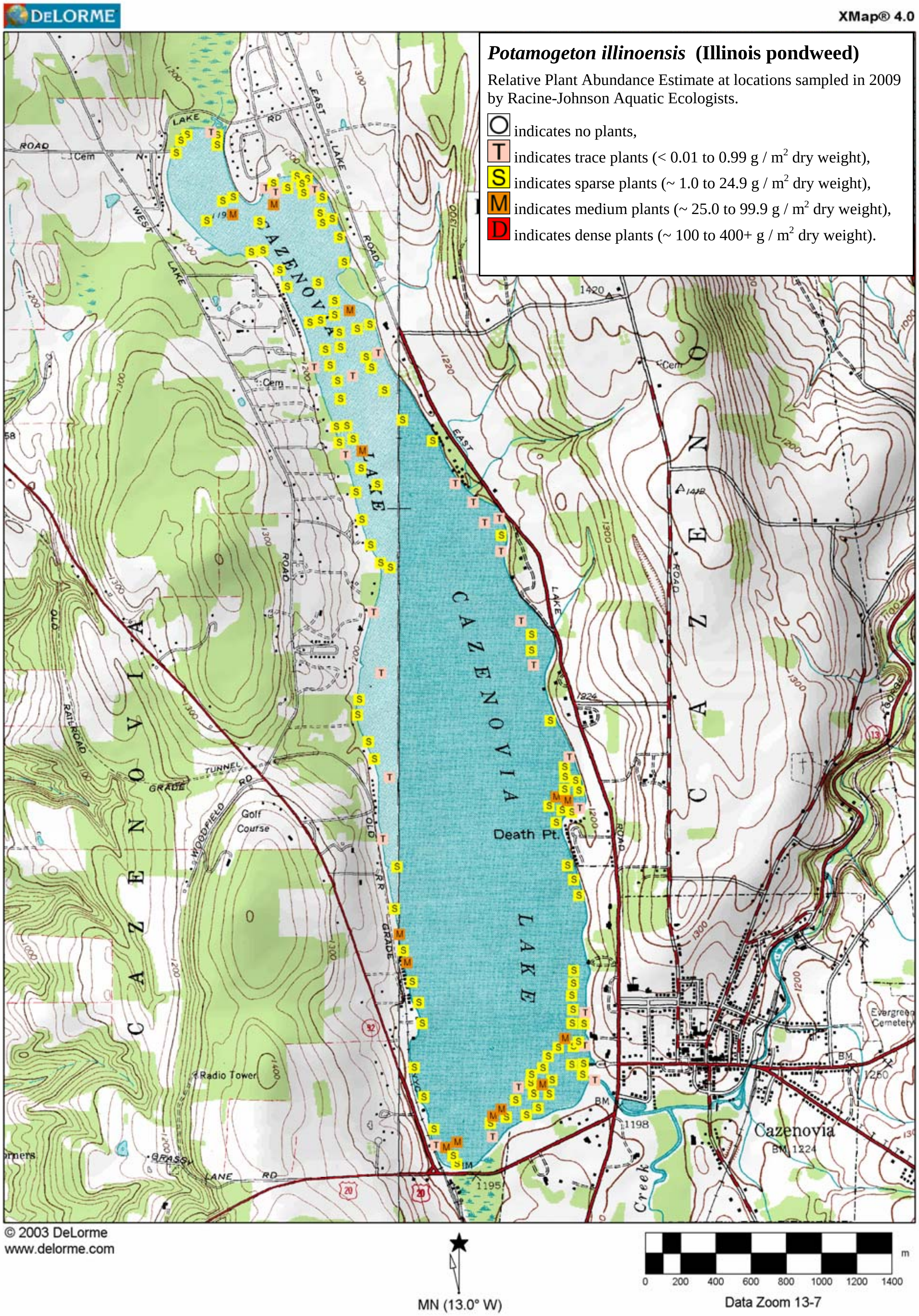

Figure 23. *Potamogeton illinoensis* (Illinois pondweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

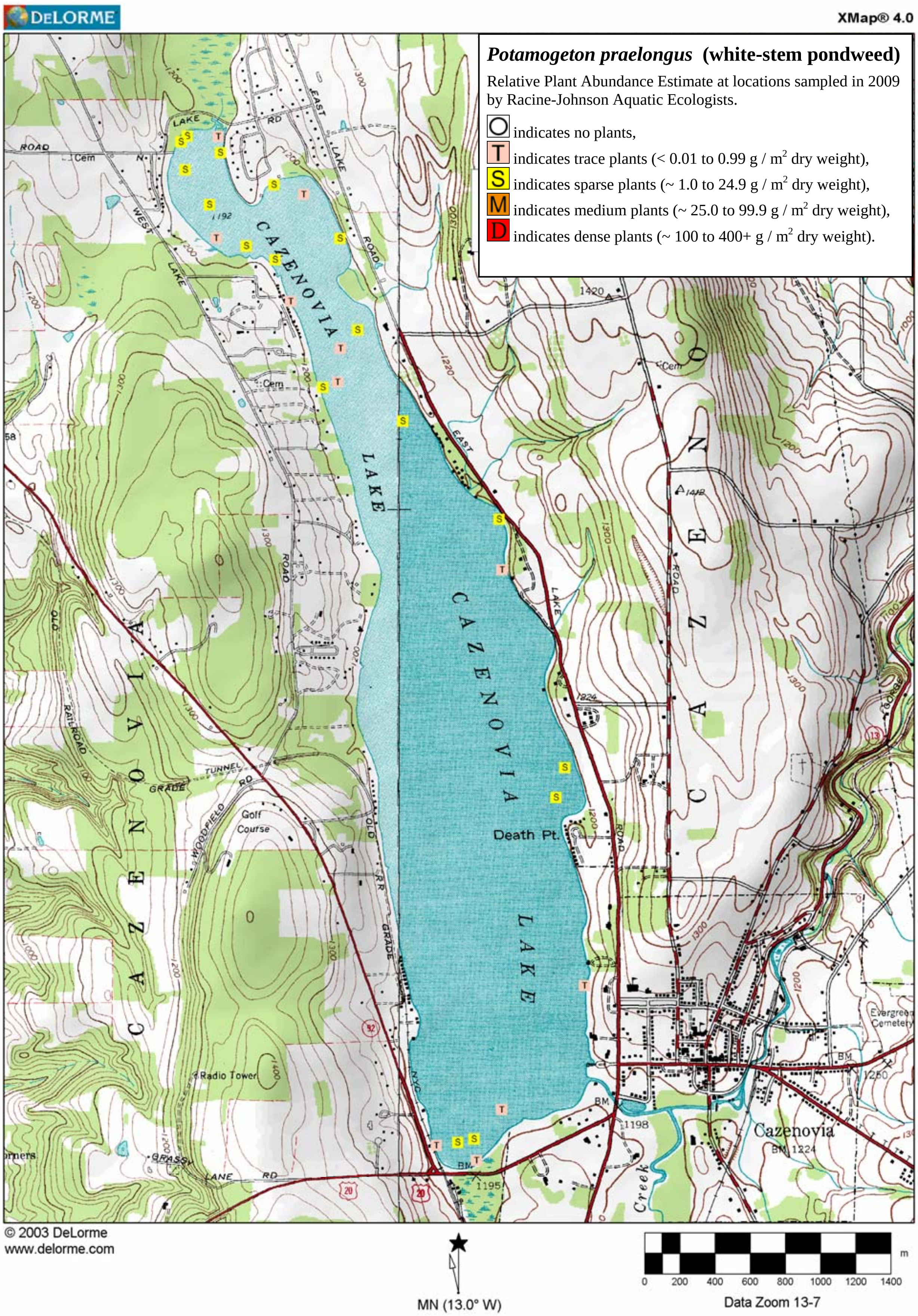

Figure 24. *Potamogeton praelongus* (white-stem pondweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

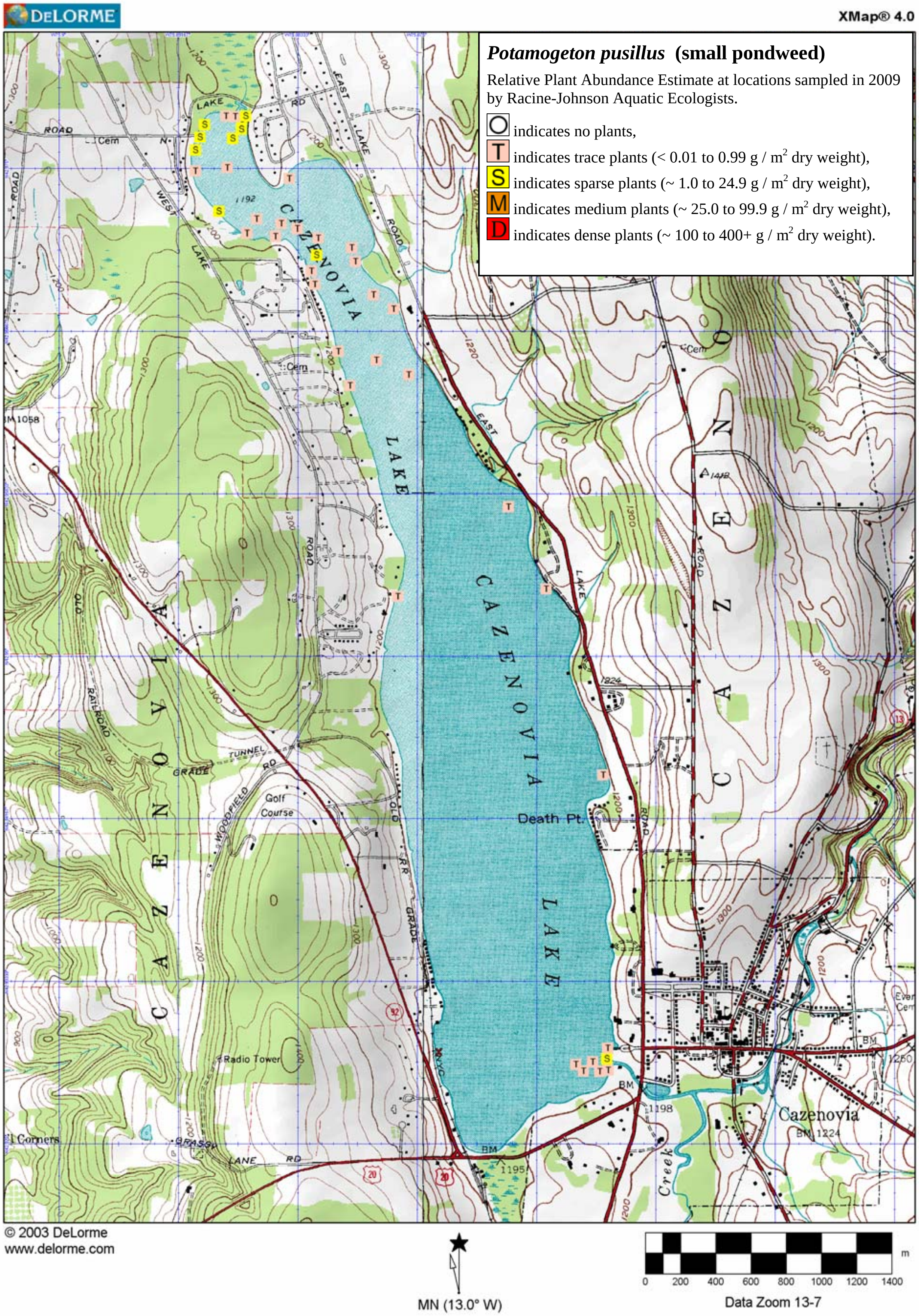

Figure 25. *Potamogeton pusillus* (small pondweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

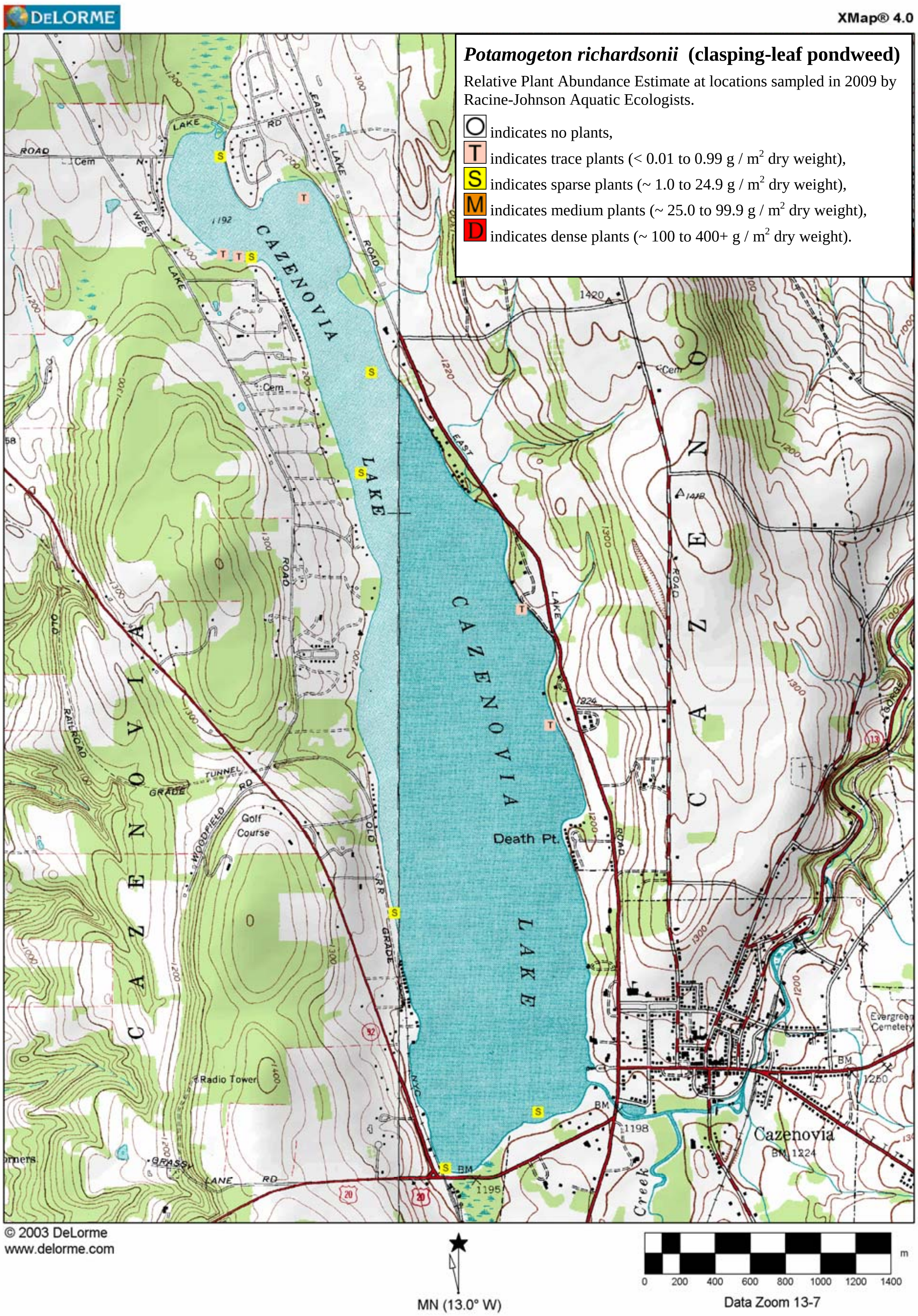

Figure 26. *Potamogeton richardsonii* (clasping-leaf pondweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

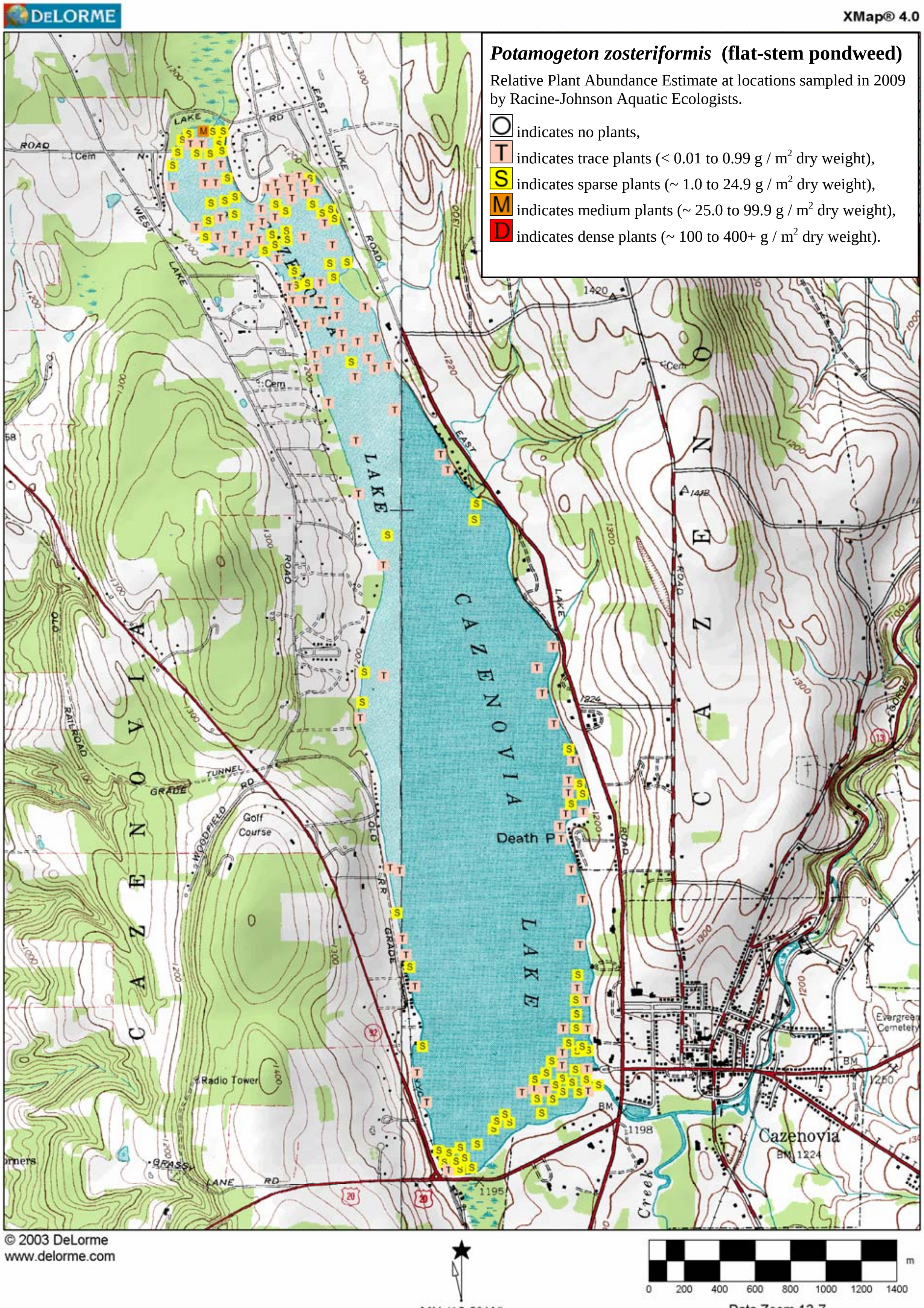

Figure 27. *Potamogeton zosteriformis* (flat-stem pondweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

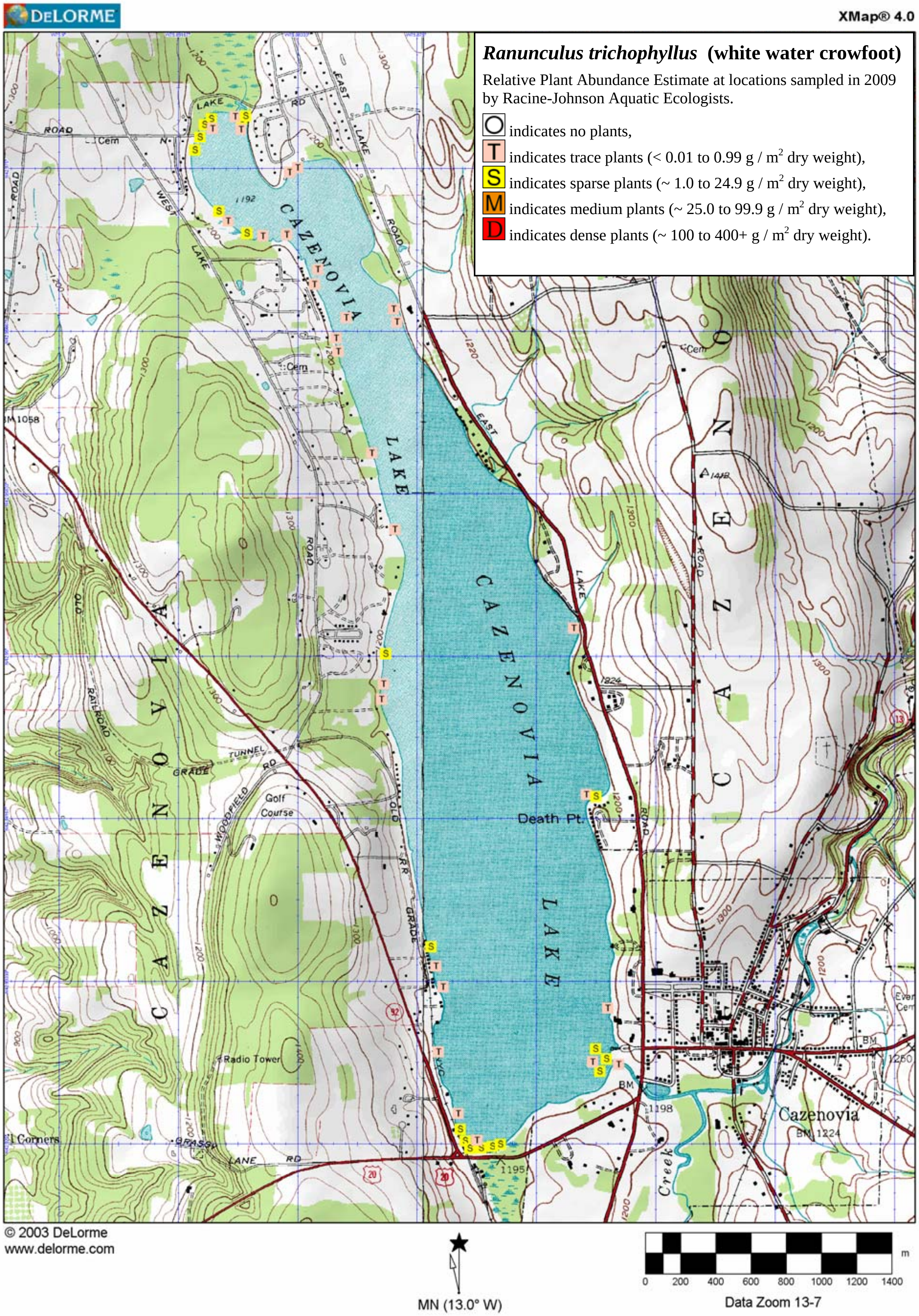

Figure 28. *Ranunculus trichophyllus* (white water crowfoot) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

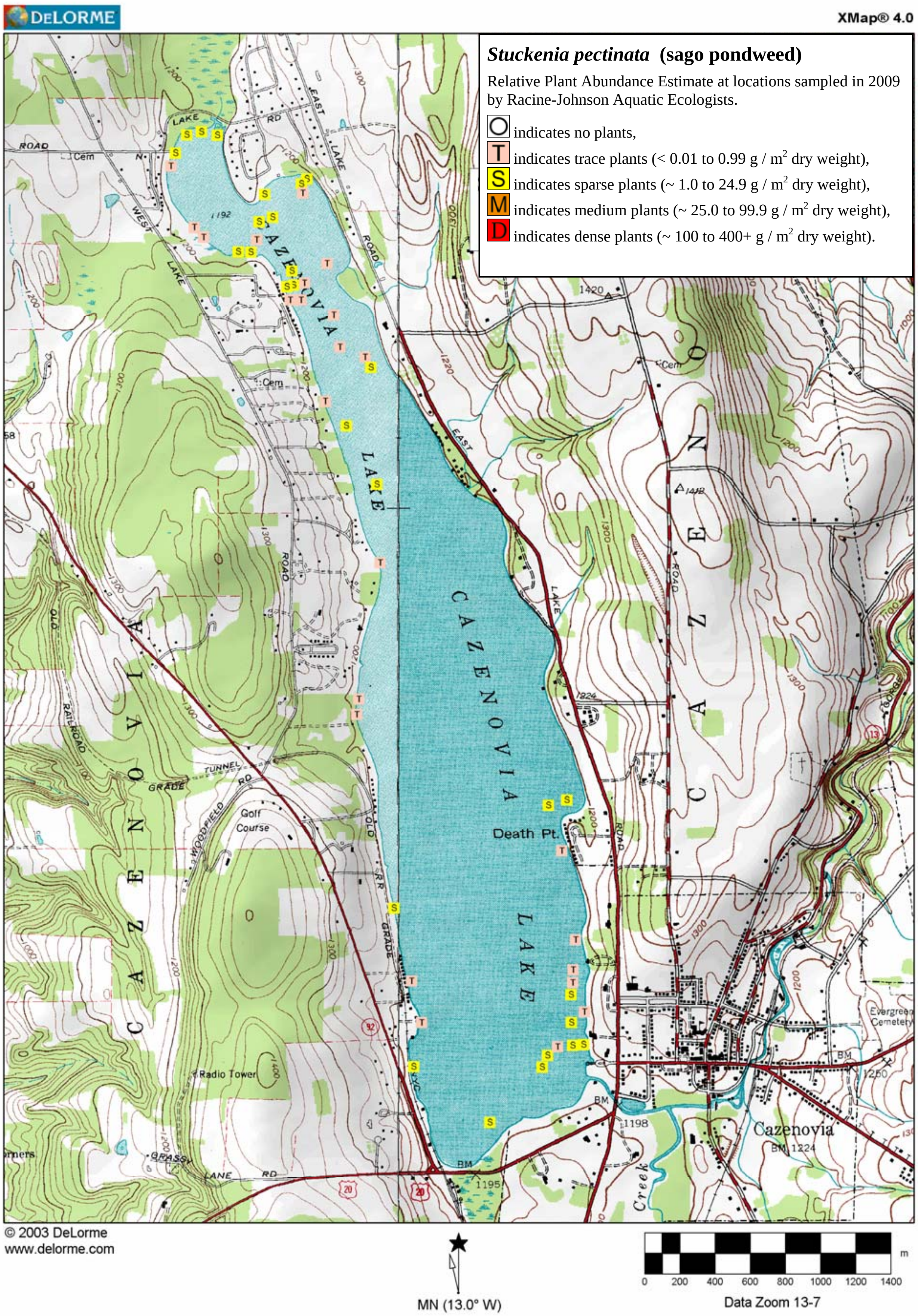

Figure 29. *Stuckenia pectinata* (sago pondweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

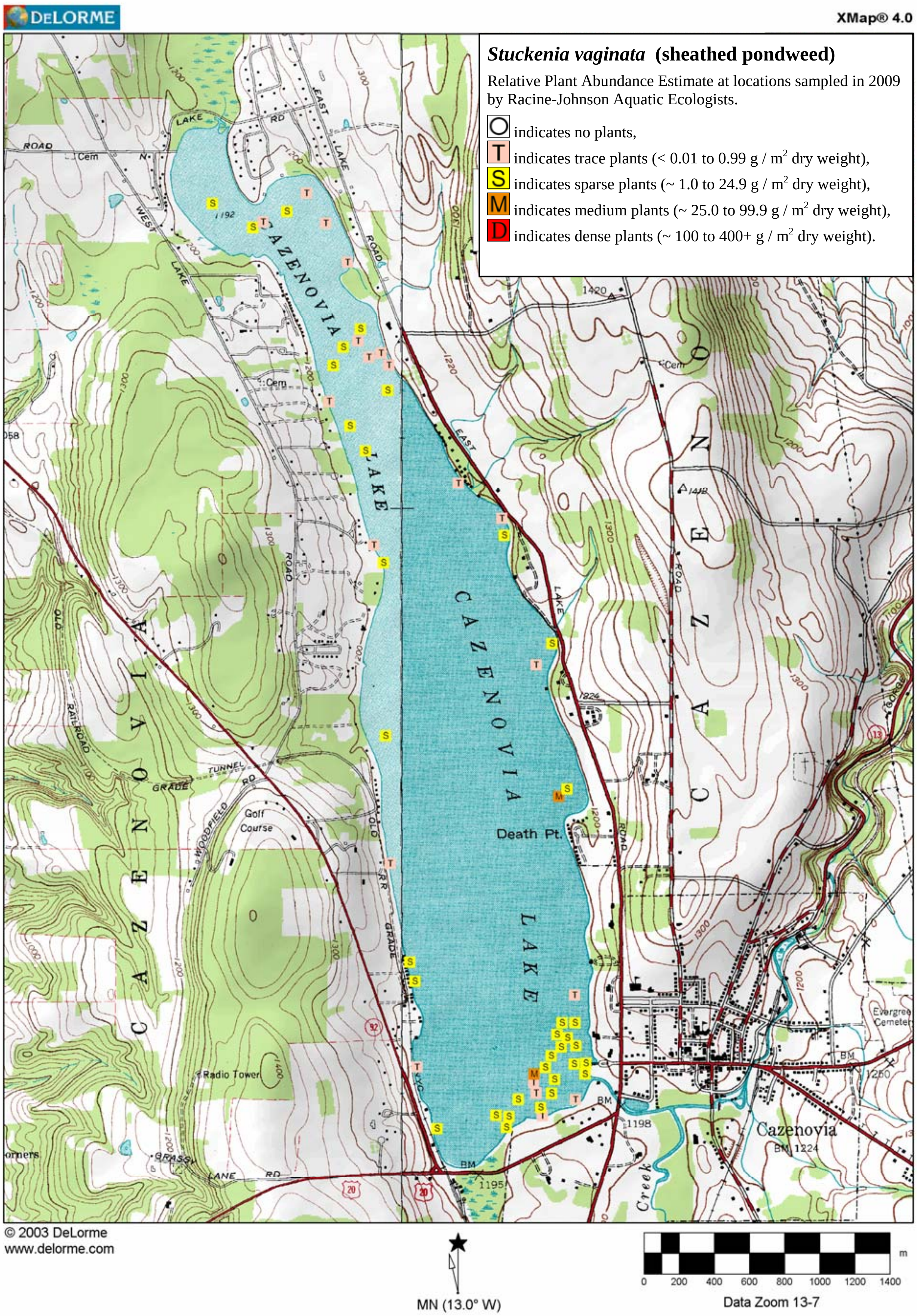

Figure 30. *Stuckenia vaginata* (sheathed pondweed) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

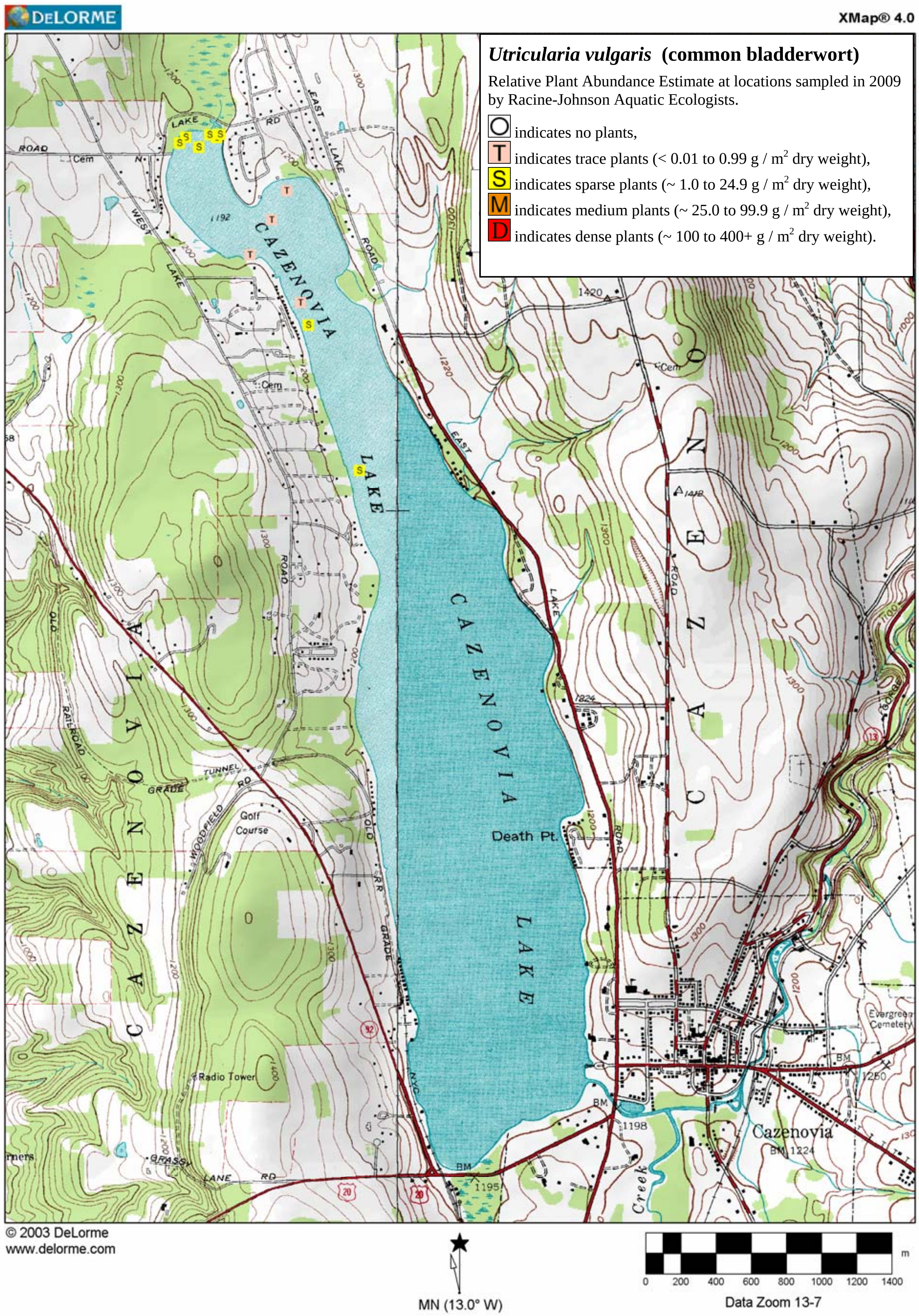

Figure 31. *Utricularia vulgaris* (common bladderwort) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

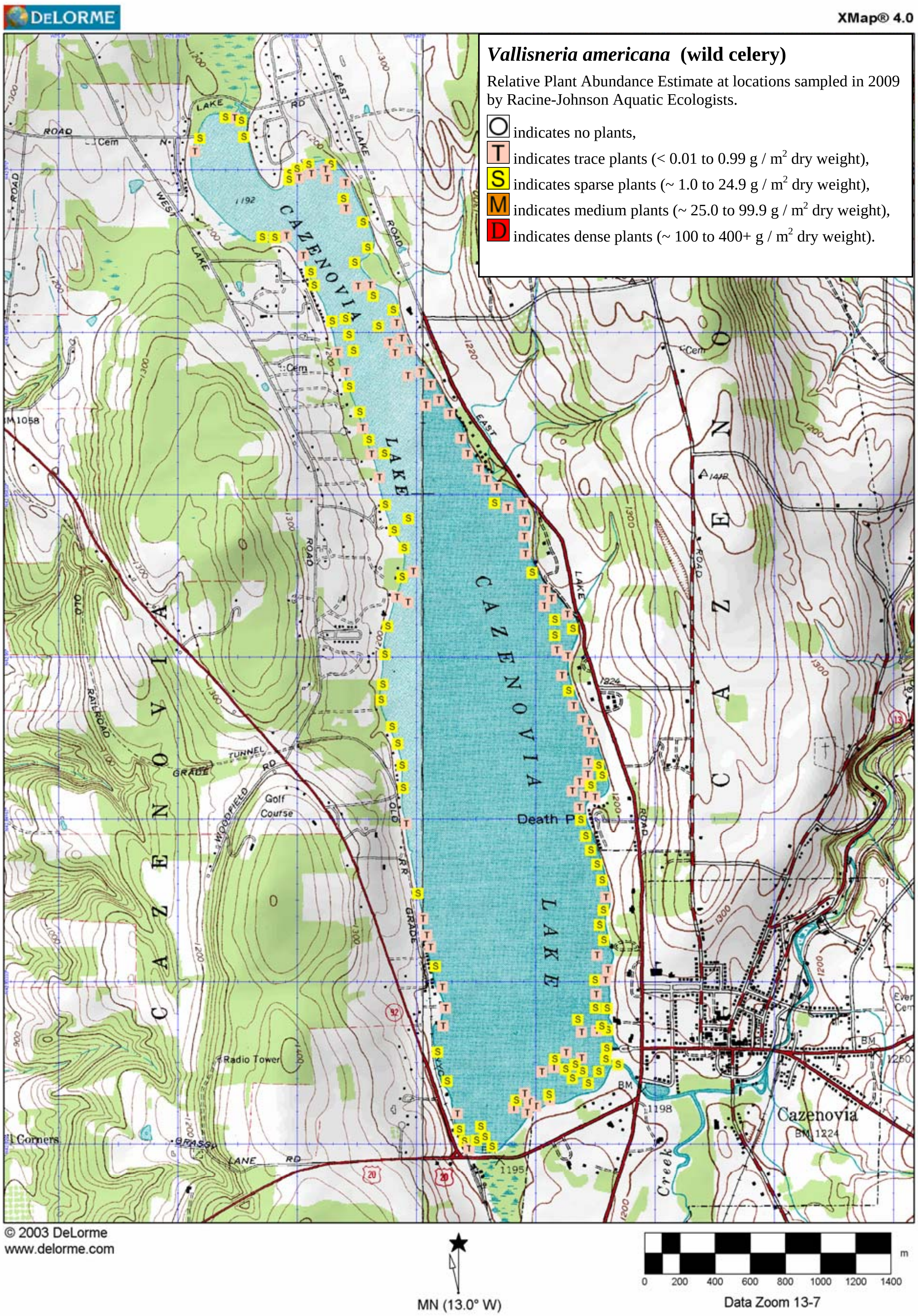

Figure 32. *Vallisneria americana* (wild celery) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

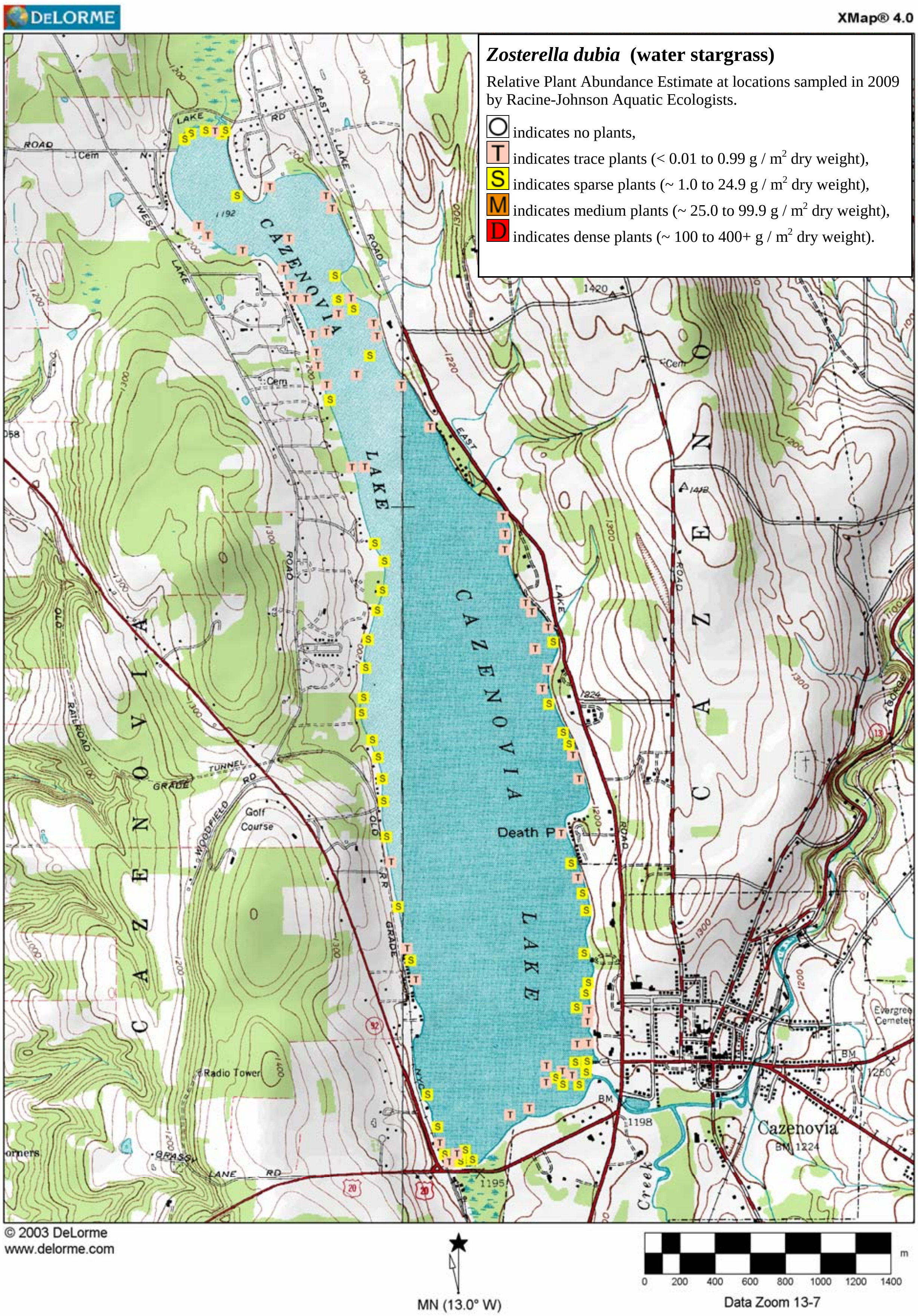

Figure 33. *Zosterella dubia* (water stargrass) map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.

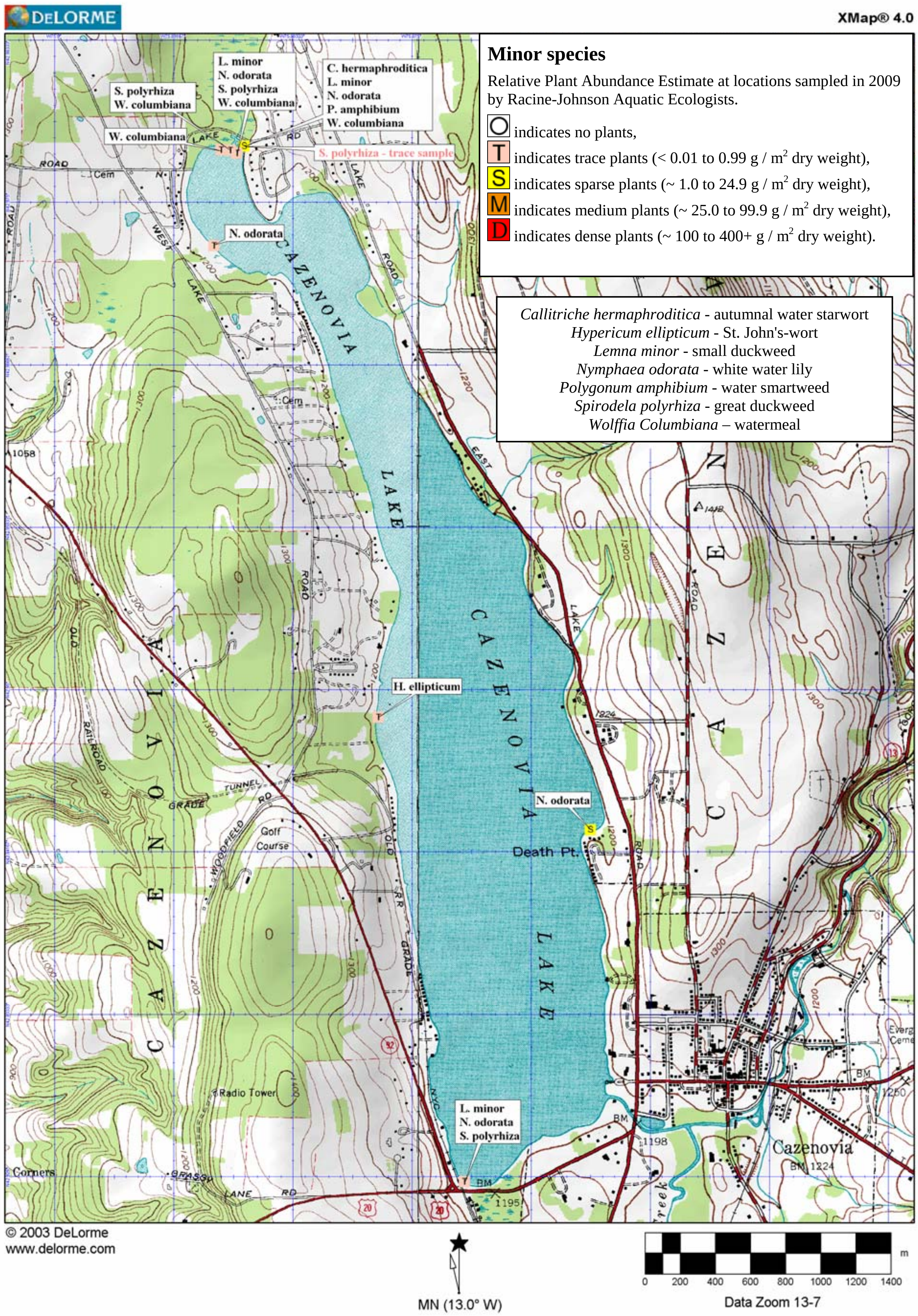

Figure 34. Minor species map of relative abundance at sampled locations in Cazenovia Lake where we collected two rake tosses in 2009.