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Date: July 23, 2009

To: Kevin Kennedy, Gary Bissette, Ron Joliceur, Chuck Lee

From: Dominic Meringolo, Environmental Engineer
Gerald Smith, President/Aquatic Biologist

Re: Quaddick Lake Pre-Treatment Survey

Early "qualitative" surveys of plant growth in Quaddick Lake, conducted in late May/June, showed that bladderwort growth was generally low as compared to last season and that the fanwort plants were actively growing in moderate amounts. Based on these early observations, we moved forward with the planned Sonar herbicide treatments for fanwort control, but decided to hold-off on performing the transect survey and deciding on bladderwort treatment needs until later in the summer. With the passing of the July 4th holiday, the transect survey was scheduled for July 7th.

The transect survey of Quaddick Lake was conducted by Aquatic Control's Environmental Engineer, Dominic Meringolo and Erika Haug, Field Biologist. The goal of the survey was to quantitatively document the current aquatic plant community in both Upper & Lower Quaddick Lake.

Survey Methodology

On July 7th, the aquatic vegetation was sampled at discrete points along a series of transects (See Figure 1) that closely replicated a previous transect Plant Survey of the lake performed by Aquatic Control / ENSR Corp. in 1999. Vegetation was observed with several methods, including visual observation, physical collection with a throw-rake and an underwater camera system (Aqua-Vu). Additional observations were made in other areas of the lake not covered by transects to examine the vegetation assemblage in the lake.

Survey Results

The survey data collected at each point is provided in Table 1. The table contains information on water depth, overall % cover & biomass of aquatic plants, plant species present and separate cover & biomass for both milfoil and fanwort. Biomass is recorded on a scale of 0-4 where 0 =no plants, 1 = plants growing low to the bottom, 2 = plants growing well above the bottom, generally less than midway through the water column, 3 = plants reaching upper portions of the water column and 4 = plant growth "topped out" or nearly so.

Figures 2-3 show the distribution of fanwort and bladderwort in Quaddick Lake. There was no appreciable amount of milfoil found in either basin. The following is a summary of the survey findings:

- Fanwort was the dominant plant in the Upper Basin. Although there were some localized areas of more dense growth, the overall cover and biomass of fanwort was still considerably less than that seen historically (pre-2008). Fanwort cover was generally 30-50% on average in water depths of ~10-feet or less.

- A majority of the fanwort plants were about 3-5 feet tall and were not visible from the water's surface. Some localized areas may exhibit near topped out growth by the end of the summer including the narrow channel just south of Stump Pond.

- Overall bladderwort growth was low to moderate and considerably less that last year. Bottom cover of bladderwort was generally 0-40% and plant biomass was low with most areas growing a foot or so off the bottom.

- There were a few small "rafts" of bladderwort in the Upper Basin at the time of the survey, but no widespread problematic growth was observed.

- Plant growth in the Lower Basin was sparse and was dominated by aquatic moss with scattered fanwort plants in the south end. The fanwort in the far south end was clearly showing the effect of the Sonar (fluridone) treatment program.

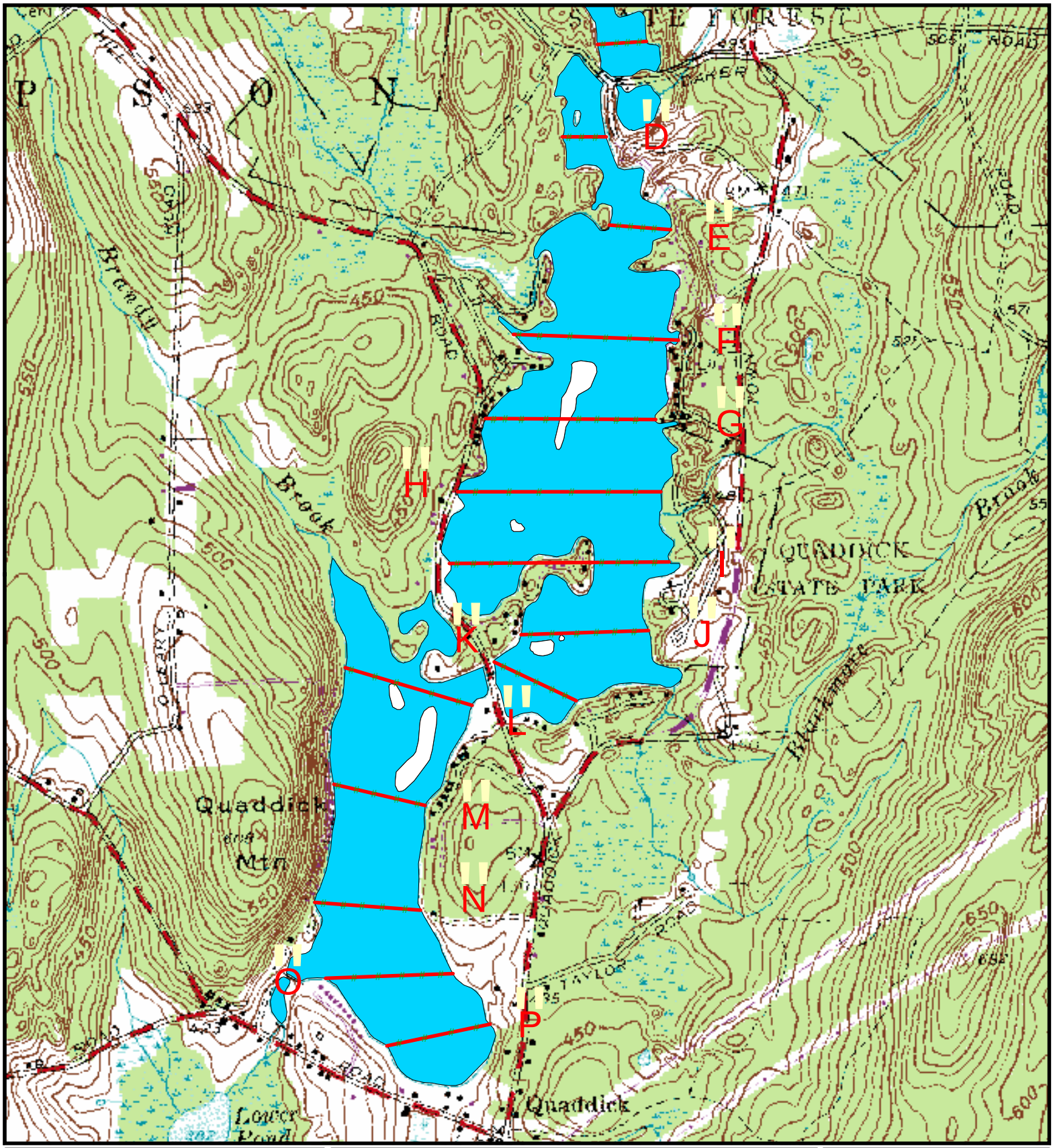
- No appreciable amount of milfoil was seen in either basin.

Management Considerations

It would appear that the lack of an effective winter drawdown in 2008/2009 has allowed the fanwort to return in earnest this year, while the bladderwort growth has remained mostly non-problematic. The reduction of bladderwort may be a result last year's extensive treatment and/or a result of changes in other environmental factors such as weather, water clarity and plant composition.

At this point, we'd recommend holding off on treatment of the bladderwort as there is no indication that it is or will become a widespread problem this summer. While an increase in floating "rafts" of bladderwort may appear as the summer progresses, we believe it would be more cost effective to conserve the remaining funds to allow for bladderwort treatment in 2010. It's clear that the fall/winter drawdown of 2007/2008 provided excellent control of the fanwort, however the very limited drawdown of 2008/2009 has allowed for a resurgence of fanwort growth. The Sonar herbicide treatment of the fanwort is progressing well and all indications are that we'll achieve good plant control in the two areas of the lake that were treated. Treatment of the Phragmites is planned for later in the summer.

If you have any questions or comments, please feel free to contact us.



Quaddick Lake

Thompson, CT

Survey

Transects

FIGURE:	SURVEY DATE:	MAP DATE:
1	7/7/09	7/22/09

Legend:

\# Survey Point

Transect

Note: Transect labels are placed at the beginning of the transect

0 500 1,000 2,000 3,000 4,000 Feet

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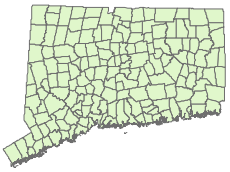

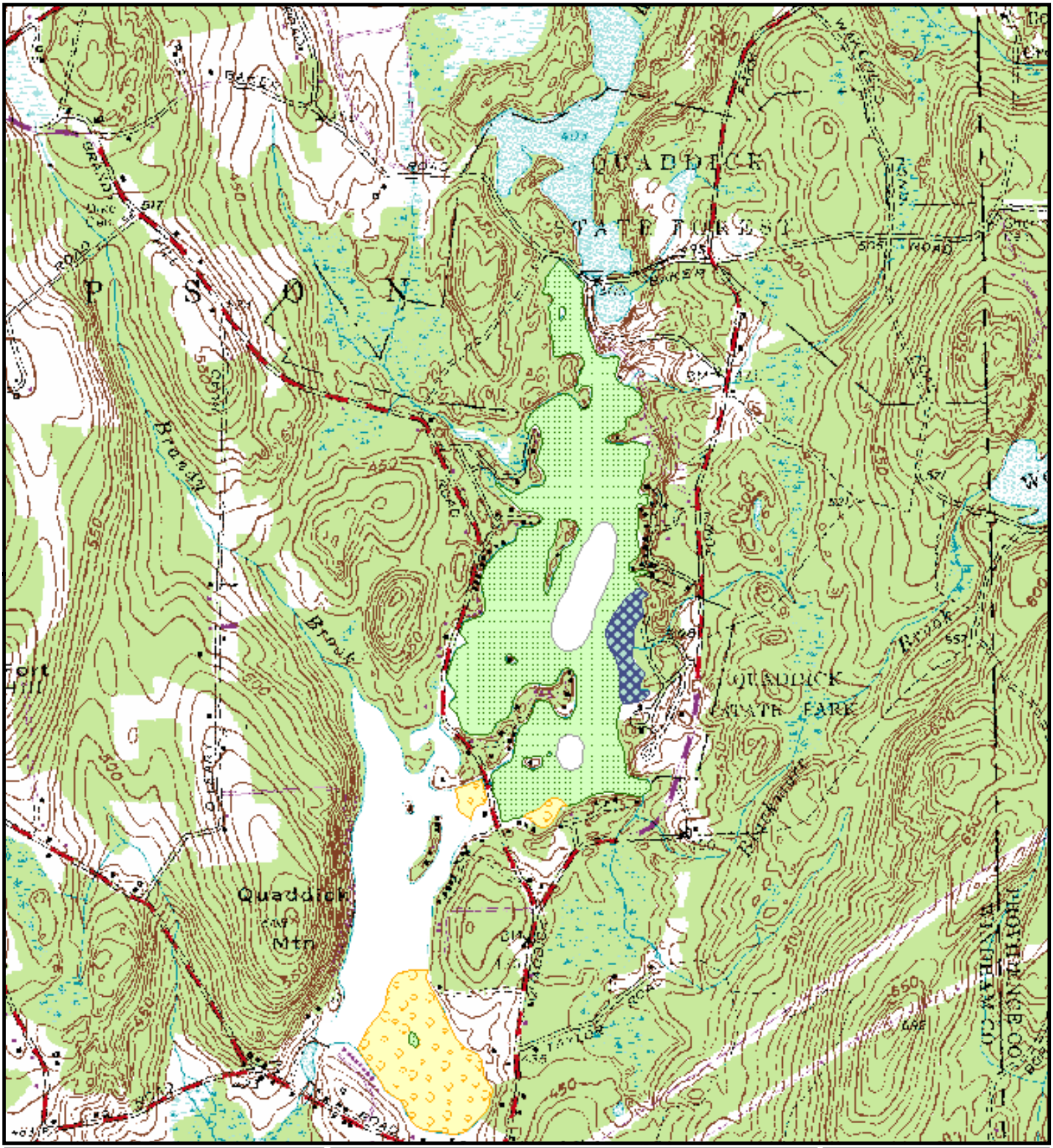

Quaddick Lake

Thompson, CT

Fanwort

Distribution

FIGURE:	SURVEY DATE:	MAP DATE:
2	7/7/2009	7/21/2009

Legend:

- 0-10 percent cover of fanwort
- 20-50 percent cover of fanwort
- 50-80 percent cover of fanwort

0 625 1,250 2,500 3,750 5,000 Feet

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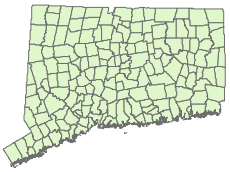

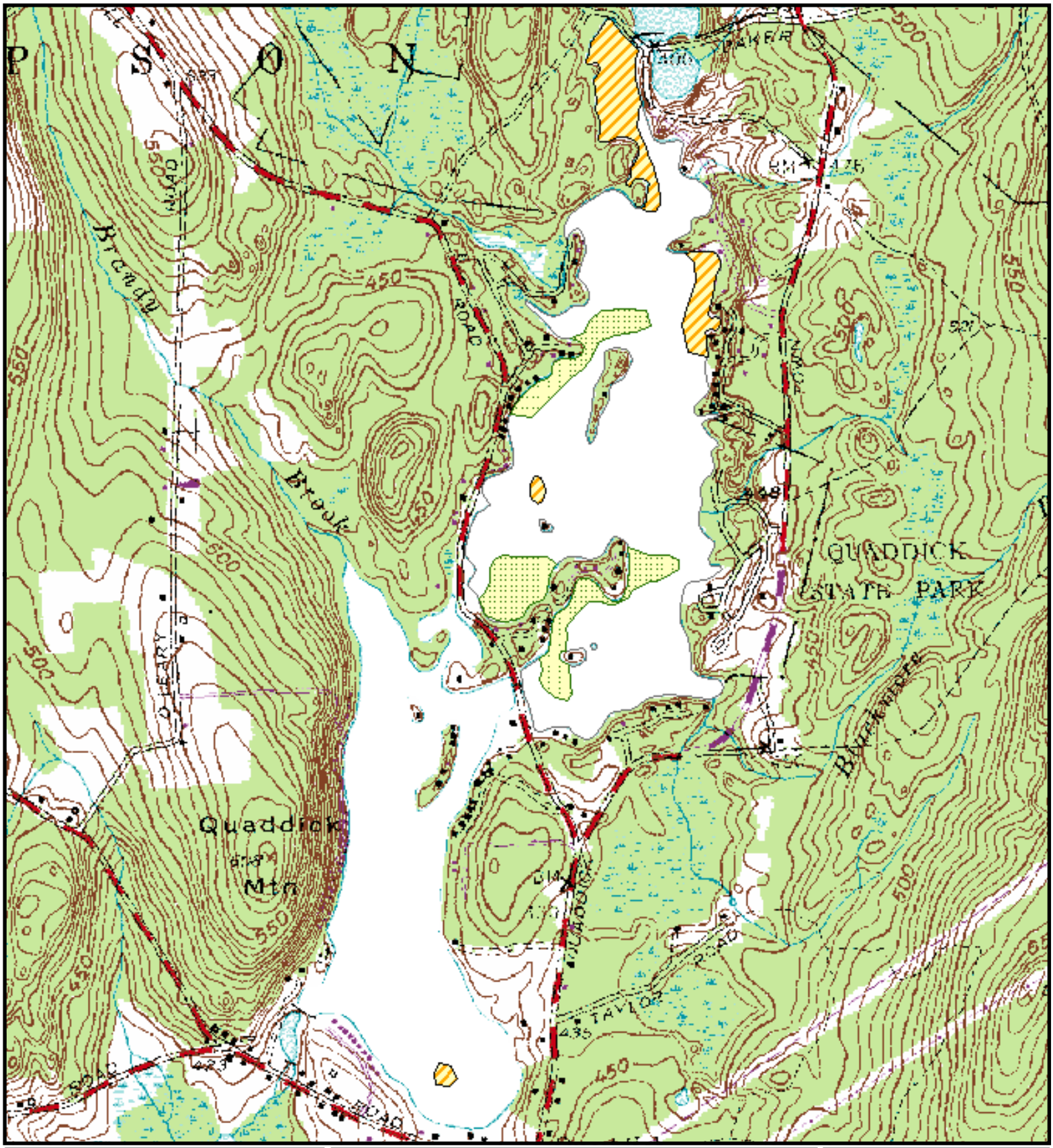

Quaddick Lake

Thompson, CT

Bladderwort Distribution

FIGURE:	SURVEY DATE:	MAP DATE:
3	7/7/09	7-21-2009

Legend:

5-20 percent cover of bladderwort

20-50 percent cover of bladderwort

0 487.5 975 1,950 2,925 3,900 Feet

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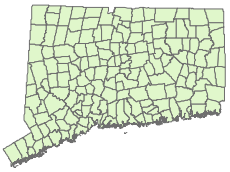

Table 1 - Vegetation Data by Transect and Point - 7/7/09

Transect Location		Water		Biovolume		Milfoil	Milfoil	Fanwort	Fanwort
Transect	Point	Depth (ft.)	Coverage	Index	Dominant Plants	Cover	Biomass	Cover	Biomass
D	1	6.5	60%	2	Pr, U, Cc, Pr	0	0	20%	2
	2	6.25	90%	3	Cc, U, Nu, B	0	0	40%	3
	3	5.5	90%	4	B, U, Cc, Mn, Lm, Pr	0	0	20%	4
E	1	6.3	65%	3	Cc, Mn	0	0	60%	3
	2	7	40%	2.5	Cc	0%	0	40%	2.5
	3	17	0		-	0	0	0%	0
	4	6.25	70%	3	Cc, Pa, U	0	0	50%	3
F	1	6	50%	1	Cc, U, Ni	0	0	20%	2
	2	9.5	30%	1	Cc, Ni	0%	0	20%	2
	3	7	30%	1	Cc, U	0%	0	20%	2
	4	6.5	40%	2	Cc, U	0	0	35%	3
	5	6.25	45%	2.5	Cc, Pt	0	0	35%	2.5
	6	2.5	80%	1	Ni	0	0	0%	0
G	1	6.5	30%	1	Ni	0%	0	0%	0
	2	18	0		-	0	0	0%	0
	3	18	0		-	0	0	0%	0
	4	5.5	20%	2	Cc, I(1 plant)	0%	0	20%	2
	5	5.5	40%	2	Cc, Ni, Nj	0	0	30%	2
	6	7.25	40%	2	Cc, U	0	0	30%	2
	7	5.5	40%	2	Cc, Pt, U	0	0	25%	2
	8	6.5	10%	1	Cc	0	0	10%	1
H	1	6.5	20%	2	Cc	0	0	30%	2
	2	6.5	60%	2	Cc, U	0	0	30%	2
	3	7	50%	2	Cc, Pt, Pa	0	0	30%	2
	4	13	0		-	0	0	0%	0
	5	12	0%		-	0	0	0%	0
	6	7.75	60%	2	Ni, Pa, Cc	0%	0	10%	2
I	1	6.5	70%	2.5	Cc	0%	0	70%	2.5
	2	7.5	60%	2	U, Cc	0%	0	50%	2
	3	10	0%		-	0	0	0%	
	4	7	10%	1	Cc, U	0	0	5%	1
	5	5.5	70%	2	Cc, Ni, U, Nj, Pr	0	0	50%	2
	6	5.5	30%	1.5	Cc	0	0	30%	1.5
	7	5.25	30%	1.5	Cc Pt U	0	0	25%	1.5
	8	2.5	40%	1.5	Cc	0	0	40%	1.5
J	1	5.5	40%	1.5	Cc	0	0	40%	1.5
	2	6.5	30%	1.5	Cc	0	0	30%	1.5
	3	7.5	30%	1	Ni	0%	0	0%	0
	4	8	0%		-	0	0	0%	0
	5	6.25	70%	2	Cc, Pt, Nj	0%	0	40%	2
	6	5.5	40%	2	Cc, Pt, Pr, U	0	0	30%	2
K	1	6.25	40%	1	Pt, I, Ni,Cc	0%	0	10%	2
	2	6.75	50%	2	Cc, U, Nj, Ni	0%	0	30%	2
	3	7.5	20%	1.5	Cc, U	0%	0	10%	1.5
	4	6.25	70%	1.5	Cc, Ni	0%	0	30%	2
	5	6	60%	1.5	Cc, Ni	0%	0	30%	2
Upper Lake Averages			40%	1.83		0%	0.00	24%	1.66

Table 1 - Vegetation Data by Transect and Point - 7/7/09

Transect Location		Water		Biovolume		Milfoil	Milfoil	Fanwort	Fanwort
Transect	Point	Depth (ft.)	Coverage	Index	Dominant Plants	Cover	Biomass	Cover	Biomass
L	1	4	20%	1.5	Cc, Ni	0	0	10%	2
	2	6	80%	1	U, Ni	0%	0	0%	0
	3	4	0%	0	-	0	0	0%	0
	4	6	90%	1	Ni	0	0	0%	0
	5	5.5	90%	1	Ni	0%	0	0%	0
M	1	8	0%		-	0%	0	0%	0
	2	8	0%		-	0%	0	0%	0
	3	8	0%		-	0%	0	0%	0
	4	8.5	60%	1	Fa	0%	0	0%	0
	5	6	0%		-	0%	0	0%	0
N	1	6	80%	1	Ni, Fa	0%	0	0%	2
	2	10	100%	1.5	Cc, Ni	0%	0	5%	0
	3	9	0%		Fa	0%	0	0%	0
	4	9	100%	1	Ni, Fa	0	0	0%	0
	5	6	0%		-	0%	0	0%	0
O	1	5	40%	1	Am	0%	0	0%	0
	2	11	60%	2	Cc, Am	0	0	5%	2
	3	8	60%	1	Cc, Am	0%	0	30%	2
	4	5	30%	1	Am	0%	0	0%	0
	5	5.5	5%	1	Cc	0%	0	5%	0
P	1	6	60%	1	Am	0%	0	5%	2
	2	6	30%	1	Cc, Am	0%	0	10%	2
	3	8	50%	1	Cc, Am, U	0%	0	10%	2
	4	6	100%	1	Am, Cc	0%	0	10%	2
Lower Lake Averages			44%	1.06		0%	0.00	4%	0.67
Overall Lake Averages			41%	1.59		0%	0.00	17%	1.31