

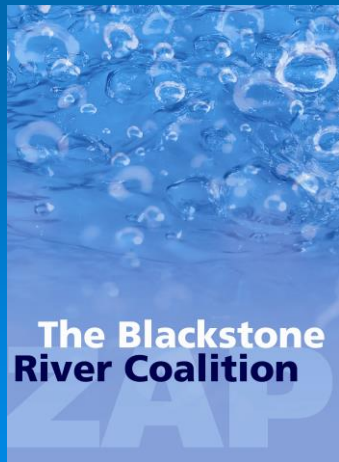
AGENDA

- 9:15 am Sign-in – coffee and pastry
- 9:30 am Welcome and Introductions by Donna Williams,
Vice President, BRC
- 9:45 – 10:15 am Overview of 2012 Report Card by
Susan Thomas and Volunteer Thank You
- 10:15 – 11:00 am Keynote Address: The Fisherville Eco-
Machine and Canal Restorer –
John Todd, John Todd Ecological
Design, Woods Hole, MA
- 11:00 – 12:00 pm Drive to Fisherville for a tour of the Eco-
Machine & Canal Restorer
- 12:00 pm Conclusion

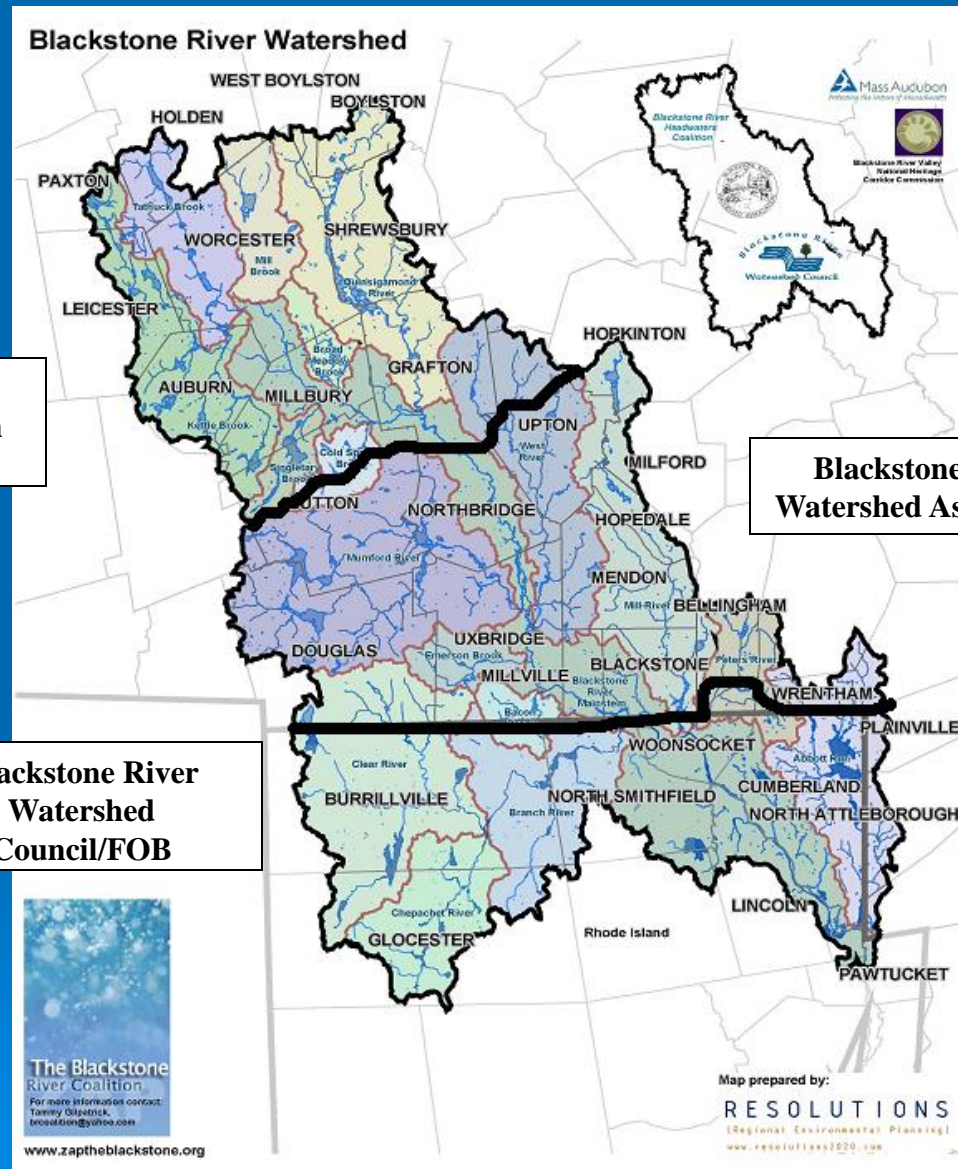
Blackstone River Coalition Watershed-wide Volunteer Water Quality Monitoring Program

8th WQ Summit and Volunteer
Appreciation Breakfast

February 16, 2013



Watershed-wide



**Blackstone River
Headwaters Coalition**

**Blackstone River
Watershed Association**

**Blackstone River
Watershed
Council/FOB**

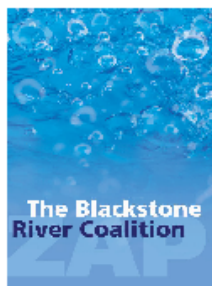
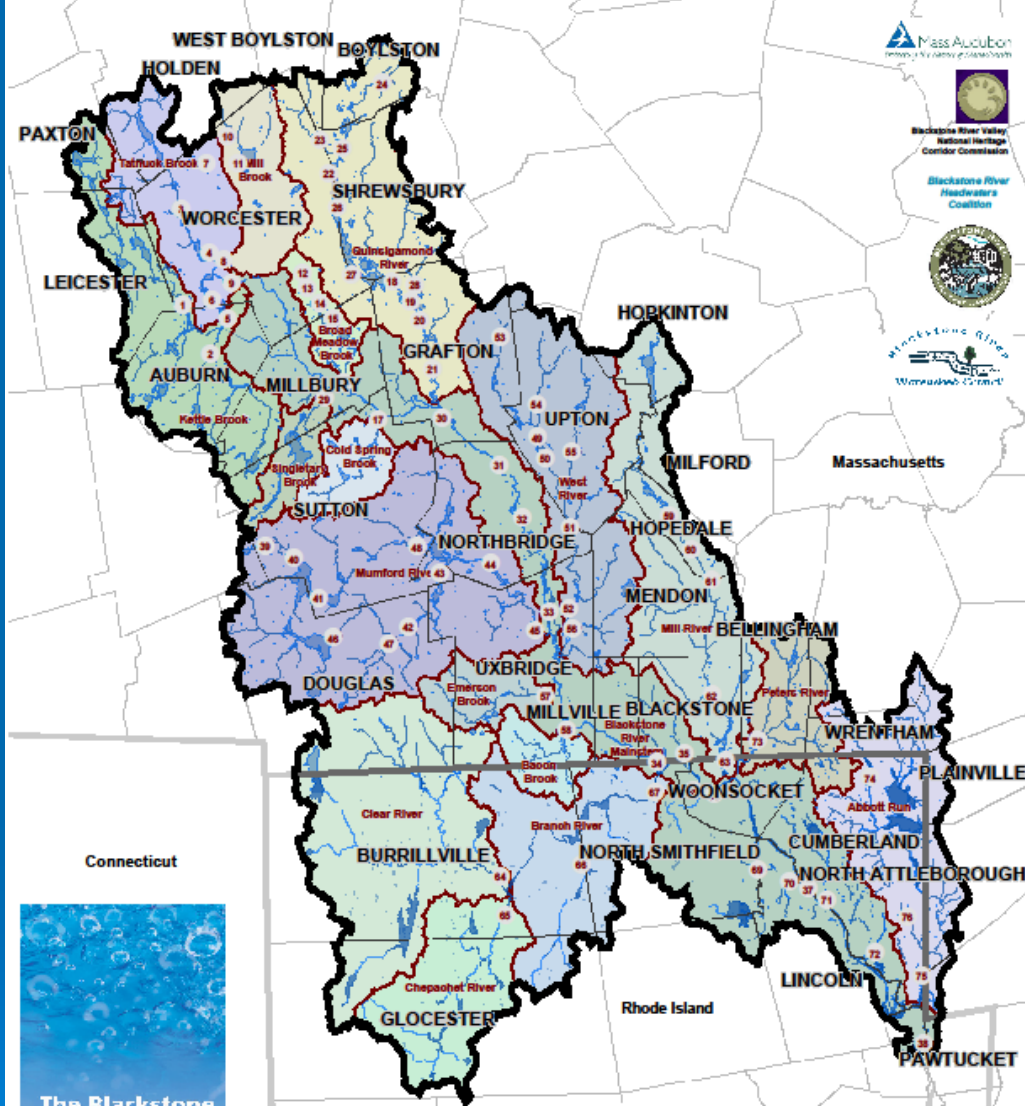
**The Blackstone
River Coalition**
For more information contact:
Tammy O'Connell
tconn@zaphtheblackstone.com

www.zaphtheblackstone.org

Volunteers & Sites

- 77 Sites/ 80 Volunteers
- Blackstone Headwaters Coalition
 - 32 Sites
 - 30 Volunteers & Lab Volunteers
- Blackstone River Watershed Association
 - 29 Sites
 - 21 Volunteers & Lab Volunteers
- Blackstone River Watershed Council
 - 16 Sites
 - 20 Volunteers & 1 Lab Volunteer

Blackstone River Watershed 2012 Water Quality Monitoring Sites



For more information email info@zaptheblackstone.org

www.zaptheblackstone.org


This program is funded in part by the Upper Blackstone Water Pollution Abatement District and Mass Audubon.

Parameters

- Water temperature
- Air temperature
- Dissolved oxygen
- Turbidity
- Orthophosphate
- Nitrate
- Conductivity



Report Card Development

- Raw data color coded by parameter according to water quality index
 - Six categories established
 - Aesthetics – turbidity, water appearance, water odor and visual assessment of turbidity
 - Water Temperature
 - Dissolved Oxygen
 - DO % Saturation
 - Nutrients – nitrate and orthophosphate
- 
- The background of the slide features several concentric, light blue circular ripples that resemble water droplets or raindrops, scattered across the lower half of the page.

Report Card Notations

- *cwf designated cold water fishery
- ** site experienced no flow conditions during one or more sampling events during the indicated season
- * *May, August, and November were considered wet weather events for sites in Massachusetts*
- * *May, June, August, October and November were considered wet weather events for sites in Rhode Island*

Blackstone River Coalition
Watershed-wide Volunteer Water Quality Monitoring Program
Report Card for 2012 Monitoring Season

map #	WaterBody	Site Location	Town	Aesthetics	Temp.	DO	% Sat.	Nutrients
HEADWATERS TRIBUTARIES								
1	Kettle Brook	Stafford Street	Worcester					
2	Dark Brook	Auburn High	Auburn					
3	Tatnuck Brook ^{cmf}	VFW-south	Worcester					
4	Tatnuck Brook ^{cmf}	Park Ave.	Worcester					
5	Leesville Pond	Leesville inflow	Auburn					
6	Leesville Pond	Leesville outflow	Worcester					
7	Beaver Brook	Jewish Community Center	Worcester					
8	Beaver Brook	Park Ave. Carwash	Worcester					
9	Middle River	St. John's Cemetery	Worcester					
10	Arcat Brook ^{cmf}	Ford Brook	Worcester					
11	Delaney Brook	Delaney Brook	Worcester					
12	Broad Meadow Brook	Dunkirk	Worcester					
13	Broad Meadow Brook	Dupuis	Worcester					
14	Broad Meadow Brook	Holdridge	Worcester					
15	Broad Meadow Brook	Knollwood	Millbury					
16	Broad Meadow Brook	Dosco	Millbury					
17	Cold Spring Brook ^{cmf}	Hatchery Road	Sutton					
18	Quinsigamond River	Outlet Flint Pond	Grafton					
19	Quinsigamond River	Rte 140	Grafton					
20	Quinsigamond River	Wheeler Road	Grafton					
21	Quinsigamond River	Pleasant Street	Grafton					
22	Coal Mine Brook ^{cmf}	Plantation Street	Worcester					
23	Poor Farm Brook ^{cmf}	Roberto Clemente	Worcester					
24	Sewall Brook ^{cmf}	School Street**	Boylston					
25	Sewall Brook ^{cmf}	Holden Street	Shrewsbury					
26	Tilly Brook	Vinny Testa's	Shrewsbury					
27	O'Hara Brook	Ideal Terrace	Worcester					
28	Bummitt Brook	Pratts Pond	Grafton					
29	Singletary Brook	Sycamore Circle	Millbury					

KEY TO COLOR CODES

Excellent

Good

Fair

Poor

Not Enough Data

Categories

(Each category is derived from the combination of the following factors)

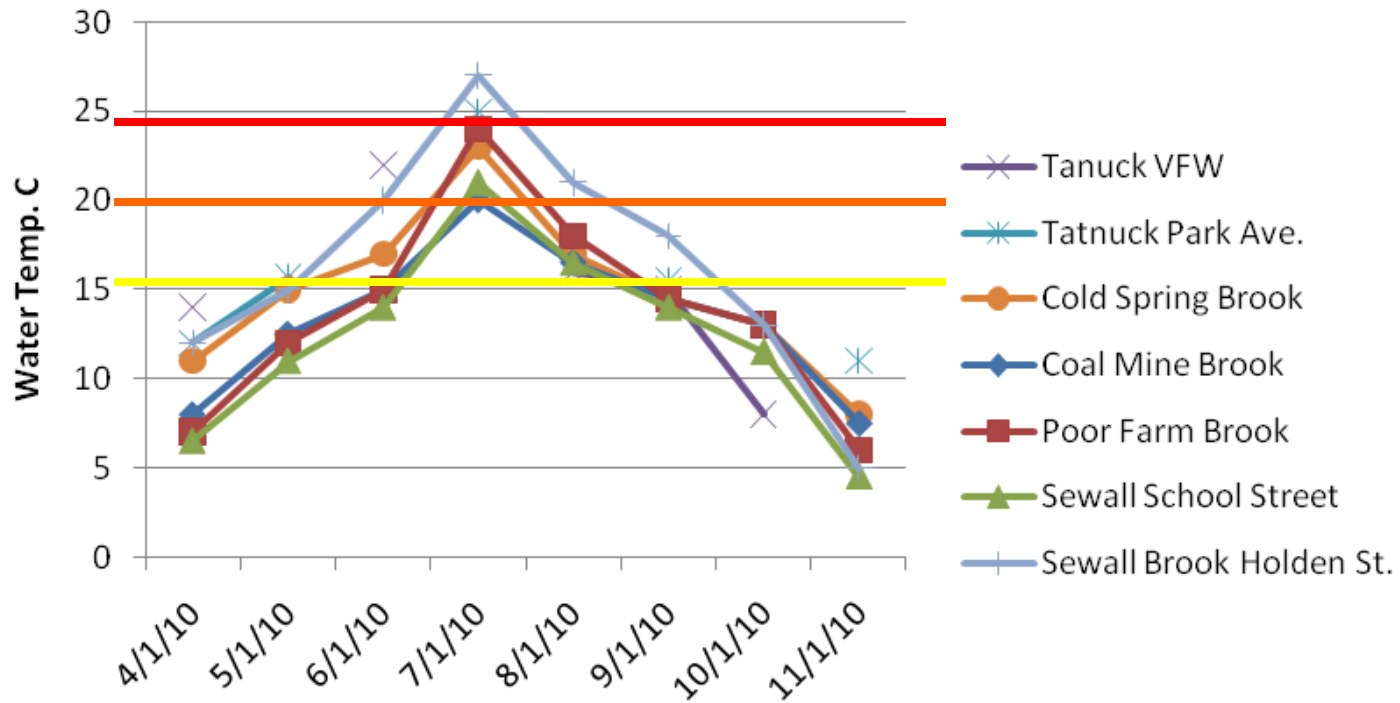
Aesthetics - turbidity, water appearance, water odor & visual assesments

Temp. - temperature
DO - dissolved oxygen

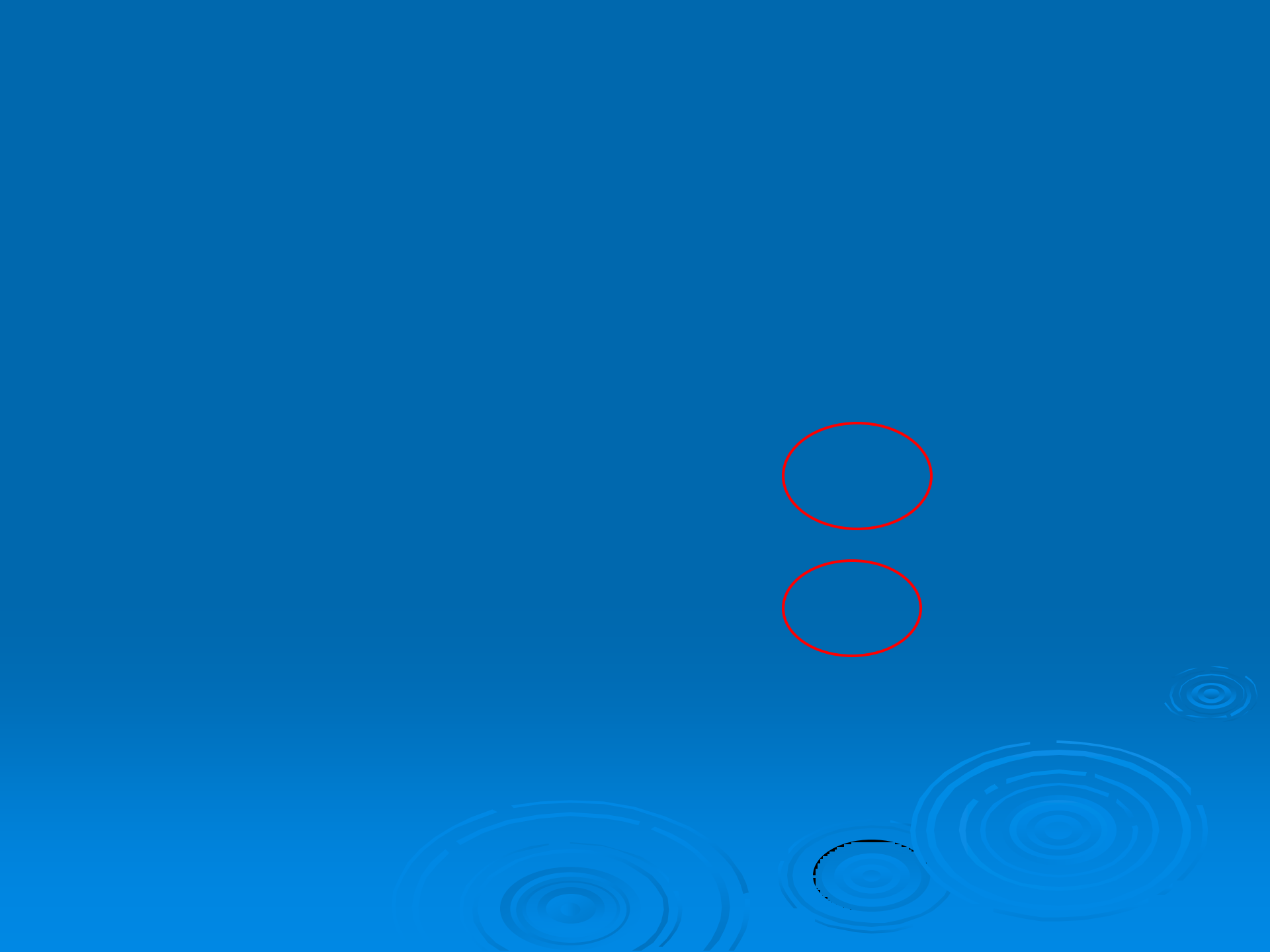
% Sat. - dissolved oxygen % saturation

Nutrients - nitrate & orthophospate

CWF - Water Temperatures



➤ July critical month but shoulder months concern too



Blackstone River Coalition
Watershed-wide Volunteer Water Quality Monitoring Program
Report Card for 2012 Monitoring Season

map #	WaterBody	Site Location	Town	Aesthetics	Temp.	DO	% Sat.	Nutrients
BLACKSTONE RIVER								
30	Blackstone River	outlet of Fisherville Pond @ Rt. 122A	Grafton					
31	Blackstone River	Sutton St. USGS flow station	Northbridge					
32	Blackstone River	Plummer's Landing	Northbridge					
33	Blackstone River	Tow path north of Stanley Woolen	Uxbridge					
34	Blackstone River	Upstream at Gorge off Staples Lane	Blackstone					
35	Blackstone River	Main St. Blackstone/TKO	Blackstone					
36	Blackstone River	River Island Park	Woonsocket					
37	Blackstone River	Albion Dam	Lincoln					
38	Blackstone River	Slater Mill	Pawtucket					
TRIBUTARIES								
39	Mumford River	Hotel Pond Outlet	Sutton					
40	Mumford River	inlet of L. Manchaug	Sutton					
41	Mumford River	outlet of L. Manchaug near Parker Rd	Sutton					
42	Mumford River	Gilboa Street/above WWTP	Douglas					
43	Mumford River	Lackey Dam	Uxbridge					
44	Mumford River	Northbridge Middle School	Uxbridge					
45	Mumford River	downstream @ Depot Street	Uxbridge					
46	unnamed tributary	outlet of Whitin Reservoir	Douglas					
47	Centerville Brook ^{CMF}	West Street	Douglas					
48	Cook Allen Brook ^{CMF}	upstr of bridge on Johnson Road	Sutton					
49	West River ^{CMF}	Hartford Avenue	Upton					
50	West River ^{CMF}	Pleasant and Glen	Upton					
51	West River ^{CMF}	Mendon Road	Northbridge					
52	West River ^{CMF}	under Rte. 16 bridge	Uxbridge					
53	Miscue Brook ^{CMF}	Merriam Road	Grafton					
54	Warren Brook ^{CMF}	Fowler Road Bridge	Upton					
55	Center Brook ^{CMF}	at Mendon Road	Upton					
56	Meadow Brook ^{CMF}	upstream at Blackstone St. bridge	Uxbridge					
57	Emerson Brook ^{CMF}	Above Quaker Highway	Uxbridge					
58	Bacon Brook ^{CMF}	Balm of Life Springs Road	Uxbridge					

KEY TO COLOR CODES

Excellent
Good
Fair
Poor
Not Enough Data

Categories

(Each category is derived from the combination of the following factors)

Aesthetics -

turbidity, water appearance, water odor & visual assessments

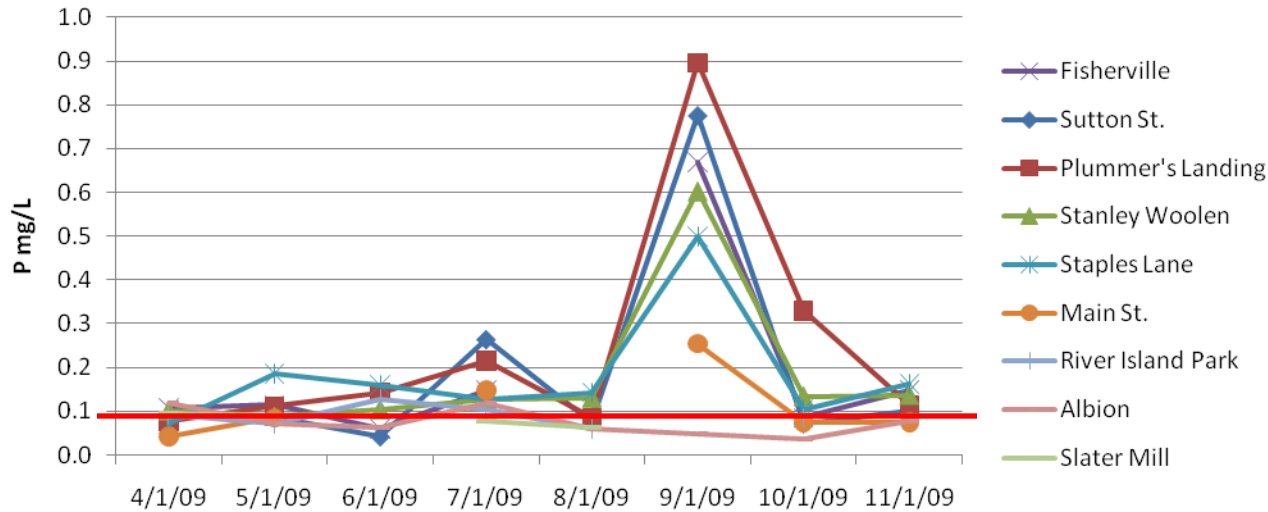
Temp. - temperature

DO - dissolved oxygen

% Sat. - dissolved oxygen % saturation

Nutrients - nitrate & orthophosphate

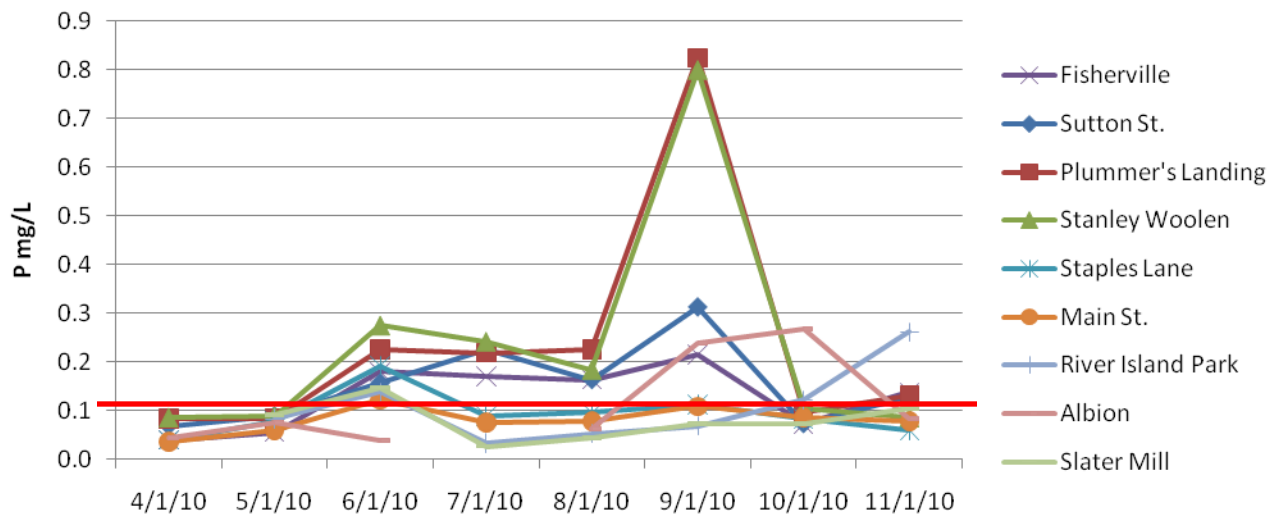
Mainstem 2009



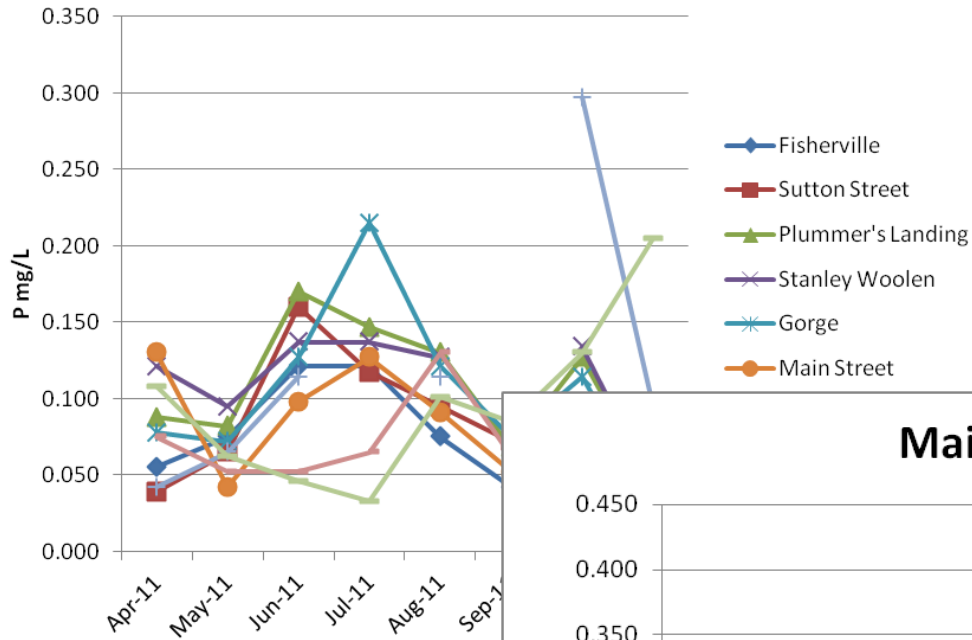
➤ September 09/10 dry years, vegetation dying

➤ Gorge, Main St., Slater Mill fair/orange 2010

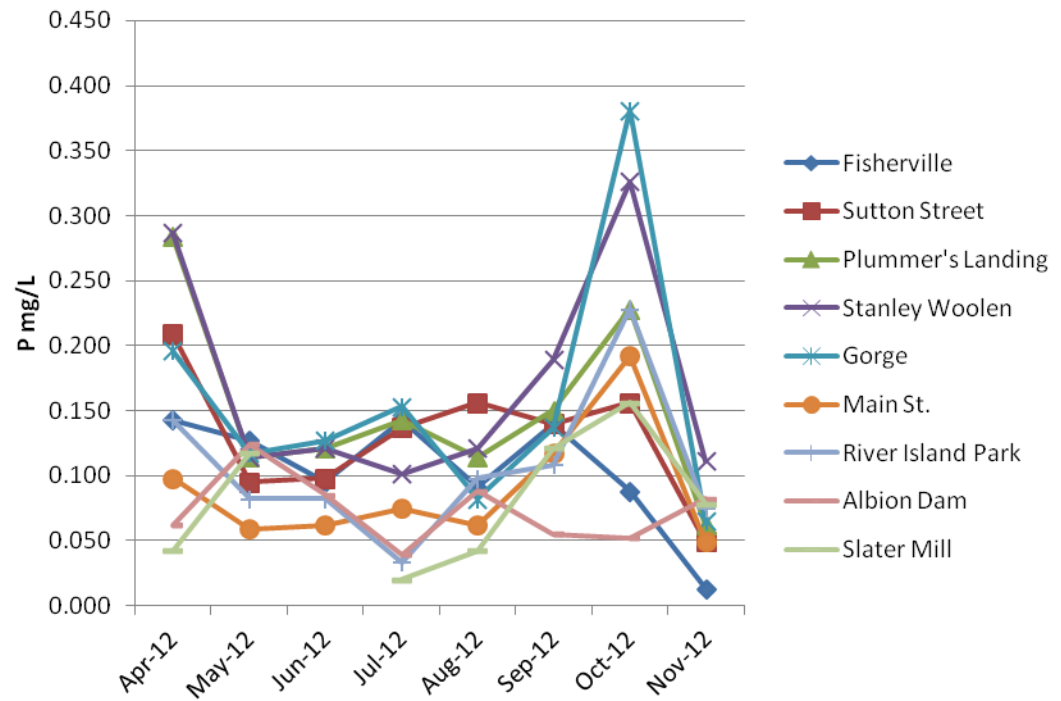
Mainstem 2010



Mainstem 2011



Mainstem 2012





➤ West River Cold Water Fisheries

West River - CWF

➤ Cold Water Fisheries

- Dissolved Oxygen poor = < 5 mg/L
- Water Temp. poor = $> 24^{\circ}\text{C}/75^{\circ}\text{F}$
- % Saturation poor = $< 50\%$

➤ Pleasant & Glenn

- DO = poor July through November
- % Sat. = poor July through November
- Water temp. poor only in July

Blackstone River Coalition
Watershed-wide Volunteer Water Quality Monitoring Program
Report Card for 2012 Monitoring Season

map #	WaterBody	Site Location	Town	Aesthetics	Temp.	DO	% Sat.	Nutrients
TRIBUTARIES continued								
59	Mill River	Fitzgerald Street	Hopedale					
60	Mill River	Mill Street	Hopedale					
61	Mill River	Hartford Avenue East	Hopedale					
62	Mill River	Park Street Valati Park	Blackstone					
63	Mill River	Privelege Street	Woonsocket					
64	Clear River ^{CW}	RI 102	Burrillville					
65	Chepachet River ^{CW}	Gazza Road	Burrillville					
66	Tarkiln Brook	Tarkiln Road	Burrillville					
67	Branch River	Rte. 146A/Great Road	N. Smithfield					
68	Cherry Brook	Olo Street	Woonsocket					
69	Crookfall Brook ^{CW}	Sayles Hill Road	Lincoln					
70	Mussey Brook	New River Road	Lincoln					
71	Sneech Brook ^{CW}	Albion Road	Cumberland					
72	Monastery Brook	Mendon Road	Cumberland					
73	Peters River ^{CW}	Paine Street	Bellingham					
74	Sylvys Brook	Grants Mill Road	Cumberland					
75	Robin Hollow Pond	Dexter Street	Cumberland					
76	Millers River ^{CW}	Hines Road	Cumberland					

KEY TO COLOR CODES

	Excellent
	Good
	Fair
	Poor
	Not Enough Data

Categories
(Each category is derived from the combination of the following factors)

Aesthetics - turbidity, water appearance, water odor & visual assesments

Temp. - temperature

DO - dissolved oxygen

% Sat. - dissolved oxygen % saturation

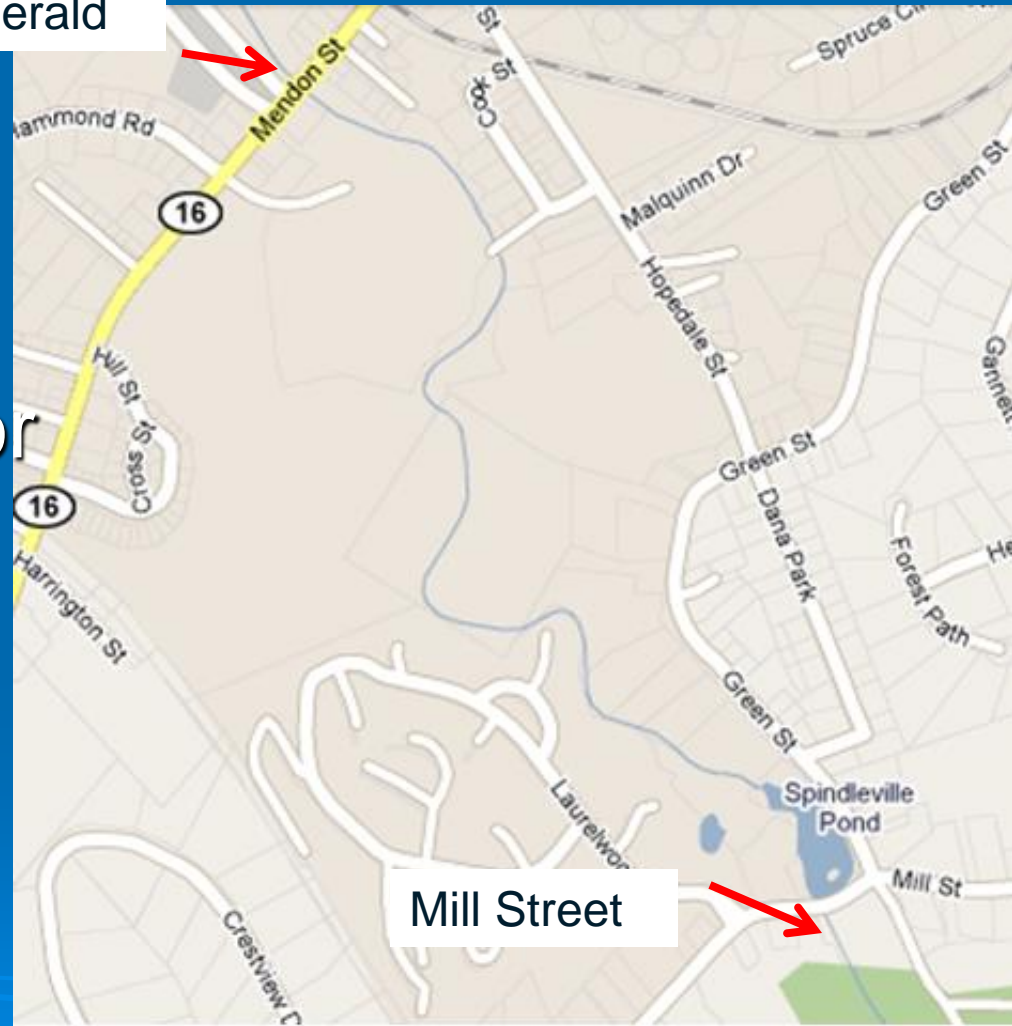
Nutrients - nitrate & orthophospate

- Mill River nutrient grades due to nitrate
- Peters River nutrient grade due to phosphate, appears to correspond to wet weather events
- Miller's River nutrient grade due to nitrate – continued follow-up this season planned

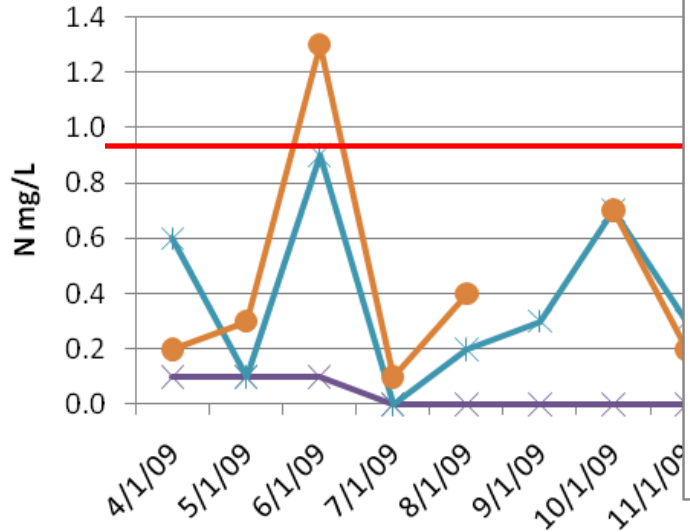
Mill River

Fitzgerald

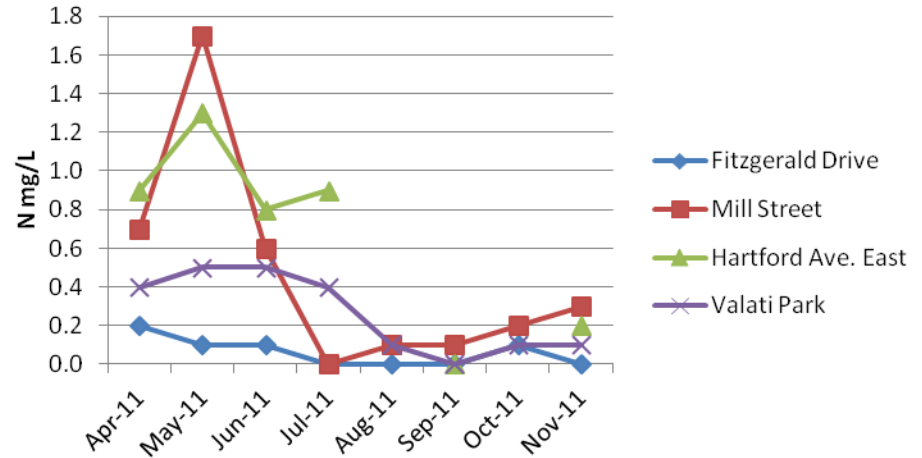
- Bracketed the source during 2009 season
- WWTP permit up for renewal – still waiting for draft



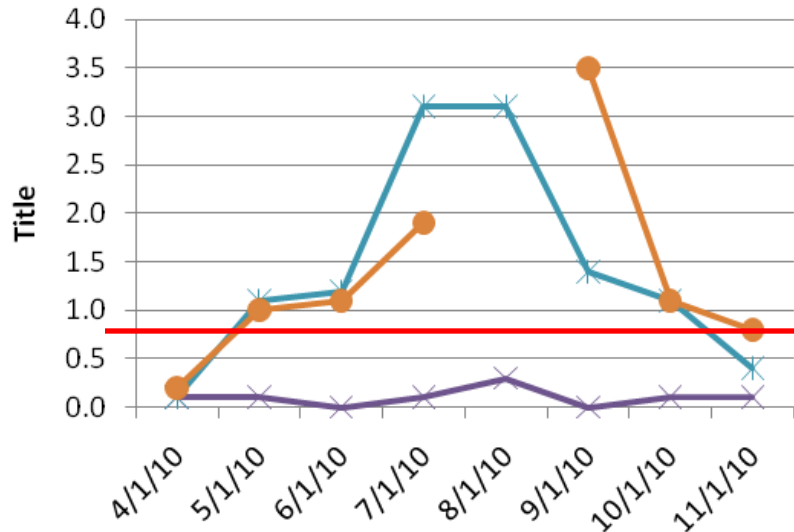
Mill River



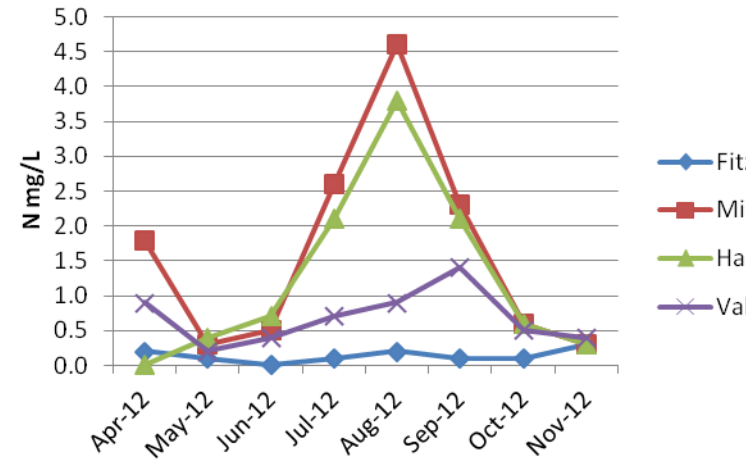
Mill River 2011



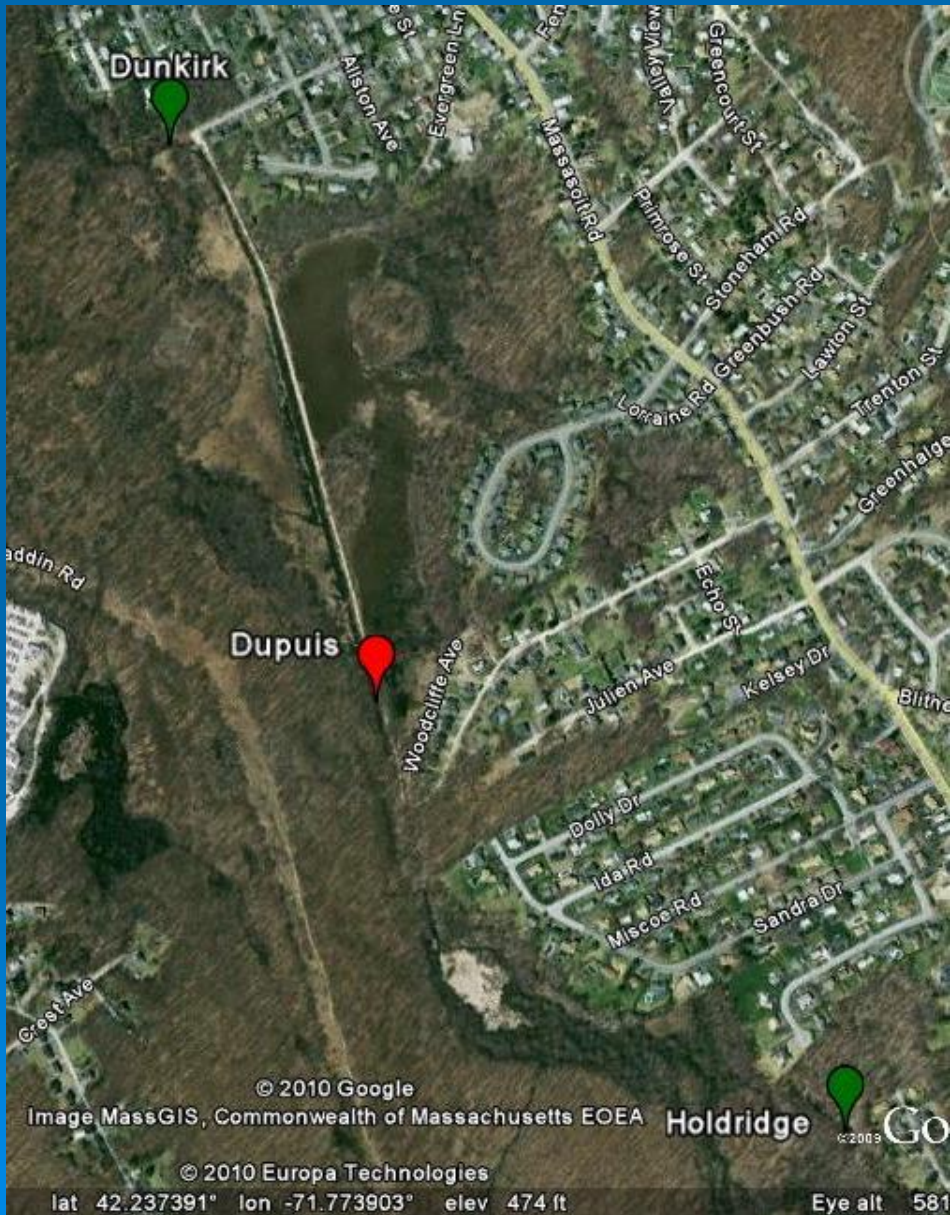
Mill River



Mill River

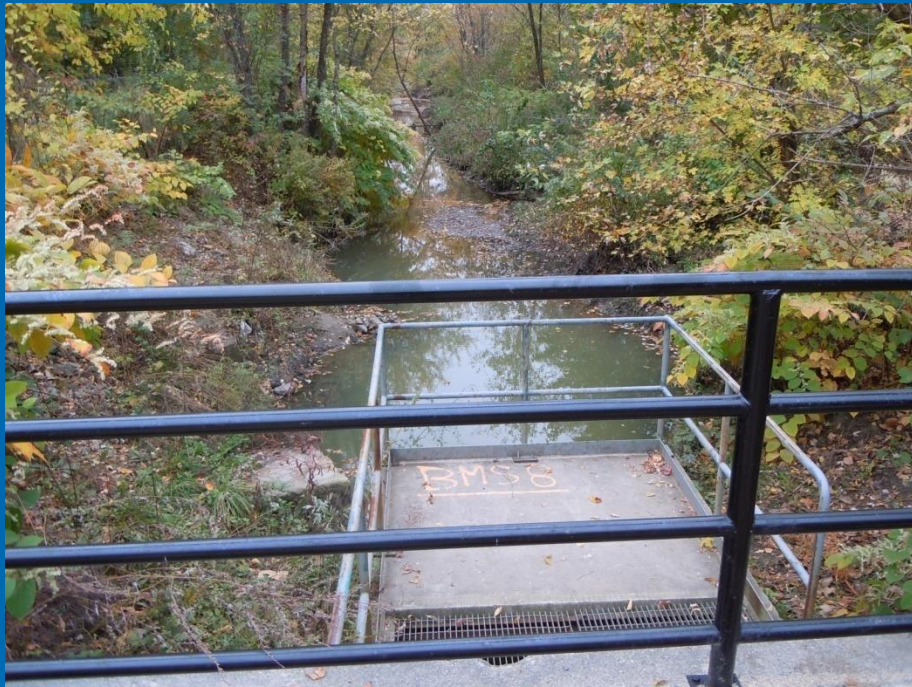


Broad Meadow Brook



- Bacteria testing
- DO Concerns at Dupuis 2010 June thru Sept.

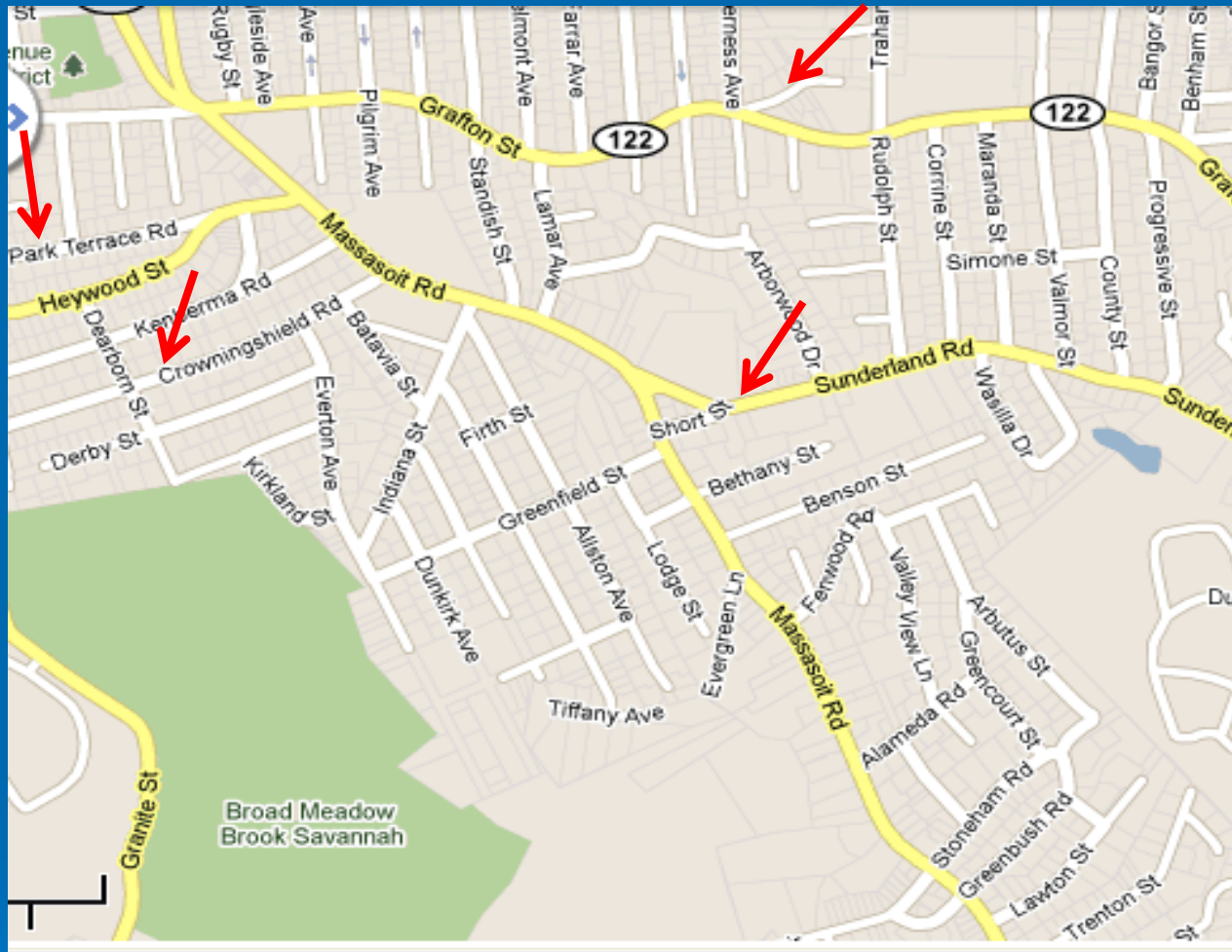
Broad Meadow Brook at Dunkirk



Broad Meadow Brook	E. coli MPN 6/18/09	E. coli MPN 7/8/09	E. coli MPN 7/11/09	E. coli MPN 7/21/09	E. coli MPN 6/29/10	E. coli MPN 7/08/10
Dunkirk/tributary	-	-	68.4	>2419.6	-	-
Dunkirk/Culvert (sample 1)	>2,419.6	n/a	579.4	>2419.6	>2,419.6	>2419.6
Dunkirk/Culvert (sample 1 x 10)	n/a	14,136	617.0	7,270.0	>24,196	-
Dunkirk/Culvert (sample 2 x 10)	-	19,863	920.8	8,164.0	-	-
Dunkirk/Culvert (sample 2 x 100)	-	-	-	-	-	22,470
Dunkirk/Culvert (sample 2 x 100)	-	-	-	-	-	30,760
Dupuis	-	-	-	-	1,553.10	816.4
Dupuis (x 10 dilution)	547.5	9,208	1,565.0	1,785.0	1,112	1,529
Holdridge	-	-	-	-	63	344.1
Holdridge (sample 1 x 10)	209.8	-	1,677.0	3,076.0	142.1	-
Sprague	-	2,419.6	-	-	-	-

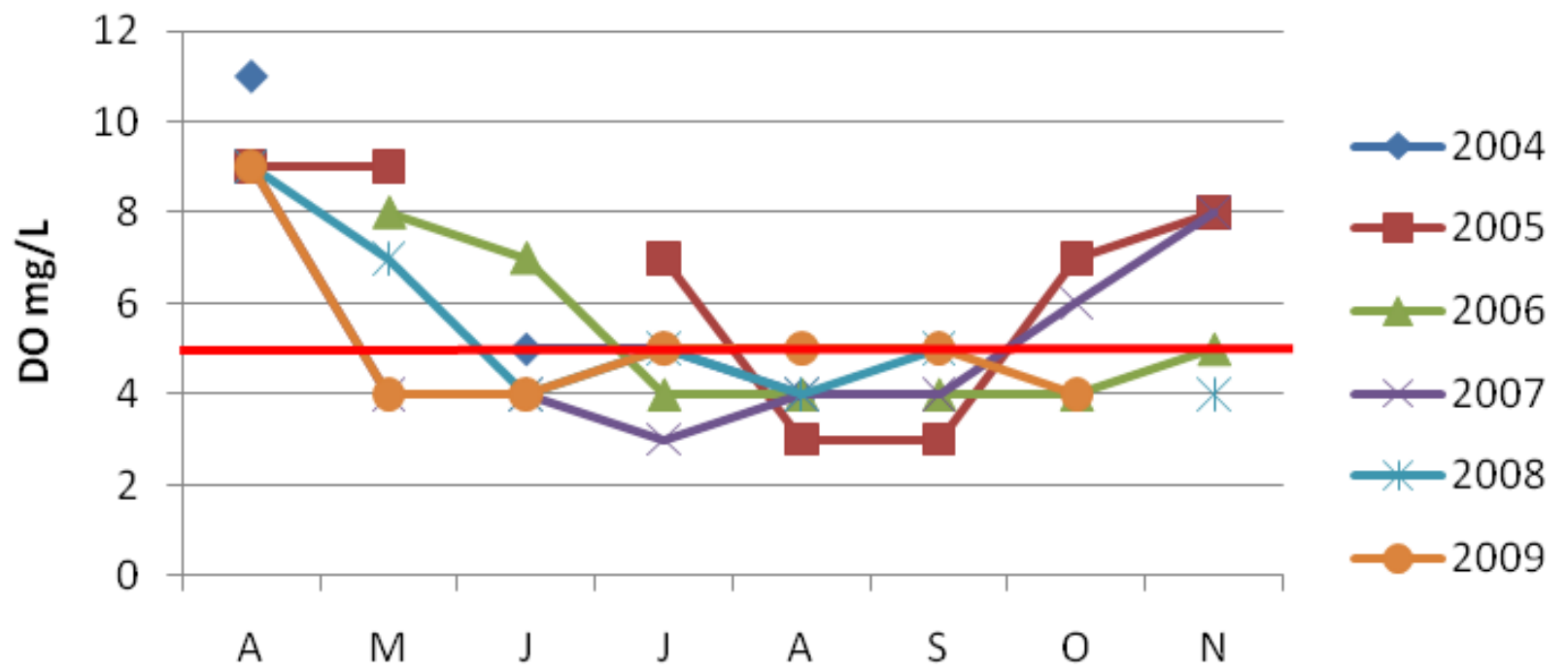
➤ Both 2010 testing events were dry weather

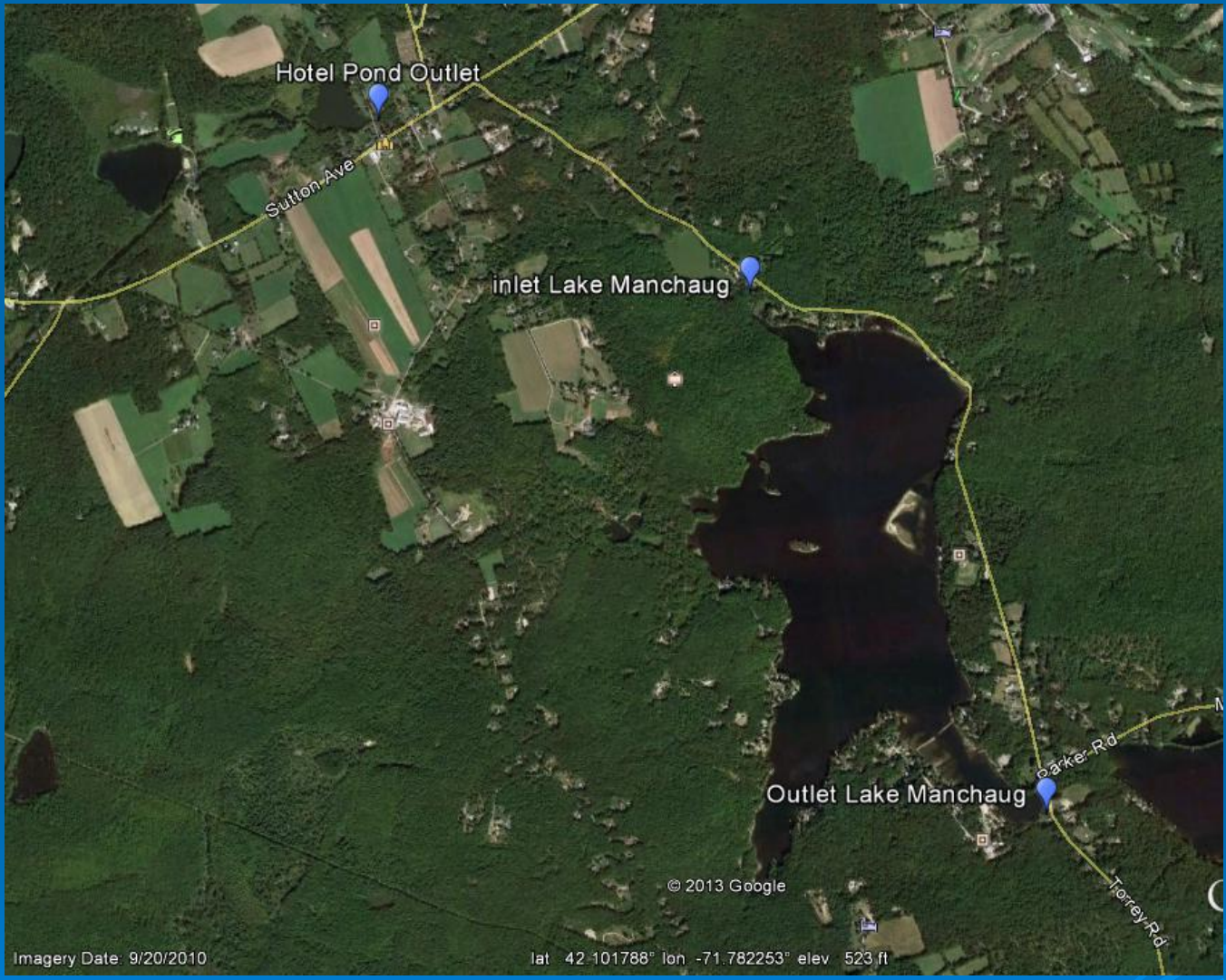
➤ DPW found a blocked sewer and 2 illicit connection



- Hyannis Place to be fixed this spring
- Crownshield and Park Terr. Fixed Sept. 2010

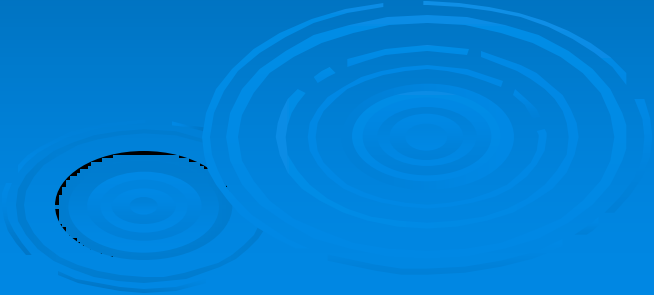
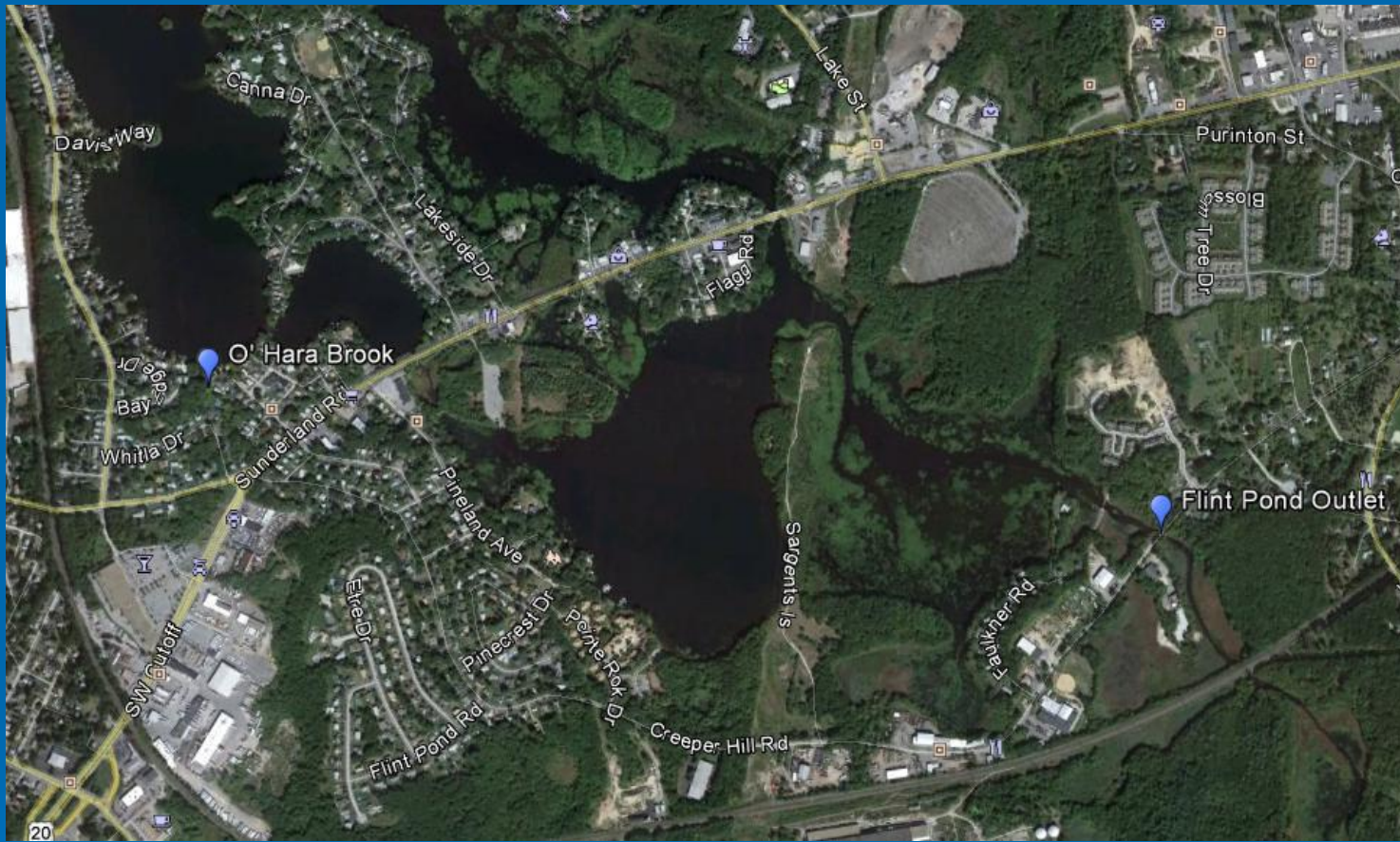
Broad Meadow Brook Dupuis





Imagery Date: 9/20/2010

lat 42.101788° lon -71.782253° elev 523 ft



➤ Sites needing new vols.

➤ Worcester

➤ Cherry Brook

➤ Tarkiln

➤ Slater Mill



A Million Thanks To

All the volunteers who contributed over 1,548
volunteer hours to the program

MA DEP for technical support and advice

Mass Riverways for technical support and
continued QA/QC assistance

The background of the slide is a solid blue color. In the lower right quadrant, there are several decorative, semi-transparent white ripples that resemble water droplets hitting a surface, creating concentric circles.

Mass Audubon



Tri-River



Cumberland Hills Fire Station



Kit Pick-up Dates

- BRWA - Saturday, March 12 – Red House, Uxbridge - 9:30 to 11:00 am
- BRWC – Saturday, March 19 – Cumberland Hills Fire Station - 9:30 to 11:00 am
- BHC – Saturday, March 26 – Broad Meadow Brook - 9:30 to 11:00 am

First Sampling Date is
Saturday, April 13, 2013

See you then!

