

Westford Stream Monitoring 2016 Results



Westford Stream Team:

Diane Duane
Kate Hollister
Hal Schreiber
Bill Duane
Don Galya
Ron Gemma
Richard Hendl
Rich Strazdas
Lilly Keele
Shannon Forte

Sampling Overview

- Sampled 12 streams, 14 sites
 - Stony Brook watershed (8)
 - Nashoba Brook watershed (6)
- River observation forms
- YSI meters for dissolved oxygen, temperature, pH, conductivity
- Bottle samples analyzed by Nashoba Analytical Laboratory for nitrates, ortho-phosphorous, total phosphorous (P)
- Coordinated with OARS
- Weather data provided by Larry Mack

Sampling Sites

Total: 14 sites

Stony watershed: 8

Nashoba watershed: 6

New in 2015

Pond Brook

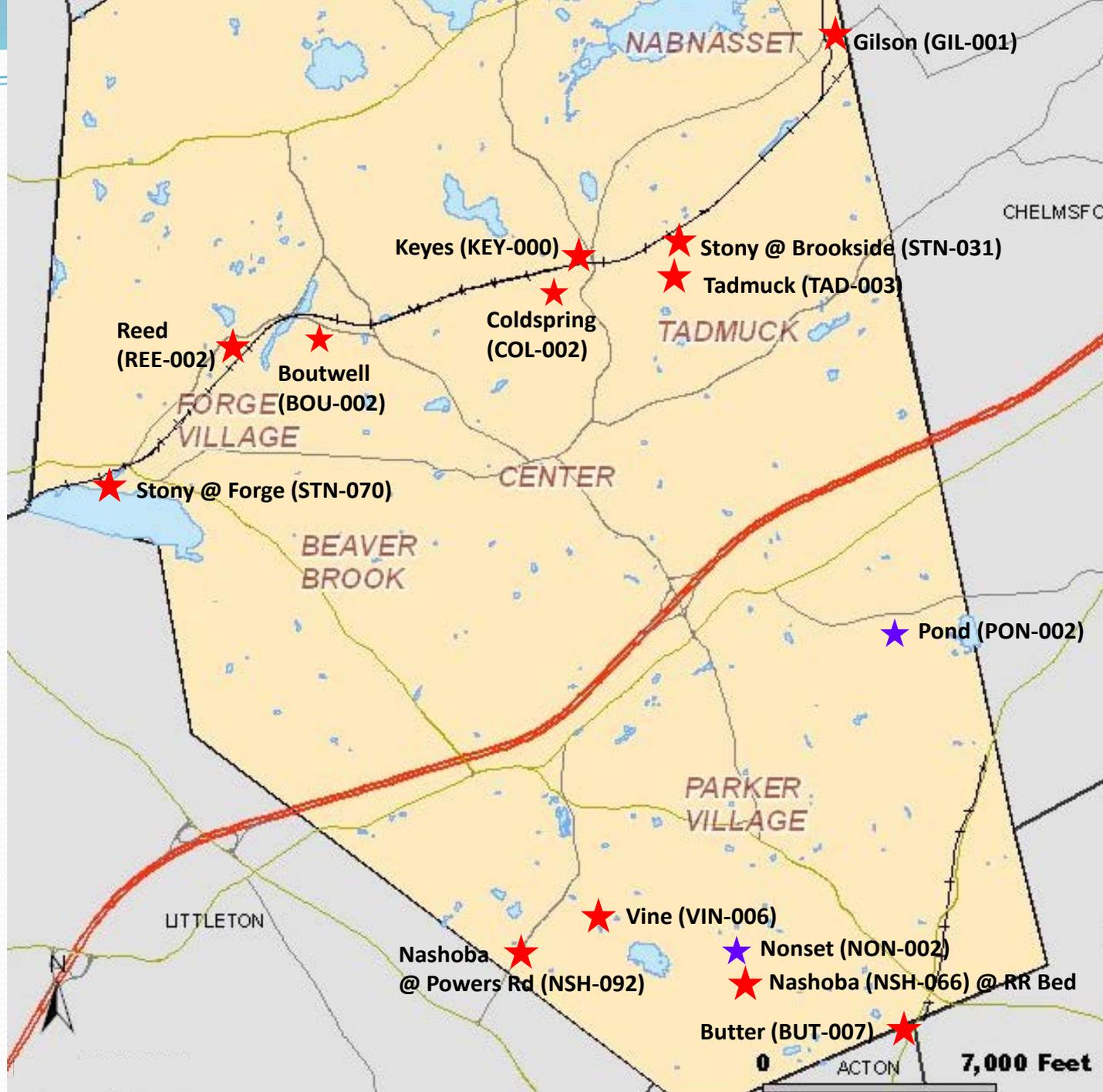
Nonset Brook (stopped
sampling in 2011)

Key to Site IDs

Brook (Reed)

↓
REE-002

↑
Distance (0.2 mile) to
the river it flows into
(Reed flows into
Stony Brook)



Results: Regular Sites

4/18/2016

Test	NSH-092	VIN-006	NON-002	NSH-066	BUT-007	PON-002	STN-070	REE-002	KEY-000	TAD-003	STN-031	GIL-001	BOU-002	COL-002
Temperature (C)	8.4	8.4	7.6	9.9	9.2	11.7	11.5	7.3	11.8	8.7	11.4	10.7	8.2	8.8
Specific Conductance (uS/cm)	1079	969	354.3	753	399.5	1293	652	339.8	244.5	832	604	399.1	560	557
Conductivity (uS/cm)	737	663	236.6	535	278.7	965	484.7	224.8	182.7	573	446.7	290.2	379.5	384.1
Dissolved Oxygen (mg/L)	9.81	10.64	10.78	8.52	10.12	10.16	11.34	10.04	8.47	11.14	10.15	8.26	8.97	11.09
Dissolved Oxygen (%)	83.8	90.9	90.6	75.3	88.4	93.8	104.2	83.6	78.4	95.9	93.1	74.6	76.3	95.7
pH	6.69	6.71	6.58	6.67	6.59	6.63	6.98	5.9	6.4	6.66	7.07	6.64	5.94	6.63
Nitrate (mg/L)	0.14	0.23	0.75	0.32	0.59	0.36	0.07	0.92	0.025	0.27	0.14	0.49	0.12	1.34
Ortho P (mg/L)	ND													
Total P (mg/L)	ND													

10/30/2016

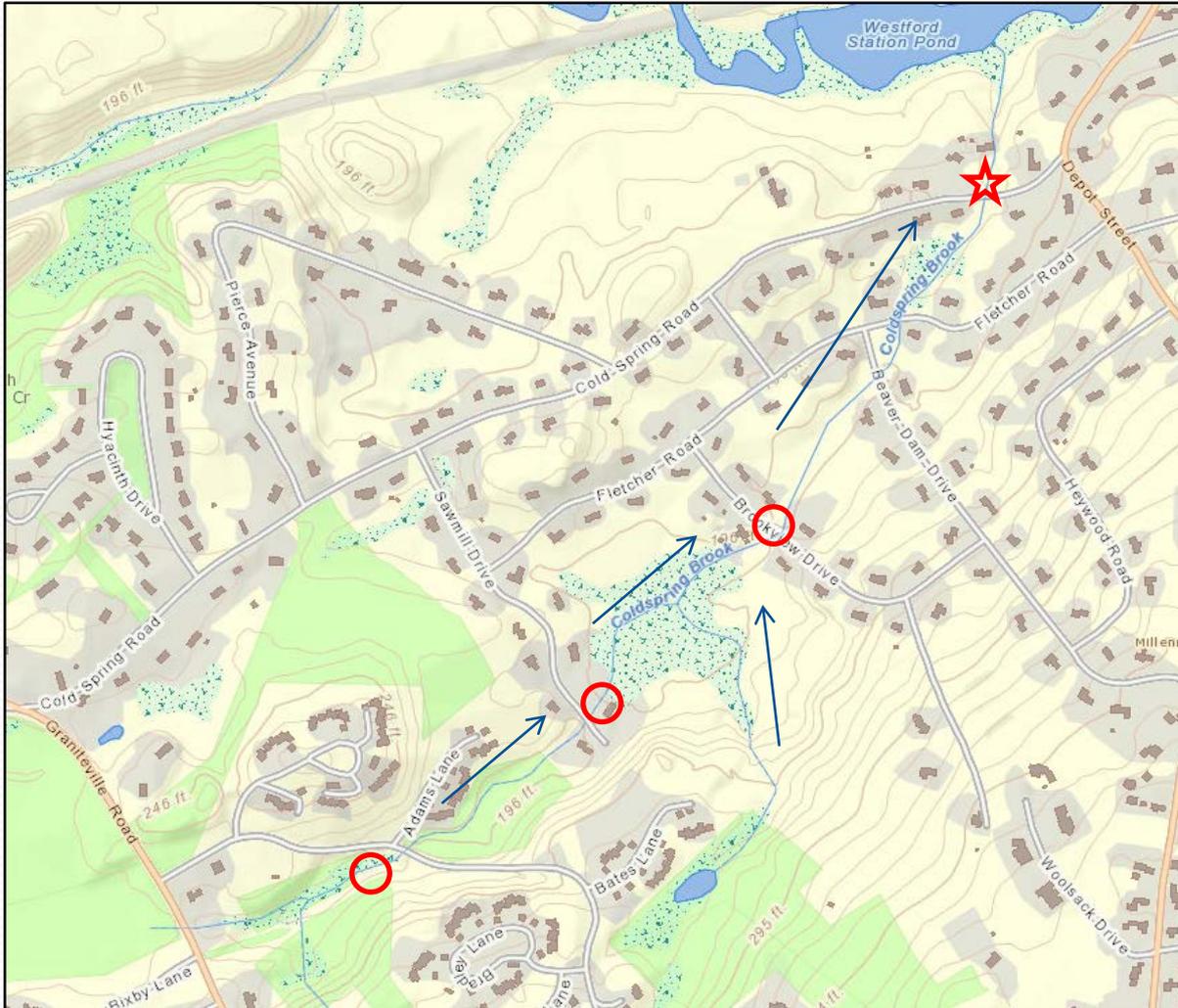
Test	NSH-092	VIN-006	NON-002	NSH-066	BUT-007	PON-002	STN-070	REE-002	KEY-000	TAD-003	STN-031	GIL-001	BOU-002	COL-002
Temperature (C)	9	8.4	8.9	8.5	9.6	8.2	11.2	10.5	8.9	8.4	8.4	9.6	8	10.9
Specific Conductance (uS/cm)	1105	1027	379.8	819	400	1352	661	468.9	363.9	1035	594	432.3	581	468.3
Conductivity (uS/cm)	767	701	262.9	562	282.1	917	487	339	252.1	707	406	305	392.5	341.9
Dissolved Oxygen (mg/L)	8.6	9.49	7.52	7.5	8.16	7.57	7.47	7.31	7.98	10.27	10.19	7.86	4.65	8.88
Dissolved Oxygen (%)	74.6	81.1	65	64.3	71.6	64.4	68.2	65.7	69	87.7	87.1	69.1	39.4	80.5
pH	6.39	6.55	5.86	6.37	6.04	6.49	6.99	6.05	6.37	5.89	6.89	6.7	5.5	6.54
Nitrate (mg/L)	0.12	0.09	0.4	0.12	0.49	0.14	0.14	1.1	0.45	0.09	0.26	0.53	0.14	1.3
Ortho P (mg/L)	ND													
Total P (mg/L)	0.02	0.03	0.02	0.03	0.02	0.05	0.01	0.01	0.01	0.02	0.02	0.01	0.03	0.02

Red highlight indicates

- pH: below MA Class B standard (6.5)
- DO: below MA fishery standard (5 mg/L)
- Nitrate: > EPA 50th percentile (0.43 mg/L)
- Total P: = EPA 50th percentile (0.05 mg/L)

Blue highlight indicates very high conductance
Source is unknown (natural or pollution?)

Special Study: Coldspring Brook



- April: Little/no rain before sample date
- Oct: 2 days of rain before sample date

Coldspring Road		Nitrate	Total P
COL-002	06/12/16	1.6	0.02
COL-002	10/30/16	1.3	0.02



Brookview Drive		Nitrate	Total P
COL-BRK	06/12/16	1.2	0.01
COL-BRK	10/30/16	0.73	0.02

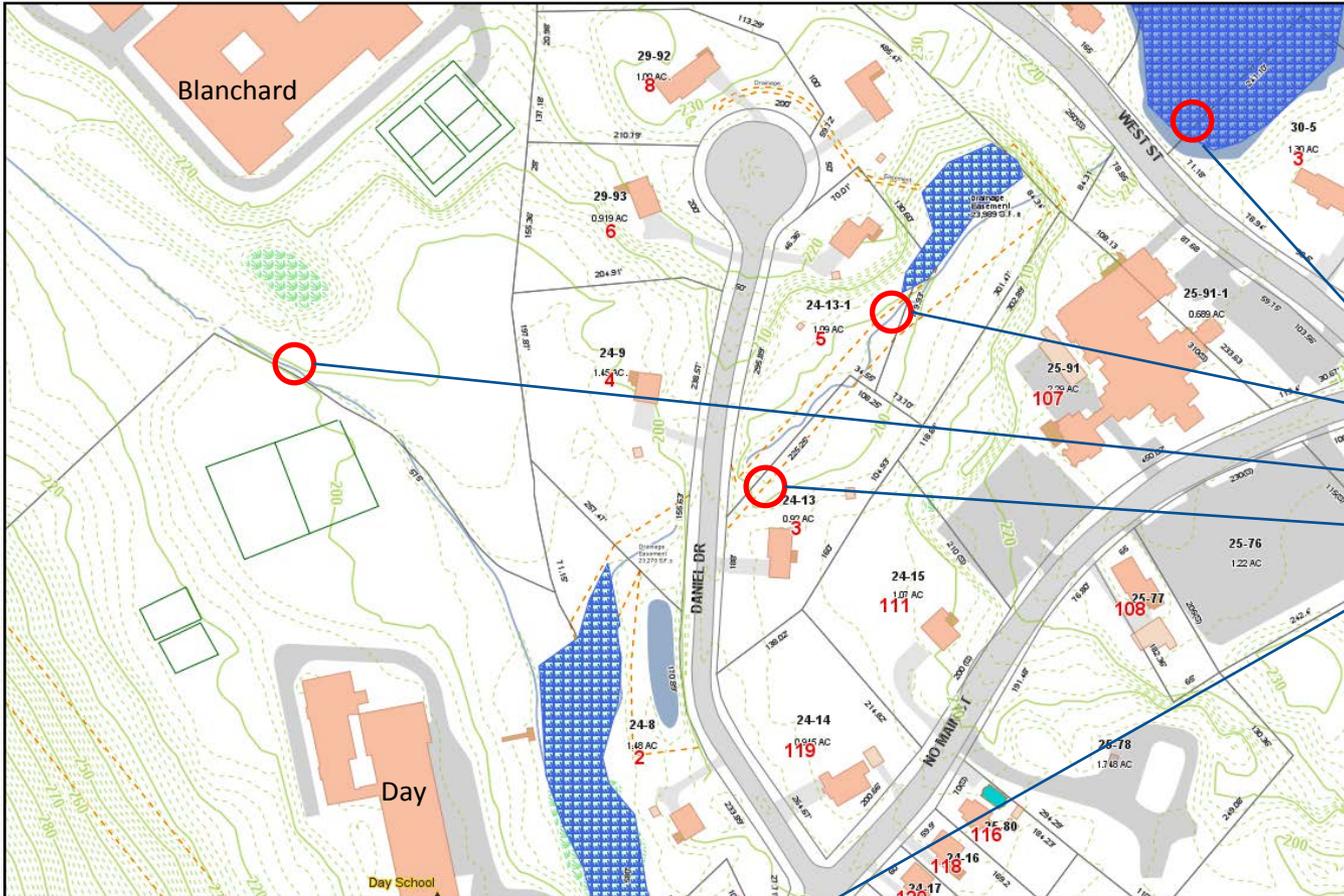


Sawmill Drive		Nitrate	Total P
COL-SAW	06/12/16	1.2	0.02
COL-SAW	10/30/16	0.24	0.13



Blanchard Lane		Nitrate	Total P
COL-BRD	06/12/16	0.32	0.02
COL-BRD	10/30/16	0.08	0.02

Special Study: Reed Brook



		Nitrate	Total P
REE-WEST	06/12/16	ND	0.03
REE-CRCH	06/12/16	0.16	0.02
REE-BRG	06/12/16	0.54	0.06
REE-DAN	06/12/16	0.51	ND
REE-002	06/12/16	1.1	0.02

- Repeated in April 2017
- Propose also monitoring nitrate in October 2017

The Team



Rich Hendl & Rich Strazdas



Diane Duane



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