WATER QUALITY TESTING AUGUST 31, 2021

For the third and final test for the 2021 season, the thirty or so volunteers who monitored their sites met with a beautiful morning, met lots of ducks and other wildlife out on the river and even witnessed the showy blooms on American Bamboo along the shoreline. We also got a little bit of rain from spotty showers on Monday to perhaps increase the E. coli readings. This on top of saturated ground from recent rains.

Both the Souhegan and Merrimack Rivers were running at a fast clip, both at multiple levels higher than their historic averages. The Merrimack at 2900cfs, twice its average of 1400. The Souhegan at 259cfs six times its average of 39cfs. Both rivers have been flowing at a very high rate most of the summer because of the heavy, continuous rains.

This is in contrast to the extremely dry, drought conditions that we had to begin the summer and our first test in June. Our June test was extremely dry; the July test extremely wet; this test a bit more normal. It goes to show the extreme conditions the rivers must put up with...and why they need protection.

The E.coli tests on both rivers were spotty. That is the tests went normally until an unexpected reading and then back to normal. For example, tests on the upper Souhegan showed generally low E.coli readings, maybe a bit higher than normal. But then just downstream of the town of Greenville the E. coli jumped way up – perhaps indicating pollution coming in from the population center. Then E.coli levels leveled off till Wilton, where they would be expected to go up – again because of population. In Milford the E.coli levels, although already high – around 200, didn't increase. From there to the confluence with the Merrimack E. coli levels stayed in the same range (150-200). Normally they drop going through the largely rural part of Merrimack.

The Merrimack River was also spotty. Levels in general were higher than expected. Usually the river tests fairly clear of E. coli. All of the readings for the entire length of the stretch that we test – from Manchester to Tyngsborough – were higher than normally seen. Not high, but higher – generally in the 70 range. However, two sites tested much higher – Depot Street in Merrimack at 248 and near the Tyngsborough Bridge at 218. Those are unusual.

E.coli readings less than 88 are considered clean, 88 to 126 is concerning, 126 to 406 unacceptable, and above 406 dangerous for public use and should be avoided.

E. coli levels generally indicate the pollution levels in the water; dissolved oxygen levels generally indicate the general quality of the water for the fish, animals, and habitat of the river. Levels of 5 to 10 are acceptable, the higher the better. Here we can show that both rivers are in pretty good shape. Granted that DO levels are higher this year because of the rains, but DO levels usually look very good on both rivers.

What can we say about this year's testing? This has been a tough year for rivers (along with us humans). The Merrimack is a dam-controlled river, which causes its own problems, and so is more subject to more uniform and better flows. The Souhegan flashes up and down with heavy rain and it did that a lot. It can handle it if it's left alone, not constrained, allowed to flow into wetlands. Both rivers need greater protection on their tributaries and wetlands so they can survive as they always have.

The high flows have been great for kayakers who've been able to get onto local rivers not normally high enough for summer paddling. Always a silver lining.

Here are the results for this week's tests. The pH levels were done as spot checks and show up with green highlighting. 7 is neutral – most of the tests are in this range and are considered good. Over the years we've seen improvements in lower levels of acid rain from western coal plants.

E-COLI MONITORING RESULTS FOR TESTS TAKEN ON AUGUST 31, 2021

SOUHEGAN RIVER SITES: mpn/100mL

1. Billy Ward Pond, Ashburnham #1 10.9; #2 5.2
2. SoR 333 Water Loom Pond, New Ipswich 21.1
3. SoR 320 Highbridge, New Ipswich 99.0
4. SoR 309 Above Greenville Mill Pond, Greenville 93.3
5. SoR 296 Downtown Greenville upstream of WWTP **224.7**
6. SoR 291 Green Bridge off Rte. 31 below Greenville WWTP 214.2
7. Horseshoe, Wilton 77.1
8. SoR 218 Below the Horseshoe, Wilton 83.3
9. Stony Brook, Wilton 123.6
10. SoR 210 Downtown Wilton 228.2
11. SoR 201 Pine Valley Mill, West Milford 93.3
12. SoR 170 Behind Hayward Field, West Milford 204.6
13. SoR 155 Souhegan Valley Boys and Girls Club, Milford 172.5
14. SoR 146 Swing Bridge, Milford 201.4
15. SoR 133 Riverside Cemetery, Milford 285.1
16. SoR 130 Behind Lorden Plaza, Milford na
17. SoR 122 Amherst Country Club 201.4
18. SoR 116 Amherst Conservation land Fairway Road, Amherst na
19. SoR 095 Boston Post Road Canoeport, Amherst 185.0
20. SoR 070 Seaverns Bridge, Merrimack 248.1
21. SoR 057 Indian Ledges, Merrimack na
22. SoR 034 Turkey Hill Bridge, Merrimack 143.9
23. SoR 015 Wildcat Falls, Merrimack 151.5

MERRIMACK RIVER SITES:

1. Mer 600 Above Amoskeag Dam, Manchester na
2. Mer 590 Arms Park, Manchester na
3. Mer 580 Upstream of Piscataquog River, Manchester na
4. Mer 570 Goffs Falls, Litchfield 54.8
5. Mer 560 Depot Street, Merrimack **248.1**
6. Mer 550 Upstream of Souhegan River, Merrimack na
7. Mer 540 Thorntons Ferry, Merrimack na
8. Mer 530 Greeley Park, Nashua 72.8
9. Mer 520 Taylors Falls Bridge, Nashua 77.6
10. Mer 510 Sagamore Bridge, Hudson 63.8

11. Mer 500 Pheasant Lane Mall, Hudson na
12. Mer 490 Upstream of Tyngsboro Bridge **218.7**

Flow on Upper Souhegan was 167 CFS. Expected flow for that date is 21

Flow on Lower Souhegan was 259 CFS. Historic flow for that date is 39

Flow on Merrimack was 2900 CFS. Historic flow for that date is 1400

RAINFALL: Spotty showers on Aug 30, negligible

Water Temperature: Souhegan 20c Merrimack 22c

DO MONITORING RESULTS FOR TESTS TAKEN ON AUGUST 31, 2021

SOUHEGAN RIVER SITES:

1. Billy Ward Pond, Ashburnham #1 6.29 ; #2 6.9
2. SoR 333 Water Loom Pond, New Ipswich 6.12
3. SoR 320 Highbridge, New Ipswich 8.35
4. SoR 309 Above Greenville Mill Pond, Greenville 8.29
5. SoR 296 Downtown Greenville upstream of WWTP 8.48
6. SoR 291 Green Bridge off Rte 31 below Greenville WWTP 8.52
7. Horseshoe, Wilton 9.00 conductivity 69.6; salinity .04
8. SoR 218 Below the Horseshoe, Wilton 9.04
9. Stony Brook, Wilton 8.80 conductivity 73.1; salinity .04
10. SoR 210 Downtown Wilton 9.06
11. SoR 201 Pine Valley Mill, West Milford 8.81
12. SoR 170 Behind Hayward Field, West Milford 8.42 pH6.40
13. SoR 155 Souhegan Valley Boys and Girls Club, Milford 8.13
14. SoR 146 Swing Bridge, Milford 8.54
15. SoR 133 Riverside Cemetery, Milford 8.70 pH6.53
16. SoR 130 Behind Lorden Plaza, Milford
17. SoR 122 Amherst Country Club 8.49 pH6.41
18. SoR 116 Amherst Conservation land Fairway Road, Amherst
19. SoR 095 Boston Post Road Canoeport, Amherst 8.06
20. SoR 070 Seaverns Bridge, Merrimack 7.96
21. SoR 057 Indian Ledges, Merrimack
22. SoR 034 Turkey Hill Bridge, Merrimack 8.24
23. SoR 015 Wildcat Falls, Merrimack 9.04

MERRIMACK RIVER SITES:

1. Mer 600 Above Amoskeag Dam, Manchester
2. Mer 590 Arms Park, Manchester
3. Mer 580 Upstream of Piscataquog River, Manchester
4. Mer 570 Goffs Falls, Litchfield 7.76 pH7.1
5. Mer 560 Depot Street, Merrimack 248.1 pH7.93
6. Mer 550 Upstream of Souhegan River, Merrimack

7. Mer 540 Thorntons Ferry, Merrimack
8. Mer 530 Greeley Park, Nashua 8.01
9. Mer 520 Taylors Falls Bridge, Nashua 8.10 pH8.10
10. Mer 510 Sagamore Bridge, Hudson 7.80 pH7.70
11. Mer 500 Pheasant Lane Mall, Hudson
12. Mer 490 Upstream of Tyngsboro Bridge 7.64 pH6.74