

Addison County Riverwatch Collaborative
New Haven River - 2011 Water Quality Summary

2010 – 2011
Focus Watershed

The Addison County Riverwatch Collaborative has been monitoring water quality in the New Haven River since 1993. During 2011, seven locations within the watershed were tested for phosphorus and turbidity on the first Wednesday in April and May (Spring sampling dates) and in June, July, August and September (Summer season). E.coli was tested only on the Summer dates at all sites except NHR11.5 and NHR15. A scheduled September event was cancelled

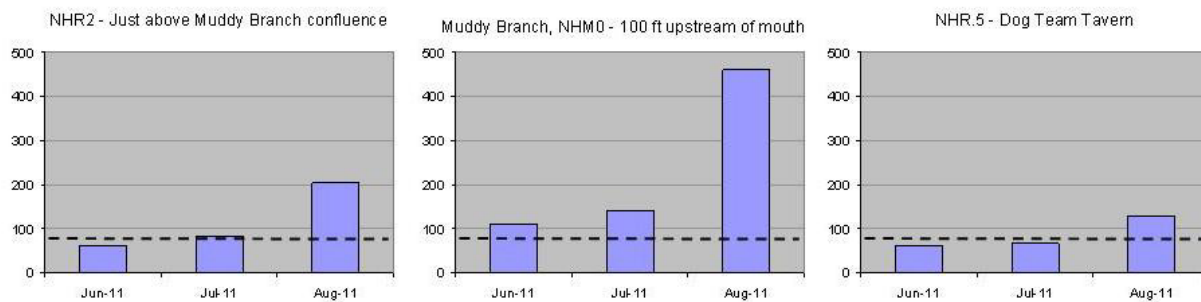
Site	Location	Town
NHR.5	Former Dog Team Tavern	New Haven
NHR2	Muddy Branch confluence	New Haven
NHR6	Route 116 Bridge, Sycamore Park	Bristol
NHR9	South St. Bridge	Bristol
NHR11.5	Bartlett's Falls Pool	Bristol
NHR15	S. Lincoln Bridge (Gap Rd.)	Lincoln
NHM0	Confluence with NHR (~100 ft upstream)	New Haven

due to damages sustained at the LaRosa Analytical Laboratory during Tropical Storm Irene. Flow in the river during the July and August sample dates represented low to baseflow conditions (based on records from the USGS gage on the New Haven River at Brooksville, just upstream from NHR.5). Flows on the April, May and June dates were moderate to high, due to snow melt and spring rains.

E.coli counts at popular recreational sites (South St. Bridge, NHR9; Sycamore Park, NHR6) were below the state standard of 77 organisms/ 100 mL on all three Summer dates, June 1, July 6, and August 3. In the lower watershed, where agricultural activities are more concentrated along the main stem and tributaries, E.coli counts were above the state standard on July 6 and August 3 at NHR2 (located just above the Muddy Branch confluence) and on August 3 at NHR.5 (Dog Team Tavern). Detected E.coli counts were generally consistent with historic results which have indicated an increase in levels downstream of the Munger Street bridge near river mile 5. This is the first year that ACRWC has monitored water quality in the Muddy Branch (NHM0). This tributary drains a 17 square mile area (14.6% of the total watershed), and joins the New Haven River main stem near the Nash bridge (just below NHR2). The Muddy Branch contains 27% agricultural land use, which is somewhat greater than the watershed as a whole (15%). E.coli counts in the Muddy Branch were above the water quality standard on all three Summer sampling dates.

E.Coli

Vermont State Standard = 77 MPN / 100 mL



Turbidity levels on the New Haven River at the six sampled stations ranged from 0.3 to 34 NTUs, with a mean level of 6.1 NTUs for the five sample dates, including two spring dates, April 6 and May 4. Turbidity levels exceeded the Vermont state standard of 10 NTUs (for Class B cold-water fisheries) at sites NHR2 and NHR.5 during the spring sample dates; the result for station NHR6 also exceeded the standard on May 4. At the seventh station, NHM0, on the Muddy Branch tributary, Turbidity levels ranged from 15 to 26 NTUs, exceeding the water quality standard on four sample dates: May 4, June 1, July 6 and August 3. Flows on the New Haven River on April 6 and May 4 were moderate as a consequence of spring rains and snow melt (April). A bankfull flow event (April 28) had preceded the May 4 sample date. 2011 results are largely consistent with historic trends. Based on past years' sampling results, Turbidity can increase well above the standard at times of increased flow – during a Summer thunderstorm, or during Spring runoff conditions – especially in the lower reaches of the river below the Bristol Flats. A slight increasing trend in Turbidity is apparent with distance downstream during all flow conditions.

Phosphorus was detected at relatively low concentrations on the New Haven main stem during the Spring and Summer sampling dates. Concentrations ranged from 6 to 128 ug/L, with an average of 27 ug/L. Results were consistent with historic trends, which indicate an increase in concentrations between the Munger Street bridge in New Haven (NHR 5) and the confluence of Muddy Branch (NHR 2). At all stations, moderately high

concentrations of Total Phosphorus have been detected in past years at times of high flow and runoff. In 2011, the mean concentration of Total Phosphorus for the two available low-flow Summer sample dates (July 6, August 3) at each of the New Haven River sites did not exceed the proposed criterion of 44 ug/L for the warm-water medium gradient (WWMG) wadeable stream ecotype in Class B waters. In the Muddy Branch (NHM0), Total Phosphorus ranged from 51 to 72 ug/L on four sample dates, May 4, June 1, July 6 and August 3. The mean concentration of Total Phosphorus (58 ug/L) for the two available low-flow Summer sample dates (July 6, August 3) at this station exceeded the proposed nutrient criteria.

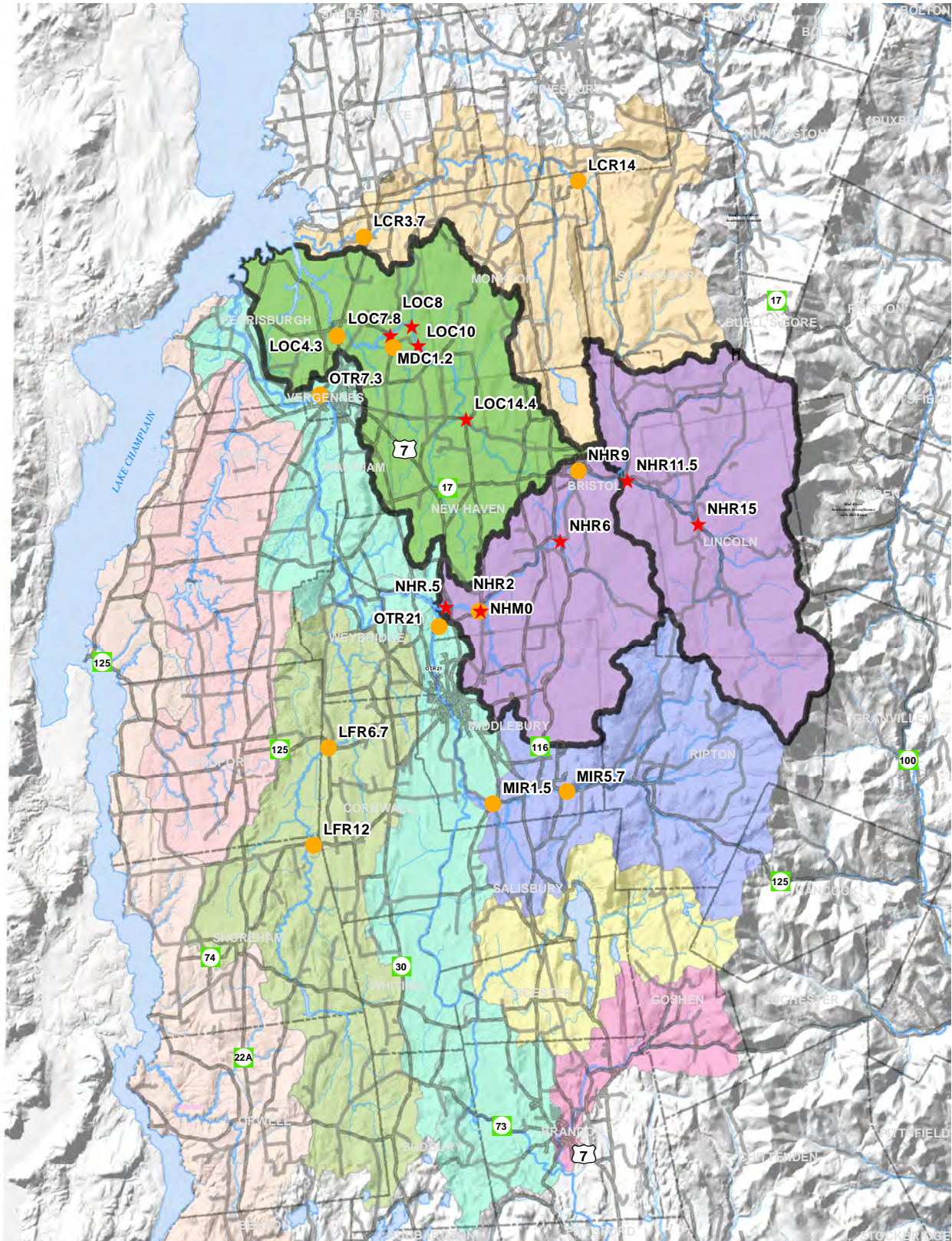
2012: The Town of Bristol (Conservation Commission) has received a Clean & Clear Grant to develop channel and floodplain restoration and conservation projects and update geomorphic assessments in the watershed. This study has referenced ACRWC water quality data. Emphasis has been on potential projects along the New Haven River main stem in Bristol and New Haven, as well as the lower reaches of Baldwin Creek. Projects presently being implemented include: two Vermont Land Trust easements on contiguous parcels spanning the Baldwin Brook tributary to the New Haven River along 3,550 feet of river; a CREP easement in a former corn field that involves buffer plantings along the full width of the river corridor for 1,200 feet of frontage along the lower New Haven River; and a river corridor easement (VT River Conservancy) along the same parcel. A pending CREP easement and river corridor easement (VT River Conservancy) are also in the works on an adjoining parcel involving 1,650 feet of river frontage.

In years 2012 through 2015, the New Haven River watershed will rotate back to a reduced frequency of monitoring at three sentinel stations, NHR11.5 (E.coli only), NHR5 and NHR2.

For more information, contact the New Haven River sampling coordinator:
Pete Diminico, 453-3899, diminico@gmavt.net

Addison County Riverwatch Collaborative

Water Quality Monitoring Sites by Watershed, 2011



★ Rotation Basin Site 2011	● Sentinel Site	Rotational Basins 2011	■ Little Otter Creek	■ New Haven River	■ Lake Champlain direct	■ Lewis Creek	■ Little Otter Creek	■ Otter Creek	■ New Haven River	■ Dead Creek	■ Lemon Fair River	■ Leicester River	■ Middlebury River	■ Neshobe River	Roads	— Pavement	— Gravel
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The Addison County Riverwatch Collaborative is a citizen organization whose mission is to collect and assess the water quality of Vermont surface waters, and to facilitate water quality and stream corridor improvement measures on a watershed scale.

