

New Haven River - 2013 Water Quality Summary Addison County Riverwatch Collaborative

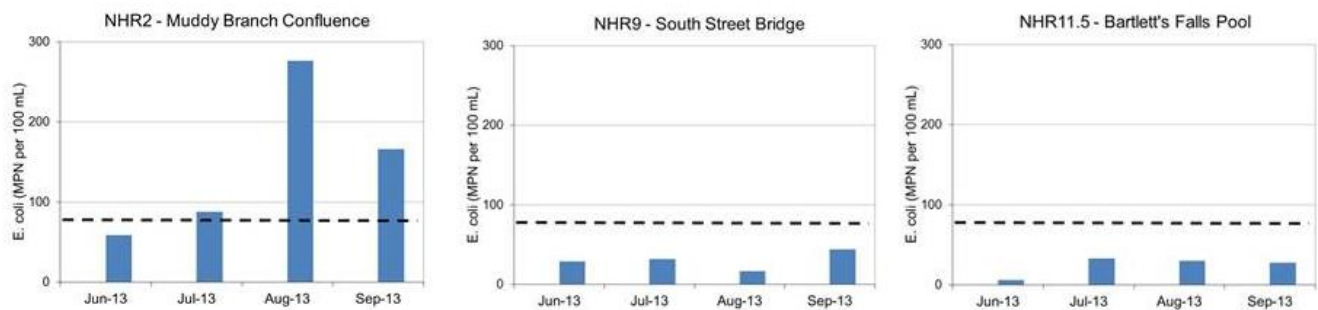
Site	Location	Town
NHR2	Muddy Branch confluence	New Haven
NHR9	South St. Bridge	Bristol
NHR11.5	Bartlett's Falls Pool	Bristol

The Addison County Riverwatch Collaborative has been monitoring water quality in the New Haven River since 1993. For years, 2012 through 2015, the number of sampling locations in this watershed has been reduced to two sentinel stations, NHR2 and NHR9, and a third recreational site monitored only for pathogens (NHR11.5). During 2013, sampling occurred on two spring dates (April 3 and May 1) and four summer dates (June 5, July 10, August 7, and September 4). The spring and early summer dates represented moderate flow conditions on the river, based on records from the USGS gage on the New Haven River at Brooksville. August and September sample dates captured baseflow conditions, while the July 10 event captured moderate to high flows following a storm event on July 3-4 and higher-than-normal May and June rainfall. On an average annual basis, flows in 2013 were near normal in the Addison County watersheds monitored by the Collaborative. Samples were tested for phosphorus and turbidity; E.coli was tested only on the summer dates.

E.coli counts at popular recreational sites (South St. Bridge, NHR9; Bartlett's Falls, NHR11.5) were below the federal health-based standard of 235 MPN/100 mL and the state water-quality standard of 77 organisms/100 mL on all four summer dates. In the lower watershed, however, the station near Nash Bridge in New Haven (NHR2) indicated E.coli counts elevated above the state standard in July, August and September. The August result exceeded the federal health-based standard. Consistent with historic results, an increasing trend in E.coli levels is evident with distance downstream from station NHR11.5 to NHR2. Developed and agricultural land uses are more prevalent in the lower New Haven River watershed.

E. Coli

Vermont State Standard = 77 MPN / 100 mL



Turbidity levels on the New Haven River at the two sampled stations ranged from 0.3 to 6.6 NTUs, with a mean level of 1.6 NTUs for the six sample dates. These turbidity levels were below the Vermont state standard of 10 NTUs (for Class B cold-water fisheries). Results from 2012 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 with distance downstream is generally observed during all flow conditions.

Phosphorus was detected at relatively low concentrations on the New Haven River during the spring and summer sampling dates. Concentrations ranged from 5.4 to 26 ug/L, with an average of 13 ug/L. Results were consistent with historic trends, which indicate an increase in concentrations with distance downstream. At all stations, moderately high concentrations of Total Phosphorus have been detected in past years at times of high flow and runoff. In 2013, the mean concentration of Total Phosphorus for the two available low-flow summer sample dates (August 7, September 4) at each of the New Haven River sentinel 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.

2014: The Addison County Riverwatch Collaborative will continue to monitor for E.coli, phosphorus and turbidity at these sentinel sites in 2014. An increased number of parameters and additional monitoring sites will be evaluated when a more intensive monitoring focus rotates back to the New Haven River for a two-year period beginning in the year 2016.

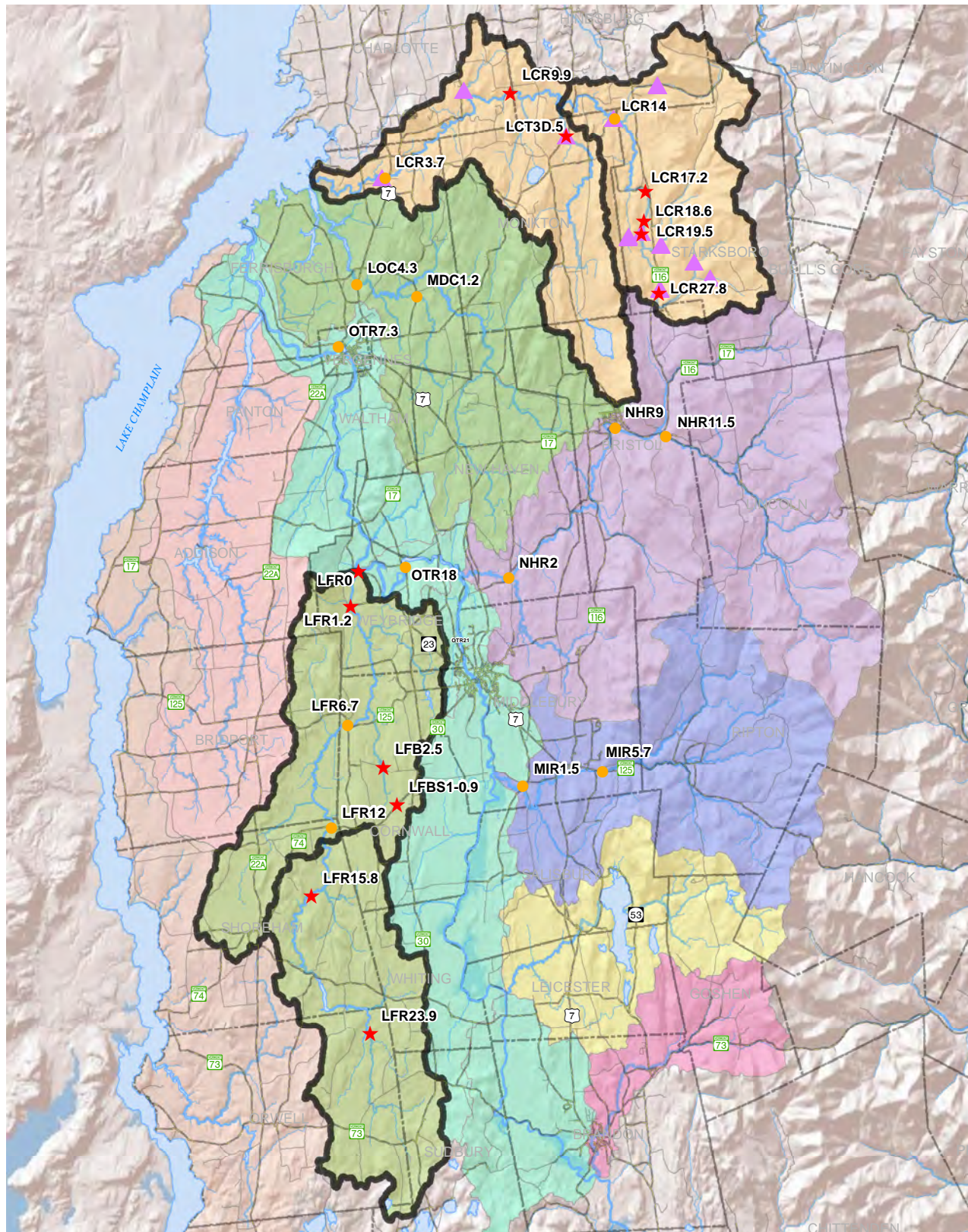
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or visit our web page at: www.acrpc.org/acrwc

Addison County Riverwatch Collaborative

Water Quality Monitoring Sites by Watershed, 2013



ACRWC 2013 Sampling Sites

- ★ Rotational Basin Site 2013
- Sentinel Site
- ▲ Biomonitoring Study Site

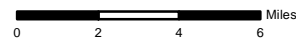
Rotational Basins 2013

- ◻ Lemon Fair River
- ◻ Lewis Creek

- ◻ 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



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.