

Lemon Fair River - 2014 Water Quality Summary Addison County Riverwatch Collaborative

Site	Location	Town
LFR6.7	Route 125 bridge.	Cornwall
LFR12	Downstream of Route 74 bridge	Shoreham

The Addison County Riverwatch Collaborative has been monitoring water quality in the Lemon Fair River since 2003. For years 2014 through 2017, the number of sampling locations in this watershed has been reduced to two sentinel stations, LFR6.7 and LFR12.

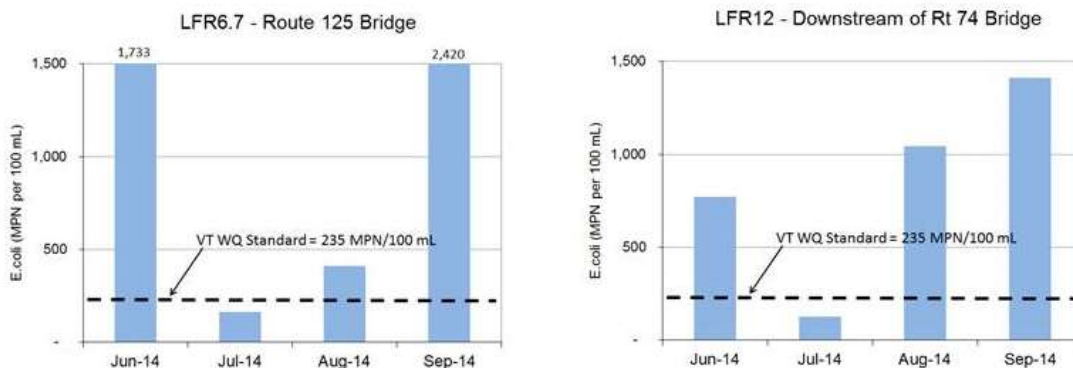
During 2014, sampling occurred on two spring dates (April 9 and May 7) and four summer dates (June 4, July 2, August 6, and September 3). The April event occurred during a time of snow melt and represented high flow conditions on the river, based on streamflow gaging records for a similar river (Little Otter Creek). May, June and August events occurred during moderate flow conditions on the river, while the July and September events captured low to baseflow conditions. On an average annual basis, flows in 2014 were near normal in the Addison County watersheds monitored by the Collaborative.

Samples from the Lemon Fair watershed were tested for E.coli, phosphorus (total and dissolved), total suspended solids, and turbidity; E.coli was tested only on the summer dates.

E.coli counts in the Lemon Fair watershed at the two sentinel sites exceeded the state standard of 235 organisms/ 100 mL on a majority of the sampling dates. The geometric mean of summer sampling results was 727 org/100mL at LFR6.7 and 617 org/100mL at LFR12; these values exceed the state's geomean standard of 126 organisms/ 100 mL. Detected E.coli counts were largely consistent with historic monitoring results which indicate chronic exceedences of the water quality standard at these two sites.

E.Coli

Vermont State Standard = 235 MPN / 100 mL



Turbidity levels at the sampled stations in Lemon Fair watershed ranged from 23.6 to 257 NTUs, with a mean of 131 NTUs. Highest concentrations were detected during low-flow conditions on July 2 and September 3. The Vermont state standard of 25 NTUs (for Class B warm-water fisheries) is applicable

during low-flow conditions. Detected concentrations were well above the standard on both low-flow sampling dates at each sentinel station.

Phosphorus was detected at moderate levels during the six spring and summer sampling dates of 2014. Concentrations ranged from 59.3 to 278 ug/L. As with turbidity, phosphorus concentrations were particularly elevated during low-flow months. The mean of the results available for the two low-flow, summer sampling dates (July and September) at each station exceeded the recently approved instream phosphorus criterion of 27 ug/L for warm-water medium gradient (WWMG) wadeable stream ecotype in Class B waters. It is possible that Lemon Fair River would instead be classified as a slow-winder stream ecotype (not yet determined for the reaches sampled); there is no instream phosphorus criterion for the slow-winder ecotype.

2015: The Addison County Riverwatch Collaborative will continue to monitor for E.coli, phosphorus (total and dissolved), total suspended sediments, and turbidity at these two sentinel sites in 2015. An increased number of parameters and additional monitoring sites will be evaluated when a more intensive monitoring focus rotates back to the Lemon Fair for a two-year period beginning in the year 2018.

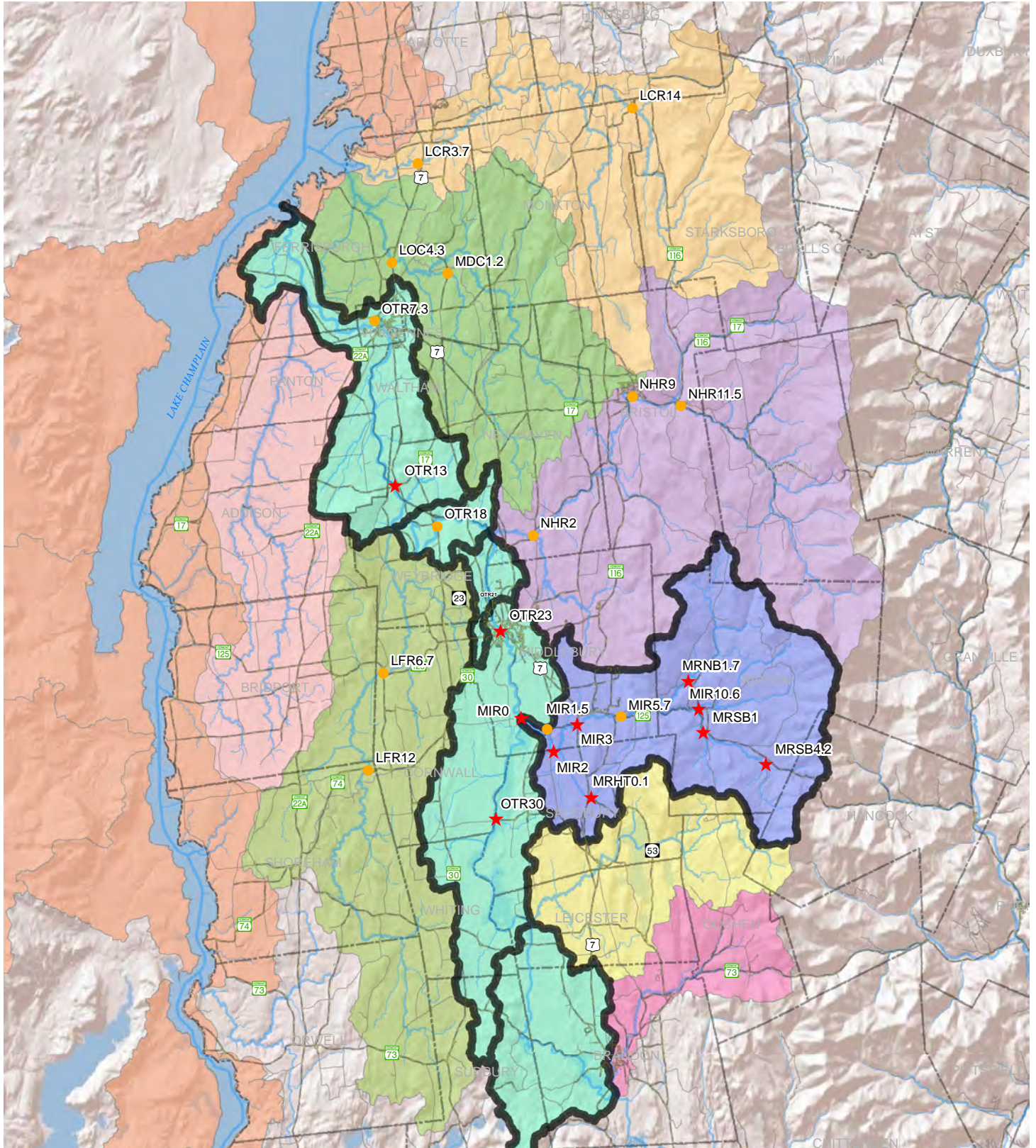
For more information, contact the Lemon Fair interim sampling coordinator:

Barb Otsuka, 388-6829, botsuka@sover.net

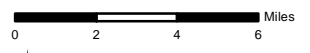
Addison County Riverwatch Collaborative coordinator: Matt Witten, 434-3236, mwitten@gmavt.net
or visit our web page at: www.acrpc.org/acrwc

Addison County River Watch Collaborative

Water Quality Monitoring Sites by Watershed, 2014



- | | | | | |
|-------------------|--------------|-------------------------------|------------------------------|------------------------------|
| ★ Rotational Site | Roads | Rotational Basins 2014 | Orange Lake Champlain Direct | Pink Dead Creek |
| ● Sentinel Site | — Pavement | Black Otter Creek | Yellow Lewis Creek | Light Blue Lemon Fair River |
| | — Gravel | Black Middlebury River | Green Little Otter Creek | Yellow-Green Leicester River |
| | | | Light Green Otter Creek | Blue Middlebury River |
| | | | Purple New Haven River | Magenta Neshobe River |



The Addison County River Watch 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.