

## Little Otter Creek - 2013 Water Quality Summary Addison County Riverwatch Collaborative

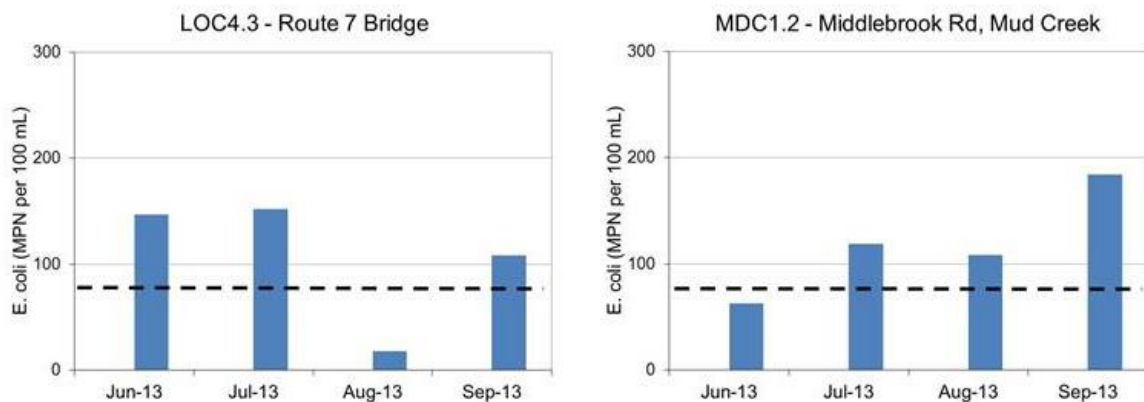
Site	Location	Town
LOC4.3	Route 7 Bridge	Ferrisburgh
MDC1.2	Wing Rd./Middlebrook Rd. (South)	Ferrisburgh

The Addison County Riverwatch Collaborative has been monitoring water quality in the Little Otter Creek since 1997. For years 2012 through 2015, the number of sampling locations in this watershed has been reduced to two sentinel stations, LOC4.3 and MDC1.2. 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 streamflow gage located at the Route 7 crossing. 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 (total and dissolved), total suspended solids, and turbidity; E.coli was tested only on the summer dates.

**E.coli** counts at the Little Otter Creek watershed stations were above the state water-quality standard of 77 MPN/100 mL on three of the four summer sample dates, but below the federal health-based standard of 235 MPN/100 mL. E.coli concentrations detected at these stations during 2013 are relatively consistent with historic monitoring results. Mud Creek station (MDC1.2) has traditionally had elevated E.coli as it is located directly downstream of a dairy pasture where livestock have direct access to the stream. Low flow rates probably contributed to the elevated E.coli counts in the September 4 sample.

### E.Coli

Vermont State Standard = 77 MPN / 100 mL



**Turbidity** levels in the Little Otter Creek at the two sentinel stations were moderate and often exceeded the Vermont standard of 10 NTUs (for Class B cold-water fisheries). Values ranged from 3.6 to 58 NTUs, with a mean level of 22.8 NTUs for the six sample dates. Highest turbidity concentrations in 2013 at these stations were detected during May or June events when streamflows were somewhat elevated as a result of record rainfall amounts. Turbidity results for 2013 at these two stations were largely

consistent with historic trends. Based on past years' sampling results, turbidity can increase well above the state standard at times of high flow – during a Summer thunderstorm, or during Spring runoff conditions.

**Phosphorus** levels were detected at low to moderate concentrations during the six spring and summer sampling dates. Concentrations ranged from 32.7 to 769 ug/L, with an average of 175 ug/L. Maximum concentrations for the season were detected during moderate flow conditions on July 10 following the storm event on July 3-4 and higher-than-normal May and June rainfall. Total Phosphorus concentrations detected in 2013 were generally consistent with historic data. Vermont recently proposed in-stream phosphorus criteria for aquatic life and aesthetics uses in wadeable streams (VTDEC, 2009). The mean concentration of Total Phosphorus for the two available, low-flow summer sample dates at each sentinel stations exceeded the proposed criteria 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 (total and dissolved), total suspended sediments, and turbidity at these two 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 Little Otter Creek for a two-year period beginning in the year 2016.

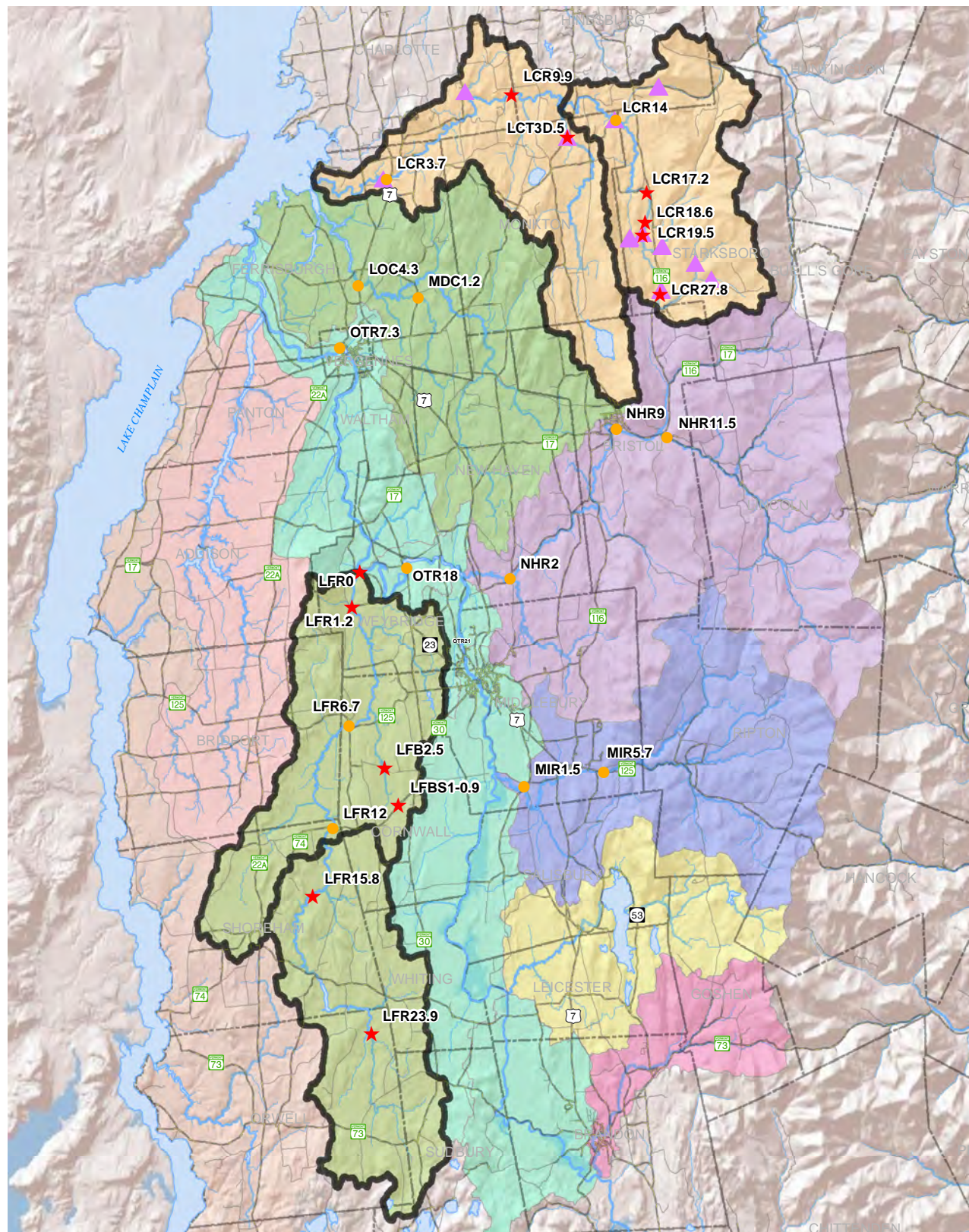
For more information, contact the Little Otter Creek sampling coordinator:

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

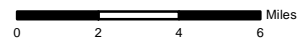
- ◻ Lemon Fair River
- ◻ Lewis Creek

- ◻ 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.