

Little Otter Creek – 2018 Water Quality Summary
Addison County River Watch Collaborative

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

The Addison County River Watch Collaborative has been monitoring water quality in the Little Otter Creek since 1997. For years 2018 through 2021, the number of sampling locations in this watershed has been reduced to two sentinel stations monitored for long-term trends: LOC4.3 and MDC1.2. During 2018, sampling occurred on two spring dates (April 4 and May 2) and four summer dates (June 6, July 11, August 1, and September 5). The year was characterized by near-normal precipitation, overall. April and May sampling events took place during high flow conditions resulting from snowmelt and spring rains, based on records from the USGS streamflow gaging station near VT Route 7. The June event occurred during moderate-flow, baseflow conditions where river stage was not changing appreciably, and groundwater levels were relatively high following spring rains. The July, August, and September events coincided with low-flow, baseflow conditions, at or below the Low Median Monthly (LMM) flow.

Samples were originally scheduled for testing of *E.coli*, total phosphorus and turbidity, with *E.coli* to be tested only in the summer months. Due to a mid-season request from the LaRosa Volunteer Monitoring program to reduce analytical costs, turbidity testing was suspended after the May event and *E.coli* was not tested in 2018.

Turbidity levels reported for the Little Otter Creek sentinel stations ranged from 13 to 32 NTUs during the two spring events. The Vermont water quality standard for cold-water fisheries is 10 NTUs. However, this standard is applicable only during dry-weather, baseflow conditions which were not relevant to these two sample dates. Based on historic results for additional stations, Turbidity can become elevated at times of increased flow – during a Summer thunderstorm, or during Spring runoff conditions. Turbidity values also tend to increase with distance downstream along the main stem of the river. The lower reaches of the Little Otter Creek drain regions underlain by fine-grained silt and clay soils derived from glacial lake deposits, which are easily eroded and transported by a range of flows.

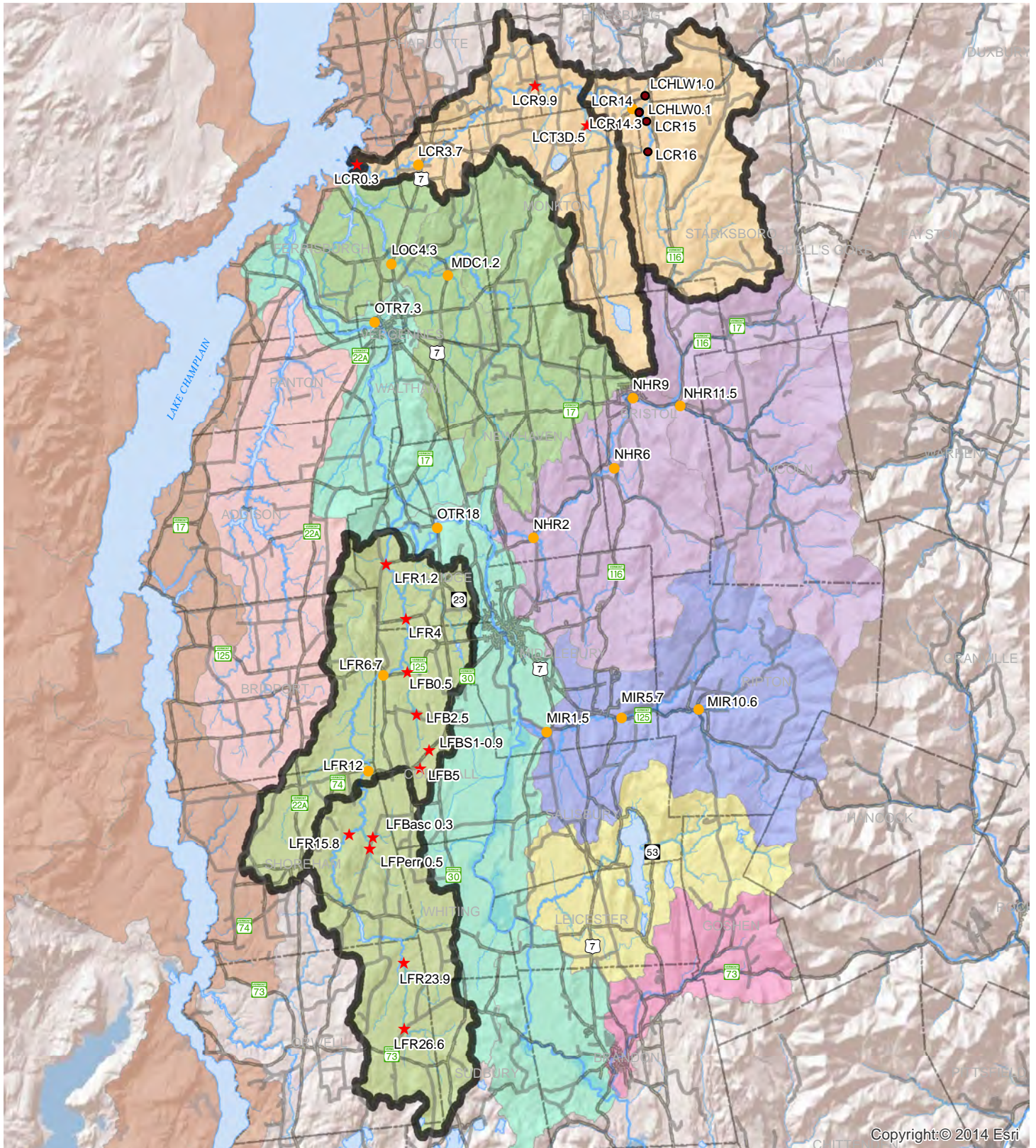
Phosphorus was detected at low to high concentrations on the Little Otter Creek during the spring and summer sampling dates in 2018. Concentrations ranged from 53 to 803 µg/L. The instream phosphorus criterion of 27 µg/L for warm-water medium gradient wadeable stream ecotypes in Class B waters is applicable at LMM flow during the months of June through October. Our July, August and September events took place when flows in the river were below the LMM. The mean phosphorus concentrations for these three summer sampling dates (126 and 381 µg/L) exceeded the instream nutrient standard of 27 µg/L at both sentinel stations (LOC4.3 and MDC1.2, respectively).

2019: The Addison County River Watch Collaborative will continue to monitor for total phosphorus and turbidity at these two sentinel sites on the Little Otter Creek in 2019. An increased number of parameters and additional monitoring sites will be evaluated when a more intensive monitoring focus rotates back to the watershed for a two-year period beginning in the year 2022.

For more information, contact the Little Otter Creek sampling coordinator:
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or visit our web page at: www.acrpc.org/acrwc

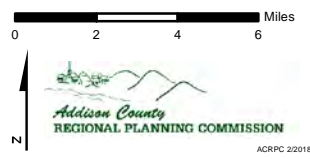
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Water Quality Monitoring Sites by Watershed, 2018



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| ● Sentinel Site | Rotational Basins 2018 | ■ Lake Champlain Direct | ■ Dead Creek |
| ★ Rotational Site | ■ Lewis Creek | ■ Lewis Creek | ■ Lemon Fair River |
| ● Special Project Site
(E.coli monitoring) | ■ Lemon Fair | ■ Little Otter Creek | ■ Leicester River |
| | | ■ Otter Creek | ■ Middlebury River |
| | | ■ New Haven River | ■ Neshobe River |



The Addison County River Watch Collaborative is a citizen organization that monitors and assesses the condition and use of our local rivers over the long term, raises public awareness of the values and functions of our watersheds, and cultivates partnerships that support water quality stewardship.