

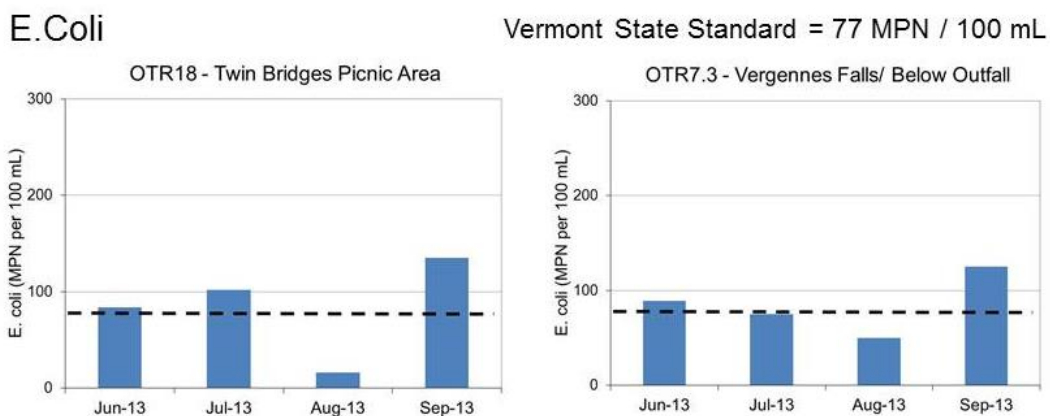
Otter Creek - 2013 Water Quality Summary Addison County Riverwatch Collaborative

Site	Location	Town
OTR18	Twin Bridges Picnic Area	Weybridge
OTR7.3	Vergennes Falls/below outfall	Vergennes

The Addison County Riverwatch Collaborative has been monitoring water quality in the lower Otter Creek since 1992. For years 2010 through 2013, the number of sampling locations in this watershed has been reduced to two sentinel stations. The downstream-most sentinel station is OTR7.3 at the Vergennes Falls below the outfall for the Vergennes wastewater treatment facility. In 2013, the upper sentinel station at Belden Falls was replaced by station OTR18 at the Twin Bridges Picnic Area, due to access limitations at the Belden Falls site.

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 Otter Creek at Middlebury and other area gages. 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, nitrogen and turbidity; E.coli was tested only on the summer dates.

E.coli concentration in the Otter Creek was nearly at or above the state water-quality standard of 77 MPN/100 mL in each station for three out of the four summer sample dates. None of the reported E.coli counts exceeded the federal health-based standard of 235 MPN/100 mL. E.coli concentrations detected at these sentinel stations during 2013 are relatively consistent with historic results.



Turbidity levels in the Otter Creek at the two sentinel stations were low and below the Vermont state standard of 25 NTUs (for Class B warm-water fisheries). Values ranged from 1.5 to 16.7 NTUs, with a

mean value of 6.1 NTUs for the six sample dates. Results are consistent with historic data, which indicate that median turbidity values are generally less than 10 NTUs.

Phosphorus levels were detected at relatively low concentrations during the six spring and summer sampling dates. Concentrations ranged from 17.9 to 133 ug/L, with an average of 45 ug/L. Moderately high concentrations of Total Phosphorus have been recorded in past years at times of high flow and runoff. In 2013, the mean concentration of Total Phosphorus at each of the two available low-flow summer sample dates (August 7 and September 4) was lower than the proposed criterion of 44 ug/L for the warm-water medium gradient (WWMG) wadeable stream ecotype in Class B waters. The Otter Creek might instead be classified as a Slow Winder stream, but criteria have not yet been developed for this ecotype.

Nitrogen levels were detected at very low concentrations during the six spring and summer sampling dates, well below the state standard for nitrogen as nitrate (5 mg/L). Concentrations ranged from 0.36 to 0.61 mg/L, with an average of 0.5 mg/L. The mean values of the summer, low-flow, sample results at sites OTR18 and OTR7.3 (0.50 and 0.61 mg/L, respectively) were below the recently proposed instream nitrogen criteria of 0.75 mg/L for WWMG wadeable stream ecotype in Class B waters.

2014: An increased number of monitoring sites along the Otter Creek will be evaluated in 2014 when a more intensive monitoring focus rotates back to the watershed for a two-year period.

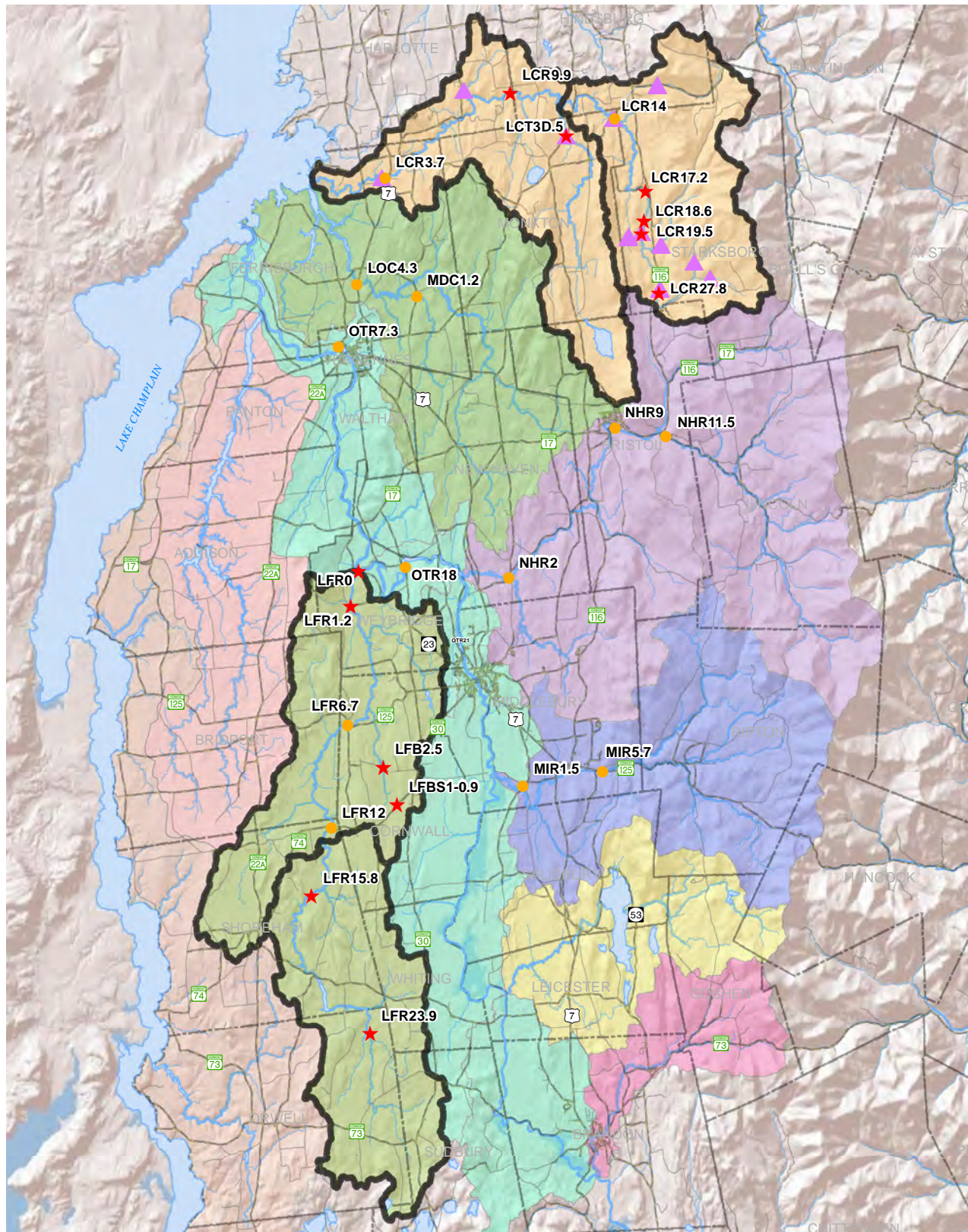
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or visit our web page at: www.acrpc.org/acrwc

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

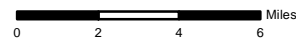
- ◻ Lemon Fair River
- ◻ Lewis Creek

- Orange box: Lake Champlain direct
- Yellow box: Lewis Creek
- Light green box: Little Otter Creek
- Light blue box: Otter Creek
- Purple box: New Haven River

- Pink box: Dead Creek
- Light green box: Lemon Fair River
- Yellow box: Leicester River
- Blue box: Middlebury River
- Pink box: 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.