

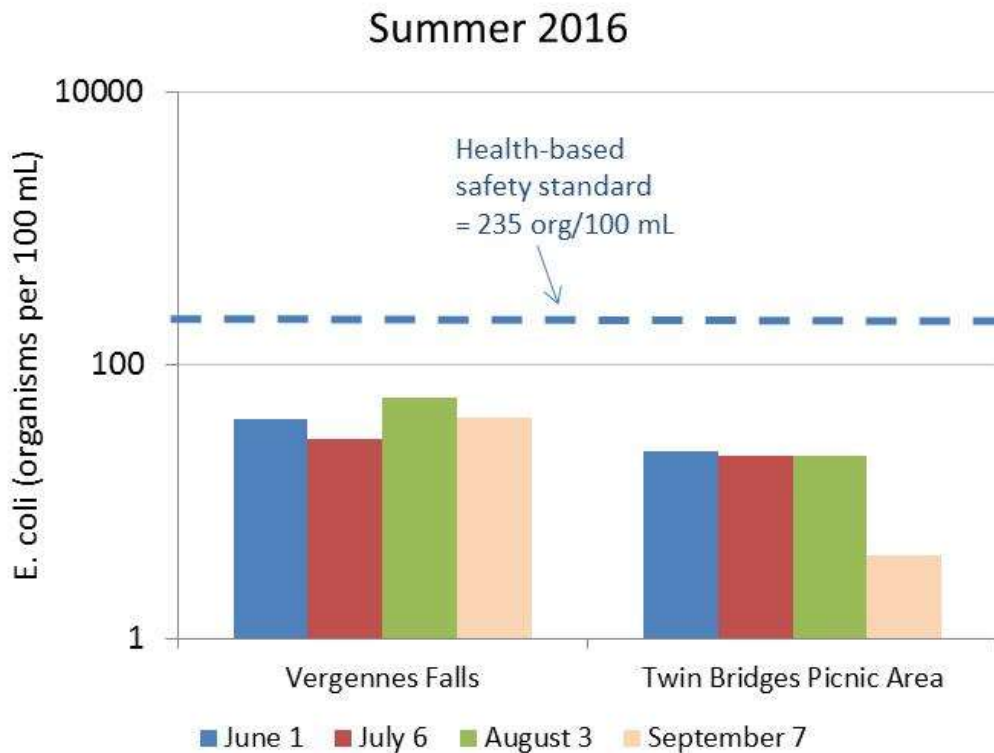
Otter Creek – 2016 Water Quality Summary
Addison County River Watch Collaborative

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

The Addison County River Watch Collaborative has been monitoring water quality in the lower Otter Creek since 1992. For years 2016 through 2019, the number of sampling locations in this watershed has been reduced to two sentinel stations monitored for longterm trends: OTR18 and OTR7.3.

During 2016, sampling occurred on two spring dates (April 6 and May 4) and four summer dates (June 1, July 6, August 3, and September 7). Following a February thaw and final ice-out and snowmelt in early March, the April and May sampling events took place during relatively low flows, characterized as baseflow conditions on the river, based on streamflow gaging records from the Otter Creek station at Middlebury. Given below-normal rainfall, the June, July, August and September events occurred during low to very-low flows also representative of baseflow conditions (i.e., relatively stable flow stage, not significantly rising or falling in response to a rainfall or snowmelt event). On an average annual basis, flows in 2016 were below normal in the six Addison County watersheds monitored by the Collaborative.

Samples were tested for *E.coli*, total phosphorus, and turbidity; *E.coli* was tested only on the summer dates.



E.coli counts at sites on the lower Otter Creek ranged from 4.1 to 57.8 organisms/100 mL. Vermont Water Quality Criteria (October 2014) state that *E.coli* is not to exceed a geometric mean of 126 organisms /100mL obtained over a representative period of 60 days, and no more than 10% of samples should be above 235 organisms/100 mL. Neither standard was exceeded on the four summer sampling dates. Otter Creek receives runoff from the Lemon Fair River between stations OTR18 and OTR7.3. *E.coli* concentrations in the Lemon Fair were elevated relative to concentrations in the Otter Creek on the same sample dates.

Turbidity levels at the Otter Creek stations ranged from 1.6 to 10.9 NTUs, with a mean value of 5.3 NTUs for the six spring and summer sample dates. The Vermont state standard of 25 NTUs (for Class B warm-water fisheries) is applicable during baseflow conditions which were relevant to all six sample dates. Detected concentrations were below the standard at both sentinel sites on all six sample dates. Based on past years' sampling results, turbidity can become elevated at times of increased flow – during a summer thunderstorm, or during spring runoff conditions.

Phosphorus levels at Otter Creek stations ranged from 16.9 to 33.4 µg/L, with a mean of 25 µg/L. The instream phosphorus criterion of 27 µg/L for warm-water medium gradient (WWMG) wadeable stream ecotypes in Class B waters is applicable at low median monthly flow during June through October. Based on gaging records from the Otter Creek at Middlebury, flows were below the low median monthly flow on the July, August, and September sample dates. The mean of the results available for these three summer sampling dates was calculated as 23.3 and 30 µg/L at OTR18 and OTR7.3, respectively. The result for station OTR7.3 slightly exceeds the instream phosphorus criterion for WWMG waters. These reaches of the Otter Creek might instead be classified as a Slow Winder stream ecotype, but criteria have not yet been developed for this stream classification.

2017: The Addison County River Watch Collaborative will continue to monitor for *E.coli*, total phosphorus and turbidity at these two sentinel sites on the Otter Creek in 2017. An increased number of parameters and additional monitoring sites will be evaluated when a more intensive monitoring focus rotates back to the Otter Creek for a two-year period beginning in the year 2020.

For more information, the Otter Creek sampling coordinator:
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