Addison County Riverwatch Collaborative Little Otter Creek - 2012 Water Quality Summary

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 2012, sampling occurred on two

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

spring dates (April 4 and May 2) and four summer dates (June 6, July 11, August 1, and September 5). Samples were tested for phosphorus (total and dissolved), total suspended solids, and turbidity; E.coli was tested only on the Summer dates. Flow in the river during all summer dates and the April spring date represented low to baseflow conditions, based on records from the USGS streamflow gages located at the Route 7 crossing. Flows on the May date were moderate due to spring rains. In general, flows in 2012 were below normal, due to the lower than normal rainfall and snowpack within the year.

E.coli counts at the Little Otter Creek watershed stations were well above the state standard of 77 MPN/100 mL and above the federal health-based standard of 235 MPN/100 mL for a one-time detection on most of the four summer sample dates. E.coli concentrations detected at these stations during 2012 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. Very low flow rates on September 5 probably contributed to the high E.coli counts per 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 4.9 to 117 NTUs, with a mean level of 24 NTUs for the six sample dates. Highest turbidity concentrations in 2012 at each station were detected during very low flow conditions on September 5. Turbidity results for 2012 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 28.5 to 957 ug/L, with an average of 174 ug/L. Maximum concentrations for the season were detected during very low flow conditions on September 5. Total Phosphorus concentrations detected in 2012 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 four, low-flow Summer sample dates at both sentinel stations exceeded the proposed criteria of 44 ug/L for the warm-water medium gradient (WWMG) wadeable stream ecotype in Class B waters.

2013: 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 2013. 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: Matt Witten, 434-3236, <u>mwitten@gmavt.net</u> http://acrpc.org/addison-county-river-watch-collaborative/

Addison County Riverwatch Collaborative Water Quality Monitoring Sites by Watershed, 2012



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