

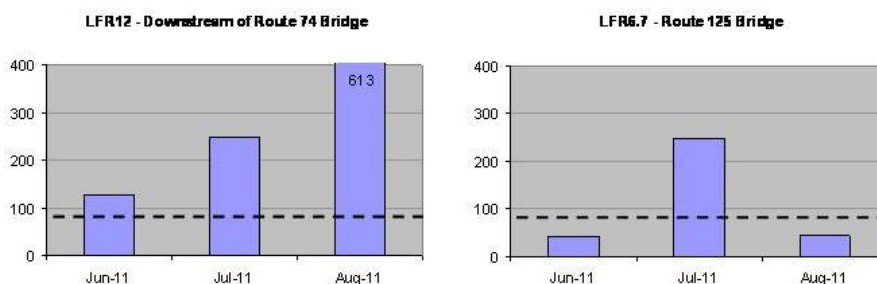
Addison County Riverwatch Collaborative Lemon Fair River - 2011 Water Quality Summary

The Addison County Riverwatch Collaborative has been monitoring water quality in the Lemon Fair River since 2003. In a non-focus year, two sentinel stations are monitored in this watershed, LFR12 and LFR6.7. During 2011, Lemon Fair sites were tested for phosphorus, nitrogen and turbidity on the first Wednesday in April and May (Spring sampling dates) and in June, July, and August (Summer sampling dates). E.coli was tested only on the Summer dates. A scheduled September event was cancelled due to damages sustained at the LaRosa Analytical Laboratory during Tropical Storm Irene. Flow in the river during the July and August sample dates represented low to baseflow conditions (based on area streamflow gages). Flows on the April, May and June dates were moderate to high, due to snow melt and spring rains.

Site	Location	Town
LFR6.7	Route 125 bridge.	Cornwall
LFR12	Downstream of Route 74 bridge	Shoreham

E.coli counts in the Lemon Fair River at the Route 74 bridge site (LFR12) were above the state standard of 77 organisms/ 100 mL on all three Summer sampling dates: June 1, July 6, and August 3. E.coli levels at the downstream station at the Route 125 bridge (LFR6.7) also exceeded the standard on July 6. Detected E.coli counts at LFR12 and LFR6.7 were consistent with historic monitoring results.

E.Coli Vermont State Standard = 77 MPN / 100 mL



Turbidity levels in the Lemon Fair at the sampled stations ranged from 11 to 91 NTUs, with an average level of 61 NTUs for the five sample dates, including spring sampling dates, April 6 and May 4. Concentrations exceeded the Vermont state standard of 25 NTUs (for Class B warm-water fisheries) at LFR12 on all sample dates and at LFR6.7 on April 6, May 4 and July 6. Results for stations LFR12 and LFR6.7 were generally consistent with historic data.

Phosphorus was detected at moderate levels during the five Spring and Summer sampling dates. Concentrations ranged from 93 to 307 ug/L, with an average of 213 ug/L. The mean of the Summer, low-flow, sample results at each station (LFR12 = 253 ug/L and LFR6.7 = 283 ug/L) exceeded the recently proposed instream phosphorus criterion of 44 ug/L for warm-water medium gradient (WWMG) wadeable stream ecotype in Class B waters. It should be noted that mean values were developed on the basis of two sample dates only – since low-flow conditions were only encountered on July 6 and August 3. VTDEC guidance (2009) suggests that Summer-time low-flow means should be developed on the basis of at least three samples collected on nonconsecutive days.

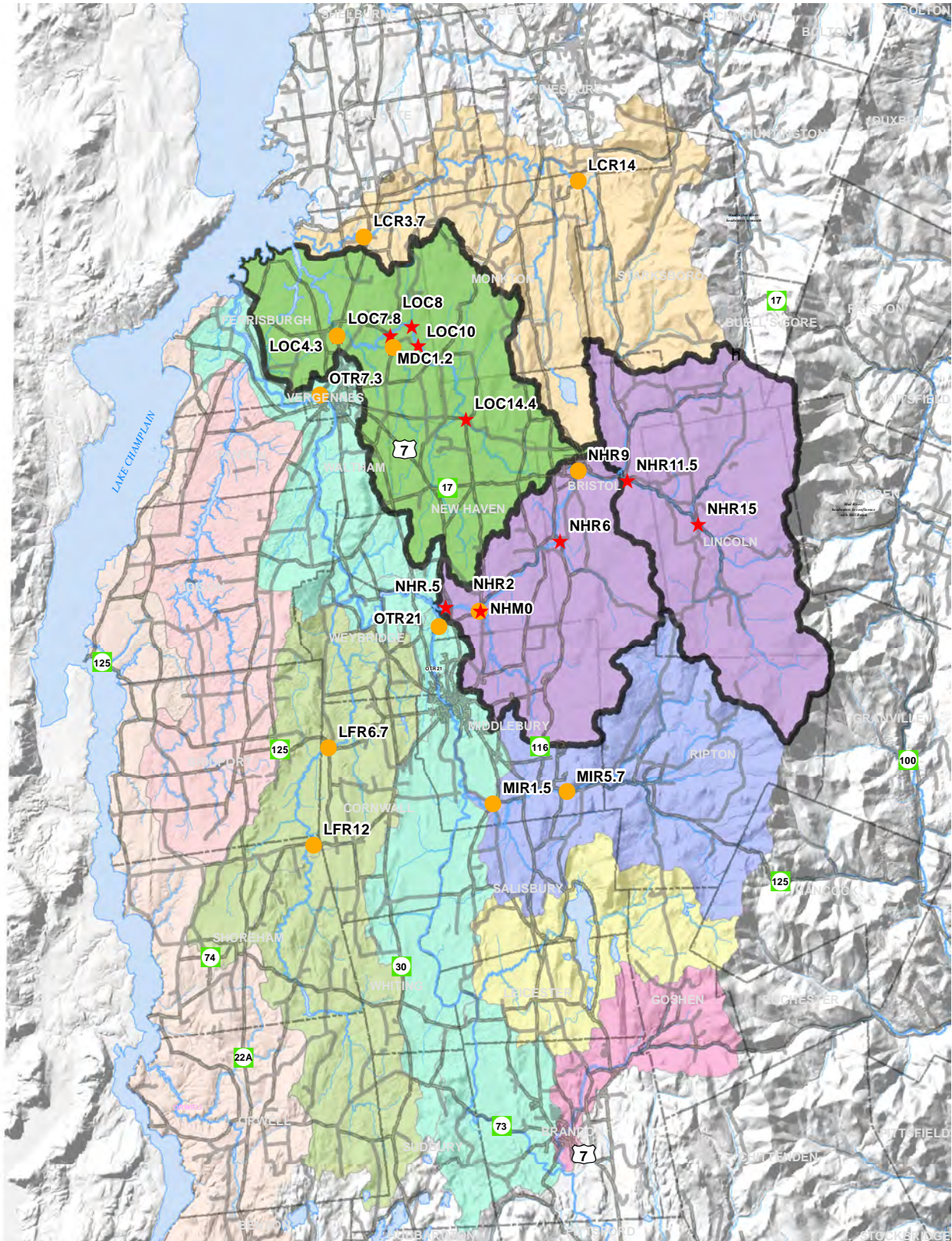
Nitrogen concentrations were generally very low (ranging from 0.5 to 1.4 mg/L) and well below the state standard for nitrogen as nitrate (5 mg/L). The mean of the Summer, low-flow, sample results at sites LFR12 and LFR6.7 exceeded the recently proposed instream nitrogen criteria of 0.75 mg/L for WWMG wadeable stream ecotype in Class B waters (the mean at each station was developed from two samples only).

2012: A more intensive monitoring focus rotates back to the Lemon Fair for a two-year period beginning in the year 2012. The Addison County Riverwatch Collaborative will sample for additional parameters (including dissolved phosphorus and total suspended solids) and six rotational monitoring sites will be added to the two sentinel stations to round out the sampling schedule for 2012 and 2013. Two stations will be located on the Beaver Branch tributary in the lower watershed.

For more information, contact the Lemon Fair sampling coordinator:
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Addison County Riverwatch Collaborative

Water Quality Monitoring Sites by Watershed, 2011



★ Rotation Basin Site 2011	● Sentinel Site	Rotational Basins 2011	■ Little Otter Creek	■ New Haven River	■ Lake Champlain direct	■ Lewis Creek	■ Lemon Fair River	■ Leicester River	■ Middlebury River	■ Neshobe River	Roads	— Pavement	— Gravel
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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.

