

2009 Mad River Watch Report

Summary

The 2009 Mad River Watch program sampled phosphorus, turbidity and E.coli on six dates as planned. Through the LaRosa partnership, samples from 18 sites were analyzed for phosphorus and turbidity on each of six dates. To compare the variability between the LaRosa lab and the FMR lab, on each sampling date two E.coli samples from each of two sites were analyzed at the LaRosa lab and compared to the results from samples processed in the Friends of the Mad River lab.

The Friends of the Mad River lab analyzed E.coli samples from a total of 36 sites (using the IDEXX QuantiTray method), and collected other information on each sampling date including pH, temperature and flow (data from USGS gauge in Moretown).

Phosphorus and Turbidity

During high and declining water conditions this season, results showed generally low phosphorus and turbidity levels. On 6/29/09, when flow conditions were high and rising, several tributaries showed high phosphorus and turbidity levels: Freeman Brook, Clay Brook, Folsom Brook, High Bridge Brook, Dowsville Brook and Welder Brook. Levels in Folsom and High Bridge Brook were particularly high. Interestingly, values on the mainstem on this date were much lower than in the tributaries, even in downstream locations (Moretown).

Data collected in 2008 showed consistently higher phosphorus levels in Folsom Brook (site 10) than in other tributaries. The trend from 2008 continued in 2009. Folsom Brook runs through an agricultural area, which may contribute to these higher levels.

On 8/24/09 flow levels were low and declining. Clay Brook showed very high turbidity (46.7 NTUs) and relatively high total phosphorus (42.2 ug/L) levels compared to all other sites sampled. Typically water quality is best under low and declining conditions, so this result is unexpected.

Quality Control

- The average relative percent difference (RPD) of phosphorus field duplicate samples for the six sampling dates was 9%, which is within the estimated range of precision specified in the QAPP (less than or equal to 30% RPD).
- The average relative percent difference (RPD) of turbidity field duplicate samples for the six sampling dates was 24%, which is outside the estimated range of precision specified in the QAPP (less than or equal to 15% RPD).
- Data completeness for the 2009 season is 100%