

FRANKLIN WATERSHED COMMITTEE

2010 LaRosa Partnership Final Report

Program Overview

The state of Vermont has designated Lake Carmi as an impaired body of water because of nuisance algae blooms that are fueled by excessive amounts of phosphorous in the lake. The watershed to the lake is mainly agricultural. More than 80% of the phosphorous load to the lake from nonpoint sources emanates from agricultural lands.

In 2008 the Franklin Watershed Committee (FWC) expanded the Lake Carmi water sampling program and joined the LaRosa Partnership. The objective of the augmented program was to sample major tributaries to the lake for phosphorous. Initially ten sampling sites were tested. In 2010 a total of sixteen sites were tested. Sampling was conducted at the mouths of all the lake tributaries. In some cases multiple points along a tributary were sampled as well.

All of the samples taken in 2010 were tested for phosphorous. Turbidity was also measured at the mouth of each tributary. Sampling was conducted every other Wednesday from June 16th thru October 6th, 2010. Sampling was also conducted during an unscheduled rain event on August 3rd, 2010.

Efforts to collect samples at the designated sites were generally successful. In instances where samples were not taken, either the tributary was dry or the land owner did not give permission to conduct the sampling.

2010 LaRosa Partnership Sampling Sites

- LC 1. Sandy Bay @ Black Woods Rd. (Near Mouth)
- LC2. Alder Run @ Lake Rd. (Near Mouth)
- LC3. Dicky's Brook @ Middle Rd.
- LC4. Dicky's Brook @ Rainville Field
- LC5. Dicky's Brook @ Lake Rd. (Near Mouth)
- LC6. Dewing Brook @ Dewing Rd.
- LC7. Marsh Brook @ Towle Neighborhood Rd. North
- LC8. Marsh Brook @ Towle Neighborhood Rd. South
- LC9. Marsh Brook @ State Park Rd.
- LC10. Marsh Brook @ Lake Carmi State Park (Near Mouth)
- LC11. Alder Run @ Middle Rd.
- LC12. Kane's Brook (Near Mouth)
- LC13. Hammond's Brook (Near Mouth)
- LC14. Little Pond Rd. Culvert
- LC15. Prouty Brook (Near Mouth)
- LC16. Westcott Brook (Near Mouth)

Test Descriptions

Phosphorous & Turbidity

Excessive amounts of phosphorous have been determined to be the major cause of algae blooms on Lake Carmi. The algae blooms render the lake not suitable for recreational activities. The majority of the phosphorous entering Lake Carmi comes from agricultural activity and lakeside residences. Lake Carmi is a eutrophic lake. In 2008 the EPA approved a TMDL for Lake Carmi. The primary objective of the TMDL is to significantly reduce the phosphorous levels in the lake.

LaRosa Partnership Sampling Results

Attachment 1 is a spreadsheet listing all results for phosphorous.

Attachment 2 is a spreadsheet listing all results for turbidity.

Quality Assurance Results

For quality assurance a field duplicate and a field blank were collected during each sampling event. A total of ten field duplicates and ten field blanks were taken for phosphorous. A total of eight field duplicates and eight field blanks were taken for turbidity.

Field Blanks. All field blanks collected for phosphorous had a ug P/L of <5. All field blanks collected for turbidity had a value of <0.2

Field Duplicates. Attachment 3 is a table listing the mean difference for Field Duplicates.

Conclusions

The LaRosa partnership is a vital tool in determining the phosphorous loads to Lake Carmi. The FWC intends to continue participating in the partnership well into the future. The FWC would like to expand the number of sites sampled in 2011 to ensure all major tributaries to the lake are tested for phosphorous. It is anticipated that data accumulated from the samples will eventually be used to develop action items to reduce phosphorous loads to the lake.