



Introduced Management Practices In Agricultural Watersheds Lead To A Reduction In Shoreline Algae



Conesus Lake Watershed Project

SUNY Brockport, SUNY Geneseo, Cornell Cooperative Extension

Problem:

During the summer, the shoreline of Conesus Lake is often choked with water “weeds” and filamentous algae. This luxuriant growth can be an impediment to boating and swimming along the shore front. Many of the complaints from lakefront property owners are focused on this water quality problem.

Management Practices Implemented:

Research on Conesus Lake has demonstrated that phosphorus loss from Conesus Lake watersheds, mostly those from watersheds in agriculture, is stimulating the growth of filamentous algae along the shoreline. Management practices were introduced through the Agriculture Environmental Management (AEM) plan on four watersheds. AEM represents a total farm planning process whereby customized recommendations on nutrient and runoff reduction, including soil analysis for nutrients, strip cropping, buffer strips and various methods for reducing barnyard runoff, were implemented for each farm.

Resolution:

Since 2001, a significant decrease in shoreline algae has occurred where the total farm planning process was implemented (Exp., Figure 1). In the three watersheds where the total farm planning process was not implemented, no significant change in the shoreline algae occurred (Figure 1). As a result of reducing the loss of phosphorus to the lake by management practices within agricultural watersheds, significant reductions in aesthetically displeasing shoreline algae were realized.

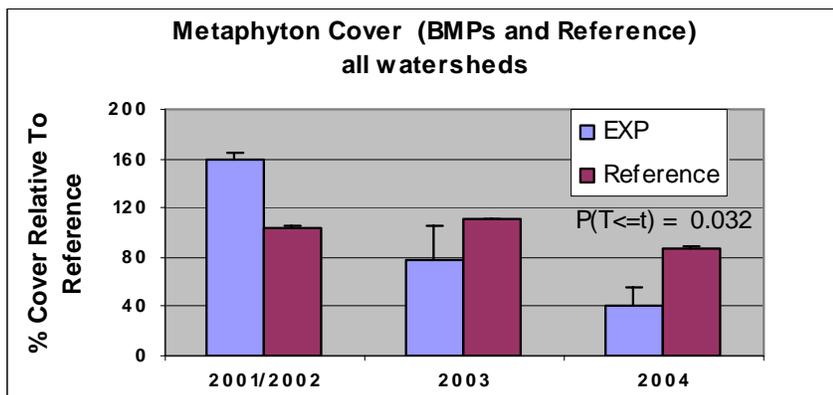


Figure 1. Comparison of surface algae (metaphyton) at seven sites at Conesus Lake. Watersheds where AEM planning was not instituted (reference, red) show no change over time. In watersheds where the AEM planning was instituted (exp, experimental, blue), a significant decrease in shoreline algae occurred.

Background: In the Conesus Lake watershed, several research projects testing various management plans to maintain soil and nutrients on farmland and thus reduce impacts on Conesus Lake have been implemented. Funding was to the State University of New York (SUNY) at Brockport, SUNY Geneseo and Cornell Cooperative Extension from the Cooperative State Research, Education, and Extension Service of the United States Department of Agriculture. With the voluntary cooperation of several farmers within the Conesus Lake watershed, several “Best Management Practices” have been implemented since 2002. These practices include reduction of manure spreading during the winter on steep sided slopes, construction of gully plugs, nutrient reduction, etc. Results on bacteria levels, shore algae and water chemistry are available at the project’s web site http://www.envsci.brockport.edu/Conesus_Project