



Best Management Practices Result in Reduced Coliform Bacteria Transported to Conesus Lake



Problem:

Beach closings due to bacteria contamination are a well-documented problem at Conesus Lake. High levels of coliform bacteria are indicative of the presence of sewage and of potential pathogens. Sources of the coliform bacteria include human sewage, wildlife, domesticated animals including dogs and cows.

Management Practices Implemented:

With guidance from Cornell Cooperative Extension, farming operations in the Conesus Lake watershed voluntarily implemented a number of Best Management Practices (BMPs) to address the problem of coliform contamination. 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, manure spreading, strip cropping, buffer strips and various methods for reducing barnyard runoff, were implemented for each farm. Fall and winter spreading of manure were discontinued in hydrologically sensitive areas and highly erodible land in the watershed in 2003. Strip and cover crops were also planted to reduce erosion on the steep sided slopes of the farm.

Resolution:

Total coliform bacteria did not change significantly among managed and non-managed watersheds between summer and fall of 2003 and 2004 (Figure 1). However, during the winter when an effort was made to reduce manure spreading on snow and frozen land, a significant decrease in total coliform abundance occurred in managed versus non-managed watersheds between 2003 and 2004.

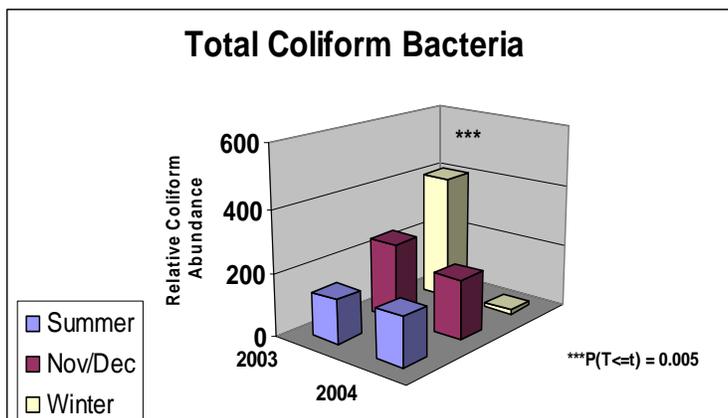


Figure 1. Seasonal comparison of relative total coliform abundance for the USDA project watersheds in 2003 and 2004. Relative total coliform abundance is calculated by dividing the experimental by the reference bacterial abundance.

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](http://www.envsci.brockport.edu/Conesus_Project)