



## IMPACT STATEMENT

### Water Quality: *Reducing Agricultural Runoff to Conesus Lake*

#### **The Need**

Conesus Lake provides drinking water to five municipalities downstream from the lake. It is also a recreational and residential lake. Aquatic weeds have become a major nuisance to swimmers and boaters in the lake. During the summer, it is difficult to clarify and purify water for municipal use due to algae and other sources of turbidity. The lake watershed is a combination of agricultural, rural residential and forested land use. Municipal users of the water plus an association of lakeshore residents have identified water quality improvement/weed control as a top priority for the future.



#### **Extension's Response**

Professionals from Cornell Cooperative Extension, SUNY at Brockport, SUNY at Geneseo, Rochester Institute of Technology (RIT), and the Livingston County Soil and Water Conservation District jointly applied for a water quality grant through the USDA Water Quality/Multi-Agency Grants program. The actual project was started in late 2002. Six sub-watersheds are being studied to see if management practices can help improve water quality in Conesus Lake. SUNY Brockport is monitoring water in the streams, Geneseo is mapping aquatic weed populations in the lake, the **NWNY Dairy, Livestock and Field Crops Team of Cornell Cooperative Extension** is developing three farm plans for sub-watershed farms, and SWCD is designing structural or land management changes on the farms. The Livingston County Health Department has overall responsibility for water quality monitoring and enforcement of obvious violations.

The NWNY Team has the responsibility of using this project for outreach to the other farmers in the Conesus Lake watershed as well as farmers across the NWNY area. Low or no cost management practices are first being implemented on the cooperating farms with additional practices to be implemented in year three of the project. The initial input by the NWNY Team was a complete set of soil samples, manure analysis, maps of hydrologically sensitive areas (HSA) and areas of concentrated flow (highly erodible land or HEL) and an inventory of current practices.

#### **The Initial Results**

The cooperating farms began to implement practices in the spring of 2003. The Team assisted one farm to make use of the soil sample data on a field-by-field basis. This farm saved over \$5000 in fertilizer purchases the first year. They also changed manure spreading practices so that manure was applied on fields with the lowest nutrient levels. Calf manure is being hauled to level fields furthest away from stream tributaries. They eliminated winter spreading near HSAs and on HEL. They installed thousands of feet of subsurface drainage to reduce surface runoff. This farm also started using cover crops after corn silage harvest. Team members also used this farmstead as a training site for farm planners and agency professionals during the summer of 2003.

A second farm implemented a managed grazing plan that included movable water tanks. This meant that heifers no longer had to obtain water from streams or ponds in the pasture area. They also went to a manure injection system, thereby reducing the risk of surface runoff substantially. A third farm installed terraces and water/sediment control basins on highly erodible land. SWCD staff provided design and construction oversight. Additional practices will be installed/implemented on these farms in the summers of 2004 & 2005.

The results are being measured during the first winter of this project. The researchers at SUNY Brockport reported reduced levels on N, P, and turbidity in downstream water compared to 2002. They also reported substantially lower pathogen levels in their stream monitors. It is my belief that this situation will continue to improve. Only time will tell if the reductions will impact aquatic weed growth in the lake.

