



Section 319

NONPOINT SOURCE PROGRAM SUCCESS STORY

New York

Agricultural Environmental Management Projects Reduce Phosphorus in Lake

Waterbody Improved

Algal blooms and rooted vegetation impaired primary recreation and aquatic life beneficial uses of New York's Oneida Lake, causing New York to add the lake to its Clean Water Act section 303(d) list in 1998. Excess nutrients, specifically phosphorus, from agricultural and urban/suburban runoff caused the growth of algal blooms in the lake. Implementing best management practices (BMPs) such as barnyard runoff management systems, silage leachate control systems, manure storage systems, and nutrient and sediment control systems successfully reduced phosphorus loads to Oneida Lake. New York State Department of Environmental Conservation's (DEC) has proposed Oneida Lake for delisting in 2008 because data show steady declines in nutrient enrichment (phosphorus levels) and indicate that the lake supports designated uses related to nutrient enrichment.

Problem

Oneida Lake, while not recognized as one of the Finger Lakes, is sometimes referred to as the "Thumb of the Finger Lakes." It is the largest lake entirely within New York State. It encompasses 51,000 acres and drains more than 2,300 miles of streams. The Oneida Lake watershed is in the Oswego-Seneca-Oneida Rivers Drainage Basin, which drains to Lake Ontario (Figure 1). It also serves as one of the links in the Erie Canal. The Oneida Lake watershed (approximately 1,364 square miles) contains portions of six counties, 69 municipalities and has a population of 262,000. The lake is approximately 21 miles long, 5 miles wide and 22 feet deep.

DEC regional fisheries staff indicated that while historically Oneida Lake has been green with considerable rooted aquatics and algae, anthropogenic activities worsened the conditions in some areas. DEC identified excess phosphorus as the cause of the unusually high number of algal blooms, which consequently led to reduced dissolved oxygen levels. Therefore, DEC placed Oneida Lake on the state's 1998 303(d) list of impaired waters for not supporting its beneficial uses of primary recreation and aquatic life and for violating the state's narrative standard for phosphorus, which states that phosphorus cannot exist in "amounts that will result in growths of algae, weeds and slimes that will impair the waters for their best usages."

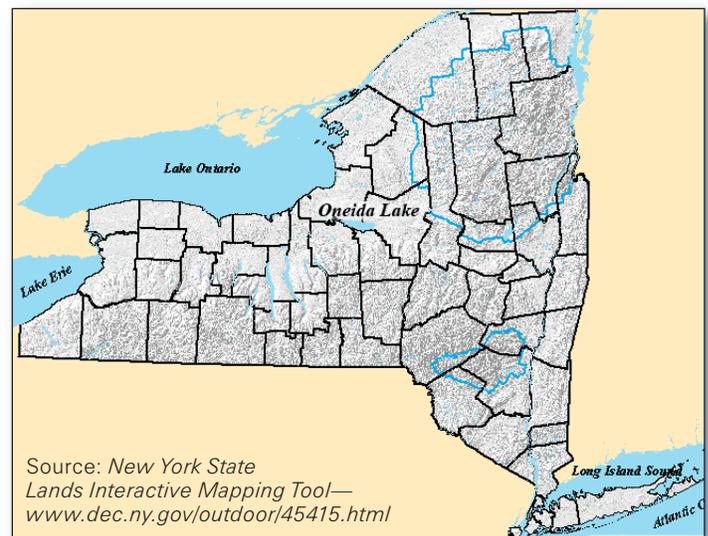


Figure 1. Oneida Lake is located northeast of New York's Finger Lakes and southeast of Lake Ontario.

Two major reports by the Central New York Regional Planning and Development Board documented the status of Oneida Lake and relevant management strategies—*Oneida Lake: State of the Lake and Watershed Report* (2003) and *A Management Strategy for Oneida Lake and its Watershed* (2004).

Project Highlights

Funds from the New York State Agricultural Nonpoint Source Abatement and Control Program (ANSCAP), a grant program that serves as a vital component of the state's Agricultural Environmental Management program, were used to implement a series of agricultural BMPs designed to reduce nutrient and sediment loads to the Oneida Lake watershed. These include soil conservation practices (reduced tillage, buffer strips, fencing, and such), silage leachate control systems (5), manure storage systems (3), barnyard runoff management and other nutrient and sediment control systems (3), access road improvements (2), constructed wetland (1), protected outlet (1), and detention basins (2).

The Oneida Lake Watershed Agricultural Advisory Committee, established in 2002, encourages farmers' participation in the Oneida Lake Watershed Management Program. Supporting this effort, ANSCAP has funded a continuing series of BMP projects to reduce nutrient, sediment and pathogen loads to the watershed.

Results

DEC has proposed Oneida Lake for removal from the 2008 303(d) list because data show a steady decline in phosphorus levels over the past 20 years. Lake Oneida now meets the state's narrative standard for phosphorus and supports its designated uses related to nutrient enrichment. The *Management Strategy for Oneida Lake and its Watershed* (2004) with the associated *State of the Lake and its Watershed Report*, indicate that current phosphorus levels (20–30 milligrams per liter [mg/L]) are more than 50 percent less than they were in the 1970s (40–60 mg/L). The lower phosphorus levels in the lake have reduced the

number of algal blooms and the amount of rooted aquatic vegetation, consequently improving aquatic life habitat and restoring the recreational uses of the lake.

Although a range of point and nonpoint source controls were implemented, agricultural land management improvements are considered to be the primary reason for achieving the load reductions.

Partners and Funding

State agency partnerships among the Departments of Agriculture and Markets and Environmental Conservation and the New York Soil and Water Conservation Committee supported the goals and objectives of the Oneida Lake Watershed Task Force with ANSCAP grant funding to implement high-priority agricultural practices. ANSCAP provided funding through a series of rounds of requests for proposals. Many of the BMP projects highlighted in this success story are those from ANSCAP Round 9 (2002), which provided \$249,150 in cost share funds through the Environmental Protection Fund (EPF) to the Madison County Soil and Water Conservation District for work on nine high-priority dairy farms in the Oneida Lake watershed. Landowners and sponsors contributed an additional \$147,724. ANSCAP and EPF funds are often used to match section 319-funded grant projects.

ANSCAP has provided a total of \$2,404,922 in all rounds of funding for other agricultural practices in the Oneida Lake watershed to reduce the nutrient and sediment loads to Oneida Lake and its tributaries. With local landowner matches, the total funding for all agricultural BMP projects in the Oneida Lake watershed is \$3,382,712. ANSCAP continues to support BMP projects that contribute to phosphorus load reductions in the Oneida Lake watershed.



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