



## Section 319

# NONPOINT SOURCE PROGRAM SUCCESS STORY

# New York

## Implementing Agricultural and Recreational Best Management Practices Restores Rudd Pond

### Waterbody Improved

Phosphorus and sediment runoff from agricultural activities and other nonpoint sources impaired the primary contact recreation use in Rudd Pond, a 70-acre waterbody in Dutchess County, New York. As a result, the New York State Department of Environmental Conservation (NYSDEC) added the pond to the state's 1998 Clean Water Act (CWA) section 303(d) list of impaired waters. The Dutchess County Soil and Water Conservation District (SWCD) worked with farmers to install agricultural best management practices (BMPs) and worked with town and county officials to reduce soil erosion and nutrient losses from transportation and recreational activities. Water quality improvements led to the removal of Rudd Pond from New York's impaired waters list in 2010.

### Problem

Rudd Pond, a 70-acre waterbody in the town of North East, is one of the largest open waterbodies in the Tenmile River watershed (Figure 1). It has 1.9 miles of shoreline and reaches a maximum depth of 14 feet. Rudd Pond supports a variety of popular fish species, including largemouth bass, chain pickerel, bluegills, black crappie and yellow perch. The pond is in eastern Dutchess County in an area of southeastern New York known as the Harlem Valley. The Tenmile River flows into the Housatonic River in Connecticut. The prominent land uses in the vicinity of Rudd Pond include agriculture, forestry, pasture, state park recreational land (the eastern shoreline of Rudd Pond is included within the Taconic State Park), transportation and low-density residential.

Annual surface water sampling conducted in Rudd Pond in the 1990s indicated that total phosphorus (TP) concentrations, which ranged between 10 and 30 parts per billion (ppb), sometimes violated the state's water quality standard, 20 ppb TP. As a result, NYSDEC added Rudd Pond to New York's impaired waters list in 1998 because the high levels of nutrients (including TP) adversely affected the primary contact recreation use. NYSDEC suspected that the TP was being delivered to Rudd Pond through runoff containing sediment and nutrients from agricultural areas, road drainage ditches, recreational trails and other sources.



Figure 1. New York's Rudd Pond serves as a recreational resource for Dutchess County.

### Project Highlights

Between 1999 and 2004, the Dutchess County SWCD addressed the nutrient impairment through a three-tiered effort to reduce soil erosion and nutrient losses from three significant land uses in the watershed—agriculture, transportation and recreation. SWCD partnered with local property owners, town and county highway departments, and the state's Office of Parks and Recreation.

The Dutchess County SWCD coordinated with the state's Agricultural Environmental Management (AEM) Program to provide technical assistance and farm practice implementation guidance to the single significant farm operator in the watershed. The SWCD helped the farm operator to develop a nutrient management plan and implement conservation tillage practices, which reduced soil erosion and nutrient runoff by limiting soil disturbance. The SWCD also worked with the farm operator to integrate improvements in crop residue management, thereby further reducing soil disturbance and nutrient loss.

The SWCD worked with town and county highway officials near Rudd Pond to adopt improved methods of road drainage ditch maintenance and provided training on proper drainage ditch sizing, shaping and stabilization to reduce sediment loss. In addition, a number of erosion control BMPs, including the seeding of banks and application of erosion control fabric, were implemented in the surrounding area.

Finally, the SWCD trained Taconic State Park officials on how to apply erosion and sediment control practices in trail maintenance and other related construction activities, resulting in reduced sediment loading to Rudd Pond from recreational activities. The SWCD continues to host training and outreach activities in the Tenmile River watershed and in other watersheds throughout the county.

## Results

The SWCD's training and outreach activities resulted in increased BMP implementation, which mitigated soil erosion/sedimentation and nutrient loss from the agriculture, transportation and recreation land uses surrounding Rudd Pond. Annual water quality samples collected from 2004 through 2009 showed

that the average TP concentration ranged from 15 to 17 ppb in Rudd Pond, indicating consistent compliance with the state's TP water quality standard of 20 ppb. On the basis of these data, DEC removed Rudd Pond from the CWA section 303(d) list of impaired waters in 2010.

## Partners and Funding

The AEM projects that contributed to the Rudd Pond successes are part of a comprehensive partnership among local, regional and state agencies along with citizen and farmer groups. The SWCD utilized AEM funding provided through the State Environmental Protection Fund to conduct farm assessments and develop farm plans in the Rudd Pond watershed. These state AEM funds were used as part of the state's CWA section 319 matching fund. The BMPs employed in the various nonpoint source control activities in the Rudd Pond Watershed are consistent with the state nonpoint source program's approved Management Practices Catalogue for Nonpoint Source Pollution Prevention and Water Quality Protection in New York State.

Additional support for implementing farm practices to reduce sediment and nutrient losses was provided by Dutchess County and by an Environmental Quality Incentives Program (EQIP) contract through the USDA Natural Resources Conservation Service. Funding to support the training and technical assistance activities of the SWCD for reducing soil erosion and sediment loads from highway and recreational trail maintenance was provided by Dutchess County. Implementation costs for trail improvements to reduce soil erosion and sediment loads to Rudd Pond were provided by the New York State Office of Parks, Recreation and Historic Preservation. Implementation costs for improvements in road drainage ditch maintenance were provided by Dutchess County and the Town of North East.



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