



Section 319

NONPOINT SOURCE PROGRAM SUCCESS STORY

Georgia

Agricultural Best Management Practices Reduce Fecal Coliform Bacteria

Waterbody Improved

Runoff from poultry operations and other agricultural areas carried high levels of fecal coliform (FC) bacteria into the Little Ochlockonee River, preventing a nine-mile segment of the river from achieving its designated use for fishing. The Georgia Department of Natural Resources (GDNR) added the segment to its Clean Water Act (CWA) section 303(d) list in 2000. Landowners constructed agricultural best management practices (BMPs) that reduced FC bacteria runoff from farms. As a result, the river segment meets its designated use and is no longer impaired by FC. In 2006 GDNR removed the nine-mile portion of the Little Ochlockonee River from Georgia's list of impaired waters.

Problem

The Little Ochlockonee River (Figure 1) is in a region of Georgia which has a rolling, hilly topography with a mosaic of agriculture, pasture and mixed pine/hardwood forests. Soils are well-drained, brownish, and loamy, often with iron-rich layers. The area has bluffs and deep ravines with cool microclimates that support several rare plants and animals, as well as species with more northern affinities.

The 82 poultry operations in the six counties surrounding the Little Ochlockonee River watershed produce more than 66 million birds annually. The amount of chicken litter produced in the project area exceeds 100,000 tons annually. Poultry producers must also dispose of the carcasses of numerous birds that do not survive the growing period. Poultry litter and other waste is commonly stored on the ground until it can be spread over pasturelands. Producers often store waste uncovered and sometimes near streams, wetlands or sinkholes, where leaching of nitrates and bacteria can readily occur.

The total maximum daily load (TMDL) assessment developed for the nine-mile segment of the Little Ochlockonee River in 2000 reports that the geometric mean for FC levels exceeded 200 counts per 100 milliliters (mL) for May through October and 1,000 counts per 100 mL for November through April. Georgia's water quality standards state that FC bacteria levels should not exceed a geometric

Photo courtesy of T. Ross



Figure 1. Georgia's Little Ochlockonee River.

mean of 200 counts per 100 mL (or 500 counts per 100 mL if proved to be from nonhuman sources) for the months of May through October. For November through April, FC bacteria counts should not exceed 1,000 counts per 100 mL (or 4,000 counts for any one sample).

GDNR cited runoff from farming and livestock operations as the primary source of the pollution. Failing septic systems were identified as a secondary source of FC contamination. The TMDL calls for FC levels to be reduced by 75 percent for the river segment to attain the water quality criterion necessary to support the fishing designated use.

Project Highlights

To accomplish the necessary 75 percent FC reduction, the Golden Triangle Resource Conservation and Development Council worked with the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) to install poultry incinerators (Figure 2) in the Little Ochlockonee River watershed. Incinerators provide for effective disposal of poultry waste (bird carcasses and litter), reducing the water contamination that often occurs when rain falls on uncovered waste piles. These BMPs are a component of a larger water quality protection project in several neighboring counties. BMPs for the larger project include other poultry incinerators, a pesticide mixing station, and covered poultry litter storage areas, also known as poultry stack houses.

Photo courtesy of USDA NRCS



Figure 2. Ochlockonee River watershed poultry producers installed poultry incinerators such as this one.

Other agricultural BMPs were installed in the area through the Environmental Quality Incentives Program (EQIP), which annually provides financial assistance to agricultural producers. To ensure continued water quality benefits, this program also included three BMP demonstration field days, five informational workshops targeting small farmers and school children, and three educational training sessions to demonstrate the benefits and importance of agricultural nonpoint source protection efforts. More than 200 people attended these education sessions.

Results

While there is no acceptable format for estimating FC load reductions, installing the incinerators prevented targeted pollutants from draining directly into the watershed. State monitoring results from 2003 show that the geometric mean for FC was 81 counts per 100 mL for November through April—a 92 percent decrease from 2000. Because the river attains water quality criteria for FC bacteria, GDNR removed the nine-mile portion of the Little Ochlockonee River (from Big Creek to the Ochlockonee River) from Georgia's CWA section 303(d) list of impaired waters in 2006.

Partners and Funding

State partners involved in the effort include the University of Georgia Cooperative Extension Service, which provided office space, technical assistance and educational outreach help; the Flint River Soil and Water Conservation District, which helped promote the project and implement BMPs; and the Southwest Georgia Regional Development Center, which provided geographical information system support and data as well as technical assistance. Federal agencies also supported the project, including the NRCS, which provided direct technical assistance to agricultural producers and helped develop conservation plans and design and approve BMPs; and the Farm Service Agency, which provided planning and technical support and data collection. Regional and local governments—including the Boards of Commissioners for Mitchell, Calhoun, Baker, Grady, and Decatur counties—also supported the project.

In total, the partners spent \$13,455 of FY02 CWA section 319 funds on BMPs installed in the Little Ochlockonee River watershed. The funds supported constructing and installing BMPs and provided 60 percent of total costs up to a \$6,000 maximum for each BMP. Producers provided the remaining 40 percent of BMP costs. EQIP funding was also made available to producers at a 50-50 cost share ratio.



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