



NONPOINT SOURCE SUCCESS STORY

Georgia

Implementing Best Management Practices Through the National Water Quality Initiative Increases Dissolved Oxygen in Piscola Creek

Waterbody Improved

Because of low dissolved oxygen levels, 25 miles of Piscola Creek were added to the Clean Water Act (CWA) section 303(d) list of impaired waters in 2000. In 2013 the U.S. Department of Agriculture's (USDA's) National Water Quality Initiative (NWQI) designated Piscola Creek a priority watershed for the Natural Resources Conservation Service's Environmental Quality Incentives Program (EQIP) investments in voluntary conservation practices that reduce pollutants from agricultural sources. After investments of over \$1,600,000 in best management practice (BMP) implementation through EQIP, in-stream water quality data collected by Georgia Environmental Protection Division (GAEPD) in 2014 indicated that 13 of Piscola Creek's 25 impaired miles were meeting water quality criteria for dissolved oxygen. Therefore, GAEPD recommended that the downstream 13-mile section of Piscola Creek be removed from the state's list of impaired waters, pending EPA approval of Georgia's draft 2016 Integrated Report.

Problem

The Piscola Creek watershed is within the hydrologic unit code (HUC) #0311020307 and includes Brooks and Thomas counties as well as the city of Quitman. The segment of Piscola Creek from downstream Whitlock Branch at Ozell Road to Okapilco Creek near Boston was added to the CWA section 303(d) list for low dissolved oxygen in 2000.

The 13-mile reach of Piscola Creek highlighted in this success story is in the Lower Piscola Creek watershed (41,309 acres) in Brooks County, Georgia, immediately north of the Georgia-Florida border. The watershed is dominated by agricultural land use, most of which is classified as row crops (29.7 percent). Of the 14,137 acres currently classified as agriculture, approximately 53 percent is irrigated by groundwater. Several classified evergreen forests (18.8 percent) appear to be intensively managed for pine and quail plantations (Figure 1).

Watershed partners developed total maximum daily loads (TMDLs), a TMDL implementation plan, and a watershed management plan that recommended implementing specific BMPs to reduce oxygen-demanding pollutant loads and bacteria loads from forestry and agricultural sources.

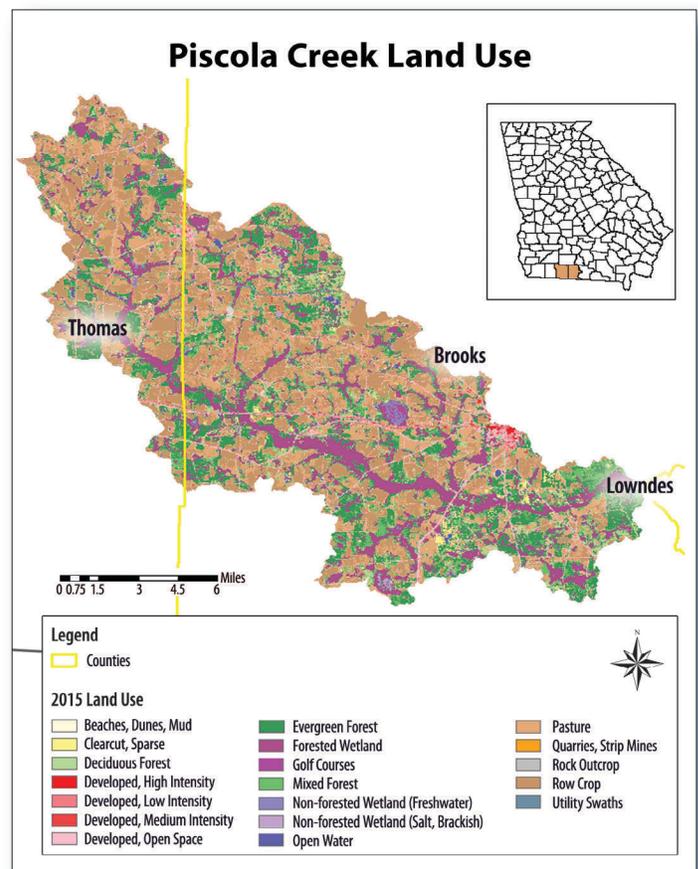


Figure 1. The Piscola Creek watershed is in southern Georgia.

Project Highlights

The NWQI was launched in 2012 by the USDA NRCS in collaboration with the U.S. Environmental Protection Agency (EPA). In 2012 the NRCS and GAEPD, the state water quality partner, selected Piscola Creek to be targeted by the NWQI for financial and technical assistance to farmers, ranchers and forest landowners interested in voluntarily improving water quality and aquatic habitats in priority watersheds with impaired streams. Qualified producers received financial assistance from EQIP to implement conservation and management practices through a systems approach to control and trap nutrient and manure runoff.

From 2012 to 2014, BMPs were implemented on 9,811 acres within Brooks County. The BMPs included conservation crop rotation, cover crops, nutrient management, fencing and installation of microirrigation. Ultimately, the goal of NWQI is to implement conservation practices in a concentrated area so that agriculture no longer contributes to the impairment of waterbodies within these priority watersheds.

Results

During 2014, GAEPD collected monthly water quality samples from Piscola Creek at State Road 333 below Quitman, Georgia, to determine the impact, if any, of NWQI conservation practices implementation on in-stream water quality. The monitoring site was selected based on its position within the watershed and its historical data that was used for comparability. Analysis of the 2014 data showed an increase in dissolved oxygen compared to the previous sampling; the segment is now meeting the water quality standard (Figure 2).

Because data indicate that 13 of Piscola Creek's 25 impaired miles are meeting water quality criteria for dissolved oxygen, GAEPD is recommending that the downstream 13-mile section of Piscola Creek (Allen Branch to Okapilco Creek, near Boston) be removed from the state's list of impaired waters, pending EPA approval of Georgia's draft 2016 Integrated Report.

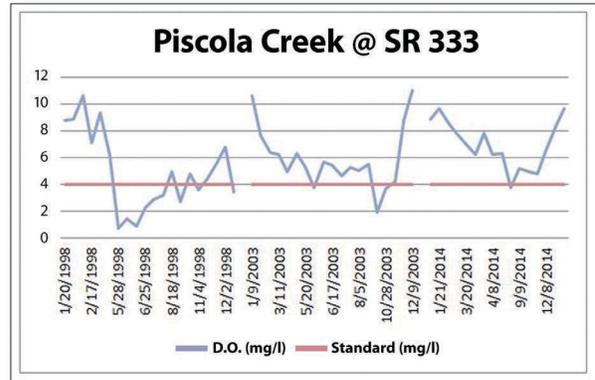


Figure 2. Data collected in 2014 at State Route (SR) 333 show that dissolved oxygen (DO) levels meet the water quality standard.

Partners and Funding

Using EQIP funds in 2012–2014, NRCS provided \$1,653,432 in funding and advice to producers in Brooks County to install conservation practices such as cover crops, nutrient management, livestock fencing and watering systems, among others, to make a difference to improve water quality. EQIP was originally established under the 1996 Farm Bill and reauthorized in the 2014 Farm Bill. Agricultural producers provided 10 to 50 percent cost share for each eligible practice implemented.

GAEPD performed monthly water quality monitoring and was the lead author on the TMDL implementation plan. Southern Georgia Regional Commission developed the 2014 Pride Branch Watershed Management Plan with financial assistance from GAEPD using CWA section 319(h) funds.



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