



NONPOINT SOURCE SUCCESS STORY

Texas

Implementing Conservation Practices and Conducting Watershed Outreach Improves Water Quality in Attoyac Bayou

Waterbody Improved

High levels of bacteria, particularly fecal coliform and *Escherichia coli* (*E. coli*), prompted the Texas Commission on Environmental Quality (TCEQ) to add Attoyac Bayou to the 2004 Clean Water Act (CWA) section 303(d) list of impaired waters for not supporting its primary contact recreation use. Local stakeholders partnered with the Texas State Soil and Water Conservation Board (TSSWCB) and the Texas Water Resources Institute (TWRI) to develop a Watershed Protection Plan (WPP) to address the bacteria impairments in the Attoyac Bayou watershed. Project partners used CWA section 319(h) grant funds from the U.S. Environmental Protection Agency (EPA) to voluntarily implement agricultural and conservation best management practices (BMPs) and conduct public outreach and education. Water quality improved, prompting TCEQ to remove Attoyac Bayou from the state's list of impaired waters in 2016 for bacteria (*E. coli*).

Problem

The Attoyac Bayou (assessment unit 0612_01) is a subwatershed within the Upper Neches River watershed extending approximately 82 miles through Rusk, Nacogdoches, San Augustine, and Shelby counties before emptying into Sam Rayburn Reservoir (Figure 1). Several rural communities can be found throughout the area, with the majority of the lands in the watershed being used for cattle and poultry operations, forestry or recreational/wildlife uses. Water quality data collected in Attoyac Bayou from 1995 to 2002 showed that fecal coliform and *E. coli* levels exceeded the bacteria water quality standard for contact recreation. As a result, TCEQ added Attoyac Bayou to the 2004 CWA section 303(d) list of impaired waters for not supporting its primary contact recreation use.

Story Highlights

In July 2010, the TSSWCB partnered with local stakeholders and TWRI to begin developing a WPP for Attoyac Bayou. The stakeholder group that led the WPP development consisted of representatives from agricultural and silvicultural producers, wildlife interests, soil and water conservation districts (SWCDs), the poultry industry, Commissioner's courts (i.e., county governments), cities and various other interests in the



Figure 1. Attoyac Bayou is in the Upper Neches River watershed in eastern Texas.

watershed. Throughout the planning process, stakeholders identified and worked to holistically address various pollution sources that threaten surface water resources within the watershed (Figure 2). Several outreach and education programs were implemented to raise awareness about water quality issues and to inform local stakeholders about management practice options.

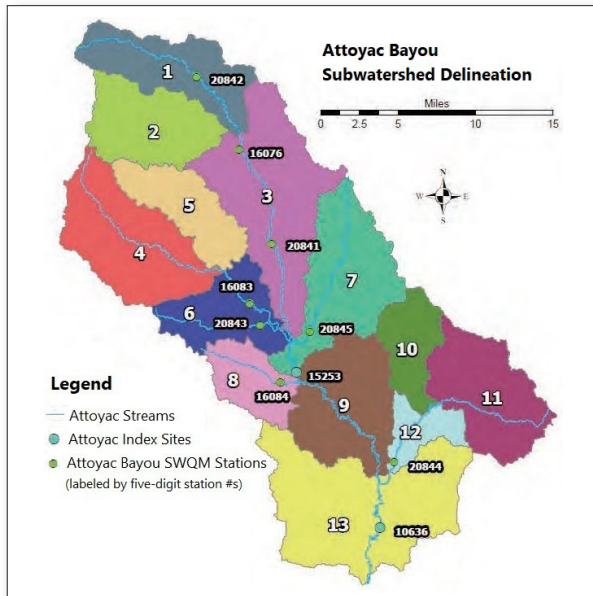


Figure 2. Subwatersheds were delineated (1–13) to help target areas during WPP implementation.

In 2007–2014 the TSSWCB partnered with the local SWCDs to certify and implement 20 water quality management plans (WQMP) on over 2,000 acres in the impaired watershed. These plans included alternative water sources, prescribed grazing, cross-fencing, animal mortality facilities, composting facilities, nutrient management and waste utilization.

In addition, the U.S. Department of Agriculture’s Natural Resources Conservation Service (NRCS) worked with landowners in the watershed to implement conservation practices on over 13,700 acres using Environmental Quality Incentives Program funding. The conservation practices implemented included prescribed grazing, grass and range planting, nutrient management, various forestry practices, animal mortality facilities, composting facilities, conservation cover, livestock pipeline, and alternative water sources.

Results

Assessment data collected from 2007 to 2014 show that the long-term *E. coli* geometric means have dropped below the geometric mean water quality standard of 126 colony-forming units per 100 milliliters in a portion of Attoyac Bayou. This area of the bayou now supports contact recreation. Therefore, TCEQ removed a portion of Attoyac Bayou from the CWA



Figure 3. Water quality monitoring will continue to be used to track water quality on Attoyac Bayou.

section 303(d) list in the 2016 Texas Integrated Report of Surface Water Quality. The success of this effort can be attributed to increased stakeholder awareness due to the watershed planning process and to implementation of conservation practices. Water quality monitoring continues to track and measure interim progress to implement the WPP and ensure this restoration effort remains a success (Figure 3).

Partners and Funding

Over \$617,800 in EPA CWA section 319(h) funds (provided by the TSSWCB), combined with more than \$414,600 in non-federal matching funds from TWRI, supported efforts to develop the WPP, collect and analyze water samples, develop pollutant loading models, and facilitate stakeholder involvement in the watershed planning process.

The Nacogdoches, Piney Woods, Rusk and Shelby SWCDs worked with landowners to provide technical assistance and voluntarily implement conservation practices. The TSSWCB and the NRCS worked through the SWCDs to provide technical assistance and provide funds (approximately \$18,000 in state funding and \$953,000 in federal Farm Bill funding) to landowners as financial incentives to implement BMPs in the Attoyac Bayou watershed.



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