Section 319
NONPOINT SOURCE PROGRAM SUCCESS STORY
Louisiana

Reducing Human and Animal Waste Discharge Restored Recreational Uses

Waterbody Improved

Runoff from dairy farms carried animal waste into Louisiana's Tangipahoa River, resulting in high bacteria counts and low dissolved oxygen concentrations. The Louisiana Department of Environmental Quality (LDEQ) listed the upper and lower reaches of the Tangipahoa River on the state's 2000 Clean Water Act section 303(d) list of impaired waters for not meeting their designated uses of primary and secondary contact recreation. Twenty years of public outreach and strict enforcement significantly reduced fecal coliform counts, restoring the primary contact recreational use of both segments of the river and removing them from Louisiana's 2008 303(d) impaired waters list for fecal coliform.

Problem

The Tangipahoa River flows for 79 miles through Louisiana, from the Mississippi–Louisiana state line to Lake Pontchartrain. LDEQ divided the river into upper and lower reaches for water quality management purposes. The upper reach of the Tangipahoa River is 56 miles long and extends from the state line to Interstate 12 (I-12). The lower reach is 23 miles long and extends from I-12 to Lake Pontchartrain. LDEQ listed the upper segment on the state's 2000 303(d) list of impaired waters for not supporting its designated uses of primary and secondary contact recreation, fish and wildlife propagation, and an outstanding natural resource due to high bacteria counts, sediment and mercury.

LDEQ also listed the lower segment in 2000 for not supporting its designated uses of primary and secondary contact recreation and fish and wildlife propagation because of low dissolved oxygen and high levels of ammonia-nitrogen, mercury, fecal coliform and sediment. The nonpoint sources of fecal coliform included dairies and residential on-site treatment systems.

The water quality standards for primary contact recreational uses require that no more than 25 percent of the total samples collected on a monthly or near-monthly basis may exceed a fecal coliform density of 400/100 milliliters (mL). This primary contact recreation criterion applies only during the defined recreational period of May 1 through October 31. During the non-recreational period of November 1 through April 30, the criteria for secondary contact recreation will apply. The water quality standards for secondary contact recreational uses require that no more than 25 percent of the total samples collected on a monthly or near-monthly basis may exceed a fecal coliform density of 2,000/100 mL. This secondary contact recreation criterion applies year round.

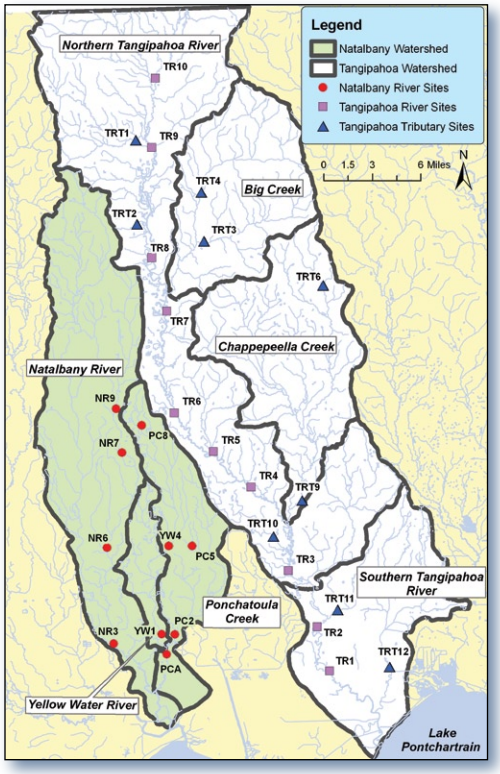

Figure 1. Map of sampling stations along mainstem of Tangipahoa River and associated tributaries.

Project Highlights

The Tangipahoa River had already been the focus of watershed management efforts for 20 years when Louisiana Department of Health and Hospitals first posted a health advisory in 1988 because of high levels of fecal coliform bacteria. LDEQ sent notices to the 250 dairies in the watershed notifying the dairy operators to apply for a discharge permit or work with U.S. Department of Agriculture's (USDA's) Natural Resources Conservation Service (NRCS) and the Louisiana Department of Agriculture's Office of Soil and Water Conservation to install no-discharge animal waste management systems. As a result, dairy operators constructed 318 animal waste management systems in Florida Parishes (Louisiana parishes that were part of Florida in the 19th century and lie in a band across the top of Lake Pontchartrain).

Tangipahoa Parish worked with the Louisiana Department of Health and Hospitals to pass a new ordinance that requires inspections of home sewage systems for all new residences or changes of residence before an electrical connection could be made to the homes. This new requirement removed more than one million gallons per day of raw sewage from the Tangipahoa River.

The agricultural community worked with regulatory agencies to finalize the minimum standards and specifications for zero-discharge waste systems on dairies. The NRCS designed and installed approximately 158 systems in the watershed. They provided daily technical assistance throughout the construction phase to ensure that systems met standards and specifications. In addition, NRCS helped approximately 105 dairy operators with lagoon cleanouts by using Comprehensive Nutrient Management Plans.

The Lake Pontchartrain Basin Foundation (LPBF) has implemented a water quality sampling program along the Tangipahoa River (Figure 1). In addition, LPBF staff members worked with and educated sewer operators on the maintenance and operation of their facilities to reduce the discharges to the river.

Results

LDEQ's water quality data have continued to indicate decreasing trends in fecal coliform bacteria since 1984, when the average annual concentration was 17,356 colonies/100 mL, and the maximum concentrations were 92,000 colonies/100 mL in both February and April. In 2007 the average annual concentration was 240.2 colonies/100 mL, with the maximum concentrations of 500 colonies/100 mL in October and 230 colonies/100 mL in August with the remaining months falling below 200 colonies/100 mL. Moreover, in 2005 LBPF began collecting weekly samples in the mainstem and tributaries of the Tangipahoa River—these data show measurable water quality improvements.

Data show that the lower segment of Tangipahoa River met standards for primary contact recreation by 2002. Therefore, LDEQ removed the lower segment from the 2002 303(d) list. The lower reach improved faster than the upper reach because the upper reach has a higher density of dairies.

Data collected from 2004 to 2007 indicate that the upper reach of the Tangipahoa River is no longer impaired by fecal coliform. LDEQ proposed removing the upper reach from Louisana's 2008 303(d) list of impaired waters. Thanks to a long-term, coordinated watershed management effort, the entire Tangipahoa River now fully supports both its primary and secondary contact recreational uses.

Partners and Funding

Partners include LDEQ, NRCS, LPBF, Tangipahoa Parish, and the Louisiana Department of Agriculture and Forestry (LDAF). In 1991 the Louisiana State Legislature passed Act 12, which allows the state to provide state cost-share funds to dairy operators in the Florida Parishes. In April 1992 LDEQ and LDAF entered into an agreement in which $237,807 of state funds were used to construct no-discharge animal waste management systems. An additional $250,000 of state and USDA cost-share program funding was provided for constructing waste management systems (1993–1998) and lagoon systems. Clean Water Act section 319 funds ($237,500) were used for educational programs and to provide dollars for technicians to inspect the no-discharge systems for proper installment and long-term maintenance.

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