



Section 319

NONPOINT SOURCE PROGRAM SUCCESS STORY

Texas

Addressing Illegal Dumping Reduces Bacteria in Tres Palacios Creek

Waterbody Improved

Bacteria leaching from illegal dumpsites caused Tres Palacios Creek in Texas to violate the state's bacteria water quality standards. As a result, the Texas Commission on Environmental Quality (TCEQ) placed Tres Palacios Creek Above Tidal (segment 1502) on the state's 1996 Clean Water Act (CWA) section 303(d) list of impaired waters for not meeting the contact recreation criteria for bacteria. TCEQ and the Lower Colorado River Authority (LCRA) launched dumpsite cleanup efforts and conducted an education and enforcement campaign. Bacteria levels declined and now meet water quality standards, prompting TCEQ to remove this segment from the state's list of impaired waters for bacteria in 2010.

Problem

Tres Palacios Creek flows through Wharton and Matagorda counties in south-central Texas and eventually empties into Tres Palacios Bay (Figure 1). The watershed encompasses an area of approximately 322 square miles extending from the city of El Campo to the city of Palacios.

Tres Palacios Above Tidal (segment 1502) is approximately 47 miles long. It begins as an intermittent stream with flow that coincides with rain events and effluent from the City of El Campo's wastewater treatment plant. As it flows into Matagorda County, segment 1502 becomes a more perennial stream used for contact recreation (swimming, water skiing and fishing).

In the mid-1990s, monitoring data showed that bacteria levels in segment 1502 violated the state's water quality standards. As a result, in 1996 TCEQ added this segment to the state's CWA section 303(d) list of impaired waters for not attaining its contact recreation use criteria because of elevated bacteria levels.

A 1999 LCRA bacteria monitoring study on Tres Palacios Creek indicated that bacteria were introduced into the creek through runoff, rather than from constant sources such as leaky or failing septic systems. In 2002 public concern about illegal dumpsites in the Tres Palacios watershed focused attention on those areas as a possible source of the bacteria problems. Illegal dumpsites can harbor the bacteria found in medical waste, dead animals, used diapers, domestic sewage waste and pet feces.

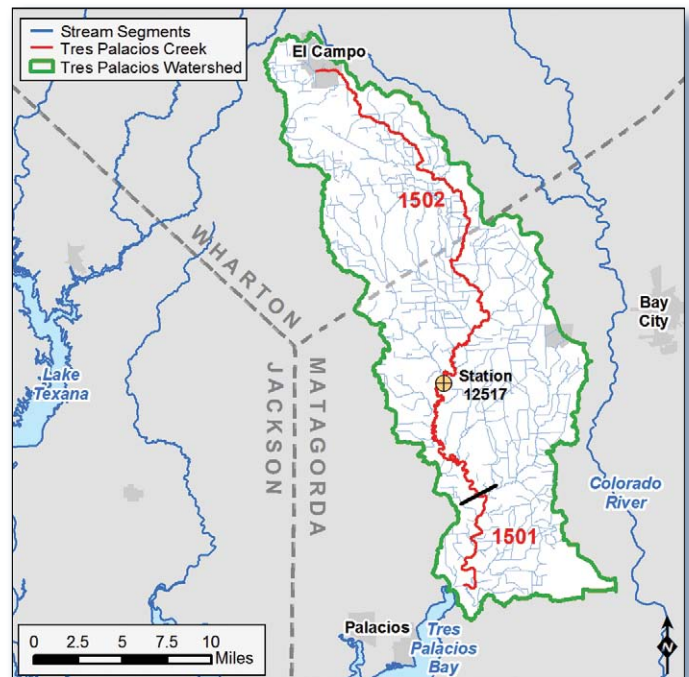


Figure 1. The Tres Palacios Creek watershed is in south-central Texas.

Project Highlights

In 2003 LCRA received CWA section 319 funds to develop an anti-dumping public education and enforcement campaign. LCRA established an illegal dumping hotline through a partnership with Matagorda County Crime Stoppers. LCRA also installed "No Dumping" signs at 37 bridge crossings, placed billboards with the hotline number and

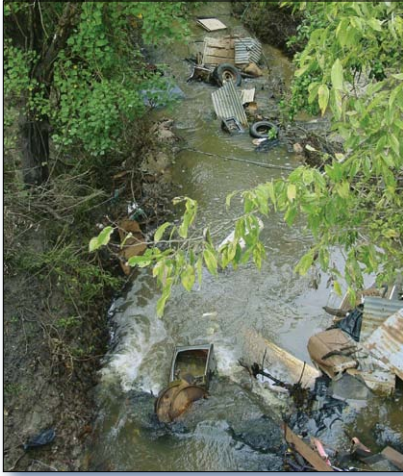


Figure 2. An illegal dumpsite in Tres Palacios Creek.

anti-dumping slogans in 24 locations, and aired a 30-second radio spot on 12 radio stations.

The enforcement portion of the project included installing security cameras at common dumpsites and conducting multiple investigations of illegal dumping activities. Throughout the project period, the Matagorda Health Department investigated 49 illegal dumping sites after receiving phone calls to the illegal dumping hotline (Figure 2).

The Department conducted some minor cleanups at those dumpsites in response. An article in the August 2003 issue of Matagorda County's *Tribune News* provided an overview of the illegal dumping campaign and highlighted the public support for the enforcement campaign conducted by the Bay City Police Department and Matagorda County Sheriff's Department.

In May 2005, TCEQ provided additional CWA section 319 funds to LCRA to expand the anti-dumping program up the Colorado River Basin to McCullough County, northwest of Austin. New project tasks included conducting an aerial survey of dumpsites along the Colorado River and several tributaries, developing an interactive DVD with maps showing dump locations, creating additional public service announcements, and holding public cleanup events.

During 2006 and 2007, the Gulf of Mexico Foundation coordinated three streamside cleanup events—one in Wharton County (March 2007) and two in Matagorda County (March 2006 and February 2007). More than 400 volunteers participated in the events, removing more than 1,000 pounds of illegally dumped trash along Tres Palacios Creek.

Results

The anti-dumping public education campaign, local cleanup events, and investigations of illegal dumping sites by the Matagorda Health Department and local law enforcement helped to increase awareness and reduce illegal dumping. The campaign not only had a positive effect in Matagorda County but also reached thousands of people in several other counties across the state.

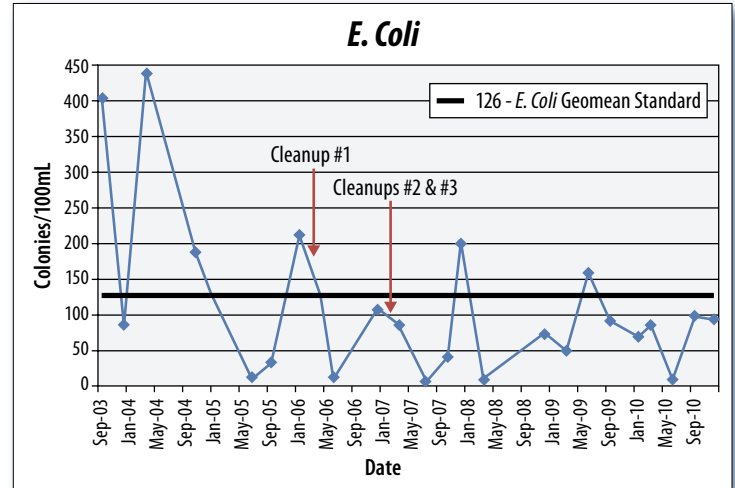


Figure 3. *E. coli* grab samples taken between 2003 and 2010 at TCEQ station 12517 on segment 1502. One outlier sample taken on 6/16/2004 (9,208 cfu/100 mL) was removed from the graph because of its large value.

Monitoring data indicate that the campaign has helped to reduce bacteria in Tres Palacios Creek. The periodic high levels in bacteria typically seen in the wet winter months have declined steadily over the years, particularly beginning in 2006 as cleanup events took place. Since 2009, the creek has consistently met the applicable water quality standard of 126 colonies of *Escherichia coli* (*E. coli*) bacteria per 100 milliliters (mL) of water (Figure 3). As a result, TCEQ removed segment 1502 from the state's 2010 CWA section 303(d) list of impaired waters for bacteria.

Partners and Funding

Funding for this project involved multiple in-kind sources and the cooperation of many partners. TCEQ provided approximately \$60,000 in U.S. Environmental Protection Agency (EPA) CWA section 319 funds to LCRA to support the project beginning in 2003. LCRA and its partners provided \$40,000 in matching funds. The Capital Area Council of Governments (CAPCOG) and LCRA provided another \$79,000 in additional funding to support the project activities. TCEQ provided additional CWA section 319 funds to LCRA in 2005 to expand the anti-dumping program. Key project partners included the Matagorda Health Department, Matagorda County Sheriff's Department, Bay City Police Department, Gulf of Mexico Foundation, LCRA, TCEQ and CAPCOG.



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For additional information contact:

Jack Higginbotham
Texas Commission on Environmental Quality
Jack.Higginbotham@tceq.texas.gov • 512-239-6699

Tim Cawthon, Texas Commission on Environmental Quality
Tim.Cawthon@tceq.texas.gov • 512-239-0845