

NONPOINT SOURCE SUCCESS STORY



Installing Conservation Practices and Addressing On-Site Sewage Facility Issues Improve Water Quality in the Lower Nueces River

Waterbodies Improved

The Lower Nueces River is one of many waterbodies listed as impaired on the Texas Integrated Report and Clean Water Act

(CWA) section 303(d) list for total dissolved solids. The Texas State Soil and Water Conservation Board (TSSWCB) used CWA section 319(h) funding from the U.S. Environmental Protection Agency (EPA) and partnered with Nueces River Authority and local soil and water conservation districts (SWCDs) to develop a watershed protection plan (WPP) for the Lower Nueces River. During the WPP development process, stakeholders learned about their local water quality issues and developed management measures to address them. Water quality improved due to the implementation of management measures identified in the WPP, leading to the removal of two assessment units of the Nueces River (2102_01 and 2102_02) from the state's list of impaired waters.

Problem

The Lower Nueces River (Figure 1) begins at the Wesley E. Seale Dam at Lake Corpus Christi in southern Texas. It flows southeast primarily through rural lands, consisting of grazing lands and cropland (cotton, grain sorghum, corn, and wheat), as well as through a few unincorporated population areas before it reaches the City of Corpus Christi and the saltwater barrier dam in Calallen.

Water quality data collected in Lower Nueces River from 2003 to 2010 showed that average total dissolved solids exceeded the water quality standard. As a result, the Texas Commission on Environmental Quality (TCEQ) added the river to the CWA section 303(d) list in the 2012 Texas Integrated Report for not supporting general use.

Story Highlights

TSSWCB partnered with the Nueces River Authority and the City of Corpus Christi in 2012 to develop a WPP for the Lower Nueces River. Throughout the planning process, stakeholders worked together to holistically address the sources and causes of impairments and threats to surface and drinking water resources within the watershed. The Lower Nueces River WPP was accepted by EPA in 2016.



Figure 1. The Lower Nueces River watershed is in South Texas.

The TSSWCB partnered with the Nueces and San Patricio SWCDs to develop and implement six water quality management plans in the impaired watershed (2013–2018), which focused on grazing and row crop operations across 1,660 acres. These plans included alternative water sources, livestock pipelines, prescribed grazing, pasture and range planting, cross-fencing, nutrient management, conservation crop rotation, irrigation land leveling, and brush management. TCEQ partnered with the Nueces River Authority to assess the needs and feasibility of repairing, replacing, and converting on-site sewage facilities (OSSFs) along the river. This led to a voluntary inspection program for OSSFs and offers of technical and financial assistance to qualifying homeowners to repair and/or replace OSSFs. A total of 51 applications were received; 44 OSSFs were pumped out and inspected, and 25 OSSFs were repaired or replaced.

Results

Water quality monitoring data collected from 2013 to 2020 show that the average total dissolved solids value (496.35 milligrams per liter [mg/L]) meets the state water quality standard (500 mg/L) for general use in assessment units 2102_01 and 2102_02 of the Lower Nueces River. As a result, the Lower Nueces River was removed from the CWA section 303(d) list in the 2022 Texas Integrated Report (Figure 2).

The success of this effort can be attributed to greater stakeholder awareness due to increased knowledge of water quality issues during the watershed planning process, the implementation of conservation practices, and the replacement or repairs of OSSFs in the watershed. Water quality monitoring continues to track and measure interim progress to implement the WPP and ensure this restoration effort remains a success.

Partners and Funding

Over \$510,840 in EPA CWA section 319(h) funds (provided by the TSSWCB) was combined with more than \$448,580 in nonfederal matching funds from the Nueces River Authority to support the development and implementation of the Lower Nueces River WPP. The TSSWCB also provided \$21,472 in state funding to the Nueces and San Patricio SWCDs to develop and implement water quality management plans in the watershed.

Additionally, TCEQ provided \$670,560 in EPA CWA section 319(h) funds, which was combined with \$447,291 in nonfederal matching funds from the Nueces River Authority to support the assessment, repair, replacement, and maintenance of OSSFs.



Figure 2. The Nueces River flows through Nueces and San Patricio counties.

MUNITED STATES

U.S. Environmental Protection Agency Office of Water Washington, DC

EPA 841-F-23-001Q December 2023

For additional information contact:

Brian Koch Texas State Soil & Water Conservation Board 979-532-9496 • bkoch@tsswcb.texas.gov

Kristin DeBone Texas Commission on Environmental Quality 512-239-5447 • KristinDeBone@tceq.texas.gov