



## Improving Water Quality in the Brazos River Basin

# Investigating Aquatic Life Conditions

In two streams in the Brazos River Basin — Rocky Creek (Segment 1217A) and Salado Creek (Segment 1243) — low concentrations of dissolved oxygen from data collected prior to 2002 indicated that conditions were not optimal for aquatic life.

Oxygen gas, which dissolves in water, is essential for the survival of aquatic life. While the amount of dissolved oxygen in water fluctuates naturally, various human activities can cause unusually or chronically low dissolved oxygen levels, which may harm fish and other aquatic organisms.

In response to these conditions, the Total Maximum Daily Load (TMDL) Team initiated a project to investigate the causes of low dissolved oxygen in the creeks, with the goal of determining whether the creeks could support a healthy aquatic community.

Learn more about water quality standards and monitoring by reading *Clean Water for Texas: Working Together for Water Quality*, available on the Web at [www.tceq.texas.gov/goto/tmdl/](http://www.tceq.texas.gov/goto/tmdl/).

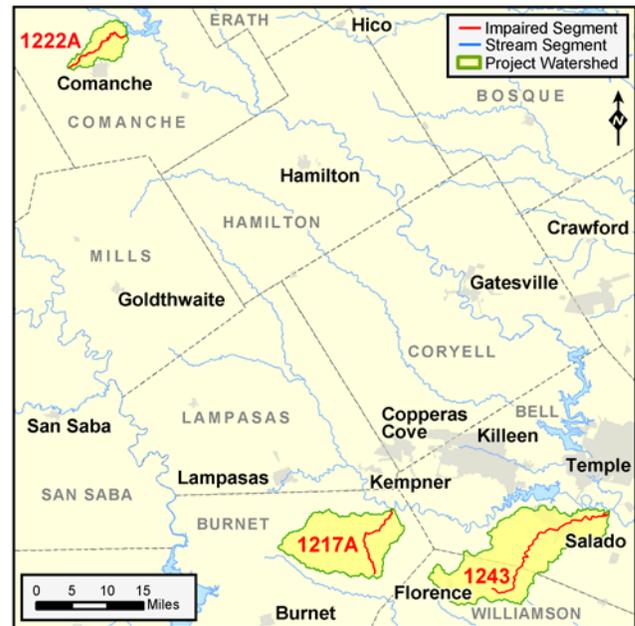
### Rocky and Salado Creeks Watersheds

These two streams are located in south-central Texas in the Brazos River Basin. Rocky Creek begins at the confluence of North Rocky and South Rocky Creeks and flows east into the Lampasas River, north of Oakalla. The subject part of the segment is the lower four miles of this 12-mile stream.

Salado Creek begins at the confluence of North Salado and South Salado Creeks and flows east, approximately 27 miles, to the Lampasas River. The 10-mile long segment studied begins at Salado Creek's confluence with the Lampasas River and extends upstream to the FM 2268 bridge in Salado (just east of Interstate 35).

Salado Creek has the larger watershed at 170 square miles, followed by Rocky Creek at 114 square miles. The watersheds are wholly or partially located in the Edwards Plateau physiographic province and the Oak Woods and Prairies natural region.

Urban development is greatest in the Salado Creek watershed. Ninety-eight percent of the land in the Rocky Creek watershed is privately owned. The major land use is cattle ranching. In general, these streams are used for agricultural purposes, recreation, and other activities, depending on time of year and stream-flow. Rocky Creek was classified as an ecologically



unique stream by the Texas Parks and Wildlife Department because of its unique geology and other characteristics (Water Resources Planning Reports, Senate Bill 1).

The Rocky Creek watershed includes portions of Burnet County and the cities of Sunnyslane, Watson, and Oakalla. The Salado Creek watershed includes portions of Bell and Williamson counties along with the cities of Florence, Corn Hill, Prairie Dell, Salado, and Sommers Mill.

### Project Development

The TCEQ evaluated sources of oxygen-demanding materials and their impacts on dissolved oxygen in the two creeks. This project also originally included Duncan Creek, Segment 1222A. The TCEQ decided to address the bacteria impairment in Duncan Creek through a separate project. The TCEQ contractor gathered 24-hour dissolved oxygen data over a two-year period between August 2002 and September 2004. The results of that monitoring are summarized in the graphs on the next page.

All monitoring on Salado Creek was in compliance with the state surface water quality standards. All locations on Rocky Creek were in compliance with the standards except for the station located on the North Fork of Rocky Creek. Data from Salado Creek and the

main stem of Rocky Creek was submitted to the TCEQ SWQMIS database and the segments were de-listed from the state's 303(d) list.

Biological data collected from the North Fork of Rocky Creek indicates that it supports a relatively healthy biological community, better than that which would be expected based upon the results of the dissolved oxygen monitoring.

In 2010, the TCEQ adopted revised, site-specific standards for dissolved oxygen in Rocky and Salado Creeks. The new criteria are described in

This project has concluded. TMDLs will not be developed for these water bodies unless conditions change.

### For More Information

Contact the project manager listed below, or visit the project website at:

<[www.tceq.texas.gov/waterquality/tmdl/](http://www.tceq.texas.gov/waterquality/tmdl/)>

### TCEQ Project Manager

Dania Grundmann, TMDL Program  
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Questions regarding the Standards should be directed to:

### TCEQ Water Quality Standards Program

Jill Csekitz  
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## Project Development Status

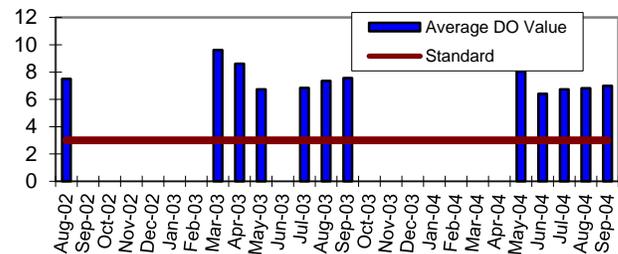
**Start Date:** August 2002

**End Date:** August 2005

### Project Highlights

- Sampling was conducted on Salado and Rocky Creeks during a two-year period between August 2002 and September 2004.
- All measurements in Salado Creek were in compliance with the water quality standards.
- All measurements in Rocky Creek were in compliance with the water quality standards, with the exception of the station on the North Fork Rocky Creek.
- Rocky and Salado creeks were removed from the state's list of impaired waters in 2006.
- In 2010, the TCEQ adopted revised, site-specific standards for dissolved oxygen in Rocky and Salado Creeks. EPA approved the revisions.

Rocky Creek, Segment 1217A:  
Summary of 24-Hour Data



Salado Creek, Segment 1243:  
Summary of 24-Hour Data

