



Assessing the Aquatic Life Use in Tidal Streams—Phase I

Water quality assessment by the TCEQ found that dissolved oxygen levels are occasionally low in three tidal streams in southeastern Texas—Cow Bayou Tidal (Segment 0511) on the upper Texas coast, and Tres Palacios Creek Tidal (Segment 1501) and Garcitas Creek Tidal (Segment 2453a) on the middle coast.

Dissolved oxygen is essential to the survival of fish and other aquatic life. The amount of dissolved oxygen in water is naturally variable, but certain human activities can cause unusually or chronically low levels to occur, which may harm aquatic organisms.

The TCEQ conducted a project that examined the causes of low dissolved oxygen in the three streams and evaluated the appropriateness of the oxygen criteria for the streams. At present, there is no generally accepted method for determining the health of tidal streams. Project staff developed such a methodology, studying the biological, chemical, and physical characteristics of the streams in question. Phase II of this project is applying the new methodology to the assessment of other tidal streams along the coast (see more information in the Phase II project overview).

In addition, the TCEQ conducted a use attainability analysis. A UAA determines whether the designated uses and criteria for a particular water body are appropriate. Depending on the results, the standards for the water body may be revised.

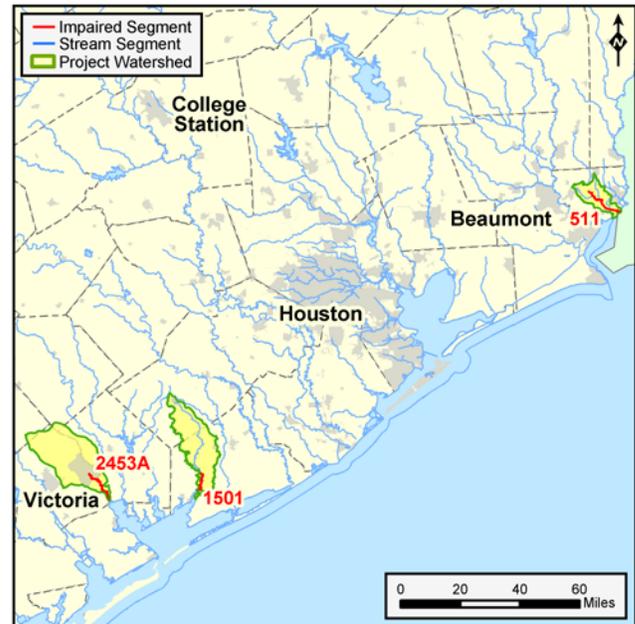
Learn more about water quality standards and monitoring, and TMDLs by reading *Preserving and Improving Water Quality*, available on our website at www.tceq.state.tx.us/goto/tmdl/.

Description of the Project Watersheds

This project focused on the tidal portions of three streams—Cow Bayou Tidal (Segment 0511) on the upper Texas coast; and Tres Palacios Creek Tidal (Segment 1501) and Garcitas Creek Tidal (Segment 2453a) on the middle coast (see maps on page 3).

Cow Bayou Tidal extends 20 miles from its confluence with the Sabine River in Orange County to a point 3.0 miles upstream of IH10 in Orange County.

Tres Palacios Creek Tidal extends 8 miles from its confluence with Tres Palacios Bay in Matagorda County to a point 0.6 miles upstream of its confluence with Wilson Creek in Matagorda County.



Garcitas Creek Tidal is an unclassified tidal tributary of Lavaca Bay that extends 15.2 miles from its confluence with Lavaca Bay in Jackson County to a point 8.5 miles upstream of FM 616 in Jackson County.

Project Development

The TCEQ signed an agreement with the Texas Parks and Wildlife Department (TPWD) to carry out this project. In addition to the three streams that are the focus of this project, two additional tidal streams—Lost River on the upper coast and West Carancahua Creek on the middle coast—were chosen to serve as reference sites for this study.

Monitoring of water quality and the fish and invertebrate communities of all the streams began in spring 2003, and was completed in fall 2004. The data were analyzed to develop a new, scientifically sound means of assessing the health of aquatic communities in tidal streams.

The UAA reports are under review by staff of the TCEQ's Surface Water Quality Standards program. Results of the Phase I analysis are also being applied to the study of other tidal streams along the Texas coast in Phase II of this project.

Public Participation

The TCEQ informed the public about this research primarily through the project Web page (see “For More Information”). If the TCEQ Standards Team decides to recommend changes to the standards for tidal streams based on the project results, those changes would be discussed with the Surface Water Quality Standards Advisory Work Group and made available for public comment before submitted to the commission and EPA for consideration.

For More Information

Contact one of the people listed below, or visit the project website at:

<www.tceq.state.tx.us/implementation/water/tmdl/29-tidalstreams.html>

Information is available on the site for both Phase I and Phase II of this project.

TCEQ Project Manager:

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TPWD Project Manager:

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Project Development Status

Start Date: August 2002

End Date: August 2007

Phase II Started: November 2007

Find a separate summary of Phase II at
<www.tceq.state.tx.us/implementation/water/tmdl/29-tidalstreams.html>

Project Status: Percent Complete

	10	20	30	40	50	60	70	80	90	100
Data Collection										
Targeted Monitoring										
Analysis										
Method Development										
Use Assessment										

Project Highlights

- Monitoring of water quality and the fish and invertebrate communities of all the streams began in spring 2003 and was completed in fall 2004.
- The TPWD provided preliminary maps of the streams being studied.
- Project staff completed a final report of the historical data review.
- Project staff completed a final report on the assessment methodology.
- The final stream-specific reports were submitted by TPWD.
- The reports are being reviewed by staff of the TCEQ's Water Quality Standards program. For information about the status of the review, contact Jason Godeaux at 512/239-2495.

Visit our website at: <www.tceq.state.tx.us/goto/tmdl/>



Watershed of Cow Bayou Tidal (Segment 0511) on the upper Texas coast

Watersheds of Tres Palacios Creek Tidal (Segment 1501) and Garcitas Creek Tidal (Segment 2453a) on the middle coast

