



Improving Water Quality in the Atascosa River Evaluating Aquatic Life and Recreational Uses

In the Atascosa River, dissolved oxygen levels were less than optimal for support of a rich, healthy aquatic ecosystem. Oxygen, 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.

High concentrations of bacteria, which are found in both human and animal waste, were also been observed in the river. The presence of these bacteria may indicate a health risk to people who swim or wade in the rivers—activities referred to as “contact recreation” in the state’s standards for surface water quality.

In response to these conditions, the TMDL Team managed a study to support a recreational use attainability analysis (RUAA) and an aquatic life use attainability analysis (ALUAA) for the river. Use attainability analyses (UAAs) assess the physical, chemical, and biological factors that determine whether a particular use is attainable in a particular water body.

The primary contact recreation use designated for the Atascosa River as of 2012 was presumed, not based on actual site-specific characteristics. This study surveyed how people actually use the stream for recreation, and evaluated stream characteristics that inhibit or promote water recreation.

Similarly, the high aquatic life use assigned to the river as of 2012 was also presumed. This study evaluated characteristics that influence the stream’s suitability for aquatic life.

Learn more about water quality standards, monitoring, and TMDLs by reading [Preserving and Improving Water Quality](#)¹, available on our website and in print.

Atascosa River Watershed

The main portion of the Atascosa River (Segment 2107) is formed by the union of the north and west prongs of the river in extreme northwest Atascosa County, southeast of Lytle. From its origin, the Atascosa River flows approximately 103 miles into Live Oak County between Choke Canyon Reservoir and Three Rivers, where it joins the Frio River.

The Atascosa River is part of the Nueces River Basin, and is the setting for Atascosa River Park in Pleasanton. The project watershed includes the com-



munities of Lytle, Poteet, Pleasanton, Jourdanton, and Christine.

The watershed is characterized by level to rolling land dominated by open grasslands, as well as cacti, weeds, thorny shrubs, and trees such as mesquite, live oak, and post oak. The area is important for recreational deer and quail hunting.

Project Development

In 2008, TCEQ contracted with the Texas Institute for Applied Environmental Research (TIAER) to conduct the two UAA studies and prepare technical reports. Previous studies in the watershed from 2002 to 2004 collected a substantial amount of data. Review of that data and changes to the state’s contact recreation standards in 2010 prompted initiation of the RUAA. TCEQ decided to evaluate the aquatic life use at the same time to gain a fuller understanding of the biological and flow conditions for the entire stream. All data and studies related to this project were submitted to TCEQ’s Standards Group for consideration.

Public Participation

Texas AgriLife coordinated public participation in this project. Public meetings were held in the watershed to seek advice and comment from people who represent government, permitted facilities, agriculture, business, environmental, and community and private interests.

¹ <https://www.tceq.texas.gov/publications/gi/gi-351>

TCEQ also encouraged local involvement with the help of the Basin Steering Committee of the Nueces River Authority, part of the state's Clean Rivers Program.

For More Information

Visit the project webpage at:

www.tceq.texas.gov/waterquality/tmdl/31-atascosa.html

E-mail us at tmdl@tceq.texas.gov or call us at 512-239-6682.

For the status of the UAAs and associated changes in the Standards, contact the TCEQ Standards Group at standards@tceq.texas.gov or 512-239-6682.

Project Dates

Started: March 2009

Project End: August 2012

Project Highlights

- TIAER collected water quality data for the ALUAA from June 2010 to October 2011.
- TIAER completed and submitted the final report on recreational uses in December 2010.
- Public meetings were held November 5, 2009, August 2, 2011, and August 30, 2012 in Pleasanton to update stakeholders on the project.
- The recommendations of the Standards Group for the RUAA have not yet been released.
- Based on the ALUAA, the Atascosa River was divided into three segments for assessment purposes: one unclassified segment (intermittent flow with pools) and two classified segments.
- The Standards Group recommended a high aquatic life use for the Lower Atascosa River (Segment 2107) and an intermediate aquatic life use for the Upper Atascosa River (new Segment 2118). These recommendations were submitted to EPA in 2014. EPA approved the changes in the aquatic life uses for Segments 2107 and 2118.
- TCEQ has not yet proposed revisions to the recreational use standards for Segments 2107 and 2118, since EPA did not approve the proposed new segment boundaries until March 2021.