



# Evaluating the Aquatic Life Use in Seven Texas Water Bodies

## Assessing Toxicity in Water and Sediment

Data assessed in 1999 indicated that toxic conditions might exist in water and/or sediment in seven water bodies at various locations throughout the state. In response, TCEQ conducted a project to confirm the presence of toxicity, and to determine its causes, where present.

To identify water bodies that do not support a healthy aquatic ecosystem, testing for toxic substances in ambient water and sediment is performed to complement routine monitoring of chemical parameters like dissolved oxygen. Since 1989, TCEQ and its partner agencies have collected approximately 600 ambient water samples and 330 sediment samples to test for acute and/or chronic toxicity in Texas waters. Toxicity tests are performed using standard protocols by the Houston Laboratory of EPA.

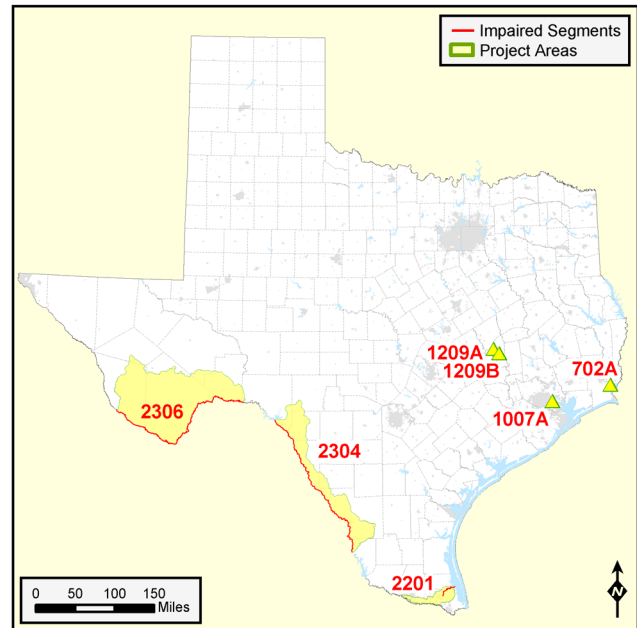
To determine the potential of water bodies to be toxic, sensitive aquatic organisms are exposed to water and sediment samples under laboratory conditions. These sensitive organisms serve as surrogates for the species indigenous to the water body being tested. However, there is not always a positive correlation between toxicity observed in the laboratory and actual toxic conditions in the water body being tested. Also, the laboratory tests used to determine the potential for toxicity do not identify the specific chemical toxicants or stressors responsible for the observed effects.

Consequently, TCEQ undertook a thorough and intensive assessment to verify whether toxic substances were present at levels likely to be toxic to aquatic life, and to identify the specific toxic substances.

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

### Project Watersheds

Water Body	Type of Toxicity
Alligator Bayou (Segment 0702A)	water and sediment
Vince Bayou (Segment 1007A)	sediment
Bryan Municipal Lake (Segment 1209A)	sediment



Water Body	Type of Toxicity
Finfeather Lake (Segment 1209B)	sediment
Arroyo Colorado Tidal (Segment 2201)	sediment
Rio Grande Below Amistad Reservoir (Segment 2304)	water
Rio Grande Above Amistad Reservoir (Segment 2306)	water

### Project Development

TCEQ engaged the services of Parsons to conduct the field work and laboratory analyses. Parsons contracted with North Texas University and TRAC Laboratories for the testing. Where toxicity was not found, TCEQ recommended removing those water bodies from the list of impaired waters. Where toxicity was found, additional testing was done to identify the specific pollutant or pollutants responsible for the observed effects.

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

### For More Information

Visit the project webpage at:

[www.tceq.texas.gov/waterquality/tmdl/30-toxicity\\_project.html](http://www.tceq.texas.gov/waterquality/tmdl/30-toxicity_project.html)

E-mail us at [tmdl@tceq.texas.gov](mailto:tmdl@tceq.texas.gov) or call us at 512-239-6682.

**Project End Date:** 2003

### Project Highlights

- Toxicity was verified in five of the seven water bodies (all except the Arroyo Colorado, Segment 2201, and the Rio Grande Below Amistad Reservoir, Segment 2304).
- Testing to determine the specific toxins was conducted in Alligator Bayou, Bryan Municipal Lake, Finfeather Lake, and Vince Bayou.
- Because the Rio Grande is an international river, plans to address toxicity in the river will be coordinated with other state and federal agencies, and with neighboring Mexico.
- Final reports and summaries are available on the project webpage.

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