



Evaluating the Aquatic Life Use in Seven Texas Water Bodies Assessing Toxicity in Ambient Water and Sediment

Water Quality and Toxicity

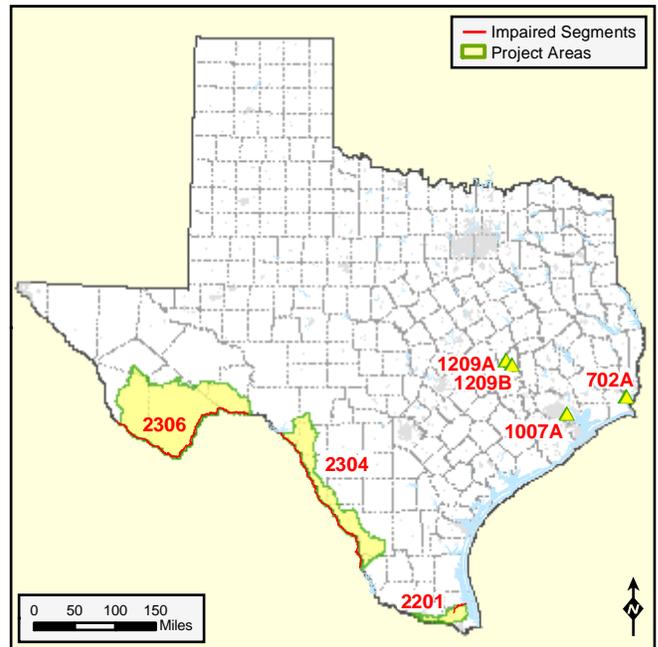
The state of Texas requires that surface waters are not toxic to aquatic life. Data assessed in 1999 indicated that toxic conditions might exist in water and/or sediment in seven water bodies at various locations throughout the state. In response, the TCEQ conducted a project to confirm the presence 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, the 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 the Environmental Protection Agency (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.

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
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



Consequently, the 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. Where toxicity was confirmed, the TCEQ will develop total maximum daily loads for the toxicants or stressors identified.

The goal of a TMDL is to determine the amount (or load) of a pollutant that a body of water can receive and still support its designated uses. This allowable load is allocated among all the potential sources of pollution within the watershed. Measures to reduce pollutant loads are then developed as necessary.

Learn more about water quality standards and monitoring by reading *Clean Water for Texas: Working Together for Water Quality*. For general information about how TMDL projects are structured, read *The TMDL Process in Texas: What You Need to Know*. Both documents are available on the Web at www.tceq.org/goto/tmdl/.

Project Development

The TCEQ engaged the services of Parsons to conduct the field work and laboratory analyses. Parsons contracted with North Texas University and TRAC Laboratories to do the laboratory testing.

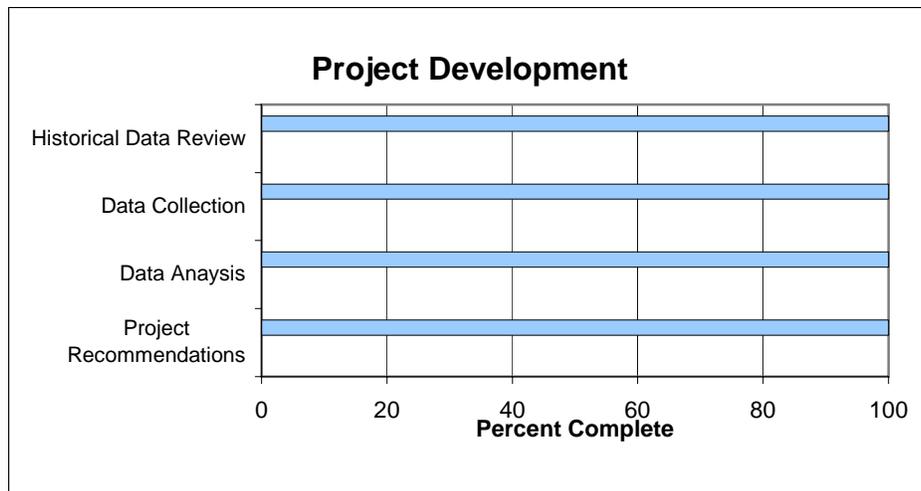
Where toxicity was not found to be present, the TCEQ will recommend removing those water bodies from the list of impaired waters.

Where toxicity was found, additional testing was done to identify the specific pollutant or pollutants responsible for the observed effects. One or more TMDL projects will be initiated to identify sources and to allocate the appropriate loads for those water bodies.

For More Information

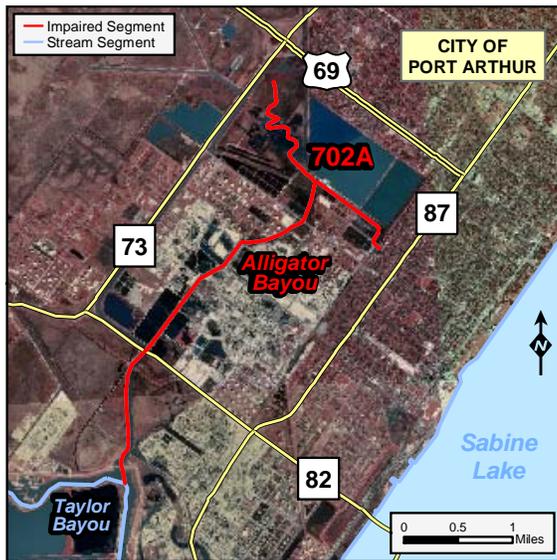
To find out more about this project, contact:

TCEQ Project Manager
Andrew Sullivan, TMDL Program
(512) 239-4587
asulliva@tceq.state.tx.us



Project Highlights

- Toxicity was verified in 5 of the 7 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.
- The TCEQ is exploring its options for addressing toxicity in the Rio Grande Above Amistad Reservoir, Segment 2306. Because the Rio Grande is an international river, plans must be coordinated with other state and federal agencies, and with neighboring Mexico.
- Final reports and summaries are available on the TCEQ's TMDL Program Web site.



Project Watersheds

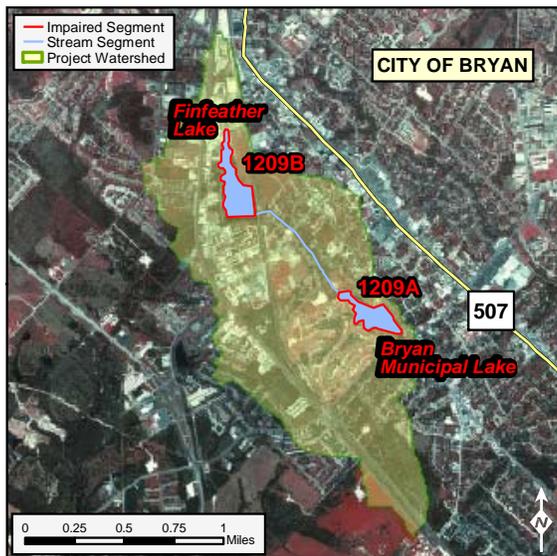
Alligator Bayou, Segment 0702A

Alligator Bayou is located in the Neches-Trinity River Basin near the city of Port Arthur. It is a freshwater tributary of Taylor Bayou, with a watershed of approximately 40 square miles.



Vince Bayou, Segment 1007A

Vince Bayou is located in the San Jacinto River Basin in the city of Pasadena. It is a tidal tributary of the Buffalo Bayou arm of the Houston Ship Channel.



Bryan Municipal Lake, Segment 1209A

Bryan Municipal Lake, also known as Country Club Lake, is adjacent to the Bryan Municipal Golf Course in the city of Bryan. The lake is shallow, with an average depth of 2 to 3 feet, and a surface area of approximately 14 acres.

Finfeather Lake, Segment 1209B

Finfeather Lake lies in an industrial area of the city of Bryan. The lake has a surface area of 18.5 acres and an average depth of 5 to 7 feet. Finfeather Lake flows into Bryan Municipal Lake via a small, unnamed stream.



Arroyo Colorado Tidal, Segment 2201

The Arroyo Colorado watershed is located in south Texas, and flows through the city of Harlingen and fertile agricultural areas into the Laguna Madre. Part of the stream is used for shipping between the Gulf Intracoastal Waterway and the Port of Harlingen.

Rio Grande Below Amistad Reservoir, Segment 2304

Only portions of this much longer segment are impaired due to toxicity; an area downstream of the city of Del Rio, and a section downstream of the city of Eagle Pass. The Rio Grande marks the international border between Mexico and Texas.

Rio Grande Above Amistad Reservoir, Segment 2306

Only the upper 25 miles of this segment, part of a much longer segment of the Rio Grande, is impaired due to toxicity. The impaired portion lies within Presidio County and flows through the cities of Presidio and Redford. The Rio Grande marks the international border between Mexico and Texas.

