Texas Commission on Environmental Quality
Total Maximum Daily Load Program
GI-504

Improving Water Quality in Texas Bays and Estuaries

Assessing the Oyster Waters Use

The state of Texas requires that bay and gulf waters be suitable for producing and harvesting edible species of clams, oysters, or mussels. However, data assessed in 2002 showed that 14 bay segments in three geographic regions (see maps) are not suitable for harvesting shellfish because of elevated bacteria concentrations. The use of waters for oyster harvesting, also called the oyster waters use, is the most commonly impaired use among Texas bay and gulf waters.

Bacteria from human and animal waste may indicate the presence of disease-causing microorganisms that pose a threat to public health. Bacteria in the water can accumulate in the tissue of oysters and other shellfish, making them unsafe to eat, especially since some shellfish are often eaten raw.

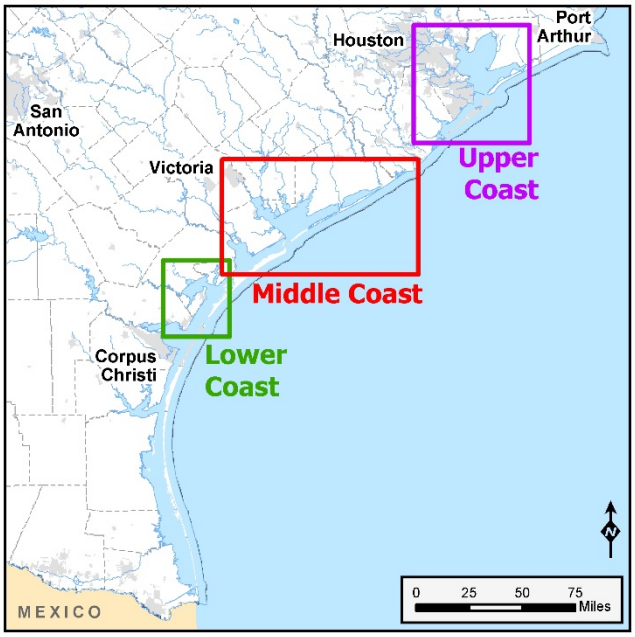
To address the impaired oyster-waters use, TCEQ initiated a project to evaluate the affected waters and develop a strategy to restore water quality in the 14 impaired segments. The project was completed in 2006 by the TCEQ's Total Maximum Daily Load (TMDL) Program.

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

How the Use is Assessed

Fecal coliform is the indicator bacteria used by TCEQ to assess the oyster waters use. The bacteriological criteria in the Texas Surface Water Quality Standards state that the median fecal coliform concentrations in bay and gulf waters shall not exceed 14 colonies per 100 milliliters of water, with not more than 10 percent of all samples exceeding 43 colonies per 100 milliliters of water. TCEQ also imposes a 1,000-foot buffer zone, measured from the shoreline at ordinary high tide, where those fecal coliform criteria do not apply.

Assessment of the oyster waters use is coordinated with the Seafood Safety Division of the Texas Department of State Health Services (DSHS). DSHS is responsible for monitoring and classifying shellfish harvest areas into four categories for harvesting: approved, conditionally approved, restricted, or prohibited. These classifications are published on the DSHS webpage Shellfish Harvesting Areas and Maps[2]. The maps, along with DSHS water quality data and



sanitary surveys, serve as the basis for TCEQ's assessment of the oyster water use.

Project Development

TCEQ convened an interagency work group comprised of state and federal governmental and non-governmental organizations. Participants included representatives of DSHS, the Texas General Land Office, Texas Parks and Wildlife Department, the Galveston Bay Estuary Program (GBEP), the U.S. Environmental Protection Agency, and the Coastal Bend Bays and Estuaries Program (CBBEP). The workgroup identified funding sources for the project and prioritized the use of those funding sources.

The bays were divided into three regions and projects were initiated reflecting the different needs in each region. These projects gathered additional data and information that was needed to better understand the factors affecting the oyster waters use.

Public Participation

In all its projects, TCEQ seeks to gather opinion and information from people who represent government, permitted facilities, agriculture, business,

[1] https://www.tceq.texas.gov/publications/gi/gi-351

[2] www.dshs.texas.gov/seafood/shellfish-harvest-maps.aspx

environmental, and community and private interests in the watershed.

The existing estuary program forums of the GBEP and the CBBEP, which are comprised of stakeholders representing a wide variety of interests, were the primary means of public participation. Project presentations were made at meetings of the GBEP Symposium and CBBEP committees. Project results were also presented at scientific meetings and to the project's interagency work group.

For More Information

Visit the project webpage at:

www.tceq.texas.gov/waterquality/tmdl/35-gulfcoastoysters.html

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

Project Dates

Start Date: June 2001
End Date: August 2006

Project Highlights

Interagency Workgroup

- In June 2001, the interagency work group convened. The work group met quarterly to refine and implement the Gulf Coast Oyster Waters strategy.

Upper Coast

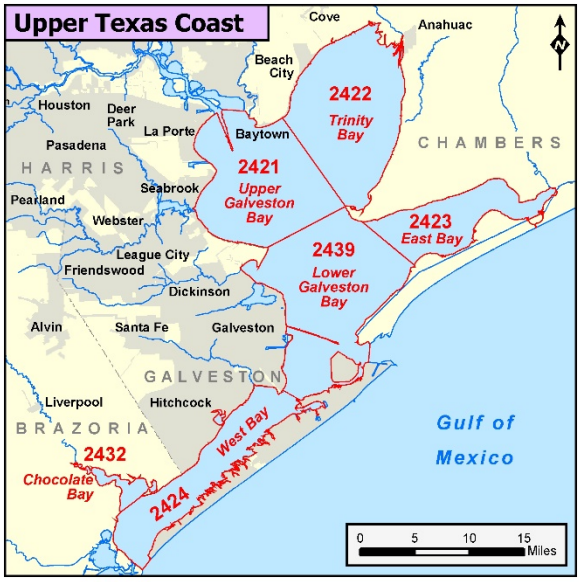
- After analysis, the work group determined that TMDLs were needed for this group of bays. The Upper Coast Oyster Waters TMDL project was subsequently begun in 2006.

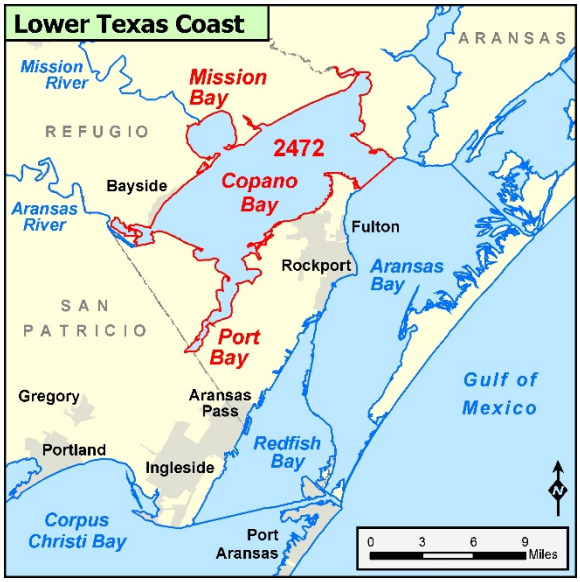
Middle Coast

- In 2002 and 2003, the oyster reefs of Lavaca Bay were mapped to determine the extent of the harvest area.
- The final oyster reef mapping report was submitted in March 2005.

Lower Coast

- TCEQ completed TMDLs for the Mission and Aransas Rivers. Both rivers flow into Copano Bay and were identified as the source of bacteria affecting the oyster waters use in Copano Bay.





Project Watersheds

Upper Texas Coast

The work group studied six segments along the upper Texas coast:

- Upper Galveston Bay (2421)
- Trinity Bay (2422)
- East Bay (2423)
- West Bay (2424)
- Chocolate Bay (2432)
- Lower Galveston Bay (2439)

These segments lie within the Bays and Estuaries Basin, adjacent to the Neches-Trinity Coastal Basin, Trinity River Basin, San Jacinto River Basin, and the San Jacinto-Brazos Coastal Basin.

Middle Texas Coast

The work group studied seven segments along the middle Texas coast:

- East Matagorda Bay (2441)
- Cedar Lakes (2442)
- Matagorda Bay/Powderhorn Lake (2451)
- Tres Palacios/Turtle Bay (2452)
- Lavaca/Chocolate Bay (2453)
- Carancahua Bay (2456)
- San Antonio/Hynes Guadalupe Bay (2462)

These segments lie within the Bays and Estuaries Basin, adjacent to the Brazos-Colorado Coastal Basin, Colorado-Lavaca Coastal Basin, Lavaca-Guadalupe Coastal Basin, Lavaca River Basin, Guadalupe River Basin, San Antonio River Basin, and the San Antonio-Nueces Coastal Basin.

Lower Texas Coast

The work group studied one segment along the lower Texas coast:

- Copano/Port/Mission Bay (2472)

It lies within the Bays and Estuaries Basin, adjacent to the San Antonio-Nueces Coastal Basin.