Texas Commission on Environmental Quality
Total Maximum Daily Load Program
GI-521

Improving Water Quality in the Trinity River

Assessing the Fish Consumption Use

In four segments of the Trinity River—Upper Trinity River, Lower West Fork Trinity River, West Fork Trinity River Below Lake Worth, and Clear Fork Trinity River Below Lake Benbrook—polychlorinated biphenyls (PCBs) have accumulated in fish. Since 2002, the Texas Department of State Health Services (DSHS) has warned people to limit the type and amount of fish they eat from these four Trinity River segments.

Prior to discovery of their toxicity in the early 1970s, PCBs were widely used in electrical equipment and sealants. PCBs are linked to increased rates of certain cancers in rats, mice, and other study animals, suggesting they are probably cancer-causing in humans.

In response to the consumption advisory, the TCEQ Total Maximum Daily Load (TMDL) Program evaluated the sources and extent of PCBs in the waterways affected by the advisory. A map of the advisory area (ADV-43) and consumption advice are available on the DSHS webpage at Fish Advisories and Bans[1].

Learn more about water quality standards, monitoring, and TMDLs by reading Preserving and Improving Water Quality[2], available on our website and in print.

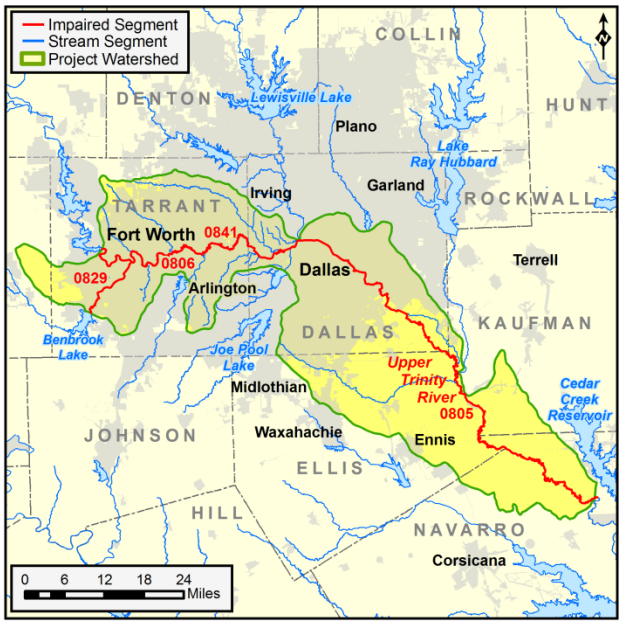
Description of the Project Watersheds

The four project segments (twelve impaired assessment units or AUs) are located in the Trinity River Basin, and flow 174 miles through six counties. Their combined watersheds cover approximately 1,540 square miles, including the densely populated Dallas/Fort Worth metropolitan area. To varying degrees, all the segments are affected by municipal and industrial wastewater discharges and by stormwater runoff from agricultural, industrial, and urban areas.

Upper Trinity River

Segment 0805 is located upstream of the confluence of the Cedar Creek Reservoir discharge canal in Henderson/Navarro County and flows to the confluence of Elm Fork Trinity River in Dallas County. The segment is 100 miles long, with a watershed of approximately 1,000 square miles. The watershed includes portions of Navarro, Henderson, Ellis, Kaufman, and Dallas counties.

There are two major tributaries that discharge into Segment 0805—East Fork Trinity River (0819) and Elm Fork Trinity River Below Lewisville Lake (0822).



The watershed also includes the tributaries Cottonwood Branch, Red Oak Creek, Parson's Slough, Ten Mile Creek, Prairie Creek, White Rock Creek, and Five Mile Creek. Most of the watershed is rural, with residential, range, and cropland uses. The portion of the watershed located in Dallas County is densely populated and heavily urban. The fish consumption impairment applies to all portions of the segment (five AUs).

Lower West Fork Trinity River

Segment 0841 is located upstream of the confluence of the Elm Fork Trinity River in Dallas County and flows to the confluence of Village Creek in Tarrant County. The stream segment is 27 miles long. The watershed is approximately 240 square miles and is located in western Dallas and eastern Tarrant counties in a densely populated urban area. Tributaries that discharge into the segment include Mountain Creek, Bear Creek, Johnson Creek, and Village Creek. The fish tissue impairment applies to all portions of the segment (two AUs).

West Fork Trinity River Below Lake Worth

Segment 0806 is in Tarrant County, located upstream of the confluence of Village Creek down to Lake Worth Dam. The stream segment is 33 miles long and the watershed is approximately 210 square miles. The only

[1] www.dshs.texas.gov/seafood/ advisories-bans.aspx

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

major tributary that discharges into the segment is Clear Fork Trinity River Below Benbrook Lake (0829). Other tributaries to the segment include Big Fossil Creek, Little Fossil Creek, Sycamore Creek, and Marine Creek. The watershed is located in a densely populated urban area. The fish consumption impairment applies to all portions of the segment (two AUs).

Clear Fork Trinity River Below Lake Benbrook

Segment 0829 is 14 miles long and located upstream of the confluence with the West Fork Trinity River (Segment 0806) down to Benbrook Dam in Tarrant County. The watershed is approximately 93 square miles and includes portions of Tarrant and Parker counties. In western Tarrant County, the watershed is a densely populated urban area. The fish consumption impairment applies to all portions of the segment (three AUs).

Project Development

The primary source of the contamination in fish appears to be legacy pollution in river sediments. Since this type of pollution naturally attenuates over time, TCEQ and DSHS will collect and evaluate fish samples from the rivers at 10-year intervals to continue assessing the safety of fish consumption.

Public Participation

In all its projects, TCEQ seeks to gather opinion and information from people in the community who represent government, permitted facilities, agriculture, business, environmental, and community and private interests in the watershed. The North Central Texas Council of Governments coordinated community involvement in this project.

For More Information

Visit the project webpage at:

www.tceq.texas.gov/waterquality/tmdl/77-trinity_pcbs.html

Call us at 512-239-6682 or email tmdl@tceq.texas.gov.

Project Highlights

- TCEQ held public meetings to inform stakeholders about this project on July 19, 2007; August 26, 2008; May 11, 2009; and February 3, 2010, in Arlington.
- DSHS collected new data from March 2008 through August 2008 and completed a final technical report in 2009, which is available on the project webpage.
- In 2010, DSHS extended the advisory (ADV-43) to include dioxin and also areas of Clear Fork Trinity River and West Fork Trinity River that were not part of the original advisory.
- The primary source of the contamination in fish appears to be legacy pollution in river sediments.
- DSHS collected new data in 2018 and 2019. Their new analysis of the fish consumption risk in the rivers is expected in 2022.