



Improving Water Quality in the Fort Worth Area Eleven TMDLs for Legacy Pollutants

As early as 1990, analysis of fish tissue collected in three reservoirs and two river segments in the Fort Worth area (Table 1) revealed unsafe levels of legacy pollutants. As a result, the Texas Department of State Health Services (DSHS) closed the water bodies for fishing. Consumers should not eat fish from these water bodies.

Legacy pollutants are chemicals that have been banned or severely restricted, but which persist in the environment. Six legacy pollutants are addressed by this project and are described in Table 2.

To address these legacy pollutants, the TCEQ developed total maximum daily loads (TMDLs). The goal of the TMDLs was the reduction of contaminant concentrations in fish tissue to levels that constitute an acceptable risk to consumers.

The TCEQ also developed an implementation plan establishing measures to achieve this goal. The plan and the TMDLs are available on our website.

Learn more about water quality standards, monitoring, and TMDLs by reading *Preserving and Improving Water Quality*, available on our website at www.tceq.texas.gov/goto/tmdl/.

Description of the Project Area

The Trinity River segments in this project drain a watershed of 295 square miles, 62 percent of which is urban. However, agricultural land used predominated in much of south Fort Worth and in a large area in the northern portion of the watershed until the 1970s. Currently, the majority of the watershed is heavily urbanized. The three small reservoirs are located in public parks within the city of Fort Worth and impound small drainage tributaries that collect storm water.

The watershed includes the following water bodies.

- § *Clear Fork Trinity River Below Benbrook Lake (Segment 0829)* is located in downtown Fort Worth and extends from the Benbrook Lake dam in southwest Tarrant County, downstream to the confluence with the West Fork Trinity River. Only the lower mile of the segment is affected
- § *Lake Como (Segment 0829A)* is a 10.1-acre impoundment of an unnamed tributary of the Clear Fork of the Trinity River, and is located in Lake Como Park in west Fort Worth. Lake Como



drains a 1.16 square-mile watershed that is predominately residential.

- § *West Fork of the Trinity River Below Lake Worth (Segment 0806)* extends from the Lake Worth dam in west-central Tarrant County, downstream to the confluence of Village Creek in east-central Tarrant County. Only the lower 22 miles are affected.
- § *Fosdic Lake (Segment 0806A)* is a seven-acre impoundment of an unnamed tributary of the West Fork Trinity River, and is located in Oakland and Lake Park in east Fort Worth. Fosdic Lake drains a 0.43 square-mile watershed that is predominately residential.
- § *Echo Lake (Segment 0806B)* is a 16.8-acre impoundment of an unnamed tributary of Sycamore Creek, and is located in Echo Lake Park in south-central Fort Worth. Echo Lake drains a one square-mile watershed that is dominated by residential and industrial land uses.

TMDLs for Legacy Pollutants

Widespread use of the chemicals addressed in this TMDL has been either banned or restricted since at least 1987. Recent sediment and fish tissue samples collected in some of these water bodies suggest that legacy pollutant levels are diminishing. Given the fact that no additional pollutant loading can legally occur

in these water bodies, the maximum permissible daily load allowable is, in effect, zero.

This concept of establishing a “no permittable load” allocation is not entirely new, and has been applied in other parts of the country where legacy pollutants have been addressed. The ultimate goal of this project is to reduce contaminant concentrations in fish tissue to levels that constitute an acceptable risk for consumers.

Public Participation

The TCEQ communicates the progress of this project through the Trinity Basin Steering Committee created by the Texas Clean Rivers Program. This project is a collaborative effort involving the TCEQ, DSHS, the U.S. Geological Survey (USGS), the City of Fort Worth, and the Trinity River Authority (TRA).

For More Information

Contact one of the people listed below, or visit the project website at:

<www.tceq.texas.gov/implementation/water/tmdl/02-fwleg.html>

TCEQ Central Office

Roger Miranda, TMDL Project Manager
512-239-6278, roger.miranda@tceq.texas.gov

Dania Grundmann, Implementation Manager
512-239-3449, danial.gundmann@tceq.texas.gov

TCEQ Regional Office

John Mummert, Region 4- Arlington,
817-469-6750, john.mummert@tceq.texas.gov

Table 1. Water Bodies and Pollutants Addressed

Segment Number	Segment Name (portion covered by TMDL)	Contaminant(s)	Original DSHS Ban Issued	DSHS Advisory or Ban Status
0829	<i>Clear Fork Trinity Below Benbrook Lake</i> (lower one mile of the segment from 7th Street in Fort Worth to the confluence with the West Fork Trinity River)	Chlordane	January 1990	<i>September 2002</i> – Ban expanded to include DDE and PCBs <i>July 2010</i> – No consumption advisory issued due to PCBs and dioxins. Chlordane no longer considered contaminant of concern.
0806	<i>West Fork Trinity River Below Lake Worth</i> (lower 22 miles of the segment from the Clear Fork Trinity River confluence to the confluence of Village Creek)	Chlordane	January 1990	<i>September 2002</i> – Ban expanded to include DDE and PCBs <i>July 2010</i> – No consumption advisory issued due to PCBs and dioxins. Chlordane no longer considered contaminant of concern.
0829A	<i>Lake Como</i> (entire lake)	Chlordane, DDT, Dieldrin, PCBs	April 1995	<i>September 2007</i> - Ban rescinded
0806A	<i>Fosdic Lake</i> (entire lake)	Chlordane, DDT, Dieldrin, PCBs	April 1995	<i>December 2007</i> - Ban modified to consumption advisory for carp due to PCBs
0806B	<i>Echo Lake</i> (entire lake)	PCBs	December 1995	<i>August 2007</i> - Ban retained

Table 2. Description of Pollutants

Chemical	Description
Chlordane	Organochlorine insecticide
DDE	Dichlorodipheynylchloroethylene (degradation product of DDD and DDT)
DDT	1,1,1-trichloro-2,2-bis (p-chlorophenyl) ethane (organochlorine insecticide)
Dieldrin	Organochlorine insecticide and a degradation product of aldrin (another organochlorine insecticide)
PCBs	Polychlorinated biphenyls (group of synthetic organic chemicals widely used as coolants and lubricants)

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TMDL Adoption

TCEQ Adoption: November 17, 2000

EPA Region 6 Approval: May 24, 2001

TMDL Project Highlights

- § The Commission approved the release of the draft TMDLs for public comment on August 11, 2000. The public comment period was held from September 15, 2000, through October 12, 2000. A public hearing was held in Fort Worth, Texas, on October 9, 2000, to receive formal comment.
- § No written or oral comments were received from the public.
- § A final report, *Eleven Total Maximum Daily Loads for Legacy Pollutants in Streams and Reservoirs in Fort Worth*, was approved by the Commission on November 17, 2000, and adopted as an update to the Texas Water Quality Management Plan.
- § The EPA approved the TMDLs on May 24, 2001.

Implementation Plan Approval

TCEQ Approval: July 2001

Implementation Plan Highlights

- § The commission approved the *Implementation Plan for Legacy Pollutant TMDLs in Fort Worth, Texas* on July 13, 2001.
- § The objectives of the implementation plan were to confirm historical trends, identify any remaining pollutant sources, and evaluate and implement mitigation or remediation strategies which will result in the restoration of the fish consumption use for these water bodies.
- § In 2001, the City of Fort Worth began implementation of mitigation measures including a hazardous waste collection center and evaluation of remediation strategies.
- § In November 2005, DSHS collected fish tissue samples from Como, Fosdic, and Echo lakes to reassess the risk associated with consuming fish from those areas. As a result of the study, DSHS lifted the fish possession ban on Lake Como, modified the ban on Fosdic Lake to a consumption advisory, and retained the ban on Echo Lake.
- § TCEQ contracted with DSHS to collect fish tissue samples and reassess the fish consumption risk in the Trinity River segments. Sampling was conducted in June and July 2008.
- § In July 2010, the DSHS issued a no-consumption advisory for West Fork Trinity River and Clear Fork Trinity River due to elevated levels of PCBs and dioxins in fish. Chlordane is no longer considered a contaminant of concern.