

Managing Agricultural Nonpoint Source Water Pollution in Texas

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Agency Role

Water Quality Mandate-Texas
Agriculture Code §201.026

TSSWCB is the lead agency in Texas responsible for planning, implementing and managing programs and practices for abating agricultural and silvicultural nonpoint source water pollution

How this gets done

- The TSSWCB works with the 216 Soil and Water Conservation Districts (SWCDs) in Texas, by using local knowledge to achieve conservation goals that are based on the needs of each specific SWCD
- The TSSWCB provides technical assistance and in some cases financial assistance to the SWCDs to help achieve these goals as well

How this get done

TSSWCB provides guidance and technical assistance to local stakeholder groups in developing and implementing Watershed Based Plans (WBP) through one of these three mechanisms:

- A TSSWCB Regional Watershed Coordinator provides technical assistance in the Watershed Planning process throughout their service area. Currently, the Wharton Regional Office is performing this in 47 counties in Southeast and South Central Texas and the entire Texas Coast
- TSSWCB Staff participate in, and provide technical assistance to WBP projects funded and facilitated by other entities
- Through the TSSWCB CWA §319(h) Grant Program, other entities are granted funds to facilitate the WBP process in a specific watershed
- The TSSWCB Water Quality Management Plan (WQMP) Program is used to implement the Agriculture Management Measures developed in WBPs

Poll Question

 is a form of Non-Point Source Pollution.

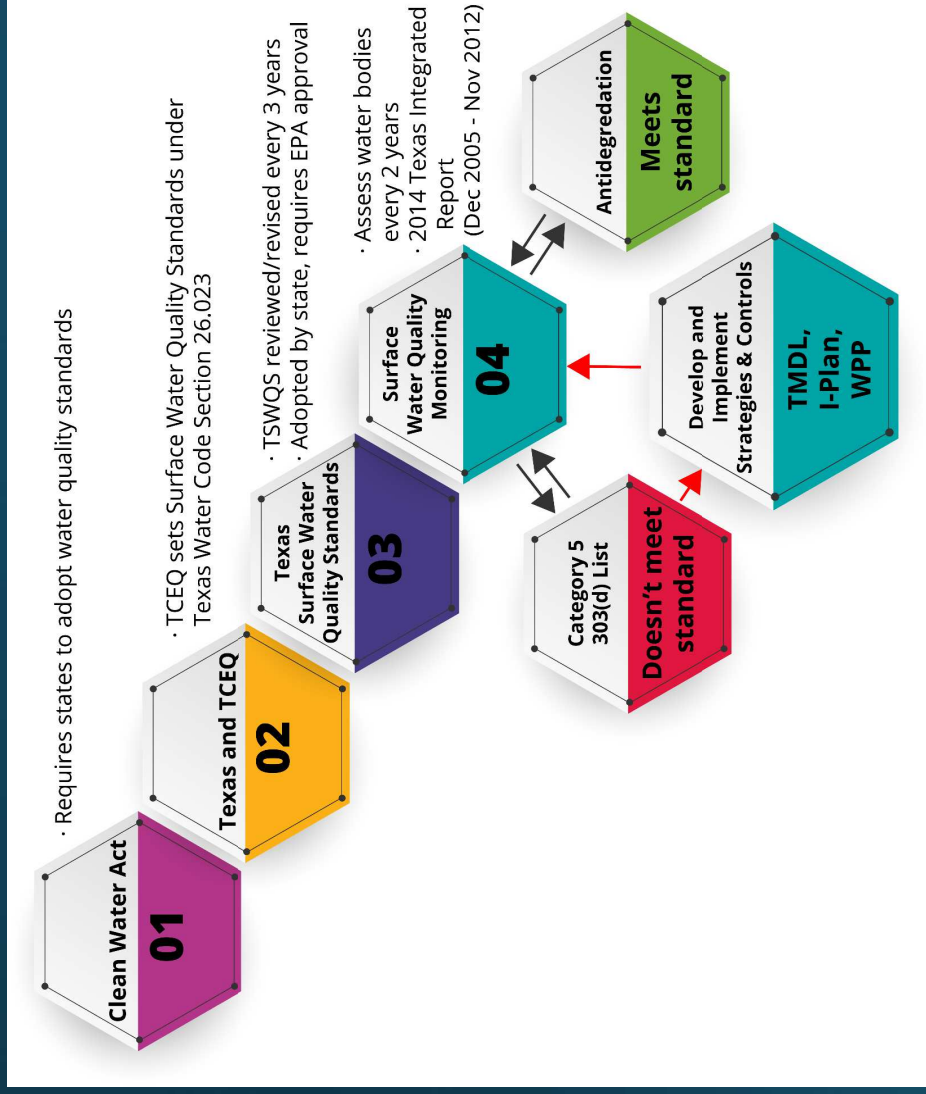
- a. Leaking sewer main
- b. Sediment runoff from a corn field
- c. Sanitary Sewer Overflow
- d. Burning tires

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C O N S E R V A T I O N B O A R D

Water Quality in Texas



Texas Surface Water Quality Standards

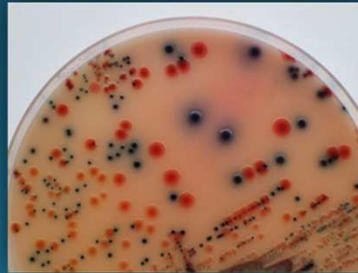
- Two Components:
 - 1) Designated Uses – Waterbodies are assigned a designated use. General Use; Aquatic Life Use; Recreational Uses; and Public Water Supply.
 - 2) Criteria – The numeric or narrative limit used to evaluate if the waterbody meets its designated use.



Texas Surface Water Quality Standards

Some Examples:

Designated Use	Criteria	Parameter
Primary Contact Recreation	126 MPN/100 mL (FW) 35 MPN/100 mL (Marine)	<i>E. coli</i> Bacteria (FW) Enterococci (Marine)
Secondary Contact Recreation 1	630 MPN/100 mL (FW) 175 MPN/100 mL (Marine)	<i>E. coli</i> Bacteria (FW) Enterococci (Marine)
High Aquatic Life Use	5.0 mg/L Average 3.0 mg/L Minimum	Dissolved Oxygen
General Use	6.5 – 9.0	pH



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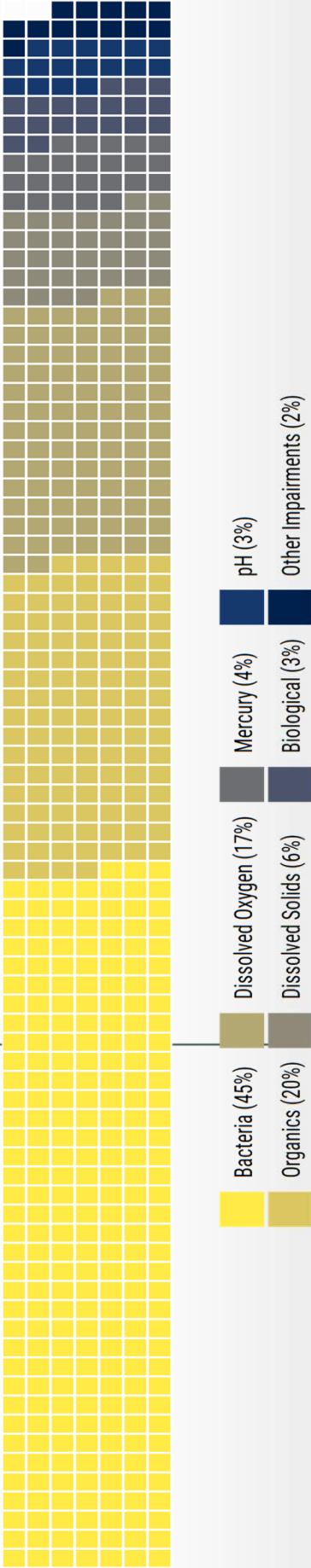
Poll Question

What is the leading water quality impairment in Texas?

- a. Bacteria
- b. Low Dissolved Oxygen
- c. Acid Mine Drainage
- d. Nutrients

2014 Integrated Report Summary

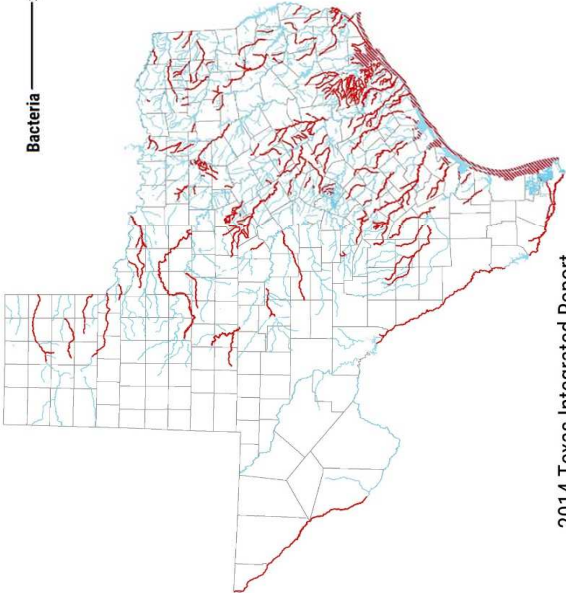
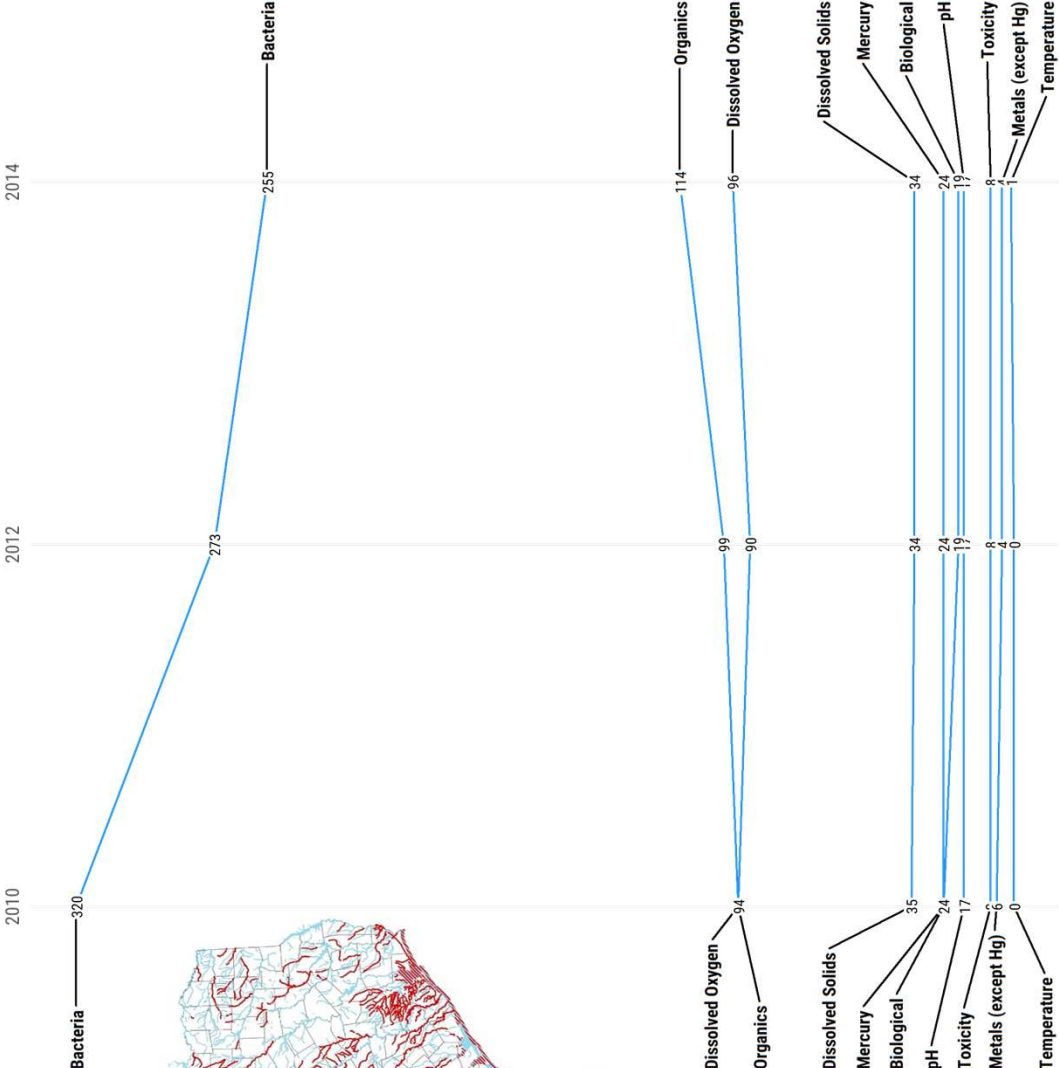
589 total impairments in 1,065 assessed waterbodies



Source: TCEQ (https://www.tceq.texas.gov/assets/public/waterquality/swqm/assess/14txir/2014_exec_summ.pdf)

2014 Texas Integrated Report Summary

Total number of impairments by parameter



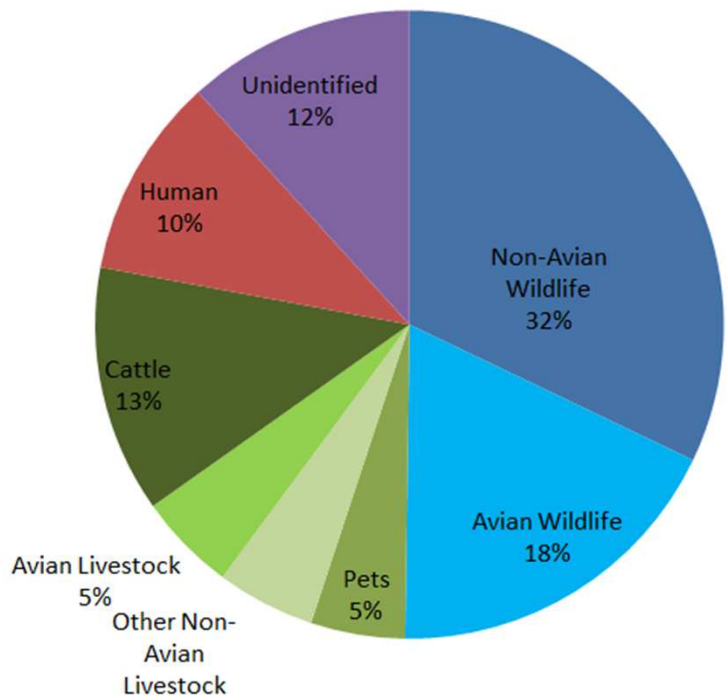
2014 Texas Integrated Report
Waterbodies with Bacteria Impairments

Poll Question

Wildlife is the highest contributor of fecal bacteria in rural and urban streams in Texas.

- a. True
- b. False

Major Sources of Bacteria in Texas Streams



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Where Does Fecal Bacteria Come From?

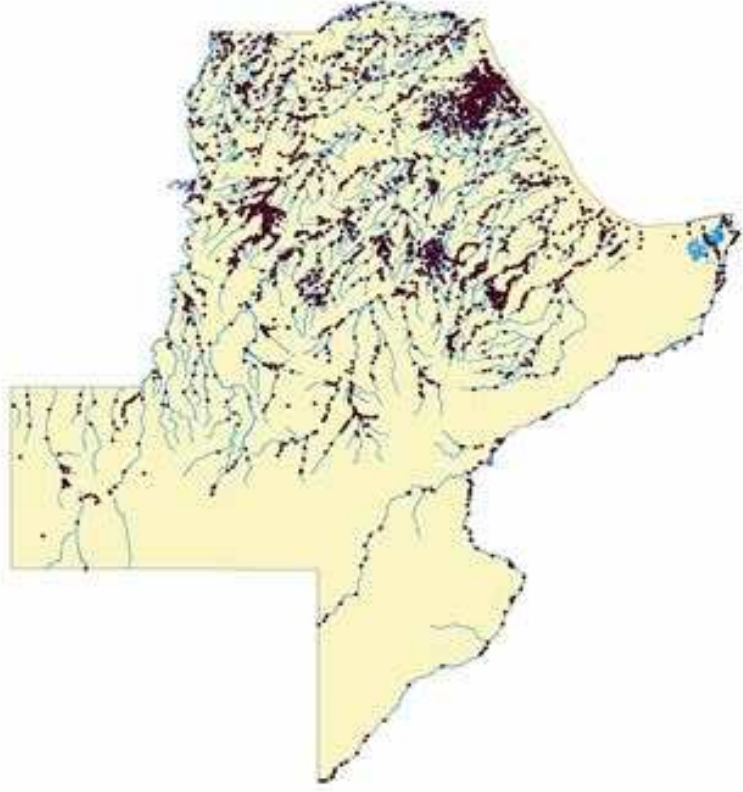
- Direct Deposition:
 - Animals directly deposit fecal matter into water
 - Warm-blooded wildlife, livestock
- Non-Point Sources
 - Stormwater runoff transports bacteria from fecal matter deposited on surfaces
 - Failing septic systems
- Point Sources
 - Improperly treated wastewater
 - Illegal dumping
 - Municipal stormwater outfalls

Water Quality Monitoring

Water Quality Monitoring in Texas is handled by the following entities.

- Texas Commission on Environmental Quality
- River Authorities and Clean Rivers Program Partners
- United States Geological Survey (USGS)

Texas Water Quality Monitoring Stations



Addressing Water Quality Impairments

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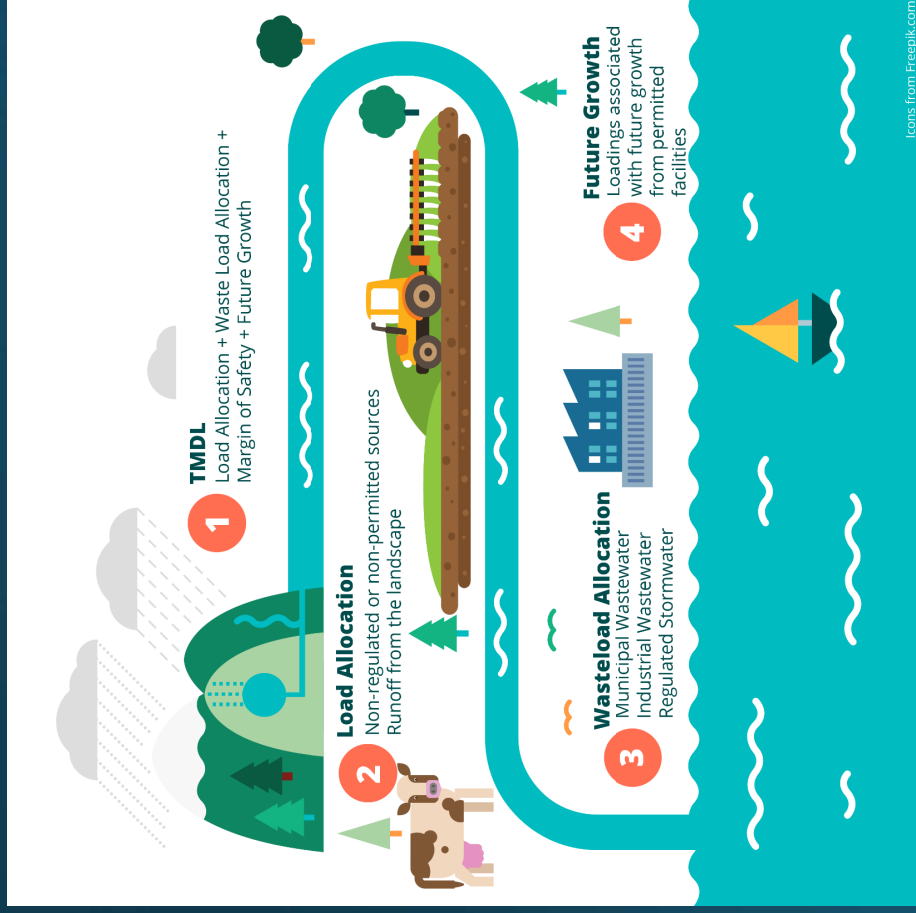
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Watershed Based Plans TMDLs

Total Maximum Daily Load (TMDL)-The TMDL is a document submitted to the EPA to fulfill requirements of the Clean Water Act. TMDLs identifies the pollutant of concern, potential sources, and allocates the allowable load.

Watershed Based Plans TMDLs



Watershed Based Plans

TMDL I-Plan

TMDL Implementation Plan (I-plan)-The TMDL Implementation Plan (I-Plan) is a document outlining steps and schedules for reducing a pollutant load in the waterbody covered by the TMDL.

The management measures and control actions identified in the I-Plan are developed by local stakeholders.

I-Plans address the pollutant of concern in the TMDL.

Watershed Based Plans WPPs

Watershed Protection Plan (WPP)-A holistic stakeholder driven plan that addresses water quality in a watershed rather than political subdivisions, that addresses all water body impairments

It is also a mechanism for voluntarily addressing complex water quality problems that cross multiple jurisdictions

Provides a framework for coordinated implementation of prioritized and integrated management strategies

Integrates ongoing activities, prioritizes implementation based on technical merit and benefits to the community

Watershed Based Plans

WPP 9 Elements

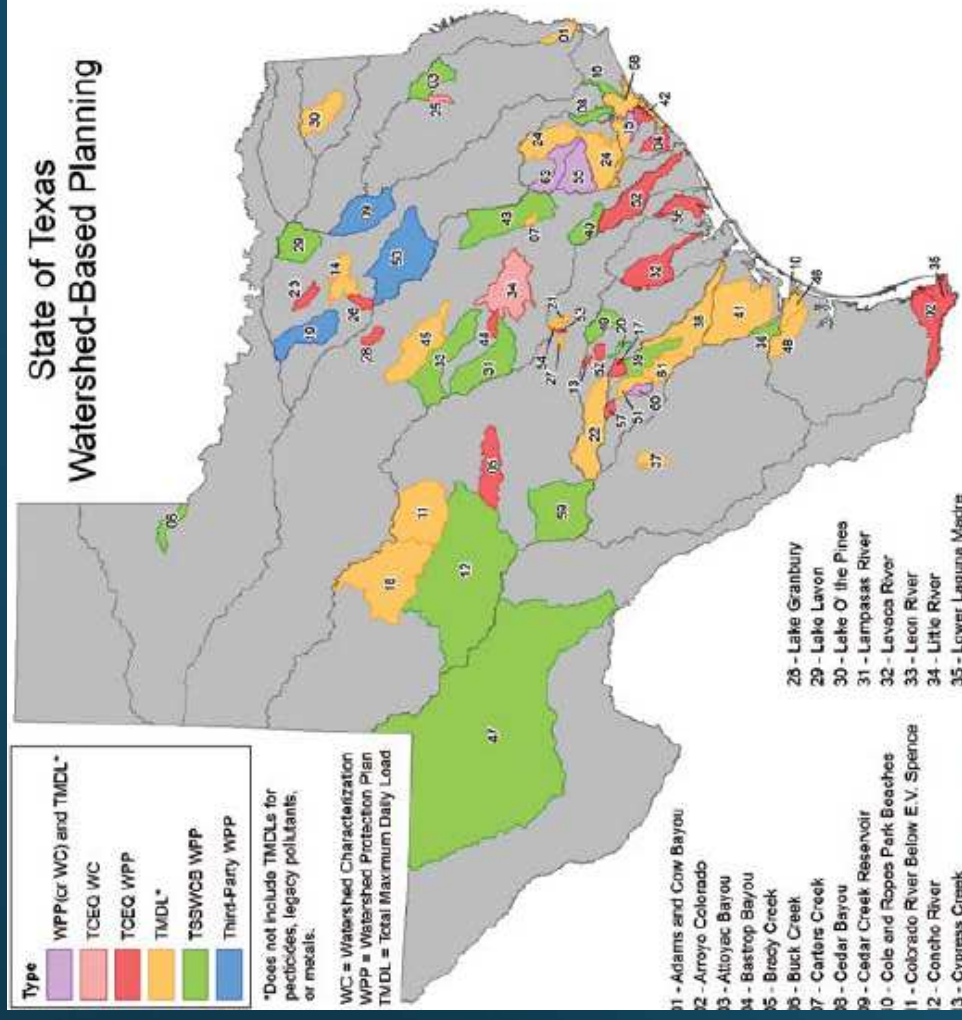
1. Identify causes and sources of pollution
2. Estimate needed reductions
3. Describe management measures
4. Include education and outreach
5. Design implementation schedule
6. Provide measurable milestones
7. Estimate costs and document sources of financial assistance
8. Progress indicators and adaptive management
9. Monitoring to evaluate effectiveness

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WBPs In Texas



How to Get Involved

Texas Watershed Steward Program

Texas Watershed Steward (TWS) program was initiated to provide science-based, watershed education to help citizens identify and take action to address local water quality impairments. Texas Watershed Stewards learn about the nature and function of watersheds, potential impairments, and strategies for watershed protection.

<https://tw.s.tamu.edu/>

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How to Get Involved

Texas Stream Team

Texas Stream Team is a network of trained volunteers and supportive partners working together to collect information about the natural resources of Texas and to ensure the information is available to all Texans. Volunteers are trained to collect quality-assured information that can be used to make environmentally sound decisions. Established in 1991 as Texas Watch, Texas Stream Team is administered through a cooperative partnership between The Meadows Center for Water and the Environment at Texas State University, the Texas Commission on Environmental Quality (TCEQ) and the U.S. Environmental Protection Agency (EPA). Currently more than 400 Texas Stream Team volunteers collect water quality data on lakes, rivers, and streams with programs across the state.

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How to Get Involved

Texas Riparian & Stream Ecosystem Education Program

- Facilitate the promotion of healthy watersheds and improve water quality through the delivery of riparian and stream ecosystem education programs with a focus on priority watersheds
- Increase citizen awareness, understanding and knowledge about the nature and function of riparian zones, their benefits and best management practices (BMPs) to protect them and minimize nonpoint source pollution
- Connect landowners with local technical and financial resources to improve management and promote healthy watershed and riparian areas on their land

<https://twri.tamu.edu/our-work/engaging-educating/texas-riparian-stream-ecosystem-education-program/>

<https://twri.tamu.edu/urban-riparian>

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How to Get Involved

Texas Clean Rivers Program

The Texas Clean Rivers Program is a partnership between the Texas Commission on Environmental Quality (TCEQ) and regional water authorities to coordinate and conduct water quality monitoring, assessment, and stakeholder participation to improve the quality of surface water within each river basin in Texas.

<https://www.tceq.texas.gov/waterquality/clean-rivers>

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Questions?

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