

THE TEXAS WATER SOURCE

UPDATING JASPER AND ORANGE COUNTY
LANDOWNERS ON LAND MANAGEMENT AND
WATER ISSUES

July 2020

Adams and Cow Bayous

Adams Bayou is located north of Cow Bayou, both of which are tributaries of the Sabine River. Adams Bayou is about 18 miles long while Cow Bayou is about 23 miles. Portions of both bayous have been channelized to make navigating simpler. There was heavy barge traffic along these bayous in the early 1900s. The straight passageways can be noticed in satellite imagery such as Google Maps as they contrast with the natural winding sections.

These two bayous flow through rural and urban sections of Orange, Jasper, and Newton counties. Half of Orange county drains into these bayous.

The bayous begin in rural areas before passing multiple chemical plants and residential communities as they flow south and drain into the Sabine. Many oil wells are located along the bayous as well. Water from the bayous has been used for irrigation and power for mills. There have been multiple studies on the flooding in these areas as the highest elevation point is only 35ft above sea level.

Currently, the water in Cow and Adams Bayou has low levels of dissolved oxygen and high levels of fecal bacteria. Dissolved oxygen is necessary for aquatic life, while fecal bacteria poses risks to human health.

There are sixteen permits from the EPA to industrial and residential facilities/areas along the Cow Bayou where discharge legally enters the bayou. Discharge types include sanitary waste, stormwater, and utility wastewater. The soils around Cow and Adams Bayous are not suitable for septic tank absorption, which could contribute to the high fecal bacteria levels. The amount of oil, dissolved oxygen, and pH levels are reported to the EPA by the permit holders.



For more information:

- <https://bit.ly/3dx5kVm>

Timber Management in Low Lying Areas

Timber management can be challenging in low lying areas with saturated soil. Conducting operations during drier months is one of the best strategies to prevent erosion, changing hydrology of the land, and damaging forest roads. Wet conditions can lead to equipment getting stuck, rutting the road, creating pools of water, and often causing erosion and costly damage.

In extremely wet areas with very high water tables, bedding may be necessary. This helps keep seedlings out of the water to prevent them from drowning. Trees need water to grow, but completely saturated soils are anaerobic (absence of oxygen), which prevents tree roots from getting the oxygen they need.

On forest roads, water can become a problem. Methods of water diversion include culverts and waterbars with wing ditches. Rolling and broad based dips can be installed to slow down and spread out water on a road. Daylighting roads can be a simple solution. By removing tree branches

that shade out the road surface it allows more sunlight to reach them which leads to faster drying.

Crossing streams can also be challenging during forest operations. It is important to keep tree tops and sediment out of the water. The type of crossing to use depends on what type of machine will be crossing, streambank slope and stability, width and volume of the stream, vegetation, and soil type. Recommendations for best crossing can be found in the Texas Forestry Best Management Practices (BMPs) “blue book”: <http://bit.ly/2O81CrP>.

Be sure to check if you are in a jurisdictional wetland as these are regulated by the Army Corp of Engineers. BMPs are mandatory in these areas.

Texas BMPs app is also available for Android and Apple smartphones:

texasforestinfo.tamu.edu/MobileApps/BMP.

Organization Spotlight

Sabine River Authority



The Sabine River Authority (SRA-TX) is a Texas agency, created in 1949, with the purpose of conserving and reclaiming the Sabine River and connected waters. The water under the SRA’s authority reaches 21 Texas counties. This group focuses on water supply and quality, as well as recreational development for surrounding communities.

The SRA often collaborates with many agencies such as Texas Parks and Wildlife and Texas Commission on Environmental Quality. Recent SRA projects include educating people about protected aquatic species such as the alligator snapping turtle, helping with the Southeast Texas Flood Coordination Study, and improving recreational facilities throughout the region.

The SRA has also formed a program, SE Texas R.A.I.N. (Southeast Texas Regional Alerting & Information Network), to help local citizens during weather emergencies, particularly when water levels could rise to dangerous levels. This site displays rainfall, streamflow, and water levels in major streams, bayous, and reservoirs. The data is compiled from many sources, including the U.S. Geological Survey and the National Weather Service. Counties covered are Hardin, Jasper, Jefferson, Newton, and Orange.

For more information:

- <https://www.sratx.org>

What are TMDLs?

Total Maximum Daily Loads (TMDLs) is a “budget” that determines the amount of a particular pollutant that a waterbody can receive and still meet its applicable water quality standards. Section 303(d) of the Clean Water Act authorizes the Environmental Protection Agency (EPA) to assist states, territories, and authorized tribes in listing impaired waters and developing TMDLs for these waterbodies. However, the State of Texas determines what the acceptable numerical levels are.

The Texas Surface Water Quality Standards establish explicit goals for the quality of streams, lakes, and bays throughout the state. The Standards are written and implemented by the Texas Commission on Environmental Quality (TCEQ) under authority of the Clean Water Act and the Texas Water Code.

TMDLs are calculated for each pollutant based on the current levels in the water, the amount of different sources the pollutant comes from, and the loading capacity. Loading capacity is how much of the pollutant can be in the water without affecting how the water can be used. Depending on the current pollutant levels, an implementation plan may be necessary to improve the water quality.

A TMDL summarizes the sources of the pollutants, while its associated Implementation Plan (I-Plan) outlines management strategies needed to restore water quality and maintain the beneficial uses of impaired or threatened waterbodies.

As a community project to improve water quality for support of recreational and aquatic life uses in Adams and Cow Bayous, TMDLs were developed and adopted in June 2007, for bacteria, dissolved oxygen, and pH. A stakeholder advisory group (SAG) formed in 2003, has been involved throughout the Orange County TMDL project. Members of the SAG represent government, permitted facilities, agriculture, business, environmental, and community interests in the two watersheds.

SAG members developed the I-Plan, approved in 2015, which together with the TMDLs is the road map for improving water quality. The TMDLs allow for restricted levels of point and non-point

source pollutants to enter the bayous while maintaining the water quality for environmental and recreational safety.

Adams and Cow Bayous were placed on the 303(d) impaired waters list by the State of Texas because they do not meet the standard conditions suitable for swimming, wading, fishing, or supporting a healthy aquatic environment. Water quality testing found elevated bacteria levels in the bayous and their tributaries that may pose a health risk for swimmers. Testing also showed low concentrations of dissolved oxygen and/or low pH levels, which indicate that conditions are not optimal for aquatic life. Municipal wastewater treatment facilities and failing residential/commercial septic systems have been identified as the primary causes contributing to the impairments.

A TMDL Implementation Status Report from September 2019, lists several accomplishments spanning a 4-year period since the 2015 approval of the I-Plan. Several entities were involved in implementing the measures. Texas A&M Forest Service (TFS), loggers/logging contractors, local landowners, and foresters - are promoting sustainable forestry practices throughout the watershed. TFS continues to deliver outreach and technical assistance to forestry interests in or near the Adams Bayou and Cow Bayou watersheds. Forest owners, managers, and harvesters are applying forestry Best Management Practices as appropriate to mitigate adverse effects on water quality. A link to this report can be found on this page: www.tceq.texas.gov/waterquality/tmdl/37-orangecounty.html. Here you can find specific tasks accomplished and continuing by all the collaborators.

For more information:

- <https://www.epa.gov/tmdl/overview-total-maximum-daily-loads-tmdls>
- <https://www.sratx.org/conservation/water-quality/tmdl>



TEXAS A&M
FOREST SERVICE

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Texas Forest Action Plan

The 2008 Farm Bill required each state to assess the forest conditions and trends within their boundaries; delineate priority forest landscapes; and identify the issues, threats, and opportunities facing these landscapes. Five primary issues were identified from the assessment in Texas:

- Urban Forest Sustainability
- Central Texas Woodlands Conservation
- Sustainability of Forest Resources in East Texas
- Water Resources
- Wildfire and Public Safety

A forest resource strategy was then developed to address these issues. Together, the assessment and strategy make up the **Texas Forest Action Plan**. The plan was developed based on three national themes: conserve working forests, protect forests from harm, and enhance public benefits from trees and forests.

Texas A&M Forest Service has completed a draft of the plan. The agency is requesting comments on this draft. Please go to the following link: <https://tfsweb.tamu.edu/ForestActionPlan/> and click on **Forest Action Plan** (under 2020 Documents) and **Comments for the 2020 Draft Texas Forest Action Plan**.

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