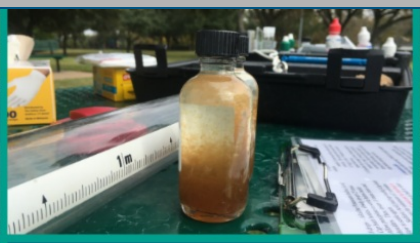




TEXAS STREAM TEAM NEWSLETTER

HOUSTON-GALVESTON AREA COUNCIL CHAPTER

WORKING TO PROTECT OUR WATERWAYS

The Meadows Center for Water and the Environment
Texas State University
Texas Stream Team

Houston-Galveston Area Council

Volume 2023, Issue 2: December 2023

Monitor's Corner

Skills Check: Sample Depth

Sample Depth is one of the parameters where the protocol has been updated, and now it is even easier to remember. Previously, monitors were taught to collect samples at 0.3 meters from the surface, or 1/3 of the depth from the surface if the water was <0.4 meters deep. Now however, the manual recommends all samples be taken at 0.3 meters, leaving monitors with only one number to remember.

Why Collect Samples at 0.3 Meters?
The Texas Stream Team monitors the quality of our state's surface waters, and follows an approved Quality Assurance Project Plan (QAPP). This QAPP ensures all monitoring for the program is consistent, and the protocol for sampling depth follows the state's professional monitoring programs which collect surface water samples at 0.3 meters in most cases.

As you go deeper in the water, changes in parameters such as temperature and dissolved oxygen can form different layers in the water column. The 0.3 meters, or about 1 foot, depth allows water to be collected and tested from the surface layer while avoiding sampling just the area directly at the surface where there might be interaction with air or the presence of scum, debris, etc. that would impact results.

What If The Water Is Shallow?
If the total depth at a sampling site is 0.3 meters or less, the sample depth cannot be 0.3 meters because the water is too shallow or the bucket would be dragging the bottom. In this case, monitors should collect samples as close to the total depth as possible without disturbing sediment on the bottom. For example, if total depth is 0.25 meters, samples might be collected at a depth of 0.2 meters without disturbing the sediment.

The newest updated version of the Standard Core Water Quality Manual is available on the Texas Stream Team website.

Sampling Depth and sample collection procedures are discussed on page 25 of the Standard Core Manual.

You can also review Texas Stream Team monitoring videos on YouTube.

YouTube Review

Watching the YouTube videos or re-reading the manual are great ways to refresh your memory and double-check your monthly monitoring procedures between QA sessions. Always review the newest updated manual.

Safety Briefing: Visibility

Whether a monitoring site is at a bridge, on a dock or on a trail, it is important to consider different items or measures that can increase your safety at the site.

One of the simplest ways to increase your safety is to increase your visibility. Roads, parks, and trails are all spaces shared with others, and increasing your visibility gives vehicles or bikes more warning to slow down and safely maneuver around you. Greater visibility can also assist others in spotting you if an accident occurs and you need help.

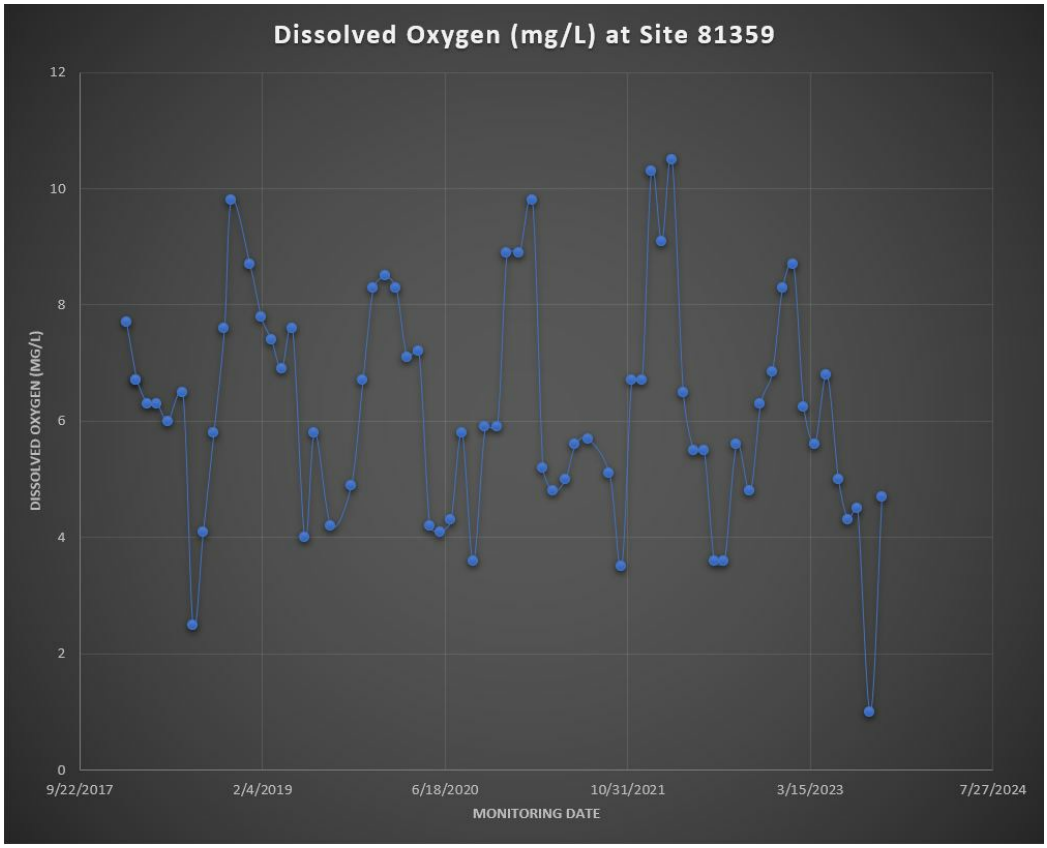
Tips for increasing visibility:

- Where bright clothing or hi-visibility safety vests
- Sample when the sun is fully up
- Use orange cones or flags at your location if it is in a high-trafficked area

As always, it is recommended to monitor with a buddy for safety. Whether they are also a Texas Stream Team Community Scientist or not, having another person with you improves your safety. If you do choose to monitor by yourself, please let someone know where and when you are going and when you expect to be back.

Technical Territory: Extremely Low DO and Potential Causes

The relationship between temperature and dissolved oxygen (DO) is well known, and monitors generally see an annual cycle with their DO readings - levels tend to go down in the summer an up in the winter since warm water holds less oxygen than cold water. This relationship can be seen the graph below showing five years of monthly DO data from a Texas Stream Team site on White Oak Bayou.



However, like most of the sites in our region, the DO at site 81359 in August of this year was exceptionally low - it was one of the lowest DO readings reported this summer at 1.0mg/L. While DO at this site has been low before (2.5mg/L in July 2018), this 2023 reading was a first, and it coincided with the highest water temperature recorded in the five year dataset as well: 31 degrees Celsius.

This record water temperature is not enough to explain the low DO on its own though, as water at 31 degrees Celsius still has the potential to hold up to 7.4 mg/L of DO if the water is 100% saturated, as seen in the solubility table in the Texas Stream Team Manual. The potential to hold more DO at a high temp is even seen in the dataset as a water temperature of 30 degrees Celsius was recorded in July 2020 and the DO for that date was measured at 4.3mg/L.

The Manual provides insight into other factors that may have impacted the record-low measurement - a lack of distribution and sources of DO in the waterway. The Manual notes that, "once dissolved in water, oxygen diffuses very slowly and distribution depends on the movement of aerated water from turbulence and currents caused by wind, water flow, and thermal upwelling" (p. 40, Texas Stream Team Core Water Quality Manual, 2023). Due to the prolonged period of drought we were experiencing, by the August sample date it had been at least 30 days since any significant rainfall had fallen in the watershed. So, while water in the bayou was moving downstream, there had not been any spikes in the discharge rates that would indicate a larger amount flowing downstream and distributing DO or providing potential aeration.

There was also no aeration provided to the site from aquatic plants or wind at the time of sampling - that area of the bayou is channelized and although algae was noted as common, that may have actually reduced DO levels as respiration used the limited DO available. Records of wind levels for the sampling day also show that wind was negligible

or nonexistent for several hours prior to sampling so no additional DO would have been introduced at the site in that way.

The good news is that the extreme low DO appears to be a result of several factors coinciding, and by September of this year the DO had rebounded. However, if extreme heat and periods of drought are going to become more frequent in our area, the DO levels of our waterways are something we will need to keep an eye on.

Monitor Spotlight: Monitor Milestones

As 2023 draws to a close, H-GAC wants to thank all Texas Stream Team Community Scientists for the time and effort they contribute to monitoring our waterways and promoting better water quality in our region! In particular, we would like to recognize the following monitoring milestones that were reached in 2023:

New & Resumed Monitors
Adriana Penabad
Angela Montoya
Ann Minnick
Heather Lambert
John Geiger
Kathy Sweezey
Kris Linberk
Maureen Asare
Sabine Blumstein
Sebastian Leyton
Steve Ellison
Tammy Leyton

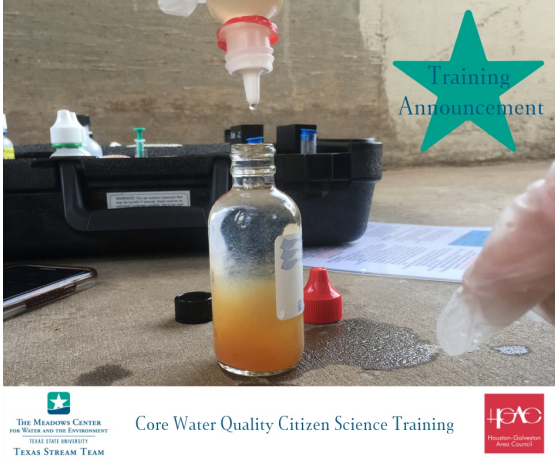
1 Year of Monitoring
Gabby Sosa
Gail McConnell
Harry Posey
Henry Goyette
Marty Hughes
Melissa Rodgers
Mimi Posey

5 Years of Monitoring
Phil Salvador

Upcoming Trainings

Texas Stream Team Standard Core Water Quality Trainings

Find a Training:
Email stream.team@h-gac.com to be added to the notification list when a new



training is scheduled. Several trainings are planned for 2024.

To view trainings held by partners across the state you can view the Meadows Center's **calendar of events**.

Monitor Resources

Community Scientist Resources
The Texas Stream Team webpage includes a section for monitor resources, including downloadable manuals, cheat sheets, links to video tutorials, and instructions for submitting and viewing data. It is a great first place to check if you have any questions about your Texas Stream Team monitoring.

Visit the Website

Electronic Monitoring Form Available
The Meadows Center for Water and the Environment continues to update the data forms and resources available for Texas Stream Team, and now those resources include an electronic monitoring form! Just like with the PDF form, make sure to fill out all necessary fields, and mark your group as H-GAC.

View the Form

TWPD Kills & Spills
Texas Parks and Wildlife Department's Kills and Spill Team (KAST) investigates fish and wildlife kills resulting from pollution and natural events. To report a Kill or Spill call **(512) 389-4848.**

Learn More

Galveston Bay Action Network
The Galveston Bay Action Network allows you to be the eyes around Galveston Bay. You can report various types of pollution throughout the Galveston Bay watershed, and GBAN will help make sure it gets reported to the appropriate jurisdiction.

Learn More

Water Quality Projects & Plans

Clean Rivers Program

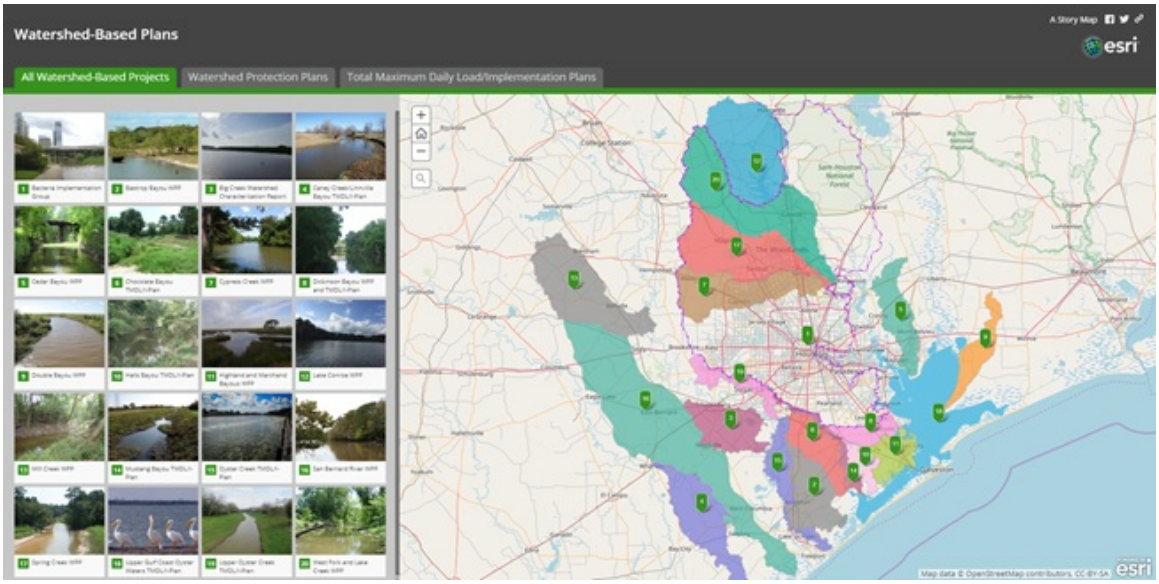
2023 Basin Highlights Report
The Basin Highlights Report for 2023 is now available in PDF and interactive online formats. The Basin Highlights Reports include the status and trends of water quality in the region. Every five years a larger Basin Summary Report is produced that provides a more detailed analysis of the region's water quality.

The 2023 report focuses on the Greens Bayou watershed.

Contact Todd Running at 713-993-4549 for more information about the Clean Rivers Program.

Watershed Based Plans

H-GAC and other local partners help facilitate the development of watershed-based plans to improve water quality in the region, including both Total Maximum Daily Load (TMDL) Implementation Plans (I-Plans) and Watershed Protection Plans (WPPs). H-GAC has an interactive story map showing the locations of ongoing and completed projects in the region. If you are interested in learning more about a specific project or getting on the mailing list for stakeholder meetings, please email the contact for that project.



View the Story Map

Ongoing Project Updates

Bacteria Implementation Group (BIG) watersheds

Status: Watersheds throughout Harris and Montgomery Counties under implementation.

Contact: Steven Johnston

Upcoming Meeting: May 21, 2024

Big Creek watershed

Status: The TMDL is going through TCEQ approvals. A Draft I-Plan was submitted to TCEQ and stakeholder review is requested.

Contact: Steven Johnston

Upcoming Meeting: To be determined

Caney Creek/Linville Bayou watersheds

Status: The TMDL was adopted by the TCEQ. The I-Plan is going through final approvals.

Contact: Steven Johnston

Upcoming: Spring 2024

Chocolate Bay watershed

Status: The Chocolate Bayou TMDL is going through final approvals. H-GAC is working with stakeholders to draft the Chocolate Bay I-Plan.

Contact: Steven Johnston

Upcoming Meeting: To be determined

Clear Creek watershed

Status: H-GAC has developed a watershed protection plan with local stakeholders to submit to TCEQ for review in the fall.

Contact: Rachel Windham

Cotton Bayou

Status: The TMDL is going through final approvals. The I-Plan was submitted to TCEQ and stakeholder review is requested.

Contact: Rachel Windham

Upcoming Meeting: To be determined

East Fork San Jacinto River watershed

Status: The WPP draft is being finalized after the public comment period.

Contact: Rachel Windham

Upcoming Meeting: To be determined

Oyster Creek watershed

Status: The TMDL is going through TCEQ approvals. The draft I-Plan was submitted to TCEQ and stakeholder review is requested.

Contact: Steven Johnston

Upcoming Meeting: To be determined

Upper Oyster Creek watershed

Status: Watershed in implementation phase.

Contact: Steven Johnston

Upcoming Meeting: To be determined

West Lake Houston Basin Implementation

Status: H-GAC is working with local stakeholders to implement strategies in the EPA accepted waershed protection plans for West Fork San Jacinto River and Lake Creek, Cypress Creek, and Spring Creek.

Contact: Rachel Windham

Partner News

Save the Date for Trash Bash

The River, Lakes, Bays 'N Bayous Trash Bash®, Texas's largest single-day waterway cleanup, invites volunteers to the 30th annual event on Saturday, March 23, 2024. Join the thousands of volunteers who attend each year to help cleanup waterways all throughout the Galveston Bay watershed. Cleanup supplies, event t-shirts, and lunch are provided to all volunteers, so bring your family and friends and come "Clean it like you mean it !". Find more

RIVER, LAKES
BAYS 'N BAYOUS TRASH BASH®

information at www.trashbash.org.

Get More Involved With Partners

Adopt-a-Beach
Artist Boat
Bayou Land Conservancy
Bayou Preservation Association
Buffalo Bayou Partnership
Cypress Creek Flood Control Coalition
Exploration Green Conservancy
Friends of the River San Bernard
Galveston Bay Estuary Program
Galveston Bay Foundation
Jesse H. Jones Park & Nature Center
Keep Texas Beautiful
River, Lakes, Bays 'N Bayous Trash Bash
SPLASh
Trash Free Texas
Turtle Island Restoration Network
The Woodlands Township
White Oak Bayou Association

About the Newsletter

Newsletter Content Survey: Looking for different content? Complete this 3-question survey to let us know what you would like to see in the newsletter.
Email stream.team@h-gac.com or call 713-993-2469 with questions, comments, or suggestions. You can also view previous issues of our newsletter.

Join the H-GAC Texas Stream Team mailing list.

Opt-out of the H-GAC Texas Stream Team mailing list by sending us an email. Clicking "unsubscribe" below will remove you from all H-GAC mailing lists.

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