

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



Volume 2022, Issue 2: August 2022

Monitor's Corner

Skills Check: Temperature

As temperatures have continued to rise, it is a good time to review tips for correctly and accurately recording air and water temperature at your site. While temperature may seem like the easiest and most basic parameter to measure, it impacts all of the other measurements you take and is important to measure accurately. One example is the amount of oxygen that the water body can hold at different temperatures as shown in the table below from the Texas Stream Team Manual.

To correctly and accurately measure air and water temperature, remember the following:

- Inspect the thermometer to make sure it is not broken and the alcohol column is not separated.
- Hang the thermometer at your site in a location out of direct sunlight and wind.
- Never hold the thermometer by the bulb at the bottom, always hold it from the top.
- Always measure air temperature before placing the thermometer in the water to measure water temperature.
- Read the water temperature with the bulb and lower part of the thermometer still in the water.
- Record temperature readings to the

Temp °C	Solubility mg/L	Temp °C	Solubility mg/L
0	14.6	16	10.0
1	14.2	17	9.8
2	13.8	18	9.6
3	13.5	19	9.4
4	13.1	20	9.2
5	12.8	21	9.0
6	12.5	22	8.9
7	12.2	23	8.7
8	11.9	24	8.6
9	11.6	25	8.4
10	11.3	26	8.2
11	11.1	27	8.1
12	10.9	28	7.9
13	10.6	29	7.8
14	10.4	30	7.7
15	10.2	31	7.4

The temperature section of the Texas Stream Team Manual (2020) starts on page 31. You can download digital versions of the manuals on [H-GAC's Texas Stream Team web page](#).

You can also review videos for monitoring procedures on the Texas Stream Team YouTube page.

[YouTube Review](#)

Watching the YouTube videos or re-reading

nearest 0.0 or 0.5 degrees Celsius.

If you have a conductivity meter that reads temperature, it is also recommended to check the thermometer and probe temperature readings against each other for accuracy.

the manual are great ways to refresh your memory and double-check your monthly monitoring procedures between QA sessions. The manual was updated in 2019 and 2020, and if you were trained on an earlier version, it is a good idea to review the new updated manuals for a refresher.

Safety Briefing: Heat Related Illnesses

As temperatures remain high and we see more days with heat warnings each year, it is important to recognize the signs of different heat-related illnesses and the actions you can take to prevent or treat them when in the field. The two most important to look out for are Heat Exhaustion and Heat Stroke.

What is the difference?

Both Heat Exhaustion and Heat Stroke are caused by your body's inability to cool itself. At the first signs of Heat Exhaustion it is important to immediately start treating it with steps such as moving to a cool place, loosening or removing tight or extra layers of clothing, drinking water or beverages with electrolytes, and putting cool compresses on your skin. If not treated immediately and your body temperature does not come down within 30 minutes, it could progress to a Heat Stroke which is a medical emergency. Review the CDC Heat Related Illnesses graphic to see more specific symptoms of each and suggested actions.

What can you do to reduce your risk?

To help reduce the risk of heat-related illnesses, the most important thing you can do is stay hydrated. Make sure you bring a lot of water with you, even if you only plan to be out for a little while. Sports drinks or other drinks that contain electrolytes are even better than water as they help replace the electrolytes you sweat out. You can also reduce your risk by wearing light and loose clothing, wearing a hat, and staying in the shade as much as possible.

The graphic is a red-bordered poster titled "HEAT-RELATED ILLNESSES" with a CDC logo at the bottom left. It is organized into two columns: "WHAT TO LOOK FOR" and "WHAT TO DO".

WHAT TO LOOK FOR	WHAT TO DO
HEAT STROKE <ul style="list-style-type: none">• High body temperature (103°F or higher)• Hot, red, dry, or damp skin• Fast, strong pulse• Headache• Dizziness• Nausea• Confusion• Losing consciousness (passing out)	<ul style="list-style-type: none">• Call 911 right away-heat stroke is a medical emergency• Move the person to a cooler place• Help lower the person's temperature with cool cloths or a cool bath• Do not give the person anything to drink
HEAT EXHAUSTION <ul style="list-style-type: none">• Heavy sweating• Cold, pale, and clammy skin• Fast, weak pulse• Nausea or vomiting• Muscle cramps• Tiredness or weakness• Dizziness• Headache• Fainting (passing out)	<ul style="list-style-type: none">• Move to a cool place• Loosen your clothes• Put cool, wet cloths on your body or take a cool bath• Sip water <p>Get medical help right away if:</p> <ul style="list-style-type: none">• You are throwing up• Your symptoms get worse• Your symptoms last longer than 1 hour
HEAT CRAMPS <ul style="list-style-type: none">• Heavy sweating during intense exercise• Muscle pain or spasms	<ul style="list-style-type: none">• Stop physical activity and move to a cool place• Drink water or a sports drink• Wait for cramps to go away before you do any more physical activity <p>Get medical help right away if:</p> <ul style="list-style-type: none">• Cramps last longer than 1 hour• You're on a low-sodium diet• You have heart problems
SUNBURN <ul style="list-style-type: none">• Painful, red, and warm skin• Blisters on the skin	<ul style="list-style-type: none">• Stay out of the sun until your sunburn heals• Put cool cloths on sunburned areas or take a cool bath• Put moisturizing lotion on sunburned areas• Do not break blisters
HEAT RASH <ul style="list-style-type: none">• Red clusters of small blisters that look like pimples on the skin (usually on the neck, chest, groin, or in elbow creases)	<ul style="list-style-type: none">• Stay in a cool, dry place• Keep the rash dry• Use powder (like baby powder) to soothe the rash

For more information you can check out the feature on Heat Related Illnesses that KHOU did earlier this summer.

[KHOU Segment \(YouTube\)](#)

As always, it is recommended to sample with a partner or bring someone with you. If you do sample by yourself, be sure to let someone know where and when you are going, and when you expect to return.

Technical Territory: Drought, Low Dissolved O

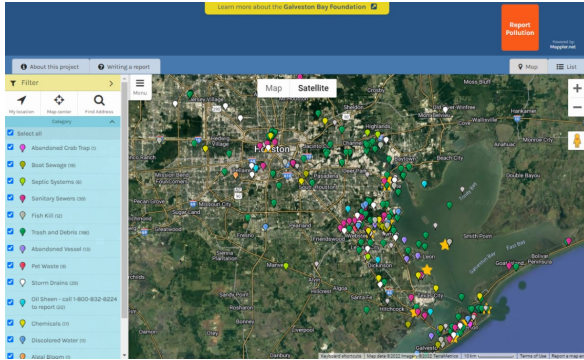
In July, two Texas Stream Team monitors on Sims Bayou reported a large fish kill, with hundreds of dead fish of all sizes, to the Texas Parks and Wildlife's local Kills and Spills Team. When they reported the incident to the Kills and Spills Team, they

As the [USGS Water Science School notes](#), in the summer this can lead to fish kills when the water near the surface is too warm for the aquatic life but the water near the bottom does not have enough dissolved oxygen. This situation can be exasperated when decaying organic matter in the water leads to eutrophication, further depleting oxygen levels.

also included their monitoring report which noted the likely cause - dissolved oxygen levels as low as 0.5 mg/L, making it a hypoxic environment. The monitoring site is on an oxbow just off the main Sims Bayou channel, and the monitors noted that there was a blockage of silt and branches at one opening that might have prevented the fish from traveling to the main channel where no fish kill was observed.

Oxbows tend to be slower moving or more stagnant than the main channel, and with a possible blockage hindering escape to the main channel this might be an extreme case. However, it highlights the effect that the extreme heat and drought-like conditions our region is experiencing can have on the aquatic environment.

As air temperature increases, it decreases the solubility of oxygen into the water column so the water is not able to hold on to the same concentration of oxygen. In addition, stagnant water, such as in an oxbow, lake, or pool in a stream tends to have less oxygen than fast moving streams because there is less internal mixing. This can keep dissolved oxygen near the surface without it reaching lower levels of the water column as effectively.



As a reminder, fish kills should be reported as soon as possible, with as much information as you can provide, and your contact information for follow up questions. You can reach the Kills and Spills Team's 24-hour communication center at (512) 389-4848 for fastest results, and you can also report online using the Galveston Bay Action Network. If you do report a fish kill as part of your Texas Stream Team monitoring events, please send us an email as well to let us know!

[Galveston Bay Action Network](#)

Monitor Spotlight: Bayou Preservation Association

By Grant Moss, Program Manager,
Bayou Preservation Association

Bayou Preservation Association is a nonprofit organization founded in 1966 with the mission to Celebrate, Protect, and Restore the natural richness of all our bayous and streams. At Bayou Preservation, we recognize that clean water is fundamental to the health of our local bayous and other waterways: for fish, wildlife, and for human recreation. Most of the streams in the Houston area have been identified as impaired for contact recreation due to high levels of bacteria and many streams have other water quality impairments affecting fish and wildlife, such as low dissolved oxygen and high levels of nutrients. While water quality is generally improving in the region's streams, much remains to be done for our waters to meet the "fishable and swimmable" goals of the Clean Water Act.

Bayou Preservation Association is committed to our local waterways and engaging the community in efforts that monitor and improve water quality. Bayou



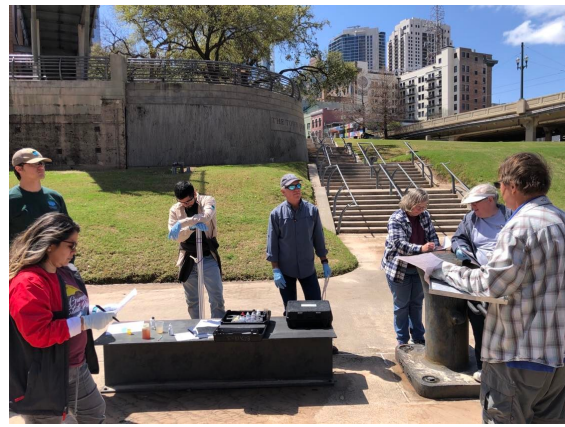
BAYOU PRESERVATION
ASSOCIATION

celebrate. protect. restore.

We are working to increase the number of Texas Stream Team monitors in the region and are specifically seeking to recruit those interested in monitoring the streams from the I-45/288 corridor east to Beltway 8. This boundary has been identified as an area to watch as there are few active monitors and could greatly benefit from more active monitors and monitoring sites.

Bayou Preservation Association will host its next training on October 20th, weather permitting, at the Sunset Coffee Building (1019 Commerce Street). Spaces are limited. To pre-register for this training please send your contact information to info@bayoupreservation.org by October 14th. We hope to see you there!

Preservation chartered Bayou Citizen Science as one of our main areas of focus with the goal of improving bayou water quality by engaging the public in providing valuable quantitative data and qualitative information, both to inform the public and to support actions by the local and regional authorities that have the responsibility and authority to improve water quality. This is done primarily through an affiliation with the Texas Stream Team.



Monitor Resources

Information for Volunteers

Monitor Resources

The following links are resources for current H-GAC Texas Stream Team volunteers:

Core Water Quality Monitoring Form PDF	Texas Stream Team Water Quality Manual
Instructions	2012 2019 Update

Other Resources

- [Cheat Sheet](#)
- [Hydrometer Instructions and Charts \(LaMotte\)](#)
- [Texas Stream Team Procedure Review Videos \(YouTube\)](#)

Data Submission

Data Viewing

Resources on the H-GAC website
H-GAC's Texas Stream Team webpage includes a section just for active monitors, 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](#)

The Meadows Center for Water and the Environment

Citizen Scientist Forms and Resources (Last updated 05.12.2022)

Citizen Scientist Trainings and Monitoring

Resources for future and current Texas Stream Team Citizen Scientists. Feel free to click on the collapsible sections below to explore the resources for each training.

Attention Core Citizen Scientists!

Texas Stream Team has officially released the **Electronic Core Environmental Monitoring Forms**. If you monitor Standard Core or Probe Core you can now ditch the paper and start entering your data electronically. We have a few resources for you to make this transition easier:

1. [Texas Stream Team Electronic Monitoring Form How-To - VIDEO](#)
2. [Texas Stream Team Electronic Monitoring Form How-To - DOCUMENT](#)

Enroll

- Pre-Training
- Post-Training

Social Media

- Facebook
- Twitter
- Instagram
- YouTube

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.

[Visit the website](#)

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](#)

Upcoming Events



Core Water Quality Citizen Science Training



Quality Trainings

Scheduled Trainings:

H-GAC

Friday, September 9, in The Woodlands

Bayou Preservation Association

Thursday, October 20, in Houston

Spaces are limited. Contact

stream.team@h-gac.com with any questions.

To view trainings held by partners across the state you can view the Meadows Center's [calendar of events](#).

[Learn More & Register](#)

Cotton Bayou Public Meeting (Online) **Tuesday, August 23, 2:00 p.m. to 4:00 p.m.**

H-GAC invites residents, local governments, businesses, and non-profits within the Cotton Bayou Watershed to attend a stakeholder meeting to hear updates to the Technical Support Document and Total Maximum Daily Load (TMDL) calculations for bacteria in Cotton Bayou. H-GAC will also discuss the development of an Implementation Plan to reduce bacteria and how stakeholders can take action to improve water quality. The meeting will be held online.

[Registration](#) is required. For more information on [the project](#) contact [Rachel Windham](#).

Caney Creek Stakeholder Meeting (Online) **Wednesday, August 24, 4:00 p.m. to 6:00 p.m.**

H-GAC invites residents, local governments, businesses, and non-profits within the Caney Creek Watershed to attend a stakeholder meeting to discuss the addendum to the Water Quality Management Plan for assessment unit 1304_02 and the status of the Caney Creek bacteria reduction Implementation Plan (I-Plan). The meeting will be held online.

[Registration](#) is required to attend. For more information on [the project](#) contact [Steven Johnston](#).

Oyster Creek Stakeholder Meeting (Online) **Thursday, August 25, 4:00 p.m. to 6:00 p.m.**

H-GAC invites residents, local governments, businesses, and non-profits within the Oyster Creek Watershed in Brazoria and Fort Bend counties to attend a stakeholder meeting to discuss water quality issues affecting communities in the watershed south of Sugar Land, including Angleton, Arcola, Bailey's Prairie, Bonney, Clute, Holiday Lakes, Iowa Colony, Juliff, Lake Jackson, Sienna Plantation, Richwood, Rosharon, and Sandy Point. Pollutants, specifically fecal bacteria, in this waterway may impact public health, local economies, and the natural environment. Residents and organizations are invited to participate in this and future meetings to provide input that will be used to review the current draft bacteria reduction plan and consider the next steps needed to put the plan into action. The meeting will be held online.

[Registration](#) is required to attend. For more information on [the project](#) contact [Steven](#)

Chocolate Bay Stakeholder Meeting (Online) Tuesday, August 30, 4:00 p.m. to 6:00 p.m.

H-GAC invites residents, local governments, businesses, and non-profits within the watersheds that make up Chocolate Bay - Chocolate Bayou, Mustang Bayou, and Halls Bayou - to attend a stakeholder meeting to discuss water quality issues affecting communities in the watershed, including Algoa, Arcola, Alvin, Fresno, Hillcrest, Iowa Colony, Liverpool, Manvel, Missouri City, Pearland, and Santa Fe. Pollutants, specifically fecal bacteria, in these waterway may impact public health, local economies, and the natural environment. Residents and organizations will be invited to participate in the future planning meetings to provide input that will be used to develop a watershed-based plan to address water quality. The meeting will be held online.

[Registration](#) is required to attend. For more information on [the project](#) contact [Steven Johnston](#).

Houston Audubon Bird Week September 17-24

[Houston Bird Week 2022](#) celebrates the important role Houston plays in the journey of billions of migratory birds and the everyday lives of resident birds. Houston Audubon and local conservation partners arrange a week of events centered around the region's birds and wildlife. Events include birding opportunities, watch parties, trivia, movie night, and more.

Xtreme Hummingbird Xtravaganza Saturday, September 17 and 24, 8:00 a.m. to 12:00 p.m.

The Gulf Coast Bird Observatory invites you to see migrating hummingbirds up close! You can watch as they carefully band the tiny birds and participate in educational booths, a native plant sale, fun kid's activities, and more. Admission is \$5 per person. Learn more at the [Gulf Coast Bird Observatory website](#).

Adopt-A-Beach Coastwide Cleanup Saturday, September 17

Save the Date for the Texas General Land Office's Coastwide [Adopt-A-Beach Cleanup](#).

Rain Barrel Workshop Sunday, September 18, 2:00 p.m. to 3:00 p.m.

The Galveston Bay Foundation is hosting a Rain Barrel Workshop in La Marque. The cost for the event is \$35 which includes 1 rain barrel, 1 connection kit, and admission to the workshop for you and a guest. Learn more on the [Galveston Bay Foundation website](#).

19th Annual Bayou Preservation Association Symposium (Online) Wednesday and Thursday September 28 and 29, 8:00 a.m. to 12:00 p.m.

Bayou Preservation Association's 19th Annual Symposium will be held virtually on Zoom over two days again in 2022 to reach a wider audience. This year's theme is "The Cost of

Doing Nothing - Opting for Resilience." For more information or to purchase tickets visit the [Bayou Preservation Association website](#).

Partner News

The Buffalo Bayou Partnership Unveils its New Bayou-Vac

On August 3rd the Buffalo Bayou Partnership unveiled its new Bayou-Vac. The custom-designed and fabricated boat will boost the organization's bayou cleanup efforts through their Clean & Green program. Learn more on the [Buffalo Bayou Partnership's website](#).

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](#)

[H-GAC Clean Waters Initiative](#)

[Jesse H. Jones Park & Nature Center](#)

[Keep Texas Beautiful](#)

[SPLASh](#)

[Take Care of Texas](#)

[Trash Free Texas](#)

[Turtle Island Restoration Network](#)

[The Woodlands Township](#)

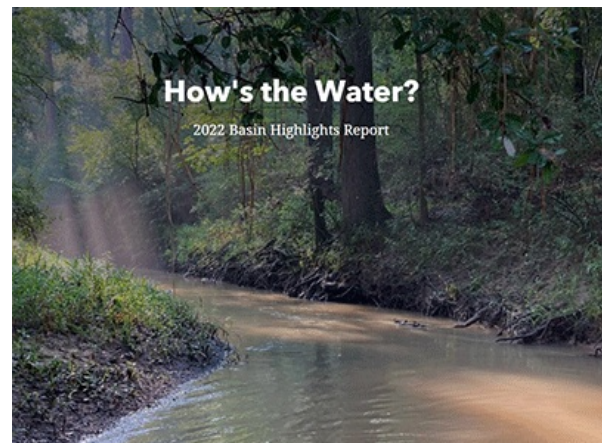
Water Quality Projects & Plans

Clean Rivers Program

2022 Basin Highlights Report Available

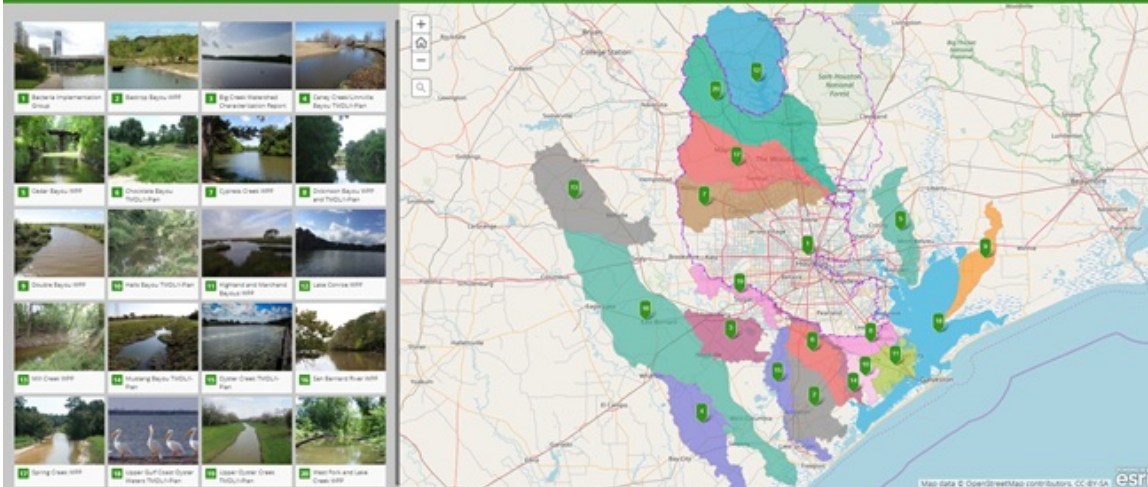
The [Basin Highlights Report](#) for 2022 is now available in PDF and interactive online formats. The Basin Highlights Reports include the status and trends of water quality in the region. Every five years a larger Basin Summary Report is produced that provides a more detailed analysis of the region's water quality. The 2022 and previous years' reports are available online.

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.



[View the Story Map](#)

Ongoing Project Updates

- [Caney Creek/Linville Bayou watersheds](#): H-GAC is working with stakeholders to develop a TMDL I-Plan to reduce fecal bacteria levels. Contact: [Steven Johnston](#)
- [Chocolate Bay Watershed](#): H-GAC is working with stakeholders to develop a TMDL I-Plan to reduce fecal bacteria. Contact: [Steven Johnston](#)
- [Clear Creek watershed](#): H-GAC is beginning to develop a watershed protection plan with local stakeholders. Contact: [Justin Bower](#)
- [Cypress Creek watershed](#): The WPP was approved by the TCEQ and EPA, and H-GAC is working with stakeholders to move implementation projects forward. Contact: [Justin Bower](#)
- [Oyster Creek watershed](#): H-GAC is working with stakeholders to develop a TMDL I-Plan to reduce fecal bacteria levels. Contact: [Steven Johnston](#)
- [Spring Creek watershed](#): H-GAC worked with stakeholders to draft a WPP. The draft has been submitted for agency review. Contact: [Rachel Windham](#)

About the Newsletter

Newsletter Content Survey: please complete this short [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, calendar items, or suggestions. You can also [view previous issues of our newsletter](#).

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[Texas Stream Team at The Meadows Center for Water and the Environment](#) at Texas State University is dedicated to understanding and protecting the 191,000 miles of Texas waterways. For more information, contact TxStreamTeam@txstate.edu.