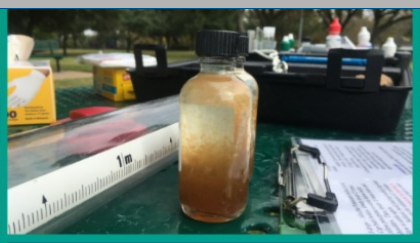




TEXAS STREAM TEAM NEWSLETTER

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 2022, Issue 1: May 2022

Monitor's Corner

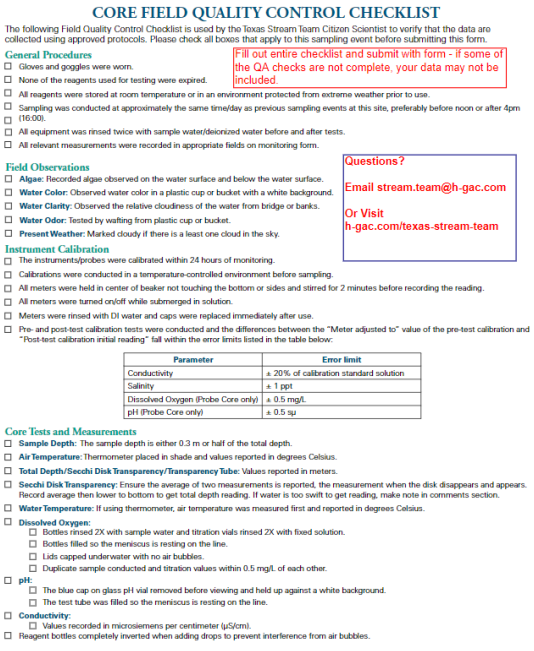
Skills Check: Field Quality Control Checklist

Both the new Texas Stream Team Electronic Monitoring Form and the PDF version have a Quality Control Checklist section. This checklist is more than just a list of helpful reminders - it is necessary to check all applicable boxes so that data managers know you followed all protocols required for your data to be reported.

Texas Stream Team monitoring follows an approved Quality Assurance Project Plan, so submitted data is carefully reviewed to make sure approved protocols were used before reports are added to the program database. In addition to checking off appropriate monitoring techniques, the checklist also helps data managers confirm things that could impact your data such as:

- Non-expired reagents were used.
- Testing was done at your normal time of day and month.
- Equipment was rinsed after use.
- Meters were calibrated within 24 hours of monitoring.

The Checklist can be a great reminder of these protocols in the field, but it is also recommended to periodically review the Texas Stream Team manual to refresh your memory, and always check the manual when you have questions about



CORE FIELD QUALITY CONTROL CHECKLIST

The following Field Quality Control Checklist is used by the Texas Stream Team Citizen Scientist to verify that the data are collected using approved protocols. Please check all boxes that apply to this sampling event before submitting this form.

Fill out entire checklist and submit with form - if some of the QA checks are not complete, your data may not be included.

General Procedures
- ☐ Gloves and goggles were worn.
- ☐ None of the reagents used for testing were expired.
- ☐ All reagents were stored at room temperature or in an environment protected from extreme weather prior to use.
- ☐ Sampling was conducted at approximately the same time/day as previous sampling events at this site, preferably before noon or after 4pm (16:00).
- ☐ All equipment was rinsed twice with sample water/deionized water before and after tests.
- ☐ All relevant measurements were recorded in appropriate fields on monitoring form.

Questions?
Email stream.team@h-gac.com
Or Visit h-gac.com/texas-stream-team

Field Observations
- ☐ **Algae:** Recorded algae observed on the water surface and below the water surface.
- ☐ **Water Color:** Observed water color in a plastic cup or bucket with a white background.
- ☐ **Water Clarity:** Observed the relative cloudiness of the water from bridge or banks.
- ☐ **Water Odor:** Tested by wafting from plastic cup or bucket.
- ☐ **Present Weather:** Marked cloudy if there is a least one cloud in the sky.

Instrument Calibration
- ☐ The instruments/probes were calibrated within 24 hours of monitoring.
- ☐ Calibrations were conducted in a temperature-controlled environment before sampling.
- ☐ All meters were held in center of beaker not touching the bottom or sides and stirred for 2 minutes before recording the reading.
- ☐ All meters were turned on/off while submerged in solution.
- ☐ Meters were rinsed with DI water and caps were replaced immediately after use.
- ☐ Pre- and post-test calibration tests were conducted and the differences between the "Meter adjusted to" value of the pre-test calibration and "Post-test calibration initial reading" fall within the error limits listed in the table below:

Parameter	Error limit
Conductivity	± 20% of calibration standard solution
Salinity	± 1 ppt
Dissolved Oxygen (Probe Core only)	± 0.5 mg/L
pH (Probe Core only)	± 0.5 su

Core Tests and Measurements
- ☐ **Sample Depth:** The sample depth is either 0.3 m or half of the total depth.
- ☐ **Air Temperature:** Thermometer placed in shade and values reported in degrees Celsius.
- ☐ **Total Depth/Secchi Disk Transparency/Transparency Tube:** Values reported in meters.
- ☐ **Secchi Disk Transparency:** Ensure the average of two measurements is reported, the measurement when the disk disappears and appears. Record average then lower to bottom to get total depth reading. If water is too swift to get reading, make note in comments section.
- ☐ **Water Temperature:** If using thermometer, air temperature was measured first and reported in degrees Celsius.
- ☐ **Dissolved Oxygen:**
  - ☐ Bottles rinsed 2X with sample water and titration vials rinsed 2X with fixed solution.
  - ☐ Bottles filled so the meniscus is resting on the line.
  - ☐ Lids capped underwater with no air bubbles.
  - ☐ Duplicate sample conducted and titration values within 0.5 mg/L of each other.
- ☐ **pH:**
  - ☐ The blue cap on glass pH vial removed before viewing and held up against a white background.
  - ☐ The test tube was filled so the meniscus is resting on the line.
- ☐ **Conductivity:**
  - ☐ Values recorded in microsiemens per centimeter (µS/cm).
- ☐ Reagent bottles completely inverted when adding drops to prevent interference from air bubbles.

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

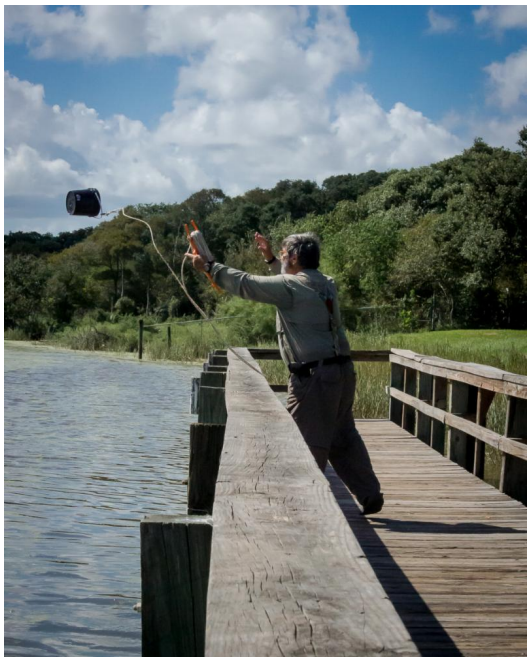
YouTube Review

As we were unable to hold QA sessions in 2020 and 2021, watching the YouTube videos or re-reading the manual are great ways to refresh your memory and double-check your monthly monitoring procedures. The manual was updated in 2019 and

any of the tests. You can download digital versions of the manuals on H-GAC's Texas Stream Team web page.

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: Monitoring Site Access

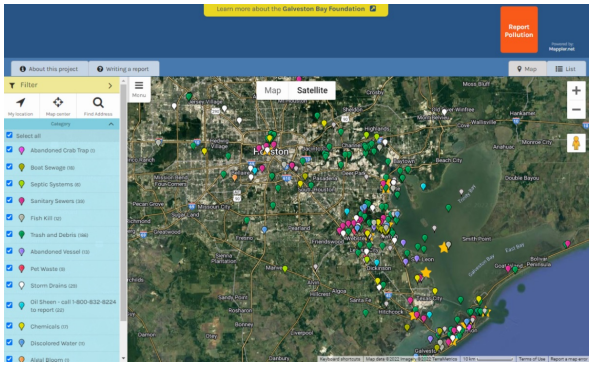


While monitoring locations that include a pier, dock, footbridge, or trail adjacent to the stream are ideal, these features are not available on all waterways. When monitoring locations are chosen they should be reviewed to confirm the safe accessibility of the site itself and the stream for sample collection. However, many sites were established years ago, and accessibility and the areas surrounding the site may have changed. If you monitor at an established site or are looking for a new site, it is important to consider several safety factors, including:

- If the banks are too steep for safe access to pull a sample.
- If slip hazards like mud or algae are frequently present on banks (natural or concrete).
- If you have to walk through an unsafe environment to access the location.
- If traffic is heavy or there is no shoulder when sampling is necessary from a bridge.

All new sites needs to be approved with either a site visit or detailed pictures of the site, and sites with unsafe access will not be approved. If you monitor at an established location where the accessibility conditions have changed and may no longer be safe, please contact stream.team@h-gac.com to discuss and determine if a new site needs to be found.

Technical Territory: Reporting Pollution Sources in the Field



Texas Stream Team monitoring creates a dataset of monthly monitoring results that can provide important information on normal waterway conditions as well as help identify potential changes or issues as they arise. However, in addition to turning in monthly reports you can make a direct impact on water quality if you report any pollution you notice at your site or around your watershed to the appropriate jurisdictions.

Evidence of pollution can come in many forms, including illegal dumping or fish kills. However, events like illicit discharges, sanitary sewer overflows, or failures in wastewater infrastructure can result in a large amount of bacteria directly entering a waterway, and those can be more difficult to spot. Some key signs to be on the lookout for include:

- A strong chemical or sewage smell in the water or surrounding area.

Some of the reporting tools in our area include the Harris County Flood Control District's Service Request for areas along their right-of-ways, the Galveston Bay Foundation's Galveston Bay Action Network, and the City of Houston's 311 platform which is available via phone, online and as an app. If you come across pollution to report in an area not covered by these resources and cannot find the appropriate jurisdiction, please email stream.team@h-gac.com and we can help you identify where to report it.

- Dry-weather discharges (large or small) from stormwater outfalls or what appear to be small tributaries on the banks. If no significant rain has fallen in over 3 days, flows from these sources might indicate a problem to be investigated.
- Unusual colors, sheens, or residues in the waterways or discharges from pipes and outfalls.

Harris County Flood Control District Service Request

Galveston Bay Action Network

Houston 311

Monitor Spotlight: Buffalo Bayou Partnership

Christina Brown, Kevin Muraira, Adam Lawrence, and Gabriela Sosa make up the newly created Conservation Department at Buffalo Bayou Partnership and manage the ecology of Buffalo Bayou Park. Together, they have been monitoring at Buffalo Bayou at Shepard Drive since November 2021 under the supervision of Christina, who was certified as a Texas Stream Team Citizen Scientist when she interned with the Student Conservation Association and Houston Parks and Recreation Department.

According to the group, "We chose to monitor with Texas Stream Team to further understand the quality of the bayou's water. Our data will allow us to track changes over time and inform future management decisions along the riparian zones."

So far they say their favorite aspect of Texas Stream Team monitoring is getting to work as a team to track changes in the bayou. They say they, "look forward to monitoring every month because it diversifies our schedule and is a fun activity to do early in the morning."

Despite initial challenges presented by the urban bayou's steep banks, slippery slopes and fluctuating water levels, the team found a location with safe access to conduct monthly monitoring and have enjoyed the monitoring activities.

They say they, "would highly recommend getting certified with Texas Stream Team. Becoming a monitor is a great way to get involved in citizen science, learn about water quality, and get outside!"

Monitor Resources

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

Electronic Monitoring Form Available
The Meadows Center for Water and

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 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

Texas Stream Team Core Water Quality Trainings

H-GAC is excited to announce that our Texas Stream Team trainings will resume this summer! Spaces will be limited, but multiple trainings will be offered during the year in different parts of our area. Please contact stream.team@h-gac.com with any questions.

Scheduled Trainings:
Saturday, June 18, in Pearland.

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
Tuesday, May 31, 4:30 p.m. to 6:30 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 is open to the public and will be at Sam and Carmena Goss Memorial Branch Library, 1 John Hall Drive, Mont Belvieu.

Registration is requested. For more information on the project contact Rachel Windham.

Artist Boat World Oceans Day Festival
Saturday, June 4, 11:00 a.m. to 4:30 p.m.

Artist Boat is hosting their World Oceans Day Festival at R. A. Apffel East Beach Park. The Festival will include a Beautify the Bucket competition, workshops for kids, and interactive booths. The Festival is free, but beach parking fees will apply. Learn more on the Artist Boat website.

Caney Creek Stakeholder Meeting
Thursday, June 9, 5:30 p.m. to 7:00 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 unite 1304_02 and the status of the Caney Creek bacteria reduction Implementation Plan (I-Plan). The meeting is open to the public and will be at the Caney Creek MUD, 405 County Road 298, Sargent.

Registration is requested, but not required to attend. For more information on the project contact Steven Johnston.

Clean Waters Initiative: Education, Outreach, and Volunteer Coordination
Thursday, June 16, 2:00 p.m. to 4:00 p.m.

H-GAC's Clean Water Initiative workshop series offers education and information to local governments, nonprofit organizations, landowners, and residents to develop effective strategies to reduce pollution in local waterways. This workshop will provide a look at some of the education, outreach, and volunteer activities that H-GAC and our area partners are coordinating to raise awareness for water resource protection and stimulate community engagement throughout the region.

The meeting will be hybrid via Zoom and in-person at H-GAC. Registration is required for both online an in-person attendance. For more information contact Rachel Windham.

Buffalo Bayou Partnership Monthly Volunteer Workday
Saturday, June 18, 8:30 a.m. to 11:30 a.m.

Buffalo Bayou Partnership invites volunteers age 9 and up to participate in a community-wide volunteer day at Buffalo Bayou Park the third Saturday of each month. Volunteers may help with a variety of tasks including trash pick-up, mulching, and weed removal. Learn more and register on the Buffalo Bayou Partnership website.

The Woodlands Township Virtual BioBlitz
June 20 to June 26

The Woodlands Township is hosting a week-long "BioBlitz", a community effort to identify as many species as possible during the National Pollinator Week. This effort provides an informal, fun opportunity for the public to learn together and share their enthusiasm for nature - and the information collected contributes to a genuine scientific survey. Anyone can participate regardless of age or knowledge level.

An in-person BioBlitz will also be held on Saturday, June 25, from 8:00-11:00 a.m. at the

Recreation Center at Rob Fleming Park. For more information on how to participate in the virtual or in-person event visit the Township website.

Water Conservation Event & Rain Barrel Workshop
Saturday, June 25, 9:00 a.m. to 12:00 p.m.

The Galveston Bay Foundation is hosting a free, family-friendly water conservation event at their Kemah headquarters where participants can learn how to use easy water conservation tools to save money and water at home. The event is free, but participants can pre-order a rain barrel for $35 to take home that day. Learn more on the Galveston Bay Foundation website.

Adopt-A-Beach Coastwide Cleanup
Saturday, September 17

Save the Date for the Texas General Land Office's Coastwide Adopt-A-Beach Cleanup.

Partner News

More than 74 Tons of Trash Removed from Waterways at 2022 Trash Bash®

On March 26, volunteers were welcomed back for the first in-person River, Lakes, Bays, N' Bayous Trash Bash® since 2019. More than 2,500 volunteers cleaned 117 miles of shoreline at 14 locations, collecting more than 74 tons of trash and 336 illegally dumped tires. After picking up trash, volunteers enjoyed educational exhibits to learn more about other common sources of water pollution.

Since 1994, more than 117,000 volunteers have cleaned up 2,411 tons of trash and 11,965 tires from waterways in the Galveston Bay watershed. Due to health concerns, the event was cancelled in 2020, and volunteers were asked to individually clean up around their own neighborhoods in 2021.

Save the date to join thousands of volunteers on **Saturday, March 25, 2023,** for the next Trash Bash. Learn more online.

RIVER, LAKES
BAYS 'N BAYOUS TRASH BASH®

Get More Involved With Partners

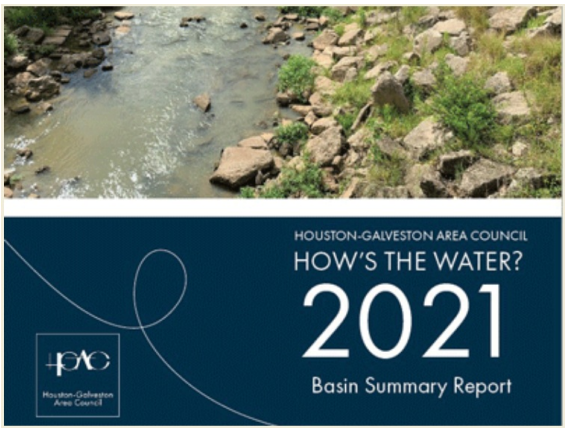
Adopt-a-Beach
Artist Boat
Bayou Land Conservancy
Bayou Preservation Association
Buffalo Bayou Partnership
Cypress Creek Flood Control Coalition
Exploration Green Conservancy
Friends of the River San Bernard
Galveston Bay Foundation
H-GAC Clean Waters Initiative
Jesse H. Jones Park & Nature Center
Keep Texas Beautiful
SPLASh
Take Care of Texas
Trash Free Texas
Turtle Island Restoration Network

Galveston Bay Estuary Program | The Woodlands Township

Water Quality Projects & Plans

Clean Rivers Program

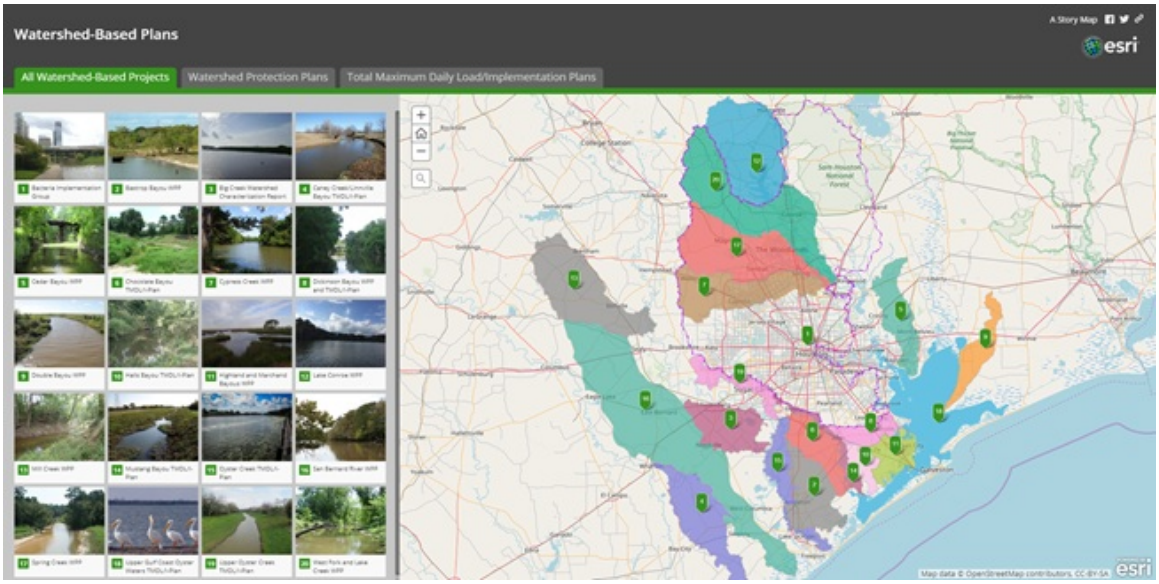
2021 Basin Summary Report Available
The Basin Summary Report (BSR), produced every five years, outlines water quality issues in the H-GAC Clean Rivers Program region based on technical analysis of historical and current trends. The BSR and the Basin Highlight Reports, which are produced in the years without a BSR, are available in PDF and interactive online formats. The 2022 Basin Highlights Report will be available soon.



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
- 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.

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.

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.
