

Texas Stream Team

Houston-Galveston Area Council Chapter

Working to Protect Our Waterways

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MONITOR SPOTLIGHT - Kendall Guidroz

In September 2018, Kendall Guidroz joined the Houston-Galveston Area Council as part of the Clean Rivers Program and coordinator for H-GAC's Texas Stream Team volunteer monitoring program.

Kendall joins H-GAC after three and a half years at Artist Boat spent engaging youth and the public in hands-on educational experiences about Gulf Coast ecosystems.

Kendall hopes to continue fostering public engagement and awareness regarding water quality issues in the region and take an active role in safeguarding the health of our water resources.

With an educational background in Environmental Studies and Stream Team experience through the Galveston Bay Foundation, she looks forward to working with and learning from all of H-GAC's Stream Team monitors.



Image: Kendall Guidroz conducts flow monitoring at a Clean Rivers Program location.

H-GAC Texas Stream Team Update

The Houston-Galveston Area Council maintains the [Texas Stream Team program](#) in the Clean Rivers Program area for this region with support from the Galveston Bay Foundation, City of Sugar Land, The Woodlands Township, Friends of the River San Bernard, Bayou Land Conservancy, and Bayou Preservation Association.

When is the next training? There are no Phase I/II trainings planned until 2019. H-GAC and partners are working to finish Phase III trainings for new volunteer monitors. If you are waiting for a Phase III training, please contact stream.team@h-gac.com to get scheduled.

Want to become a Phase III Trainer? If you have been monitoring for a while, feel confident in the procedures, have free time (especially on weekends), and love teaching, let us know and we will help get you certified to help with Phase III trainings.

SAFETY BRIEFING - Chemical Concerns

By Kendall Guidroz, H-GAC Planner

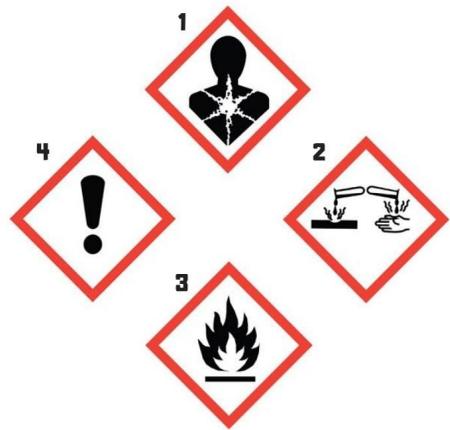
As water quality volunteers conducting field tests, Texas Stream Team monitors use a variety of chemicals to test different water quality parameters. While the informal setting of sampling sites (and the Texas elements) might make things like gloves and glasses seem less necessary, it is important to protect yourself from the potential hazards present in these chemicals.

The chemicals utilized for water quality monitoring include:

- Sodium Thiosulfate
- Starch Indicator Solution
- Sulfuric Acid*
- Alkaline Potassium Iodide with Azide*
- Manganous Sulfate Solution*
- pH Wide Range Indicator*

Four of these six chemicals (indicated with an *) have chemical hazard symbols listed on the bottle.

Many monitors have backgrounds in the lab or other fields where these hazard symbols are familiar sights. For those who might need a refresher, here are the four hazard symbols listed on Stream Team chemicals.



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1. Health Hazard	2. Corrosion	3. Flame	4. Exclamation Mark
Carcinogen	Skin Corrosion/Burns	Flammables	Irritant (Skin and Eye)
Mutagenicity	Eye Damage	Pyrophorics	Skin Sensitizer
Reproductive Toxicity	Corrosive to Metals	Self-Heating	Acute Toxicity (harmful)
Respiratory Sensitizer		Emits Flammable Gas	Narcotic Effects
Target Organ Toxicity		Self-Reactives	Respiratory Tract Irritant
Aspiration Toxicity		Organic Peroxides	Hazardous to Ozone Layer (non-mandatory)

***Hazard Communication Pictograms and warnings courtesy of www.osha.gov.*

If you would like more information on a specific chemical we use, you can download the Safety Data Sheet (SDS) from LaMotte's web site.

When conducting water quality monitoring, always remember to put safety first. Wear gloves and eye protection when handling chemicals, and be aware of your physical surroundings at all times when out in the field.

TECHNICAL TERRITORY

By Jessica Casillas, H-GAC Planner

Impacts from Alterations to Freshwater Inflows

Maintaining freshwater inflows has recently gained traction from stakeholders and policymakers as the timing and volume of freshwater inflow has greatly impacted downstream estuarine systems. Altering estuarine systems not only impacts the abiotic and biotic factors of the system, but the socioeconomic well-being of the region as well. As the world's most productive ecosystems, marine habitats and estuaries provide goods and services valued at \$14 trillion annually. Unfortunately, many of these estuaries are also deemed threatened, with the most influencing factor being impacts from alterations of freshwater flow.



Image: The mouth of the San Bernard river is closed in a photograph from June 2016.

Factors altering freshwater inputs include construction projects, dams, and diversions. Without the influence of freshwater, important estuarine habitats such as tidal flats, seagrass beds, salt marshes, oyster reefs, and mangroves may be negatively affected. The result may be an alteration of essential habitat and nursery grounds for commercially valuable species such as blue crabs, red drum, shrimp, and many others.

The inflow of freshwater causes a domino effect by bringing nutrients, sediments, and organic material to a receiving water body, which positively correlates with primary production. Primary production is the foundation all life forms directly or indirectly rely upon.

Fluctuations in primary productivity may influence higher trophic interactions, leading to detrimental consequences in the landscape of an estuary.

Since 1985, the Texas Legislature has passed laws to maintain freshwater inflows into coastal basins. Various agencies and partnerships across the state assist in data collection and analytical studies to maintain the biogeochemical signature of an estuary so that it remains ecologically sound.

Part of the data collection process is evaluating the quantity and quality of freshwater reaching Texas estuaries. In partnership with the Texas Commission on Environmental Quality, the Houston-Galveston Area Council Clean Rivers Program routinely monitors instream flow in the region's waterways. This data, complemented by Texas Stream Team volunteer data, can help policymakers make informed decisions to effectively manage plans to maintain the health and integrity of an estuarine ecosystem.

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](#)

[Japhet Creek](#)

[Keep America Beautiful](#)

[Keep Texas Beautiful](#)

[Take Care of Texas](#)



SKILLS CHECK - Conductivity Using TDS Low and High



Here are some tips and reminders for successfully measuring and reporting conductivity using your meter:

- Your conductivity meter (or setting on a dual meter) should reflect your sample site.
 - Fresh water sampling sites should use the LOW meter/setting.
 - Tidal areas or segments should use the HIGH meter/setting.
 - The correct meter/setting should have been determined during your Phase III training.
- On a DUAL meter select the correct setting by:
 1. Hold down the temperature button, turn the meter on, and release the temperature button.
 2. The meter will go into range selection mode.
 3. Press the HOLD button to scroll through the options.
 4. Select "LO" or "HI" based on your sample site.
 5. The meter confirms the last selection when no button is pressed for five seconds.
 6. If the measurement is outside the range of the selected setting, you will get an error message. Use the AUTO setting at that point but be sure to check whether the measurement is in micro- or milliSiemens.
- Record the temperature of the sample on your data sheet.
- Record the setting/meter used by checking either TDS Low/3 or TDS High/4.
 - LOW setting measures in **micro**Siemens, and HIGH measures in **milli**Siemens.
- Report the actual reading in the conductivity box.
 - If you selected TDS High/4, H-GAC will convert the value for you during our review.
- Always store the meter in the **off** position (batteries are expensive) and in a climate-controlled location. Texas Stream Team kits should NEVER be stored in vehicles.
- To calibrate your meter follow the calibration steps found on pages 42-46 in your [Texas Stream Team Instruction Manual](#).

Still have questions about conductivity? You can always quickly review the TST testing procedures for measuring conductivity on [YouTube](#).

REVIEW YOUR DATA ON THE H-GAC WRIM

The [Water Resources Information Map \(WRIM\)](#) displays the Houston-Galveston Area Council's Clean Rivers Program water quality data. Data is available from Clean Rivers program professional monitors and Texas Stream Team volunteer monitors. A new Advanced Tab allows for improved search functionality by specific site for monitoring, on-site sewage systems, and other water quality issues.

Texas Stream Team monitoring data is updated on the 15th of each month. Please check out your site and email stream.team@h-gac.com if you find any issues.

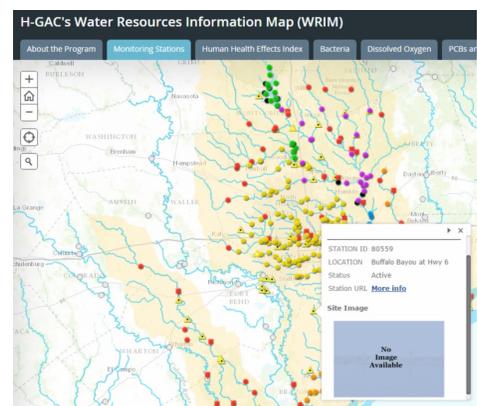


Image: H-GAC's WRIM displays water quality monitoring locations.



CALENDAR OF EVENTS

What's Going on in the Galveston Bay Watershed?

Nov 08	Oyster Creek Bacteria Reduction Project Public Meeting As part of the San Jacinto-Brazoria Coastal Basin bacteria reduction project focusing on Oyster Creek, H-GAC will host a public stakeholder meeting from 4 to 6 p.m. Thursday, November 8, at the Brazoria County Library-Lake Jackson Branch, 250 Circle Way, Lake Jackson. To RSVP, please contact Steven Johnston at 832-681-2579.
Nov 08	Parks and Natural Areas Roundtable Field Trip H-GAC's Parks and Natural Areas Roundtable field trip will be Thursday, November 8, with a tour of three parks in Sugar Land. The tour begins at 9:30 a.m. at Sugar Land Memorial Park and continues to Smart Financial Center Plaza and Brazos River Park. Registration is requested and limited transportation is provided. Get more information and register.
Nov 15	H-GAC Regional Recycling Roundtable Join H-GAC to celebrate America Recycles Day at 10 a.m. Thursday, November 15, with a workshop on composting as a recycling strategy. Presentations will include an update on commercial composting, an overview of the master composter program, and local municipal case studies. Registration is requested. Get more information and register.
Nov 15	Conversation and Cocktails on America Recycles Day Join the Galveston Bay Foundation from 5 to 7 p.m. Thursday, November 15, at La Fisheria, 213 Milam St, Houston, to #SkiptheStraw to raise awareness for the 2018 Galveston Bay Report Card and celebrate America Recycles Day. Get more information.
Nov 15	Galveston Bay Foundation's Water Quality Open House Join the Galveston Bay Foundation from 5:30 to 7 p.m. Thursday, November 15, at the Proletariat in Galveston for conversation about water quality and safety. Get more information.
Nov 15	Habitat Restoration Workdays at the Coastal Heritage Preserve Join Artist Boat for habitat restoration workdays at their Coastal Heritage Preserve in Galveston. An itinerary and map to the Preserve will be sent out upon RSVP. Contact Mary Warwick for more information or to RSVP.
Nov 16	Our Great Region Awards Deadline The Our Great Region Awards 2040 recognize outstanding projects, plans, programs, or policies in the region advancing the goals and strategies identified in the Our Great Region 2040 Plan . The application closes Tuesday, November 16. More information is available in the 2018 application guide or by contacting Amy Combs at 713-993-4544.
Nov 28	Gulf of Mexico Alliance Wednesday Webinars Gulf of Mexico Alliance (GOMA) is hosting the final Wednesday Webinar of the series at 2 p.m. Wednesday, November 28. Preregistration is not required. Webinar topic

will be Harmful Algal Blooms (HAB) Detection (Kate Hubbard).
[Learn more and join the webinar.](#)

Dec 5-7	Texas A&M Agrilife Extension and Master Gardener Composter Training This three-day training in Rosenberg will allow participants to become Composter Specialists. This training is sanctioned by the Texas Master Gardener program and is limited to 24 attendees. Get more information and register online.
Dec 6 & 20	Habitat Restoration Workdays at the Coastal Heritage Preserve Join Artist Boat for habitat restoration workdays at their Coastal Heritage Preserve in Galveston. An itinerary and map to the preserve will be sent out upon RSVP. Contact Mary Warwick for more information or to RSVP.
Jan 3 & 17	Habitat Restoration Workdays at the Coastal Heritage Preserve Join Artist Boat for habitat restoration workdays at their Coastal Heritage Preserve in Galveston. An itinerary and map to the Preserve will be sent out upon RSVP. Contact Mary Warwick for more information or to RSVP.
Now - Jan 19	Carlos Cruz-Diez at the Cistern: Spatial Chromointerference Exhibit The exhibit creates a situation in space involving the dematerialization, transfiguration, and ambiguity of color through movement. By projecting moving chromatic modules on objects and people, these become transparent and virtually change condition and form. The spectator becomes both actor and author of a complete chromatic event, which evolves through space. Get the complete Cistern tour schedule and purchase tickets.
Mar 30	River, Lakes, Bays 'N Bayous Trash Bash®. Save the date for Saturday, March 30, 2019. Visit TrashBash.org to see where sites are located and how to become a volunteer. Sponsorships just became easier with the online donation button . Donations of any size are welcome and Trash Bash is a success due to generous individual, organization, and corporate sponsors.

REPORT POLLUTION: GBAN

Activities such as oil and chemical spills, trash, dumping of waste, and illegal discharge of boat sewage have the potential to pollute the environment and threaten the health of people, plants, and animals.

Reporting pollution in the Houston-Galveston region helps protect the bay. Through the Galveston Bay Action Network (GBAN), it's easy to report pollution using a laptop, desktop, or mobile device.

Download the app or visit the [Galveston Bay Foundation website](#) today to start reporting pollution.

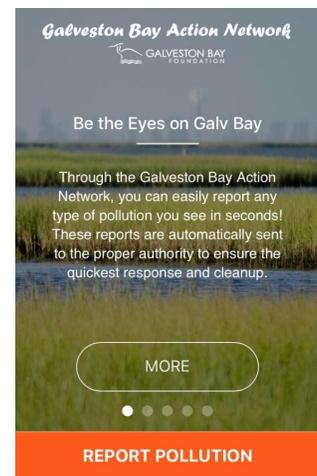


Image: The GBAN app makes reporting pollution easy.

AQUATIC FIELD STUDIES WORKSHOPS

The Woodlands Township Environmental Services Department is hosting two workshops for teachers and volunteers interested in bringing student groups into the field for hands-on, minds-on aquatic studies through the department's field study program.

Workshops are **8 a.m. to noon, February 9 and March 2**, at the Parks and Recreation Aquatics Building, 8203 Millennium Forest Drive, The Woodlands.



Image: A STEM water quality class.
Photo credit: Dick Schaffhausen

Attendance is recommended at both workshops before scheduling a field study for students. The workshops are free and open to all teachers (especially 5th-6th grade science), but registration is required and spaces are limited.

Contact [Teri MacArthur](#) or 281-210-3928 to register or for more information. Activities will cover topics including understanding water quality, aquatic food webs and common local fish, and conserving water for future generations.

Certified Texas Water Specialists and other volunteers interested in helping with the program

Contact [Steven Johnston](#) at 832-681-2579 for information about [TMDL projects](#).

WATERSHED PROTECTION PLANS

Contact [Justin Bower](#) at 713-499-6653 for more information about [watershed protection plans](#).

NEWS FROM SAN MARCOS

NEW DATAVIEWER

Texas Stream Team (TST) is working on a new map to display water quality data collected since the start of the program in 1991. Currently, the map displays site locations and whether they are active or inactive. The [map](#) is accessible to the general public. If you have questions about the data or would like a copy, please contact txstreamteam@txstate.edu.

PUBLICATIONS

The Meadows Center for Water & the Environment at Texas State University has several publications of interest to Texas Stream Team monitors. You can [subscribe to them online](#).

ID CARDS

TST identification cards are available for volunteer monitors. If you would like an ID card, please request it [via email](#). Once the request is logged, your monitor ID number will be checked against the state TST database, and address verified. The ID card is mailed to your address.

STREAM TEAM FEST 2018

To celebrate training the 10,000th Stream Team water quality volunteer monitor and other success, TST invited all past and present monitors and partners to Stream Team Fest on **October 6**. Nearly 100 people attended, and in addition to the activities and other awards, TST presented the first ever "Golden Secchi Award" to Delores McCright for dedicating 24 years to TST. [Read the full Stream Team Fest article from TST](#).

ABOUT THE NEWSLETTER

Email kendall.guidroz@h-gac.com or call 713-993-2469 with questions, comments, calendar items, or suggestions for future H-GAC Texas Stream Team newsletters or to join the H-GAC Texas Stream Team Newsletter mailing list.

H-GAC is the regional organization through which local governments consider issues and cooperate in solving area-wide problems. We invite you to subscribe to the [Community and Environmental Update](#), a monthly e-newsletter to keep you informed about the many community planning, economic development, and environmental planning programs at H-GAC.

[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.