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# Texas Stream Team

Houston-Galveston Area Council Chapter

Working to Protect Our Waterways

**VOLUME 2017, ISSUE 4**

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## IN THIS ISSUE

- [Monitor Spotlight](#)
- [Safety Briefing](#)
- [TST Training Schedule](#)
- [Reagent Repositories](#)
- [Technical Territory](#)
- [Get More Involved](#)
- [TST Training Videos](#)
- [H-GAC WRIM Advanced Features](#)
- [Other H-GAC GIS Applications](#)
- [Calendar of Events](#)
- [GBAN Phone App](#)
- [News from around the Region](#)
- [News from San Marcos](#)

*Aerial view of the opened mouth of the San Bernard River after Hurricane Harvey (Photo Credit: Bert Smith)*



## MONITOR SPOTLIGHT

### H-GAC Fall/Winter TST Update

H-GAC's Texas Stream Team (TST) program had a successful year in 2017. There were five Phase I and II training days, new monitoring sites and monitors were added. H-GAC's goal is to continue to have the most comprehensive volunteer monitoring program in the state by

adding more monitors and monitoring stations in 2018.

There is a staff change to announce. Becki Begley will be stepping away from TST to focus on assisting small coastal communities with water quality education and outreach. She also manages the River, Lakes, Bays 'N Bayous Trash Bash®.

[Rachel Fields](#) will take on a larger role with the TST program at H-GAC. Rachel is a Planner, primarily conducting water quality monitoring for H-GAC's Clean Rivers Program, but is also a trained Stream Team instructor and auditor. She has more than a decade of experience in water quality. Rachel will be the Data Manager, and will continue to assist Project Manager [Will Merrell](#) with training and outreach events. Please send your emails and data sheets to [stream.team@h-gac.com](mailto:stream.team@h-gac.com). Will or Rachel will respond to your questions and requests.



*CRP monitors Rachel Fields and Will Merrell*

## SAFETY BRIEFING

*By Rachel Fields, H-GAC Planner*

### Quicksand - Not Just a Cartoon Concern

Hurricane Harvey magnified some common issues and introduced new hazards for water quality monitoring in the region. While conducting Clean Rivers Program water quality monitoring recently, Will Merrell and I found a danger neither of us had previously seen in the area. It's a natural phenomenon some people don't know even exists in real life. It's quicksand!



*Will Merrell encountered quicksand while monitoring*

Quicksand is caused by water agitating loose sand. When the water in the sand can't escape, it creates a liquefied soil that can't support weight. The sand appears solid and is indistinguishable from surrounding sediment. Rain from Hurricane Harvey caused a lot of erosion and sediment movement in the region. A few areas now have a lot more sand than they did before the flooding. When the force of the water moved the sand downstream, it disturbed and loosened it. As the sand settled and the water levels dropped, the surface of the sand strengthened, but just below the surface the sand remained liquefied.

This caused the recent incidents of quicksand. A hurricane does not need to drop 52 inches of water for this to happen again. Anytime sand is suddenly agitated by water, quicksand is a possibility.

If you are surprised by quicksand (take it from us, it can be startling), try not to panic.

- Most quicksand is not very deep and you will only sink a few feet, but continued or panicky movement can cause you to sink farther. Deaths from being stuck in quicksand have occurred, but if you remain calm you can escape.
- People are less dense than quicksand so you will float at about waist level even in deeper quicksand.
- Use a stick or other object to get yourself out or even better - a buddy with a rope.
- If you and your monitoring buddy get stuck (as it happened to us), just relax, lean back to float, slowly kick your legs, and "swim" out.
- Quicksand can be exhausting, so take frequent breaks if you get tired.

Keep calm and monitor on!

## 2018 TEXAS STREAM TEAM TRAININGS

H-GAC and its partners are developing volunteer monitor training schedules for 2018. Please check the [H-GAC TST website](#) for information about how to become a monitor.

## REGIONAL REAGENT REPOSITORIES

Federal shipping regulations for hazardous materials prevent the shipment of chemical reagents from H-GAC to monitors.

Since many monitors live far from, or don't enjoy the drive to the H-GAC office in Houston, two volunteer monitors are storing and distributing reagents and conductivity standard solution for the program.

If you live **north of Houston** (The Woodlands area and Montgomery County), contact [Teri MacArthur](#) to arrange to pick up supplies. If you live **south of Houston** (San Bernard River), contact [Valroy Mauldin](#) to arrange to pick up supplies.

Hardware and glassware can be picked up in Houston or can be mailed.



## TECHNICAL TERRITORY

**By Will Merrell, H-GAC Planner**

### Texas Stream Team and Hurricane Harvey

#### ***Flood Water Quality***

Texas Stream Team Phase I training extensively covers how land use within a watershed can affect water quality. For instance, a waterway in a watershed with many construction sites might have higher sediment, or a waterway in a watershed with hundreds of aging and potentially failing on-site sewage systems could have higher counts of bacteria and other pathogens.

Flooding exacerbates all land use sources of pollution within a watershed. During Harvey, not only did thousands of area homes flood and wastewater treatment plants overflow, but the erosive effects on stream channels and overland flow also caused massive amounts of sediment to be washed downstream. EPA Superfund sites, areas that have been contaminated with hazardous waste, were inundated. Many state and local agencies (including H-GAC Clean Rivers Program

partners) and universities continue to investigate Harvey's effects on ambient water quality. Data will be shared when available.

### ***TST and Harvey***

For TST, safety is the number one priority. If your site has suffered from bank erosion, excessive sediment accumulation, or anything else that would make it unsafe to monitor, please contact [stream.team@h-gac.com](mailto:stream.team@h-gac.com) for help finding a new monitoring location.

TST data will be used to assist with understanding regional water quality post-Harvey. Please remember to provide detailed comments about substantial changes at your monitoring location. Pay close attention to significant decreases or increases in water quality constituents (e.g., DO is lower than it was last November, or conductivity has increased), the absence of aquatic life, or anything else noteworthy to share. Your comments provide a valuable and useful window into your monitoring station and waterway.

## **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](#)



*H-GAC Clean Rivers Program at Boy Scout Fair*

## **TEXAS STREAM TEAM TRAINING VIDEOS**

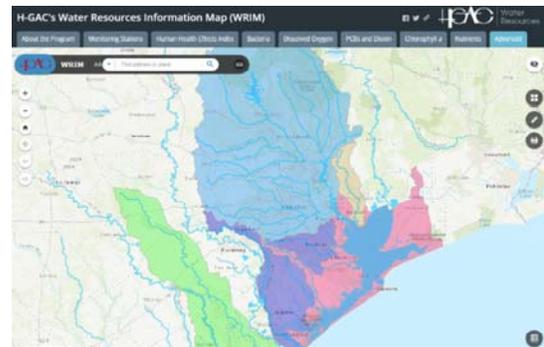


Don't forget you can always quickly review TST testing procedures with [Texas Stream Team YouTube videos](#).

Videos include Dissolved Oxygen Fixation, Titrating the Fixed Dissolved Oxygen Sample, Field Observations, Measuring pH, Calibrating Conductivity Meters, and Measuring Conductivity.

## **ADVANCED FEATURES ON THE H-GAC WRIM**

The [Water Resources Information Map](#) (WRIM) displays H-GAC's Clean Rivers Program water quality data. Data is available from Clean Rivers program professional monitors and TST 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.



## OTHER H-GAC INTERACTIVE WEB APPs

In addition to the WRIM, H-GAC offers more water-related [interactive web applications](#). Applications include a Regional Flood Information application (developed following Hurricane Harvey), 2016 Basin Summary Report, 2017 Basin Highlights Report, Bacteria Implementation Group (BIG) Report, and the Riparian Buffer Tool. Click on the "Water Quality" filter to see a list of the applications.

H-GAC also provides applications for employment, growth, land use and cover, planning, transportation, and the environment. Some of the applications include urban forestry, low impact development, and landfill inventories.

## CALENDAR OF EVENTS

What's Going on in the Galveston Bay Watershed?

<b>Nov. 10</b>	<a href="#">Prairie Friday</a> Restoration Activities (Armand Bayou Nature Center)
<b>Nov. 14</b>	<a href="#">San Jacinto-Brazos Coastal Basin Water Quality Project Stakeholder Meeting</a> (Brazoria County Library Branch - Alvin)
<b>Nov. 15</b>	Go online to organize or attend an event for <a href="#">America Recycles Day</a> .
<b>Nov. 18</b>	Register for <a href="#">Tree Planting at Exploration Green</a> (Sponsored by Trees for Houston)
<b>Nov. 25</b>	Register for <a href="#">Wetland Planting at Exploration Green</a> (Sponsored by Texas Community Watershed Partners/Texas A&M AgriLife Extension Service)
<b>Nov. 28</b>	Register for <a href="#">H-GAC's Clean Waters Initiative Workshop</a> on Freshwater Inflows (H-GAC Conference Room B/C, Second Floor)
<b>Nov. 28</b>	<a href="#">Houston Bay Area Storm Water Flooding Forum: Harvey, Ike and Our Future</a> (University of Houston-Clear Lake)
<b>Dec. 5</b>	The Texas Water Development Board (TWDB) <a href="#">Financial Assistance Workshop</a> focused on disaster recovery for water, wastewater, and stormwater utilities (H-GAC Conference Room B/C, Second Floor)
<b>Dec. 7</b>	<a href="#">Brazos-Colorado Coastal Basin Water Quality Project Stakeholder Meeting</a> (Wharton County Library Main Branch - Wharton)

## APPS FOR REPORTING POLLUTION

Not sure what jurisdiction to report pollution to?

The Galveston Bay Action Network (GBAN) allows residents to easily report pollution using a desktop, laptop, or mobile device from anywhere in the Houston-Galveston

region. Types of pollution to report include oil and chemical spills, trash and illegal dumping, illegal discharge of boat sewage, bird or fish kills, submerged vessels, and waters that are abnormally colored or have an unusual odor. The information is automatically forwarded to the proper investigating authority based on location.

[Click here](#) to report pollution from your computer.

Want to report from your mobile devices? Download the app at the [Apple Store](#) or [Google Play](#).



## NEWS FROM AROUND THE REGION



*Volunteers at Trash Bash*

### TRASH BASH TO CELEBRATE 25 YEARS ON MARCH 24

The 2018 [River, Lakes, Bays 'N Bayous Trash Bash®](#) is **Saturday, March 24**. Save the date to be part of the 25th consecutive cleanup at a site near where you live, work, or go to school. In 24 years, 105,800 Trash Bash volunteers have collected 2,189 tons of trash, 16 tons of recycling, and 10,709 tires.

There will be a larger-than-usual volume of trash and debris this year as a result of Hurricane Harvey, so many volunteers will be needed. Learn how to volunteer or become a sponsor at [www.TrashBash.org](http://www.TrashBash.org).

### CLEAN RIVERS PROGRAM

H-GAC's [Clean Rivers Program](#) collects information to characterize surface water quality in four major basins in the greater Houston region. H-GAC's Regional Monitoring Workgroup includes seven professional monitoring organizations who provide data to the TCEQ for 303 routine monitoring sites (six monitored for 24-hour Dissolved Oxygen) on at least a quarterly basis.



For FY2018, the program continues to refine monitoring efforts in the region by eliminating or minimizing duplication of effort. Monitoring partners are working under the FY2018-2019 Multi-Basin Quality Assurance Project Plan (QAPP), approved in September. H-GAC's rigorous data review process and regional training opportunities help standardize monitoring techniques and procedures to guarantee high quality data.

### CLEAN WATERS INITIATIVE WORKSHOPS

Clean water is crucial to the region's environment, economy, and quality of life. H-GAC'S [Clean Waters Initiative](#) (CWI) program offers workshops for local governments, landowners, and residents to develop strategies to reduce pollution in area waterways.

### TOTAL MAXIMUM DAILY LOAD PROJECTS

The [Bacteria Implementation Group](#) has been meeting since 2008 to reduce bacteria concentrations in

watersheds around Houston. Actions taken have helped lower bacteria concentrations by almost half, but there is still progress to be made. The BIG met on October 31 and approved the 2017 Annual Report, a report on actions taken by member organizations in 2016. The annual report recommends organizations address sanitary sewer overflows, failing on-site sewage facilities, untreated stormwater runoff, and several other implementable actions. The BIG will meet in 2018 to review activities for revision of the current implementation plan. For more information or to participate, contact [Steven Johnston](#) at 832-978-0091.



**BACTERIA IMPLEMENTATION GROUP**

The San Jacinto-Brazos and Brazos-Colorado Basin projects are multi-year processes to identify, plan, and address bacteria impairments across each basin in coordination with stakeholders.

The [San Jacinto-Brazos Basin \(11\) Project](#) will focus on Chocolate Bayou, while the [Brazos-Colorado Basin \(13\) Project](#) will focus on Caney Creek Tidal, Linnville Bayou, and Caney Creek Above Tidal. H-GAC completed characterization reports for both basins and will host public stakeholder meetings to discuss options for developing bacteria reduction plans and begin identifying stakeholders to participate on a coordination committees to guide these efforts. Upcoming stakeholder meetings are listed in the **Calendar of Events** (above).

## WATERSHED PROTECTION PLANS

The [San Bernard Watershed Protection Plan](#) (WPP) was accepted by the U.S. Environmental Protection Agency in late summer. H-GAC has applied for grant funding for implementation.

H-GAC and TCEQ have been working for two years with local stakeholders to identify sources of fecal waste in the watersheds of the West Fork San Jacinto River and Lake Creek. Guided by local knowledge and scientific evaluations, the [West Fork Watersheds Partnership](#) has completed the first phase of the project and is actively working to identify voluntary solutions that will address their water quality issues. Voluntary monitoring in the watersheds supplements Clean Rivers Program data and provides a more robust picture of pollution in the area. Fecal bacteria in the watersheds come from a broad mix of sources, including human waste from on-site sewage systems and wastewater, livestock, pets, and wildlife. The variety of sources allows stakeholders to be flexible in employing an equally wide range of potential solutions. The partnership will also consider the effects of sediment from mining operations and excess nutrients from fertilizers and other sources. It's not too late to get involved; your feedback and local knowledge is important.



*Lake Conroe*

The Cedar Bayou Watershed on the east side of Harris, and west side of Liberty and Chambers counties, supports a diverse mix of uses, from commercial navigation to recreation fishing. High levels of fecal bacteria pollution led local stakeholders to develop a WPP that was accepted in 2015. Local TST members were of great service to the project, and their data supplemented Clean Rivers Program data as staff evaluated conditions in the watershed.

The [Cedar Bayou Watershed Partnership](#) then began to implement some of the voluntary solutions identified in the WPP. H-GAC is working with the Texas State Soil and Water Conservation Board to host a series of educational programs, install some structural measures, promote agricultural programs, and remediate failing on-site sewage systems to address local concerns about their water quality.

Contact [Justin Bower](#) at 713-499-6653 for information about WPPs.

## HOUSTON AREA URBAN FORESTS

H-GAC is working with the nonprofit groups U.S. Endowment for Forestry and Communities, Inc. and American Forests to prioritize and promote local projects to expand and diversify the Houston area's vibrant urban forests. Urban trees provide a wealth of benefits to urban communities, ranging from aesthetic beauty and property value, to reduction of pollution, flooding, and heat issues. Maintaining robust forests in areas near waterways is an excellent way to improve water quality. Local partners are assisting in the development of goals for the region and identifying priority projects to promote to potential funding sources.



For more information or to get involved, contact [Justin Bower](mailto:Justin.Bower@h-gac.com) at 713-499-6653 or visit [www.houstonforests.com](http://www.houstonforests.com).

## NEWS FROM SAN MARCOS

### PADDLERS PROGRAM

[Paddlers](#) collect data from new or hard-to-reach locales. Kayakers and canoeists can collect higher quantities of data at more locations, improving understanding of water quality issues in lakes, rivers, streams, estuaries and bays. To learn how to get involved, call 512-245-9200, email [txstreamteam@txstate.edu](mailto:txstreamteam@txstate.edu), or complete an [online form](#).

### COMMUNITY FORUM

TST has a [community forum](#), "Caring for Our Waters." This Community Forum website provides a place to share valuable knowledge and experiences online by posting questions, sharing stories, photos and best practices, submitting wish lists, publicizing events, providing feedback and brainstorming with others. The main goal of the Community Forum is to strengthen the TST community across the state and to harness the knowledge and valuable experience TST participants have gained over the past 25 years.

### 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.

### NEWSLETTER

TST has a statewide newsletter, *Headwaters*. Be the first to know about the latest news, services, and volunteer opportunities. See past issues and sign up for [email delivery](#).



THE MEADOWS CENTER  
FOR WATER AND THE ENVIRONMENT  
TEXAS STATE UNIVERSITY

### ABOUT THE NEWSLETTER

Email [Rachel.Fields@h-gac.com](mailto:Rachel.Fields@h-gac.com) or call 713-993-4518 with questions, comments, calendar items, or suggestions for future H-GAC Texas Stream Team newsletters.

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 going on 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](mailto:TxStreamTeam@txstate.edu).

Houston-Galveston Area Council | [Stream.Team@h-gac.com](mailto:Stream.Team@h-gac.com) | [www.H-GAC.com](http://www.H-GAC.com)