

TWO DECADES OF SUCCESS

**THE CLEAN RIVERS
PROGRAM**

**OUR REGION IS HOME TO MORE THAN 16,000 MILES OF
WATERWAYS AND SHORELINE. MOST PEOPLE IN OUR
REGION LIVE WITHIN A MILE OR TWO OF A WATER BODY.**

The Houston-Galveston region's Clean Rivers Program works with local partners and the Texas Commission on Environmental Quality (TCEQ) to ensure our water bodies continue to be a viable resource for our region.

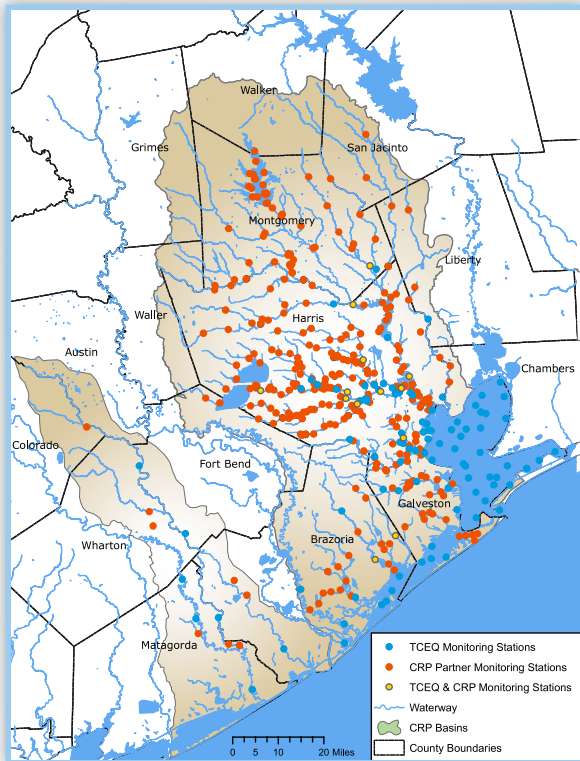


WHY IT'S CRUCIAL TO PROTECT WATER QUALITY

MORE THAN
80%

of the major waterways in our region do not meet state water quality standards. The most common water quality issues are:

Largest Coordinated Monitoring Program in Texas



BACTERIA

50% of stream miles are impaired by high levels of bacteria, which can cause swimmers or others who come into direct contact with the water to become ill or suffer from skin infections.

DISSOLVED OXYGEN

24% of stream miles are impaired by low levels of dissolved oxygen, which fish and other aquatic life crucial to our region's economy need to survive.

PCBs/DIOXINS

76% of tidal waterways are impaired by high levels of PCBs/dioxins in fish tissue. People who eat fish or seafood contaminated by PCBs/dioxins can develop long-term, serious illnesses.

NUTRIENTS

29% of stream miles have a concern for elevated levels of nutrients. In high concentrations, nutrients can lead to algae growth. Decomposing algae consume oxygen, threatening a water body's aquatic population.

“As a result of the training and guidance received on sampling, data management and quality assurance from the Clean Rivers Program, the Harris County Pollution Control Services Department Laboratory was able to achieve and maintain accreditation with the National Environmental Laboratory Accreditation Program since 2008. This accreditation has ensured our compliance with TCEQ and benefited Harris County.”

—Chris Barry **LABORATORY MANAGER**
Harris County Pollution Control Services Department

IMPROVING WATER QUALITY AND MAINTAINING HEALTHY WATERWAYS IS ESSENTIAL TO OUR REGION.



Over the next 20 years, approximately 80% of our region's drinking water will come from surface water, or water in rivers, lakes, bays and bayous. Pollutants, such as bacteria and nutrients, add to the cost of treating the water to make it suitable for drinking.



Waterways in our region are a place where people swim, ski, fish and boat. Additionally, the Galveston Bay Estuary System provides many opportunities for wildlife and bird watching as a part of the Great Texas Coastal Birding Trail, which connects more than 500 miles of the Texas coast.



The majority of the waterways in our region ultimately flow into Galveston Bay- the largest estuary on the Texas coast and the seventh largest in the United States. Oyster harvesting in the estuary system alone is a \$30 million business for our region. Sport fishing in the Galveston Bay area brings in more than \$170 million each year, and annual revenues from tourism, including eco-tourism like fishing and bird watching, total about \$4 billion in our region.

GETTING BETTER

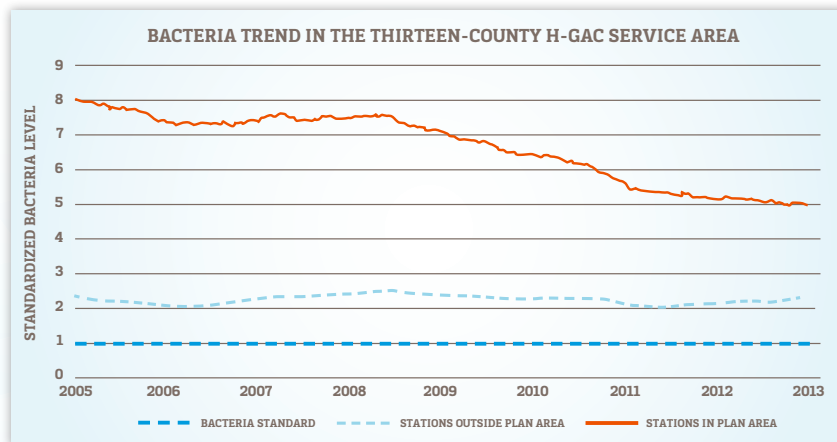
Even though most of the waterways in our region do not meet state standards, overall trends are positive. More streams and bays are stable or showing signs of recovery than are showing signs of deterioration.

OVERALL, WATER QUALITY IN OUR REGION IS IMPROVING BECAUSE OF:

- Improvements in the regulation and maintenance of septic systems, sanitary sewer collection systems and municipal wastewater treatment facilities.
- Increased preservation of natural habitat around waterways, the addition of wetland features and wet bottom detention basins, and the installation of man-made habitat additions, including detention / retention ponds, trees and landscaping in new developments.
- Heightened awareness of water quality concerns among residents, business owners and community leaders through public outreach activities, "cleanup" events, participation in watershed protection planning efforts and the development of implementation plans.

“ We have derived immense value and benefits by participating in the Clean Rivers Program. Not only have we been able to enhance the water quality monitoring and assessment training for our staff and students, we also have confidence in the accuracy and consistency of the shared data managed by the program. ”

—George Guillen, Ph.D.
EXECUTIVE DIRECTOR
Environmental Institute of Houston



As a result of the Clean Rivers Program, H-GAC provides scalable, detailed trends analysis of water quality.

Trends in bacteria levels are compared for sampling stations inside an area undergoing a major bacteria implementation plan with stations in the surrounding area with no implementation plan for bacteria.



CLEAN RIVERS PROGRAM

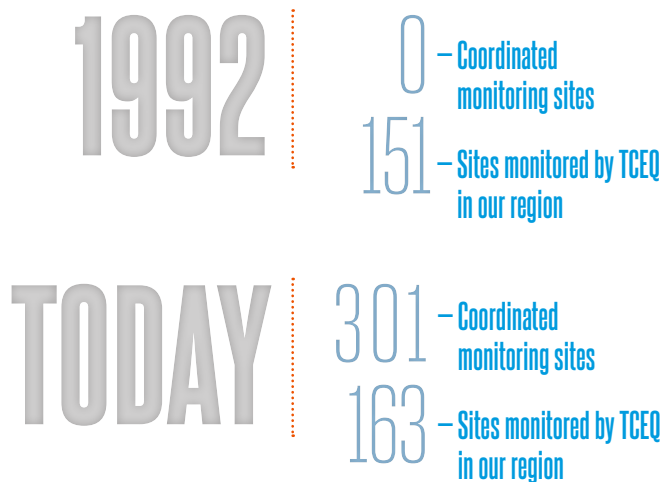
STATEWIDE MODEL FOR SUCCESS

Since 1992, the Houston-Galveston region's Clean Rivers Program has partnered with local agencies to provide the most accurate and up-to-date water quality information possible. Thanks to this coordinated effort and the use of advanced data management and analysis tools, policymakers have the data they need to prioritize areas with water quality issues and implement the management measures that will have the most impact. The data collected and analyzed through the Clean Rivers Program have resulted in millions of dollars in local, state and federal funding for programs to help reduce pollution in area water bodies, including watershed protection planning and implementation, as well as extensive bacteria reduction plans.

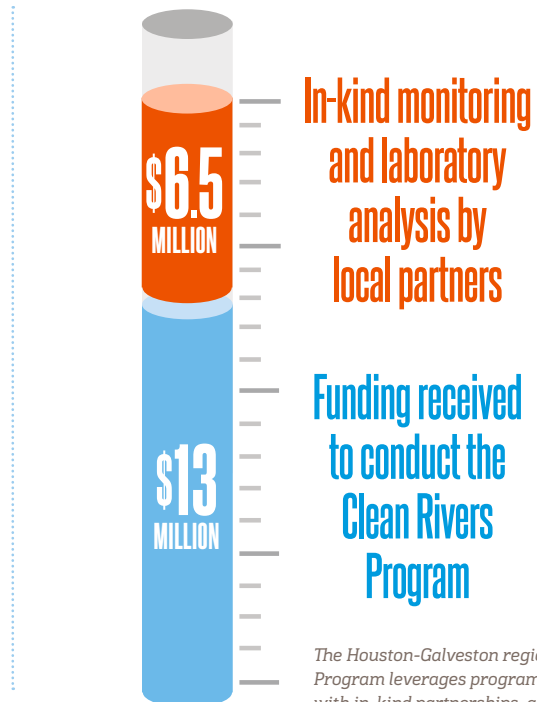
By reducing duplication of effort and standardizing data collection and laboratory analysis, we are able to paint a more detailed picture of water quality in our region. This coordinated program also provides significant benefits to everyone involved, including savings in monitoring and analysis costs, enhanced training for field and laboratory staff, the purchase of updated equipment and improved access to water quality data.

H-GAC's Clean Rivers Program was the first in Texas to coordinate with local monitoring agencies. Other Clean Rivers Programs across the state have looked to H-GAC as the model for partnership.

MEASURING SUCCESS



LEVERAGING FUNDS



The Houston-Galveston region's Clean Rivers Program leverages programming funding with in-kind partnerships, allowing us to increase monitoring stations and provide additional benefits. Funding reflected is cumulative since 2000.

BENEFITS TO PARTNERS

Training and Audits are available for professional water quality monitors and laboratory staff.

Data Management and Increased Access to Data are offered through interactive GIS tools and customized data queries.

Baseline Data for All Water Quality Projects translates into \$5 million of funding for our region's water quality projects. The data not only points out the problems in our waterways, but is also the basis of providing solutions, such as watershed protection plans. Plus, the Galveston Bay Estuary Program uses this data as part of its Bi-Annual State of the Bay Report.

Laboratory Accreditation is provided for all laboratories used by professional water quality monitors in the region through the National Environmental Laboratory Accreditation Program - NELAP.

Special Studies including bacteria source identification, continuous dissolved oxygen monitoring and habitat characterizations, give the TCEQ and local partners the data necessary to develop more comprehensive water quality assessments.

River, Lakes, Bays 'N Bayous Trash Bash® volunteers have cleaned up more than 2,000 tons of trash from area waterways during this annual single-day event. Over its 20-year history, Trash Bash® has become self-sustaining through the concerted efforts of volunteers and partner agencies led by the Texas Conservation Fund.

Texas Stream Team, a network of more than 80 trained volunteers, monitors water quality. This data is a supplement to professional monitoring data. The monitoring conducted by these volunteers is valued at \$38,000 annually.

CLEAN RIVERS PROGRAM PARTNERS 1992 - 2013

- City of Houston Health and Human Services
- City of Houston Public Works and Engineering
- City of Houston Water Quality Control
- City of Pearland*
- Environmental Institute of Houston
- Galveston County Health District*
- Harris County Flood Control District
- Harris County Pollution Control
- H-GAC
- San Jacinto River Authority - Lake Conroe Division
- San Jacinto River Authority - Woodlands Division
- TCEQ
- United States Geological Survey

**No longer participating in monitoring program*

COST SAVINGS

50 SITES @ \$250 DOLLARS PER MONTH FOR 1 YEAR
EQUATES TO \$150,000 IN ANNUAL SAVINGS

These savings, resulting from the reduction of duplicated monitoring sites, have been reinvested in expanded monitoring, special studies, and other tools to better assess regional water quality.

“ Thanks to the efforts of the Clean Rivers Program, we are now better able to inform people of water quality issues. While our waterways are not yet as clean as we would like, over time it is getting better. Together, we are working to safeguard this important natural resource. ”

—Arturo Blanco BUREAU CHIEF, BUREAU OF POLLUTION CONTROL AND PREVENTION
Houston Department of Health and Human Services, City of Houston

LEARN MORE. GET INVOLVED WITH WATER QUALITY ACTIVITIES.



CLEAN RIVERS PROGRAM STEERING COMMITTEE Help shape the clean rivers conversation by getting involved in the Steering Committee.
www.h-gac.com/community/water/rivers/crp_committee.aspx



TRASH BASH® Held every spring at 17 sites throughout our region, Trash Bash® is the state's largest shoreline cleanup event. www.trashbash.org



TEXAS STREAM TEAM A network of trained volunteers make frequent observations about the conditions in their waterways and conduct on-site water quality testing.
www.h-gac.com/texasstreamteam



STAKEHOLDER MEETINGS Add your input to the ongoing water quality protection projects across our region. www.h-gac.com/go/watershedprotection



WATER RESOURCES INFORMATION MAP (WRIM) An interactive mapping tool provides users with water quality data, photos and additional information.
www.h-gac.com/go/wrim



HOW'S THE WATER? IPHONE APP WRIM's functionality is available for users on the go. Look for the How's the Water? app in the iTunes store.



H-GAC WATER RESOURCES TWITTER FEED Find the latest information on water quality issues in our region, including public meetings and fish consumption advisories. [@HGACWater](https://twitter.com/HGACWater)

FOR MORE INFORMATION, PLEASE VISIT

WWW.H-GAC.COM/CRP OR E-MAIL WATERRESOURCES@H-GAC.COM



SUPPORT THE CLEAN RIVERS PROGRAM

The Houston-Galveston region's Clean Rivers Program, the first of its kind, has become a model for many other programs in Texas, thanks in no small part to your support. We are eager to build on this success and continue to be good stewards of the program and of the resources it serves. We seek the continued commitment of our partners and renewed interest and participation of our stakeholders.

