

A PROGRAM OF THE TCEQ

# BAY BRIEFINGS



GALVESTON BAY ESTUARY PROGRAM • 17041 EL CAMINO REAL, SUITE 210 • HOUSTON, TX 77058 • P: 281-218-6807 • F: 281-218-6461 • GBEP@TCEQ.TEXAS.GOV • WWW.GBEP.STATE.TX.US

## Freshwater inflows in Galveston Bay: Relationship to (harmful) algal blooms (HABs)

### Summary

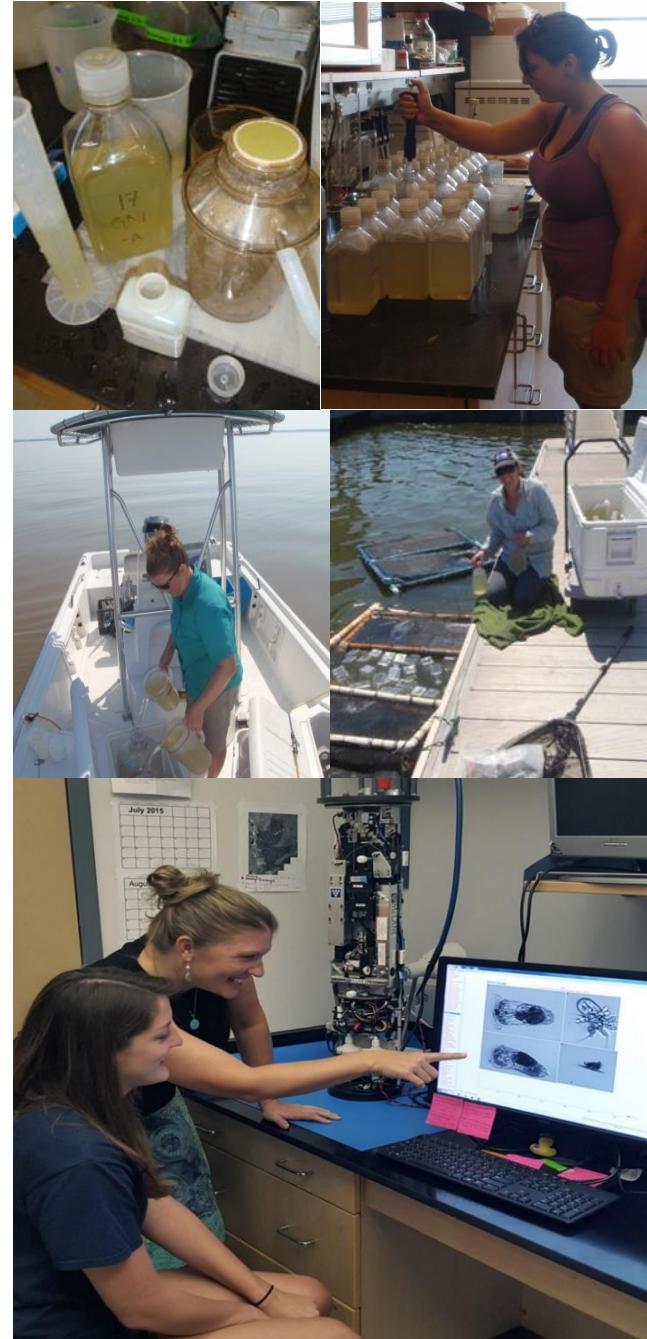
Galveston Bay is an economically important Texas estuary. It is a major tourist destination, providing >50% and >30% of the state's recreational and commercial fishing, respectfully. The bay houses the second most productive oyster fishery in the United States and is one of the most successful seafood landing sites in the state, generating upwards of \$1 billion in revenue per year. Due to a history of harmful algal blooms which have shut down the oyster hatcheries for weeks or longer at a time, it is important to monitor Galveston Bay.

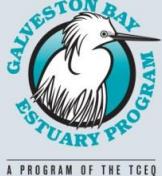
Continuous monitoring of the phytoplankton community in the bay will help keep these fisheries safe and protect humans from ingesting contaminated shellfish and finfish. We work with various state agencies to report on blooms as they occur or to help with sampling. Pertinent information is reported at:

<https://tpwd.texas.gov/landwater/water/environconcerns/hab/redtide/status.phtml>

Since 2008, we have been collecting samples throughout the bay and cataloging the community present using traditional microscopic approaches. Those species most frequently observed have been posted at:

<https://www.tamug.edu/phytoplankton/projects/Galveston-Bay-Phytoplankton.html>.





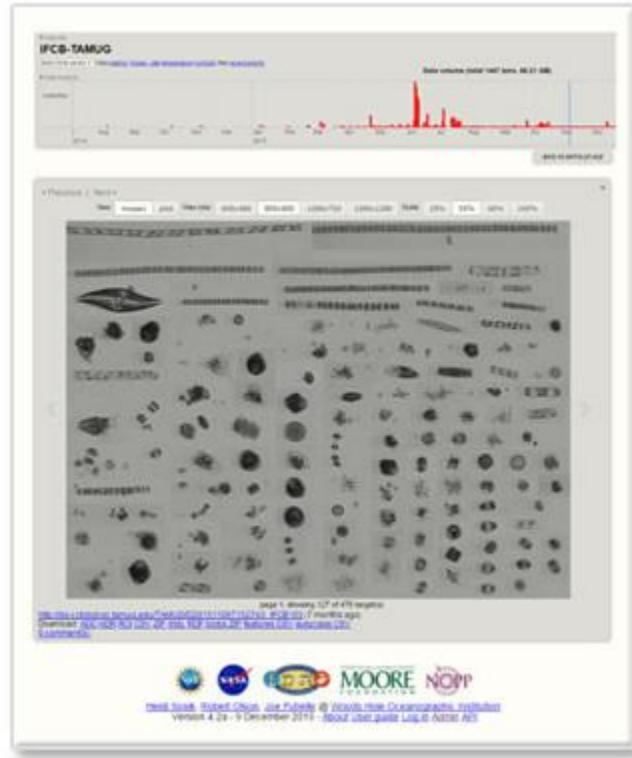
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Some but not all of these are known to cause harmful algal blooms. Our Imaging FlowCytobot is used to provide, in near real time, detection of harmful algal blooms at the entrance to Galveston Bay, giving state officials more time to protect fisheries and consumers. *To view samples taken from the TAMUG daily sampling station on our dashboard, click the image below:*



(<http://dq-cytobot-pc.tamug.edu/TAMUG>)

We report HAB blooms to Texas Department of State Health Services. In order to raise awareness on a national level, we also report to the Center for Disease Control's (CDC) One Health Harmful Algal Bloom System (OHHABS)

<https://www.cdc.gov/habs/ohhabs.html>. This system

collects environmental and illness data related to harmful algal blooms. To report blue-green algae blooms, CyanoTRACKER [www.cyanotracker.uga.edu](http://www.cyanotracker.uga.edu) allows individuals to take pictures and report blooms in local area.

## Plan Relevance

The GBEP identified an “examination of the impacts of freshwater inflow and bay circulation” as a priority area in its comprehensive conservation management action plan. Specifically *to ensure beneficial freshwater inflows necessary for a salinity, nutrient and sediment loading regime adequate to maintain productivity of economically important and ecologically characteristic species in Galveston Bay* (GBEP 1994). More than two decades later, the major gap in our knowledge base to address present and future concerns is a clear understanding of the downstream ecological impacts of changes to freshwater inflows and modes of nutrient loading on the estuary.

## Partners:

This work would not be possible without the support and contributions from many stakeholders including but not limited to TCEQ, TWDB, TWCA, TPWD, GFB, HARC, HGAC, and others working in and around the bay.

## For more information:

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