

# Armand Bayou Watershed

The Armand Bayou Watershed drains to a small bayou near the western shore of Galveston Bay. Armand Bayou lies in the San Jacinto-Brazos Coastal Basin, an area of flat coastal plain between the San Jacinto and Brazos River basins.

The Bayou is a 290-acre tidal tributary of Clear Lake which is then a part of the Galveston Bay system. As the home of the Johnson Space Center, a major University, oil fields, a former air force base, residential areas, golf courses, a Coastal Preserve, and the Bayport Industrial Complex (the largest petrochemical complex in the western hemisphere), the watershed is unusually diverse in its uses. It also hosts a diverse ecosystem due to the convergence of three distinct habitats: Southern Evergreen Forest, Gulf Coast Prairie, and Tidal Salt Marsh.

## History

The first humans arrived in the bayou area seven to eight thousand years ago. They were nomadic Native Americans – Karankawa, Attakapa, and Cohuiletan Indian tribes. Approximately twenty Indian sites known as Middens (Indian waste sites) have been found along the Bayou. The area is listed on the National Register of Historic Places as the "Armand Bayou Archeological District."

The bayou ecosystem saw the arrival of European settlers in the 1800's. They brought with them the plow and crops such as sugar cane, vegetables, fruits, and trees. The land surrounding the bayou remained privately owned for almost 100 years – leaving the bayou accessible only by boat.

Since the 1960's, the area has changed considerably with the development of Clear Lake City, NASA, and the annexation of most of the bayou area by the City of Pasadena. In the 1970's, the famed Houston naturalist and curator of the Burke-Baker Planetarium, Armand Yramategui, was interested in providing open space in Harris County for the enjoyment of future generations. After Yramategui's untimely death, friends continued his efforts and acquired some 2,100 acres of land situated on what was then called Middle Bayou.

Their successful project ultimately led to the formation of Armand Bayou Nature Center and the renaming of the bayou. The Armand Bayou Park and Nature Center was created with 2119 acres, preserving some of the natural characteristics of the lower end of the bayou. In 1990, Armand Bayou was designated as a Texas Coastal Preserve – the country's largest urban preserve.

**Length**  
14 Miles • 60 Sq. Miles

**Rainfall**  
35" to 70" • Average 48"

**Elevation**  
0'-35'

**Soils**  
Poorly Drained,  
Very Slow Permeable,  
Clayey and/or Loamy Soils

**Major Ecoregion**  
Western Gulf Coastal Plains

**Terrain**  
Flat Coastal Plain

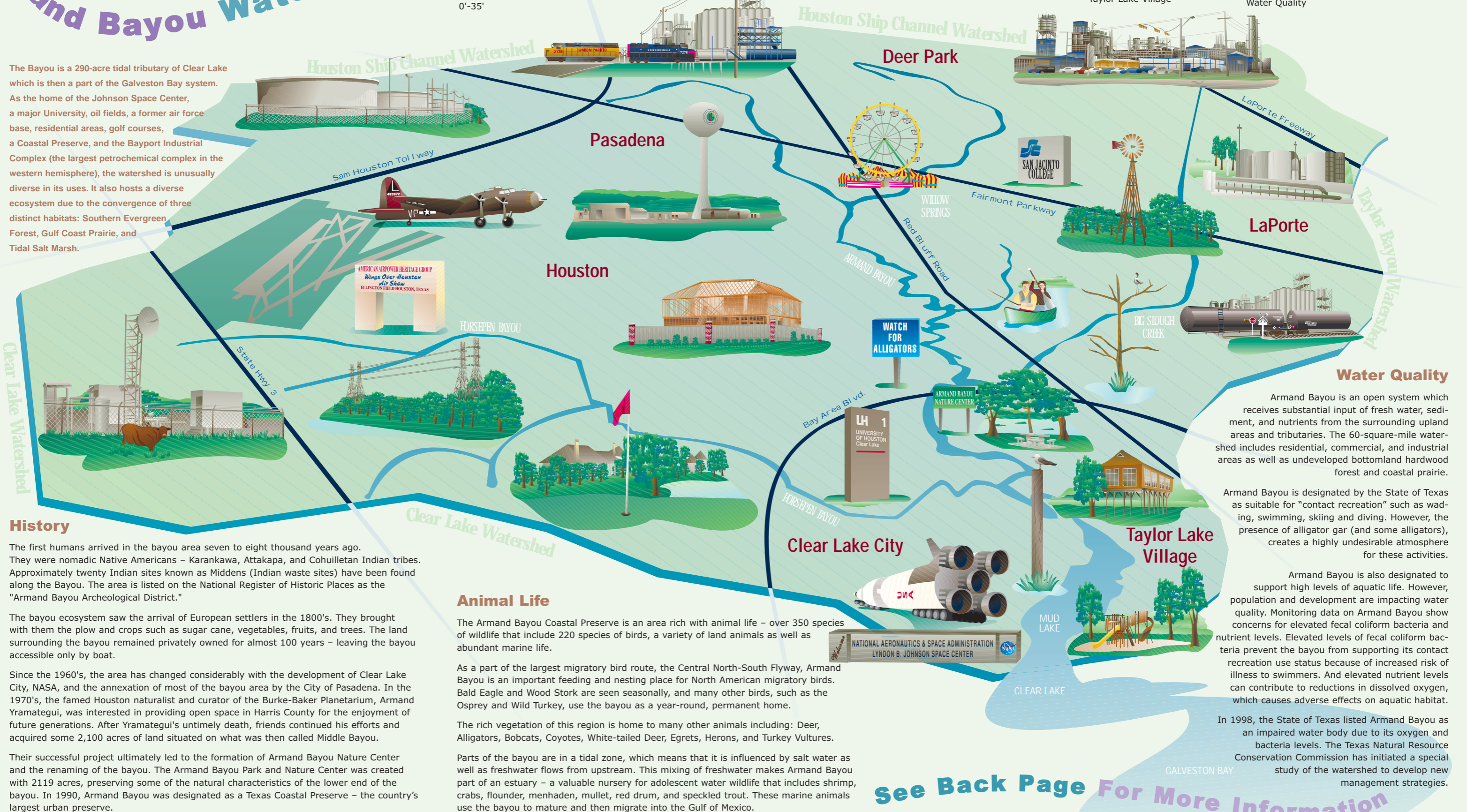
**Tributaries**  
Horsepen Bayou  
Big Island Slough  
Spring Gully  
Willow Springs Gully

**Cities Within Watershed**  
LaPorte  
Deer Park  
Pasadena  
Houston  
Taylor Lake Village

**Aquifers**  
Gulf Coast

**Issues**  
Ongoing Development  
Habitat Loss  
Water Quality

## Watershed Profile



## Water Quality

Armand Bayou is an open system which receives substantial input of fresh water, sediment, and nutrients from the surrounding upland areas and tributaries. The 60-square-mile watershed includes residential, commercial, and industrial areas as well as undeveloped bottomland hardwood forest and coastal prairie.

Armand Bayou is designated by the State of Texas as suitable for "contact recreation" such as wading, swimming, skiing and diving. However, the presence of alligator gar (and some alligators), creates a highly undesirable atmosphere for these activities.

Armand Bayou is also designated to support high levels of aquatic life. However, population and development are impacting water quality. Monitoring data on Armand Bayou show concerns for elevated fecal coliform bacteria and nutrient levels. Elevated levels of fecal coliform bacteria prevent the bayou from supporting its contact recreation use status because of increased risk of illness to swimmers. And elevated nutrient levels can contribute to reductions in dissolved oxygen, which causes adverse effects on aquatic habitat.

In 1998, the State of Texas listed Armand Bayou as an impaired water body due to its oxygen and bacteria levels. The Texas Natural Resource Conservation Commission has initiated a special study of the watershed to develop new management strategies.

## Animal Life

The Armand Bayou Coastal Preserve is an area rich with animal life – over 350 species of wildlife that include 220 species of birds, a variety of land animals as well as abundant marine life.

As a part of the largest migratory bird route, the Central North-South Flyway, Armand Bayou is an important feeding and nesting place for North American migratory birds. Bald Eagle and Wood Stork are seen seasonally, and many other birds, such as the Osprey and Wild Turkey, use the bayou as a year-round, permanent home.

The rich vegetation of this region is home to many other animals including: Deer, Alligators, Bobcats, Coyotes, White-tailed Deer, Egrets, Herons, and Turkey Vultures.

Parts of the bayou are in a tidal zone, which means that it is influenced by salt water as well as freshwater flows from upstream. This mixing of freshwater makes Armand Bayou part of an estuary – a valuable nursery for adolescent water wildlife that includes shrimp, crabs, flounder, menhaden, mullet, red drum, and speckled trout. These marine animals use the bayou to mature and then migrate into the Gulf of Mexico.

See Back Page For More Information

No matter where we live or work, we are always in a watershed – an area of land that drains to a particular creek, river, bayou or lake. As our population grows, so do the risks to our waterways from activities in the watershed. Understanding our role in watershed management is key to the protection of our waterways, floodplains, and drinking water, plus our recreational and fishing areas.

# Armand Bayou Watershed

## Subsidence

Over the last one hundred years, Armand Bayou has changed dramatically as a result of human activity. Subsidence, a lowering of the land surface caused by rapid and wide spread groundwater and petroleum withdrawals, has virtually eliminated the coastal marshes, extended the zone of tidal influence, and changed the lower reach of the bayou from a fresh to salty water environment. Since the early 1900's, the watershed has subsided between 5-7 feet causing Mud Lake to enlarge more than three times its size. Several hundred acres of wetlands have been lost along the bayou, accounting for a 91.3% reduction in wetland acreage. Bare trees trunks along the banks of the Bayou are further evidence of human influence. Fortunately, subsidence is projected to be less than an additional foot by the year 2020.

## A Texas Coastal Preserve

With the support of local officials and the public, Armand Bayou has been designated a Texas Coastal Preserve by the Texas Parks and Wildlife Department and the Texas General Land Office. As a permanent preserve, the area receives protection of water quality, living resources, and human health – making it one of the last undisturbed bayous in the Houston area. In the waters that flow through Bay Area Park and the Armand Bayou Nature Center, motorized boat traffic is not allowed, making it a premier site for canoeing and flat water kayaking.

## Contacts

For more information about your watershed, please contact the following:

### Armand Bayou Nature Center

8500 Bay Area Blvd. (7 mi. east of I-45.)  
Weekend visitors may enjoy demonstrations and guided walks.  
(281) 474-2551  
[www.ghg.net/abnc/](http://www.ghg.net/abnc/)

### Galveston Bay Estuary Program

(281) 332-9937  
[www.epa.gov/owow/estuaries/gb.htm](http://www.epa.gov/owow/estuaries/gb.htm)

### Galveston Bay Foundation

(281) 332-3381  
[www.galvbay.org](http://www.galvbay.org)

### Houston-Galveston Area Council

(713) 627-3200  
[www.hgac.cog.tx.us](http://www.hgac.cog.tx.us)

### Texas Natural Resource Conservation Commission

(512) 239-4491  
[www.tnrcc.state.tx.us](http://www.tnrcc.state.tx.us)

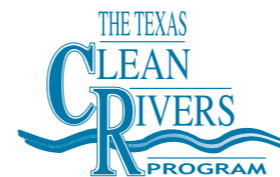
### Texas Parks & Wildlife Department

(800) 792-1112  
[www.tpwd.state.tx.us/](http://www.tpwd.state.tx.us/)



HOUSTON-GALVESTON AREA COUNCIL

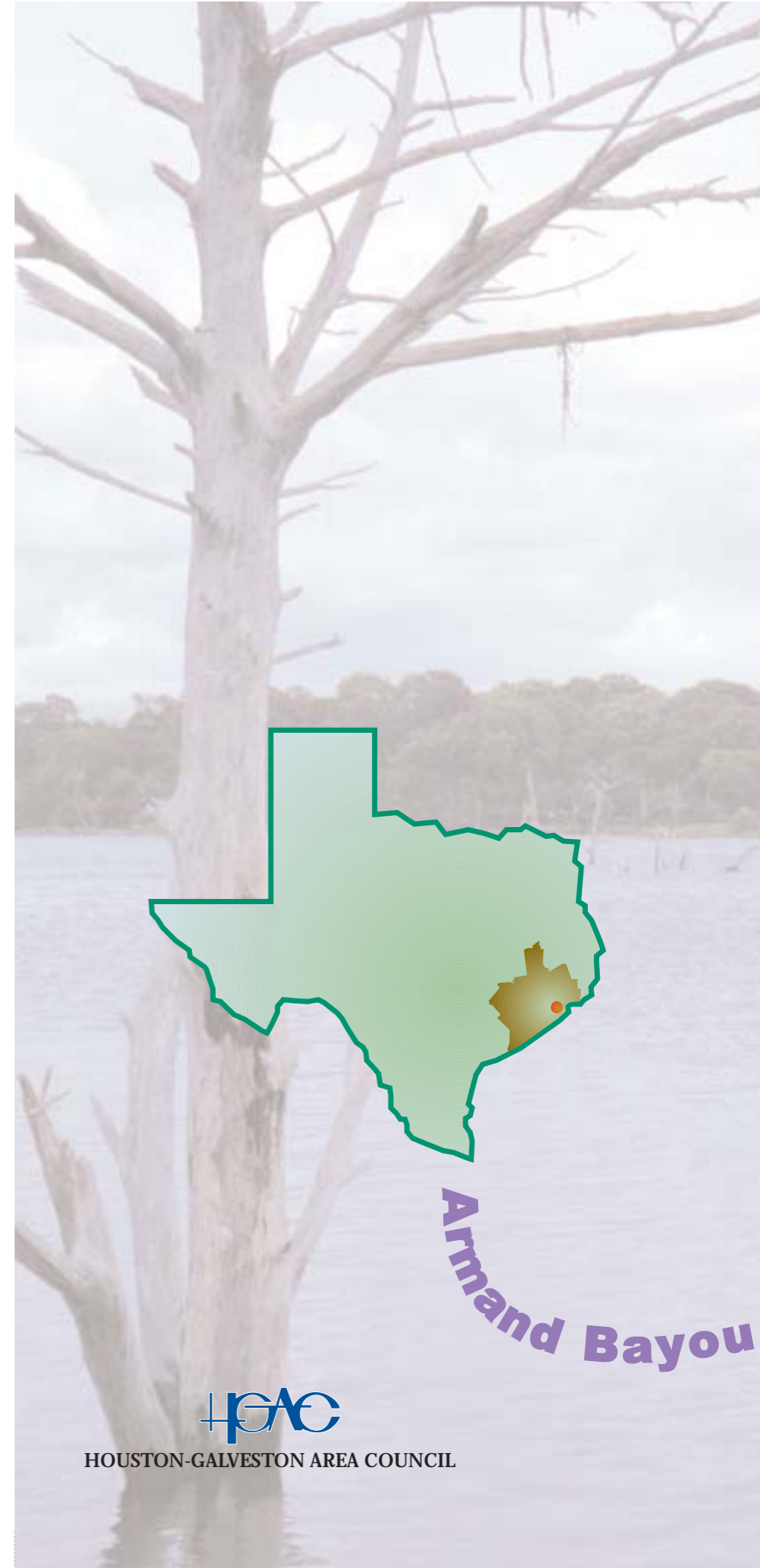
*A voluntary association of local governments in the 13-county Gulf Coast Planning Region.*



*A partnership between the Texas Natural Resource Conservation Commission, regional water quality authorities...and you!*



*Prepared in cooperation with and financed primarily by the Texas Natural Resource Conservation Commission.*



HOUSTON-GALVESTON AREA COUNCIL

Armand Bayou