Dickinson Bayou *watershed*

The Dickinson Bayou watershed, a natural basin of land, collects water and drains it into tributary streams, then into Dickinson Bayou, the main stream of the watershed. It is located within the San Jacinto-Brazos Coastal Basin, to the southeast of Houston and west of Galveston Bay. The Dickinson Bayou watershed covers a total of approximately 63,830 acres or 99.7 square miles and is elongated in shape, with a length of 22 miles from west to east. The maximum width of the watershed is approximately 7 miles. Water falling within this area eventually makes its way into Dickinson Bayou.

The bayou begins near the town of Alvin in Brazoria County as an intermittent stream and flows easterly through flat to rolling prairies in Galveston County approximately 24 miles. The water collected by the bayou flows into Dickinson Bay, a secondary bay of Galveston Bay. Cat's Point, April Fool Point, and Shell Island bound the roughly circular bay just over a mile across.

About 55% of the watershed is within the 100-year flood plain (a flood plain based on a 1-percent chance of flooding in any given year). Adjoining watersheds include Clear Creek to the north, Mustang Bayou, Halls Bayou, Highland Bayou, and Moses Bayou to the south. Two major irrigation canals, the Gulf Coast Water Authority's American Canal and Galveston System cross the watershed.

Galveston County Parks Department
4102 Main St. (FM 519)
La Marque, TX 77568

Contacts

The aim of this publication is to heighten awareness of the impact each and every citizen has on the watershed where they live. Since the Dickinson Bayou watershed impacts Galveston Bay, it is important for each individual, community, and business to adhere to the priorities of *The Galveston Bay Plan*. For meeting the requirements of stormwater management, this publication provides public outreach and education. Galveston County has shown leadership in these efforts. The publication is made possible from a grant from Galveston Bay Estuary Program to Galveston County Parks Department. For more information on your watershed, please contact the following:

Galveston County Parks Department
(409) 934-8100 • www.galvestonparks-seniors.org

Galveston Bay Estuary Program
(281) 332-9937 • http://gbep.state.tx.us

Houston-Galveston Area Council
(713) 627-3200 • www.h-gac.com

Texas Commission on Environmental Quality
Region 12-Houston Office
(713) 767-3500 • www.tceq.state.tx.us

Galveston County Health District
(409) 938-2314 • www.gchd.org

Galveston County Extension Office
(281) 534-3413 • http://tevas-sea-grant.tamu.edu

Texas Cooperative Extension
Texas Coastal Watershed Program
(281) 333-9216 • www.urban-nature.org

Keep Dickinson Beautiful
(281) 337-6293 • www.ci.dickinson.tx.us

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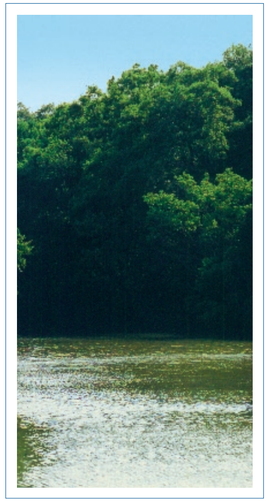


Dickinson Bayou *watershed*

No matter where we live, where we work, WE ARE ALWAYS IN A WATERSHED

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.

History and Development

Dickinson, with its population of approximately 18,500, is the major city within the Dickinson Bayou watershed. The city was named for John Dickinson, a Texas Revolutionary hero and one of the "old 300" settlers of Austin's original colony. Early settlers included Alexander Farmer, Herman Benson, and General E. B. Nichols. The Nichols summer home built in 1857 still stands. Dickinson's early economy was based on cattle production and agriculture. Italian immigrants and African-American families contributed to the success of the fruit and vegetable truck farming from the 1890s into the 1930s. Once known as the "Strawberry Capital of the World", Dickinson continued to celebrate the strawberry season with a festival each year well into the late 1990s.

Within this watershed the major development is concentrated in and around the cities of Dickinson and League City and along the Interstate 45 corridor. The natural Dickinson Bayou watershed includes the entire city of Dickinson, Algoa, and portions of the cities of Alvin, Friendswood, League City, Santa Fe, and Texas City. The remainder of the area is rural and undeveloped. Commercial development is light to medium industrial and office warehouses along with retail merchandizing. Reliant Centerpoint's H. P. Robinson generating plant is located along State Highway 146, along with several commercial fishing operations, and similar uses. In the western portion of the watershed it is still predominantly agricultural uses. The watershed has much potential for growth, which is recently accelerating due to the rapid development of neighboring League City.

Monitoring Agencies

Galveston County Health District

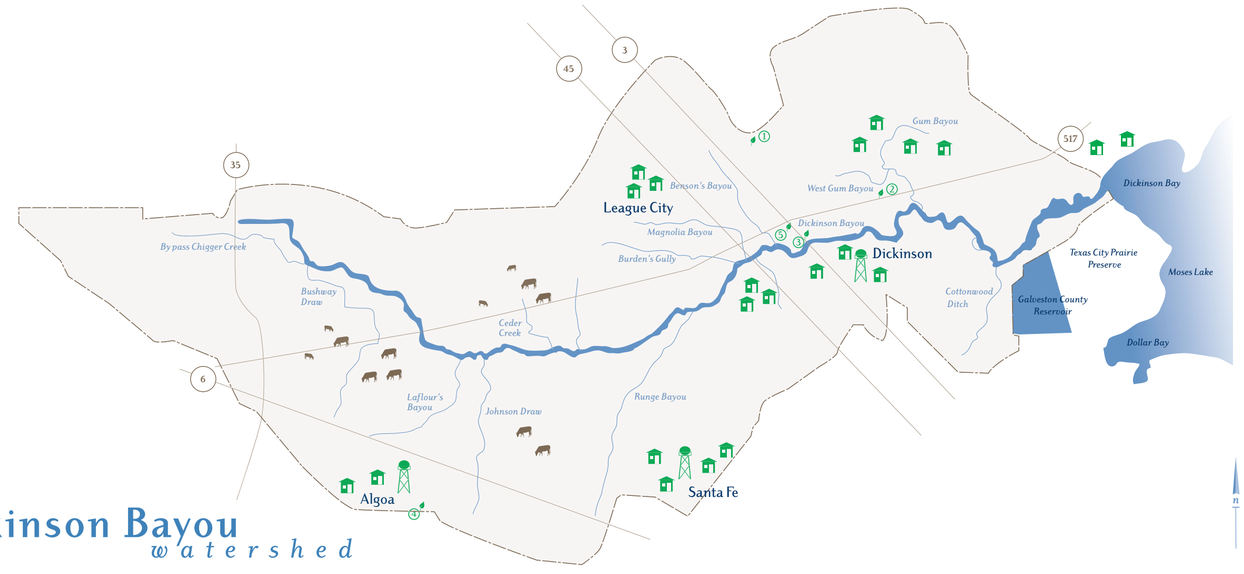
Uses Contact recreation High Quality Aquatic Habitat Contact recreation

Water Quality

Dickinson Bayou Above Tidal. This portion of the watershed is listed as impaired for high bacteria levels. Other concerns include low dissolved oxygen and high ammonia concentrations. It runs 7 miles and is freshwater.

Dickinson Bayou Tidal. The main stem of the bayou is listed as impaired for low dissolved oxygen occurrence. A special study conducted through the Clean Rivers Program revealed that tidal fluctuations allow surface water to flush and replenish itself with dissolved oxygen, while deep water is forced to remain in the same location and slush back and forth. It runs 15 miles and is brackish, a mix of salt and freshwater create an estuarine habitat.

The entire watershed is listed as impaired for high bacteria levels. Low levels of dissolved oxygen are found in Borden's Gully and Magnolia (Geisler) Bayou.



Dickinson Bayou provides many environmental and recreational benefits to the residents of its watershed and beyond.

Watershed Profile

Area
100 square miles

Rainfall
48" Average Annual

Geology
Sea-level fluctuations caused movement of the continental ice sheets during the Wisconsin Ice Age. Stored water released from the melting ice sheets increased sea levels depositing muddy sands and sediments in the region of the Dickinson Bay shoreline.

Soils
Somewhat poorly drained, very slowly permeable, clays and clay loams, loams and silt loams, and fine sandy loams

Major Ecoregion
Western Gulf Coastal Plain

Subregion
Gulf Coast Prairies and Marshes

Natural Region
Oak Prairies and Woods

Vegetation
Coastal Short Grass Prairie

Cities
Dickinson, Alvin, League City, Santa Fe, Algoa

Tributaries
Gum Bayou, Benson's Bayou, Magnolia (Geisler) Bayou, Borden's Gully, Cedar Creek, LaFlore's Bayou, Metzler Gully, Cottonwood Ditch, Johnson Draw, Francis Bayou, Runge Bayou, Old Runge Bayou, Thaman Draw, Bushway Draw

Aquifers
Gulf Coast

Issues
Flooding/high moisture retention at surface due to nature of soils. Water quality (pollutants/bacteria). Loss of native habitat. Erosion.

Legend

Watershed border

Park

Bayou

Recreation and Economic Opportunities

Within the watershed, approximately 60% of the land has been modified while 40% remains in a more natural state. A scenic 13.5 mile section of the bayou exists from Cemetery Road off FM 517 to State Highway 146. The bayou's upper reach is less suitable for recreational uses than the lower reach due to its narrow width and rather slow movement. Still, small motor boats and kayaks ply the waters of the upper reaches of the bayou while water skiers and pleasure craft share the waters with crabbers in the lower reaches. At least 24 species of migratory birds have been observed flying and resting in the Dickinson Bayou region. Bird watchers can expect to spot water pipit, short-billed marsh wren, swamp sparrow, mourning dove, snowy egret, belted kingfisher, white ibis, and double-crested cormorant, among other local species. A Texas General Land Office report noted 11 endangered species of migratory birds in the region including the peregrine falcon and bald eagle. Like many of the rivers and bayous flowing into Galveston Bay, boating activity is popular. Fishing guides are available for day trips into the bay or out into the Gulf of Mexico. Shrimp boats dock just inside Dickinson Bay offering fresh catch in season. Dickinson Bay is within close proximity to the large oyster reefs of Galveston Bay.

Conservation and Education

The citizens of Dickinson who generate community support to clean up the bayou created Keep Dickinson Beautiful (KDB). KDB focuses on community pride and environmental awareness in hopes of changing the attitudes of children and adults on littering, greenspace maintenance and preservation. Various projects encourage people to reduce, reuse and recycle. The organization has been honored three separate times with Governor's Achievement Award. KDB's aim is to educate and involve citizens in preserving and maintaining an environment that will serve people and the environment well into the future. Volunteers and partnerships with other community organizations fulfill the goals through various events held in the community throughout the year. Events such as Pubic Lands Day, Trash Bash, Arbor Day, Dickinson Dump Day, and Texas Recycles Day bring both the awareness and challenge of maintaining a healthy watershed to the community. Students learn how they can contribute to being part of the solution rather than part of the problem in the annual Environmental Expo. KDB fosters the citizens of Dickinson in helping others and taking pride in the beauty of the community.

A team of wetland scientists, government agencies, private corporations, and citizen volunteers, led by the Galveston Bay Foundation, is restoring bird islands in Dickinson Bay. The project's goal is to replace a series of critical islands on the north side of the Dickinson Ship Channel lost through erosion caused by prolonged wave action and subsidence over the past six decades. Intertidal marsh habitat, colonial water bird roosting and nesting habitat, and oyster reefs are being created through this project. The Nature Conservancy's Texas City Prairie Preserve lies on the southeasterly shoreline of Dickinson Bay in the near vicinity of this island restoration. The islands will provide erosion protection for the shoreline of the prairie preserve. Two restricted islands will provide protected habitat for nesting birds. A general access island will provide recreational activities such as bird watching. Work is currently underway and expected to be completed in 2008. Each island is being constructed as funding becomes available. Clean clay is transported by barge to the island location, sculpted to slopes and elevations suitable for supporting vegetation. Shell hash is then deposited on the islands to provide bird habitat. The islands are future planting sites for Marsh Mania, a volunteer-based wetlands restoration event. When the project is complete, 10-12 acres of intertidal marsh will be restored and 3 acres of oyster reef will be recreated benefiting commercial and recreational species of fish, shrimp, and crabs.

Parks

Paul Hopkins County Park provides public access to Dickinson Bayou and one of its tributaries. Recent efforts by local citizens and the county parks department have brought major improvements to the park. The property around this park was historically restricted for exclusive residential use, creating a park like atmosphere well beyond the actual boundaries of the park. The surrounding areas retain many pines and post oaks among other native species of trees providing crucial habitat for birds, possum, squirrel and raccoons.

In the northeast portion of the watershed, Elva Lobit Park offers baseball and soccer fields along with picnic facilities. Families gather for sport events as well as outdoor cookouts.

Bayshore Park on Galveston Bay attracts various visitors. Wind surfing is a popular sport just off shore. Pelicans, both brown and the migratory American White, gather at the Spillway in the warmer water entering the bay from the generating plant's cooling facility. Medford Baseball Field is adjacent to this park.

Ray Holbrook Park on Gum Bayou offers girls softball fields and preserves crucial green space. Two boat ramps, one at Highway 3 and one at State Highway 146, provide access for recreational boating and sport fishing.

Runge Park is located in Santa Fe along the southern boundary of the watershed. Approximately 11 acres of parkland were given to the county in 1942. The park amenities include Little League and Pony Colt baseball fields, riding arenas, a community center, and an open air pavilion.