



the national wildlife federation's recommended projects **Galveston Bay**

THE GALVESTON BAY SYSTEM is the largest and most economically important estuary in the state and has been named "an estuary of national significance" by Congress. The bay is vast and varied, ranging from brackish bayous to tidal marshes, from oyster beds to mud flats. These diverse waters are also home to Atlantic croaker, flounder, spotted seatrout, and many other species of finfish. Nearly three hundred different kinds of birds have been recorded in the area around Galveston Bay.

The bay is surrounded by the Houston-Galveston area and is home to much of the nation's chemical production and refinery capacity. Water quality has improved since the passage of the Clean Water Act but remains a concern, largely due to urban runoff and industrial discharges and spills. Galveston Bay had long supported one of the nation's largest oyster fisheries, but the bay's oyster populations were significantly reduced by Hurricanes Ike and Harvey. The bay is also estimated to have lost approximately 35,000 acres of wetlands between 1953 and 1989. The bay's shallow waters are fed largely by the Trinity and San Jacinto rivers. The Trinity River contributes approximately half of the freshwater inflow to the bay, but this river is also one of the primary sources of water for the rapidly-growing Dallas, Fort Worth, and Houston metropolitan areas. The success of many necessary restoration projects such as oyster reef and marsh restoration—also depends on sustaining an appropriate balance of fresh and saltwater in Galveston Bay.

GALVESTON BAY Recommended Projects

COASTAL WETLANDSPierce Marsh Wetland Restoration

The Pierce Marsh complex covers 2,346 acres, owned jointly by Galveston Bay Foundation and The Nature Conservancy. The complex is located in close proximity to several Galveston County communities, including Bayou Vista, Tiki Island, Omega Bay, and Hitchcock. Since the late 1990s, several marsh restoration efforts have improved over 400 acres at the site. A 2016 project placed nearly 200,000 cubic yards of dredged material in the area, resulting in an area of approximately 70 acres available for wetland restoration. This project will build on the 2016 project, placing between 120,000 and 200,000 cubic yards of material and restoring 50 acres of intertidal wetlands.

OYSTER REEFS & SHORELINES Galveston Bay Oyster Reef Restoration and Enhancement

In 2008, sediment from Hurricane Ike destroyed up to 60 percent of the oyster reefs in Galveston Bay. In 2017, Hurricane Harvey's large influx of fresh water caused oyster mortality rates in the bay ranging from 50 to 100 percent. Galveston's East Bay was particularly badly affected by Hurricane Harvey.

This project will result in on-the-ground restoration of up to 400 acres of oyster reef in Galveston Bay. This project would build off of a NRDA study identifying the best locations and sizes for reef restoration as well as a small-scale 'source and sink' project funded by NFWF.

PROJECT COST: \$14,300,000 LEAD ORGANIZATION: TPWD PARTNERS: TGLO

Additional Benefits:

PROJECT COST: \$2,500,000

PARTNERS: TNC, TGLO, USAC

+ Potential population benefiting: 12,400

LEAD ORGANIZATION: Galveston Bay Foundation

- + Socially vulnerable population benefiting: 2,100
- + Critical facilities in vicinity: 1

Additional Benefits

+ Acres supporting recreational fishing: 400+

HABITAT PROTECTION Gordy Marsh Land Acquisition Project, Phase II

Less than one percent of the Chenier Plain's unique prairies and coastal wetlands remain in a pristine state. The Gordy Marsh project would protect 1,800 acres of wetlands and shoreline habitats, including 900 acres of some of the highest quality coastal wetlands remaining in Chambers County. The project would also protect 400 acres of additional prairie and wetlands. An erosion control breakwater would establish marsh habitats along Trinity Bay and would protect 2.2 miles of shoreline. This area has a gradual slope and is prime for marsh migration in response to forecasted local sea level rise.

PROJECT COST: \$9,400,000 LEAD ORGANIZATION: Galveston Bay Foundation PARTNERS: USFWS, NRCS, GBEP

HABITAT PROTECTION Coastal Heritage Preserve, Phase IV

This project would add 725 acres to the existing preserve and manage and restore 1,400 acres of coastal habitat on the reserve once the land is acquired. The land to be protected includes habitats that were once common on Galveston Island, such as oak mottes as well as dunes interspersed with palustrine and estuarine wetlands. This project would protect important habitats for fish and wildlife, buffer storm surge, and would benefit the economy by increasing wildlife viewing and recreational fishing opportunities.

PROJECT COST: \$28,200,000 LEAD ORGANIZATION: Artist Boat PARTNERS: USFWS, TPWD, GBEP, GBF, TGLO

Additional Benefits:

- + Potential population benefiting: 1,300
- + Area available for recreation: 725 acres
- + Critical facilities in vicinity: 2

Additional Benefits:

- + Socially vulnerable population: 3,900
- + Potential carbon storage: 4,176 tons CO2
- + Critical facilities in vicinity: 15



Our Approach to Project Evaluation

The National Wildlife Federation's Gulf of Mexico Restoration Program developed a science-based and systematic approach to evaluate estuarine restoration needs. This approach assesses critical stressors, identifies focal areas, determines restoration needs, and establishes restoration targets to make recommendations. The diagram below illustrates the application of this process for Galveston Bay and demonstrates the benefits that the suite of restoration projects could collectively achieve.





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