



# SHORELINE RESTORATION



Considered one of the most productive bird nesting islands on the Texas Coast and one of the few natural islands in West Galveston Bay, North Deer Island has experienced up to 10 feet of erosion per year. The erosion destroyed highly productive habitat for up to 30,000 nesting pairs using this island as well as nursery areas for commercially and recreationally important finfish and shellfish.

The 144-acre island is made up of upland rookery habitat and estuarine marsh. The young produced here are likely the birds that everyone sees wading in marshes and bayous throughout the Houston-Galveston area. Habitats like these are important economically: fish and wildlife resources contribute over \$8 billion annually to the Texas economy. These resources are also part of the coastal natural heritage and deserve consideration for their intrinsic value.

## THE NATIONAL ESTUARY PROGRAM IN ACTION

## Galveston Bay Estuary Program

Designated as a Gulf Ecological Management Site (GEMS) by the EPA's Gulf of Mexico Program, North Deer Island in West Galveston Bay is the most important colonial waterbird rookery island along the upper Texas coast.

In 2000, the Galveston Bay Estuary Program partnership, whose mission is to preserve the bay's economic and ecologic health, identified the erosion-protection project at North Deer Island as part of the region's habitat conservation goals. The project is also a key component of the

West Bay Conservation Corridor, where project partners involved have preserved 5,000 acres of coastal habitat and restored or enhanced over 900 acres of coastal wetlands.

Partners worked for eight years and in two phases to restore and protect North Deer Island's rapidly eroding shoreline and highly populated bird nesting habitat. Many challenges exacerbated the duration of the project. These included: limited funding; rising fuel and material costs; logistical challenges, such as avoiding im-

pacts to oyster reefs and archaeological sites and the discovery of unexpected soft sediments; and timing constraints, including short duration of funding sources and narrow construction windows to avoid disturbing nesting and rearing activities.

Despite the numerous hurdles, partners employed innovative, cost-saving techniques such as barging in 24,100 tons of limestone from a rock quarry in Missouri—using the Mississippi River and the Intracoastal Waterway as a route—to create 6,450

feet of stone breakwater and armor 1.7 miles of shoreline. The planning, engineering, and construction costs for the eight-year endeavor were over \$3.2 million dollars. The protection of this rookery island is one of several nationally recognized collaborative efforts to help conserve vital remaining habitats and restore lost habitats. By armoring the shoreline, upland nesting areas, wetlands, tidal flats, and lagoons were protected, and three priority bird species—the endangered Brown Pelican and threatened Reddish Egret and White-faced

Ibis, and 16 other bird species were conserved thanks to the partners' efforts. North Deer Island has also been extremely important to the recovery of the Brown Pelican in Galveston Bay. Based on a strong and healthy population, the U.S. Fish and Wildlife Service proposed removal of the Brown Pelican from the endangered species list.

The North Deer Island project won first place in the partnership category for the 2008 Gulf Guardian Award and received the 2008 Coastal America Part-

nership Award for outstanding efforts to restore and protect the coastal environment.

The large and diverse partnership includes, but is not limited to, the following: Audubon Texas, EcoNRG, EPA Gulf of Mexico Program, Houston Audubon Society, Harris & Eliza Kempner Fund, Meadows Foundation, Reliant Energy, Shell Marine – National Fish and Wildlife Foundation, Texas Commission of Environmental Quality–Galveston Bay Estuary Program, Texas General Land Office, Texas Parks and

Wildlife Department, and U.S. Fish and Wildlife Service.

Visit **[www.gbep.state.tx.us](http://www.gbep.state.tx.us)** to learn more about this and other GBEP efforts.

*EPA's National Estuary Program (NEP) is a unique and successful coastal watershed-based program established in 1987 under the Clean Water Act Amendments. The NEP involves the public and collaborates with partners to protect, restore, and maintain the water quality and ecological integrity of 28 estuaries of national signifi-*

*cance located in 18 coastal states and Puerto Rico.*

*For more information about the NEP go to [www.epa.gov/owow/estuaries](http://www.epa.gov/owow/estuaries).*



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