

## Case Study

application | **Shoreline Erosion**  
location | **Sundown Island- Matagorda, TX**  
product | **Geotubes® Containers**

job owner

**National Audubon Society**

**Texas Coastal Sanctuary**

engineer

**Formosa Plastics Co.**

contractor

**King Fisher Marine Services, Inc.**

TenCate™ develops and produces materials that function to increase performance, reduce costs and deliver measurable results by working with our customers to provide advanced solutions.

### THE CHALLENGE

Sundown Island Sanctuary, also called Bird island, is a low lying, 20-acre island constructed from dredged material in 1962. The site is located near where the Matagorda Ship Channel and the Gulf Intracoastal Waterway cross in Matagorda Bay, east of Port O'Connor and southeast of Port Lavaca, in Texas' Coastal Bend.

Bird Island is leased from the General Land Office and managed by the National Audubon's Society's Texas Coastal Sanctuaries program. The island is set aside as a sanctuary for many birds, common and endangered, including the Brown Pelican.

High velocity tidal current plus wave action from marine traffic was causing considerable shoreline erosion of beach area critical to some bird populations and diminishing the island's size.

### THE DESIGN

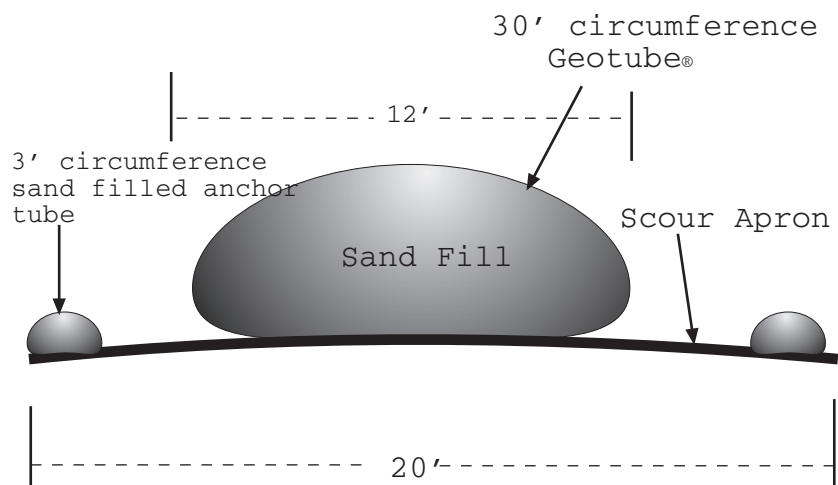
As part of their ongoing program for protecting and enriching the environment, Formosa Plastics Corporation's engineers, working with King Fisher Marine Services, Inc., Port Lavaca, Texas, designed an erosion protection plan utilizing three 5-foot high Geotube® structures in a finger jetty layout, with lengths of 250, 300 and 375 feet. Formosa Plastics funded construction, with King Fisher Marine as the installing contractor. Construction began in late February, 1995 and was completed in four days. The Geotube® containers were filled with dredged sand located offshore of Bird island.

### THE CONSTRUCTION

The 3 Geotube® structures were laid approximately 50 feet onto the beach in shallow trenches with the balance of the tube extending into the bay. Spacing between tubes was approximately 300 feet.

Material selected for use was high strength woven polypropylene fabric specially designed

for fabricating Geotube® structures. Using Geotube® technology, this erosion control plan was worked out in consultation with the Environmental Protection Agency, Texas Natural Resource Conservation Commission, Texas General Land Office, Texas Parks and Wildlife Department, Corps of Engineers, National Audubon Society and US Fish and Wildlife.



Aerial view of Matagorda Bay with Geotubes® containers in place at the west side of the island.

**THE PERFORMANCE**

To date, the project has been an unqualified success. Not only has erosion ceased, but in fact, beach accretion has occurred. Further tube protection at the northeast side of the island is being planned. As for the Geotube® structures, the birds love them!



Installation of Geotube® containers and scour apron.



Geotube® six months after installation.

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