What's Happening! AROUND THE BEND
UPDATES FROM THE COASTAL BEND BAYS & ESTUARIES PROGRAM
September 2024

Nueces Delta Shoreline Protection Efforts Continue

The marsh and estuary habitat along the Nueces Delta has been suffering impacts of coastal erosion and relative sea level rise, compounded with a lack of sediment input. The Texas Water Development Board published a study conducted by the University of Texas Marine Science Institute in 2019 that compared 2005 and 2016 imagery of the Nueces Delta which showed an erosion rate of 14.8ft/year. (Dunton et al. 2019)

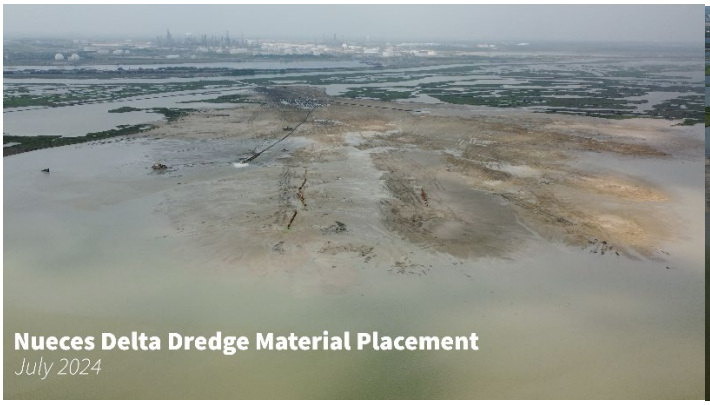
Nueces Delta marsh behind breakwater structure.

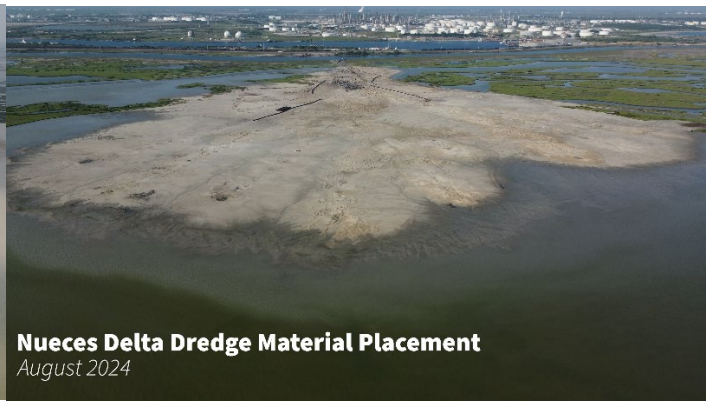
Like any natural system, the Nueces Delta relies on a fine balance of inputs and impacts to maintain functionality of the system. A delta is built when a river deposits sediment carried through the watershed ultimately building land masses before vegetation takes hold and the estuarine habitat develops. As the water from the river flows through the estuary, it also provides a freshwater influx that will help keep salinity levels in balance for plant and wildlife species that rely on the habitat.

3,600 ft breakwater structure protecting the Nueces Delta Shoreline.

CBBEP has been involved in several projects that are working to combat the marsh loss happening in the Nueces Delta. The Program completed over 3,600 linear feet of breakwater that will protect the Delta shoreline from wave impacts in November 2023. Recently, the US Army Core of Engineers oversaw the beneficial placement of around 1 million cubic yards of new work dredge material from the Corpus Christi Ship Channel Deepening Project to build up the shrinking land mass and introduce new sediment to the Delta. Most of the material was in place in the Delta before tropical storm Alberto brought 4 feet of storm surge to the Coastal Bend shortly followed by heavy rain fall.

CBBEP staff were recently able to visit the Nueces Delta to look at the dredge material placement site and see the impacts of the storm surge on the new breakwater structures. CBBEP will continue monitoring areas that received the new work dredge material for a year after construction is complete, focusing on collecting elevation and vegetation data such as percent coverage, species composition, and frequency of occurrence. This data will be used to inform an adaptive management plan to provide future guidance for the management of these areas. This plan will help answer questions like, “Do we need to go back and transplant vegetation?” or “Should sediment be moved to improve channelization?”





During the initial post storm site visit, the new material placement and breakwater structures fared well through the storm surge. You can also see two large industrial mats that washed up on top of the breakwater from an unknown location. To get an idea of how much power a storm surge can bring, these mats weigh approximately 2,300 pounds. While there is still work to be done, you can tell that the sediment placed before the storm withstood the storm surge, maintained its footprint, and effectively protected the marsh behind it.

Additional material will be placed by the USACE contractors this fall in the Nueces Delta with the goal of building back even more of the marsh habitat that has been lost over the years. CBBEP will be monitoring these placement areas to see how they change over time, and we will be ready to take any adaptive management steps that may be needed to help these areas become the thriving marsh habitat that was once part of the Nueces Delta shoreline.

Brown Pelicans perched on storm surge debris on breakwater structure.

The Coastal Bend Bays & Estuaries Program is a non-profit organization dedicated to protecting and restoring bays and estuaries in the 12-county region of Texas Coastal Bend. CBBEP is partially funded by the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency. For more information about the Coastal Bend Bays & Estuaries Program, contact Quinn Hendrick, 361-336-0305 or qhendrick@cbbep.org.
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