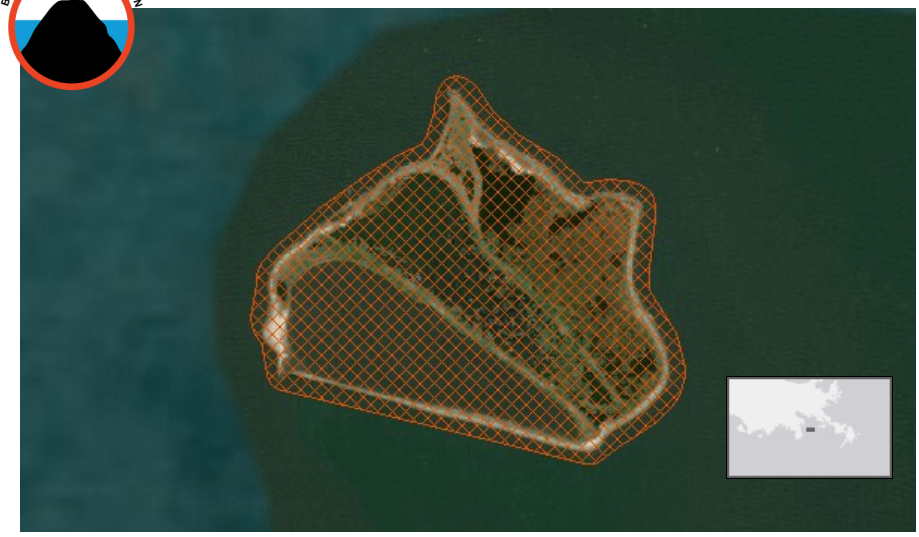
Queen Bess Island Restoration



Location

This project is located in Jefferson Parish approximately 2.5 miles northeast of Grand Isle.

Project Overview

This project, developed in partnership with the Louisiana Department of Wildlife and Fisheries, is designed to restore suitable colonial waterbird nesting and brood-rearing bird habitat on the island through the placement of dredged material, vegetative plantings, and limestone rip rap and aggregate. The project calls for the enhancement of the existing rock ring, the strategic placement of bird ramps around the island, and the installation of breakwaters. These project features are intended to protect the island and enhance its nesting and brooding habitat.

Issues Addressed

Observations from 2019 indicate that the number of Brown Pelican colonies in Louisiana may have decreased by more than 50% since 2010. Barataria Bay is home to a limited number of bird rookeries. Queen Bess Island is one of the largest and most productive rookeries in Louisiana for a number of colonial nesting bird species, including Brown Pelicans. Natural and manmade forces, including the *Deepwater Horizon (DWH)* oil spill, have contributed to the deterioration of this rookery.

Project Information

Project Type(s):

Barrier Island/Headland Restoration

Project ID:

BA-0202

Basins:

Barataria

Funding Program(s):

NRDA

Project Phase:

Engineering and Design

Parish(es):

Jefferson

Estimated Cost:

$18.7 million

Project Benefits

Restoration:

- 36 acres benefitted

coastal.la.gov

Historic Restoration

We have learned lessons from previous efforts to restore Queen Bess Island. In 1990, Cell 2 was created using fill dredged from the Barataria Bay Waterway Channel. That same sediment source was used in 1995 to created Cell 3 on the southwest side of the island. Cell 1 is part of the historical island and was nourished by the two projects that created Cells 2 and 3.

Funding and Agency Partnerships

Using $18.71 million in funds from the Deepwater Horizon oil spill Natural Resource Damages Assessment settlement administered by Louisiana's Trustee Implementation Group (LA TIG), the Queen Bess Island Restoration Project has increased the abundance and quality of nesting acreage on the island.

The U.S. Deptartment of the Interior (DOI) is the lead federal trustee for the Queen Bess Restoration Plan and Environmental Assessment. CPRA is the implementing trustee leading engineering and design, construction, and operations and maintenance, with the Louisiana Dept. of Wildlife & Fisheries (LDWF) as supporting partner. LDWF is the implementing trustee leading monitoring and adaptive management with CPRA as supporting partner. C.H. Fenstermaker was the design firm and Pontchartrain Partners, LLC, is the construction contractor (award value: $9.8 million).

Engineering and design were completed in under two years, from September 2017 through May 2019. Construction activities began in August 2019 and are being completed in time for the 2020 Brown Pelican nesting season that begins in mid-February. Planned operations, maintenance, monitoring, and adaptive management activities will continue for 10 years following construction.

Project Benefits

This project is intended to restore and protect bird habitat and populations that were injured by the *DWH* oil spill. Accordingly, the project to created almost 30 acres of Brown Pelican habitat and seven acres of tern and skimmer habitat.

Project Design

The project map on the following page shows the three designed fill cells. In yellow are the bird ramps that provide access to shallow waters, in the purple are breakwaters designed to protect the tidal exchange point in the north and provide calm waters for swimming in the south, and in blue is the rock containment dike meant to contain fill material and further protect the nesting grounds. The berm, shown in orange, adds extra strength to the rock dike at points of potential vulnerability. The limestone covering the sand fill in Cell 3 prevents vegetation growth, addressing an important nesting preference for terns and skimmers. The rest of the island supports for the nesting preferences of other colonial waterbirds, like Brown Pelicans, herons, and egrets.

Planned Post-Construction Activities

In addition to replenishing small limestone in future years, there will be supplemental plantings in the middle and lower elevations, re-establishment of the bird ramps as needed, selective degradation of sections of the rock dike to align with settled sand fill elevations, and repurposing of degraded rock dike material to support a maintenance lift of the rock breakwaters.

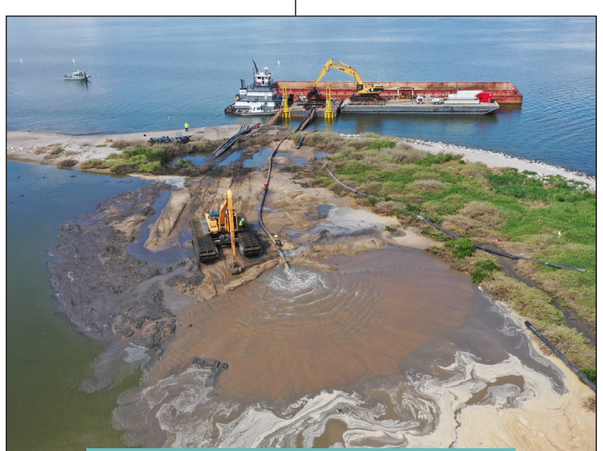
Monitoring will include regular nest aerial surveys and vegetative surveys. Additionally, LDWF marked 500 Brown Pelicans with large yellow leg bands this past nesting season. LDWF and its partners will conduct surveys next year to learn how these birds respond to the restoration. This will provide valuable information to future restoration efforts and inform how to properly manage this island into the future.

Queen Bess Island Restoration Project (BA-0202)

Project Design

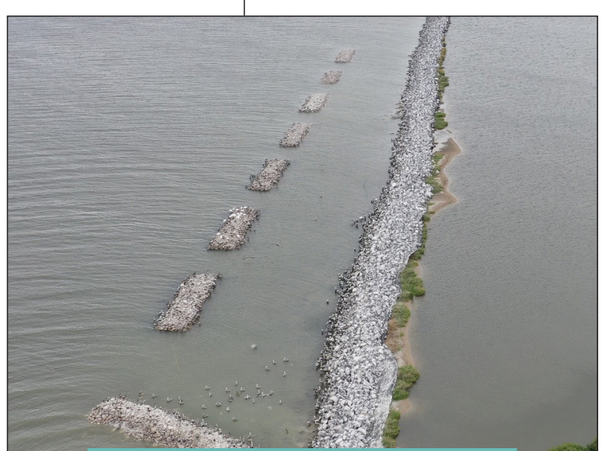
Queen Bess Island Restoration Project (BA-0202)

Construction Design



Mississippi River Sediment

150,000 cubic yards of Mississippi River Sediment
This fill material wasprocured from a sand pit near Belle Chasse and barged to the project site.



Breakwaters

11 South Side Breakwaters to provide a calm water area that is approximately 1,100 feet long and offset 75 feet from the island's rock dike.
1 North Side Breakwater to protect tidal exchange gap from erosion.

Vegetation

25,600 plants installed for habitat enhancement
Matrimony Vine, Groundsel Bush, and Marsh Elder

Rock Containment Dike

4,900 linear feet of enhanced rock containment dike surrounding the island