

Restoration Plan/Environmental Assessment for Rabbit Island

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Background/Objectives. Coastal Louisiana has been substantially impacted by a range of threats, both natural and human driven including coastal erosion, increased hurricanes/storm surge, climate change/sea-level rise, and industry, including Rabbit Island, the only significant brown pelican habitat in southwestern Louisiana. At the start of the planning process, most of Rabbit Island's remaining 200 acres were either open water or tidal wetlands that are at or slightly above sea level. This low elevation was subject to frequent inundation due to impacts by wind-driven waves and tidal effects and the island no longer provided the critical colonial-nesting waterbird habitat it once did. It remained relatively natural and scenic, and is accessible only from aircraft and boat. GHD, in collaboration with our partners, addressed the state's challenge to develop a Restoration Plan for Rabbit Island that evaluated restoration benefits as well as potential impacts to the environment and human health that could result from implementation of the Rabbit Island project design.

Approach/Activities. To restore and mitigate threats to birds, address habitat loss and alteration, and detrimental changes to bird habitat vegetative structure, the project was designed to raise the elevation of Rabbit Island with dredge fill placed in two partially contained fill area cells, for construction of optimal nesting and brooding habitat. An estimated 389,388 cubic yards were dredged and placed in these contained cells. Approximately 8,222 ft of containment dike was constructed around the island's perimeter. Containment dikes were approximately 25-ft wide with potential strategic dike gapping occurring after the fill material settled. Elevation range: 1 to 3.5 feet above MHW. Silt fences were installed, as necessary, to minimize deposition in the non-filled tidal pond and creek features (important foraging habitat). The shallow ponds provide habitat for various fish species and aquatic invertebrates. Based on the design the Restoration Plan determined that only short-term minor adverse impacts for natural resource areas would occur during project construction: affecting geology, soils, and topography; hydrology and water quality; habitats; and marine and estuarine fauna, essential fish habitat, and managed fish species, protected species, and oyster seed grounds. However, each of these natural resource areas would experience long-term benefits that support a sustainable project. Due to the remote location of the island away from any populated areas, no impact and/or threat to human health occurred; signage and protective observation/communications during construction were used to advise navigation, and a benefit to the public is a reduction of storm surge with the island as a buffer. All short-term impacts were minimized with the development and implementation of best management practices.

Results/Lessons Learned. The Restoration Plan was approved by the Coastal Protection and Restoration Authority of Louisiana in early 2020, and the total project cost of \$16.4 million was funded with settlement money from the Deepwater Horizon oil spill as the funding source that facilitated the desperately needed adaptation and resilience measures required to secure the future of Rabbit Island. With construction completed in October of 2021, Rabbit Island's first nesting season following restoration far exceeded expectations. While roughly 370 nests were anticipated for the 2021 season, Louisiana Department of Wildlife and Fisheries observed approximately 6,100 nests on the island, including 1,150 Brown Pelican nests. The restoration of this vital habitat is another example of combined efforts of state and federal agencies to increase resilience for all residents of coastal Louisiana – including nesting birds and other wildlife who call Rabbit Island home.