



Coastal Bend Bays & Estuaries Program, Inc.

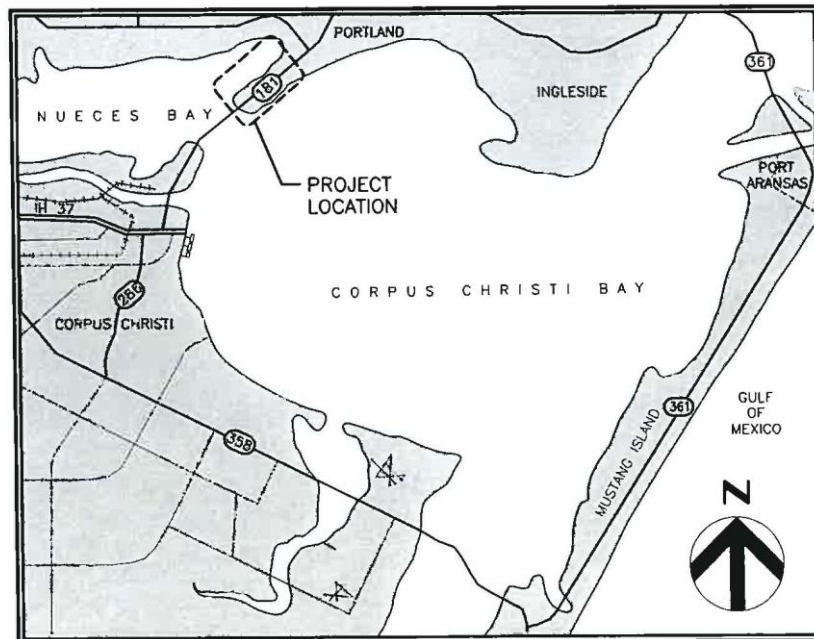
1305 N. Shoreline, Suite 205, Corpus Christi, Texas 78401 • 361-885-6202 • 361-881-5168 (fax)

Nueces Bay | Portland Causeway Marsh Restoration Phase 1: Planting Terraces and Protective Berms CBBEP Projects 0909, 0931, 1014, 1015

Final Report

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Prepared By to
Dustin Cravey, Project Manager
Coastal Bend Bays & Estuaries Program
1305 N Shoreline Blvd, Suite 205
Corpus Christi, TX 78401



Background

Nueces Bay Causeway supports the section of U.S. Highway 181 that crosses the mouth of Nueces Bay between Corpus Christi and Portland. Historically, this area consisted of significant amounts of crucial marsh habitat. Approximately 180 acres of marsh habitat was lost to dredging and construction of the causeway in the late 1940s, and approximately 160 acres of marsh has been lost to subsequent erosion. This assessment does not include impacts caused by the construction of the roadway or railroad that existed prior to the 1940s.

Based on a habitat assessment conducted in 2006, the general health of the remaining marsh complex is good, supporting a variety of fisheries (including crucial nursery habitat) and providing foraging and loafing opportunities for migratory colonial waterbirds. These opportunities provided to colonial waterbirds undoubtedly contribute to the success of nearby rookery islands that exhibit increasing nesting populations of crucial species of concern (including Black Skimmers, Brown Pelicans, Great Blue Herons, Great Egrets, Snowy Egrets, Tri-Colored Herons, and a variety of Terns). Low-marsh communities, dominated by smooth cordgrass (*Spartina alterniflora*), are much more ecologically productive than mid-marsh communities and adjacent uplands. Unfortunately, it is the low-marsh communities that have suffered the greatest loss – to the point where they are no longer the dominant community type in the area.

The marsh complex and adjacent uplands also serve as a buffer, protecting U.S. Highway 181 from erosion due to wave energy from Nueces and Corpus Christi bays. As stated earlier, approximately 160 acres of this protective buffer has been lost since the 1940s. The causeway also provides public access for bird watchers, wade-fishers and light watercraft. Currently, public access along the Nueces Bay side of the Portland Causeway is largely unmanaged, increasing the vulnerability of crucial habitat and adding to the effects of natural erosion.

Completed Goals (Phase 1)

Phase 1 of the Nueces Bay Causeway Marsh Restoration project was implemented using dedicated federal grant awards from Coastal Management Program (administered by Texas General Land Office) and American Reinvestment and Recovery Act (administered by U.S. Fish & Wildlife Service), as well as non-federal contributions from Texas Commission on Environmental Quality and various local governments and organizations.

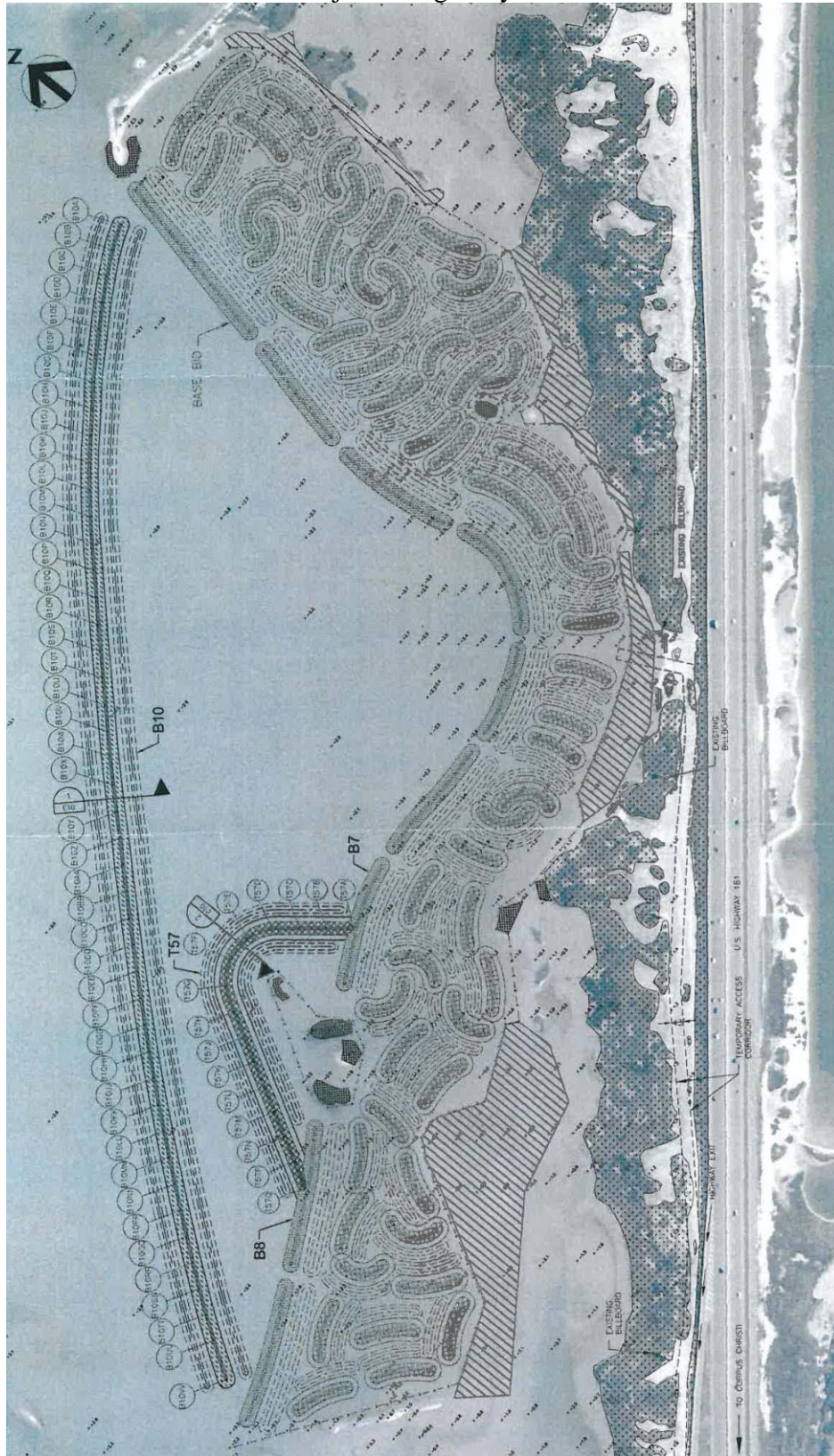
Achievements completed during Phase 1 include 1) restoration of 76 acres of marsh complex, consisting of approximately 25% elevated planting area and 75% open water, 2) construction of a protective outer-berm, providing another 12 acres of elevated planting areas, 3) planting of 31,000 *Spartina* plants throughout the newly created marsh, 4) creation of a 70-acre confined cell between the terraces and outer-berm, allowing for the future placement of dredged material to create additional marsh habitat, and 5) the (short-term) protection of 4,800 ft of shoreline adjacent to critical infrastructure (U.S. Highway 181).

On the following pages are a drawing of the Phase 1 project layout and various photographs taken during and after the completion of construction activities. Detailed design drawings and final survey results were submitted with previous progress reports.

Future Work (Phase 2)

Building upon the success of Phase 1, CBBEP has been able to secure another \$3.5 million for future work on the project. These funds will be used to 1) place dredged material in the 70-acre confined cell to create marsh complex with denser planting area, 2) construct a rock revetment along the outer-berm to provide long-term protection, 3) complete planting throughout the project site, and 4) make more robust improvements to managed public access along the shoreline adjacent to the project site.

Project Design Layout



Pre-Construction Site Assessment: 07/27/2010



Work on Protective Inner-Berm: 7/31/2010



Protective Inner-Berm: 8/24/2010



Work on Planting Terrace: 9/27/10



Planting Terrace: 9/27/10
(Note waterbirds loafing on the terrace.)



Cordgrass Planted on Protective Inner-Berm: 10/28/2010





Work on Protective Outer-Berm: 11/18/2010



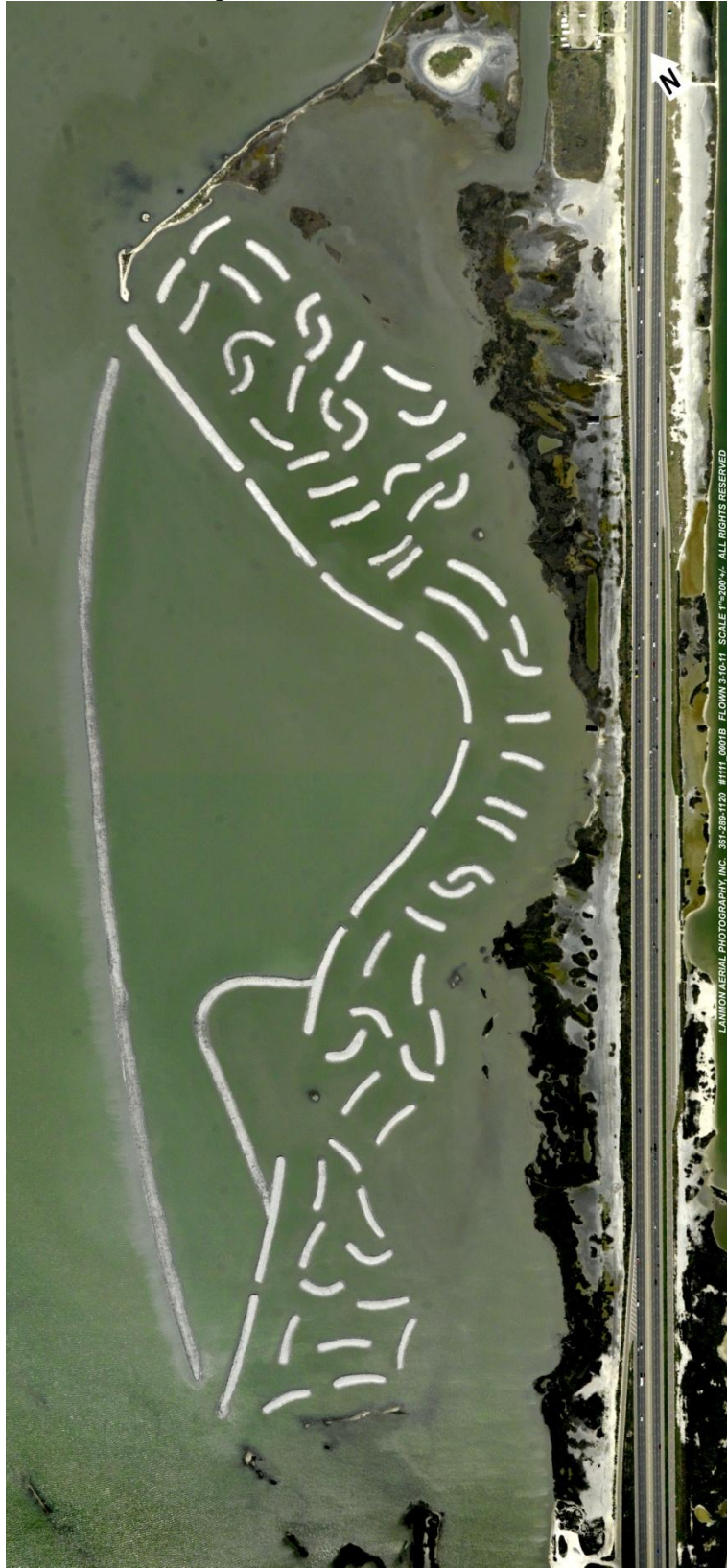
Protective Outer Berm: 01/07/2011



Waterbirds in Shallow Water Next to Planting Terrace: 01/07/2011



Vertical Aerial of Completed Terraces and Protective Berms: 03/06/11



Oblique Aerial of Completed Terraces and Protective Berms: 03/06/11

