

Texas Parks and Wildlife Department Restoration Projects Overview

This is not about beneficial use but restoration



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Graduated from Texas A&M University at Galveston in May 1992 with a B.S. in Marine Fisheries.

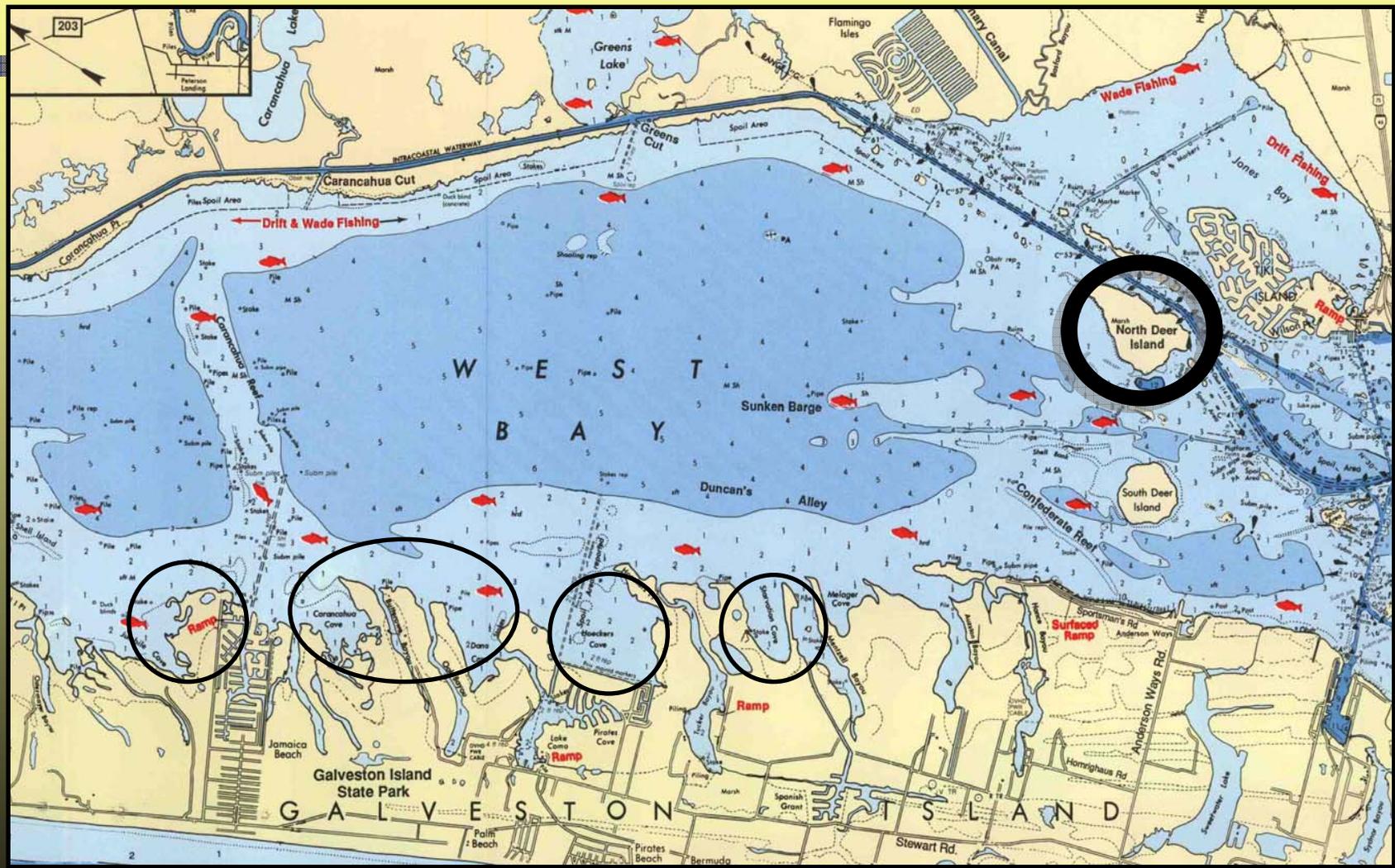
1993-1996. National Marine Fisheries Service at the Galveston Laboratory, Fisheries Management and Fisheries Ecology Divisions.

1996- present. Texas Parks and Wildlife Department, Resource Protection Division, as a Natural Resource Specialist conserving and restoring natural resources of the state of Texas.

Goals of Restoration

- Replace functions and values that have been lost
- Action in a geographic context – location
- Location choice should be guided to degraded sites
- BU can definitely be part of restoration
- Process should not be driven solely on the basis of productivity or a single group of organisms

North Deer Island Protection and Restoration Project



Project Goals and Facts

- To stop or slow shoreline erosion on North Deer Island
- Erosion has been measured up to 20 feet per year on the island
- North Deer Island is the largest and most important shorebird and wading bird rookery in the Galveston Bay System
- Up 30,000 pairs of breeding birds and 18 species have been counted utilizing the island
- Includes the endangered brown pelican and threatened white-faced ibis and reddish egrets

Initial Project Design



Marsh will be created inside
southern shoreline protection

Phase I Implementation/cost

- Partners- TPWD, GBEP, USFWS, TGLO, Houston Audubon, Reliant Energy
- Total Budget- \$920,000
- Project Engineer- URS Corporation
- Project Design- Combination of rock breakwater, rock armoring and rock groins
- Contractor- Bertucci Contracting

Final/Engineered Project Design

North Deer Island Protection and Restoration Project



100 0 100 200 Meters



Phase I Construction

- Planned to construct northeast quadrant and southwest quadrant
- Constructed southwest breakwater (4000 feet) and part of southeast breakwater (900 of 1800 feet)
- Change due to unexpected high bird nesting on northwest quadrant













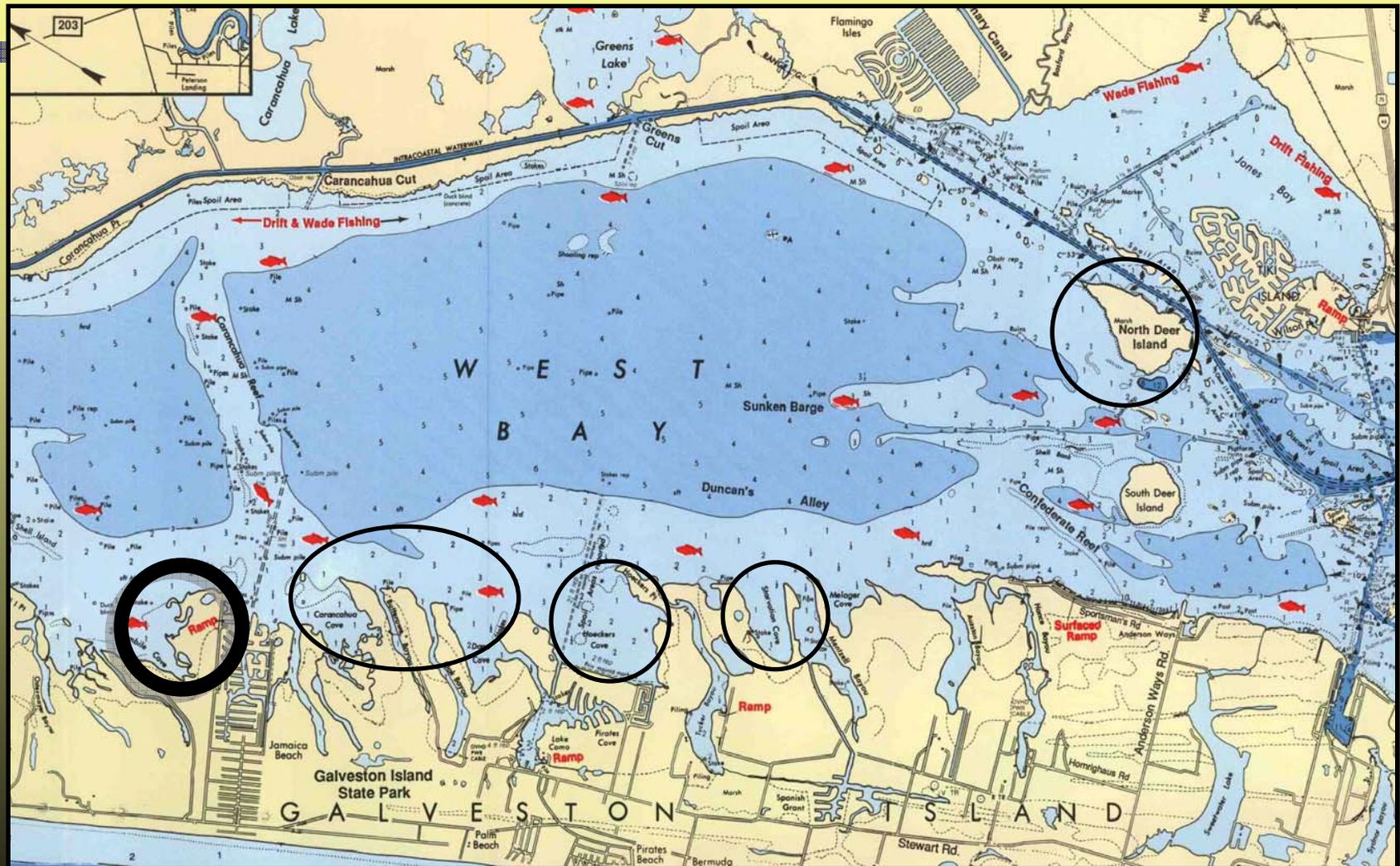
North Deer Island Protection and Restoration Project



100 0 100 200 Meters

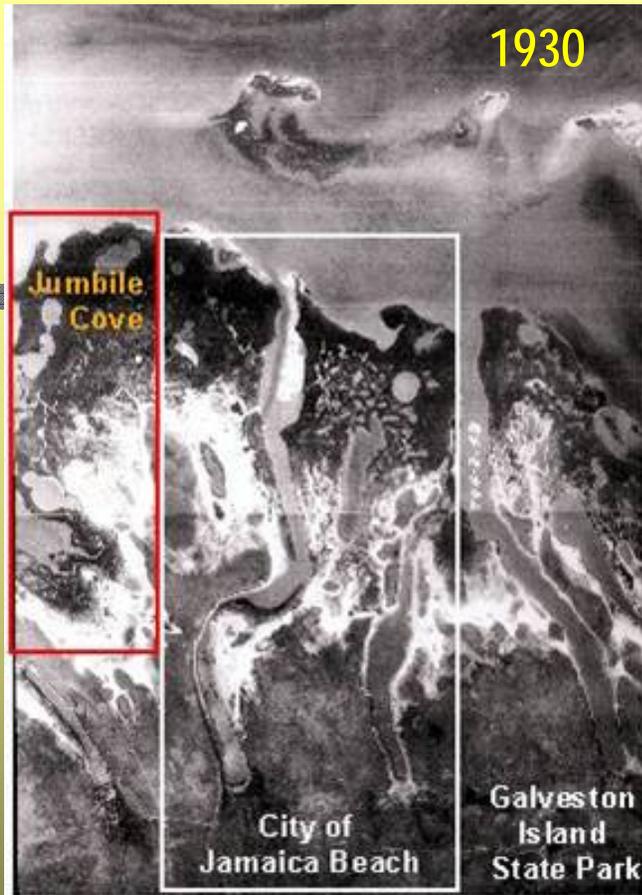


Jumbile Cove Wetland Protection and Restoration Project



Project Goals and Facts

- To slow or halt erosion in the Jumbile Cove marshes and restore intertidal marsh and bird nesting habitat



- 75 acres of intertidal marsh
- 56 acres of tidal flats
- 29 acres of lagoon/open water
- >24 acres coastal prairie



- 18 acres of tidal flats
- 116 acres of open water
- 15 acres coastal prairie
- 35 acres of intertidal marsh

Initial Project Design

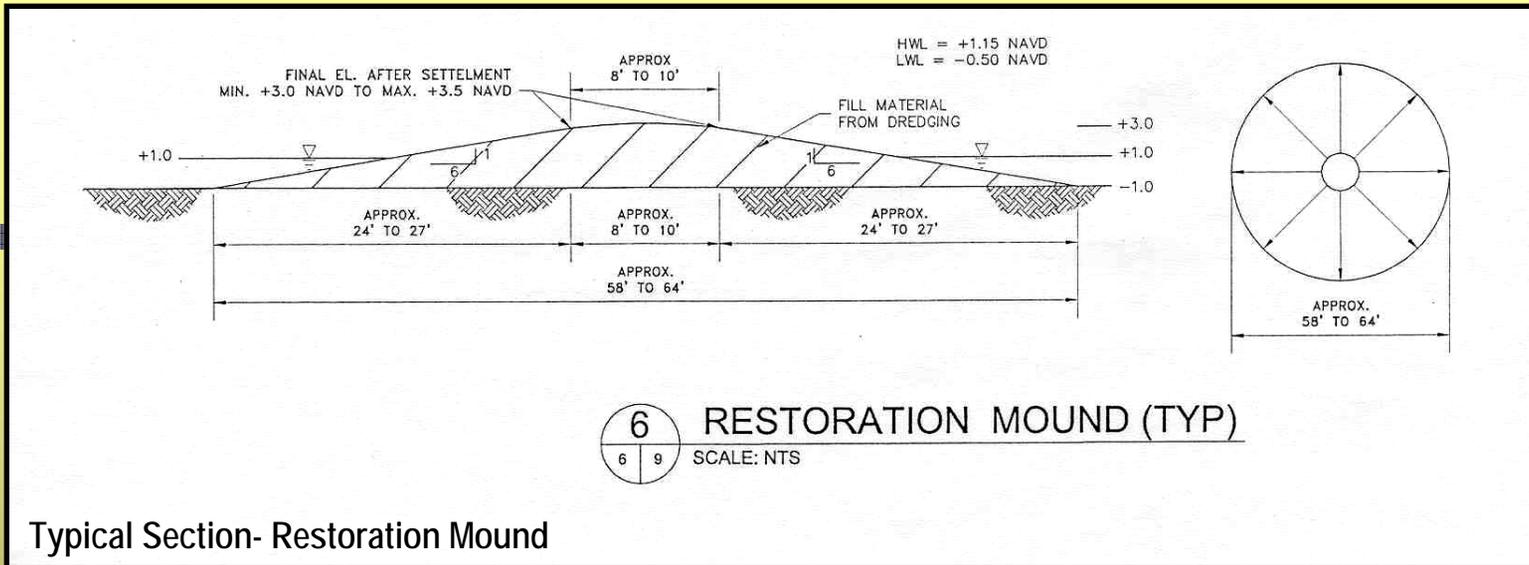
- Originally proposed as a terrace project with no breakwater
- Galveston Island SP terraces were showing signs of erosion
- Developed mound approach and geotextile breakwater

Phase I Implementation/cost

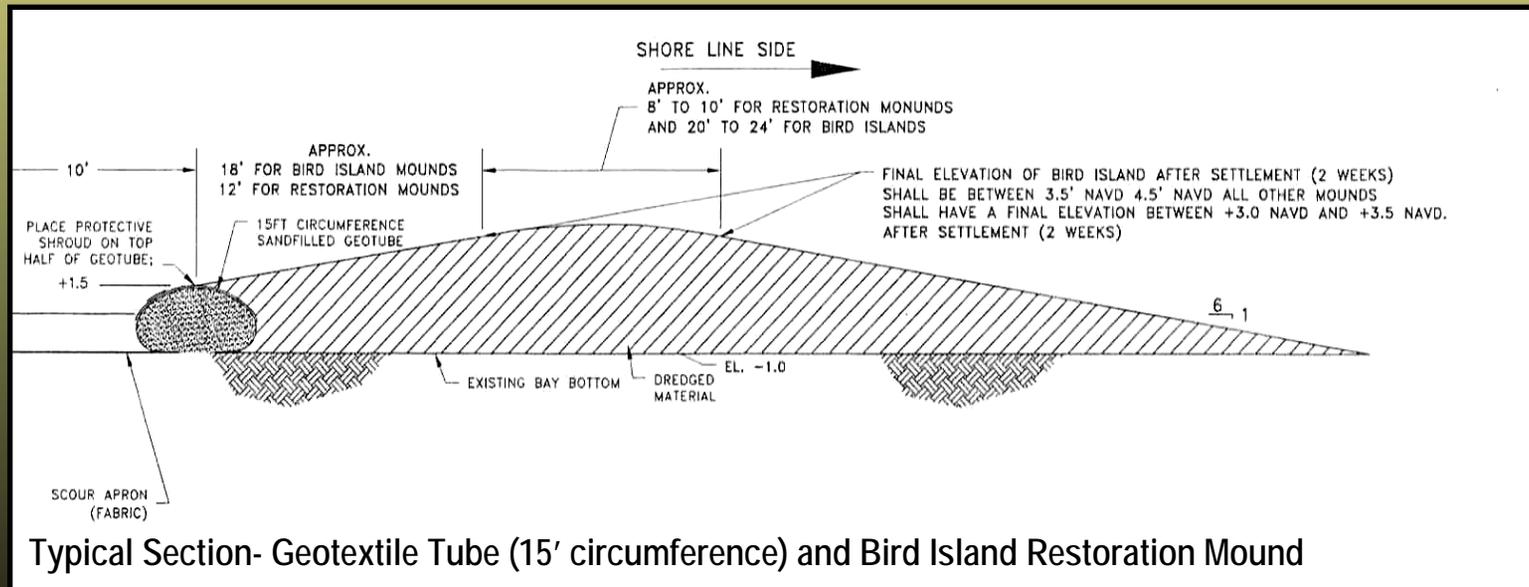
- Funding Partners- TPWD, GBEP, TGLO, USFWS, CWPPRA, Shell Marine Habitat Program, Reliant Energy, and U of H Clear Lake Environmental Institute
- Construction cost - \$480,043
- Engineering, surveying, and sediment analysis cost- \$54,890
- Project Engineer- Professional Engineering and Environmental Consultants or Marrero, LA
- Project Contractor- DRC, Inc.
- Project Sub-contractor- Five Star Dredging

Phase I Construction

- Construct 2,800' of geotextile tubes
- Construct 35 marsh mounds
- Construct 2 bird nesting mounds with fringe marsh



Typical Section- Restoration Mound



Typical Section- Geotextile Tube (15' circumference) and Bird Island Restoration Mound



Test Mound







October 17, 2002

Phase II Implementation/cost

- Funding Partners- TPWD, GBEP, TGLO, USFWS Coastal Program, NOAA Community Based Restoration Program
- Construction cost - \$215,105
- Engineering (and plants \$14,500) cost- \$48,500
- Project Engineer- Professional Engineering and Environmental Consultants or Marrero, LA
- Project Contractor- J & S Contractors Inc.
- Project Sub-contractor- Five Star Dredging

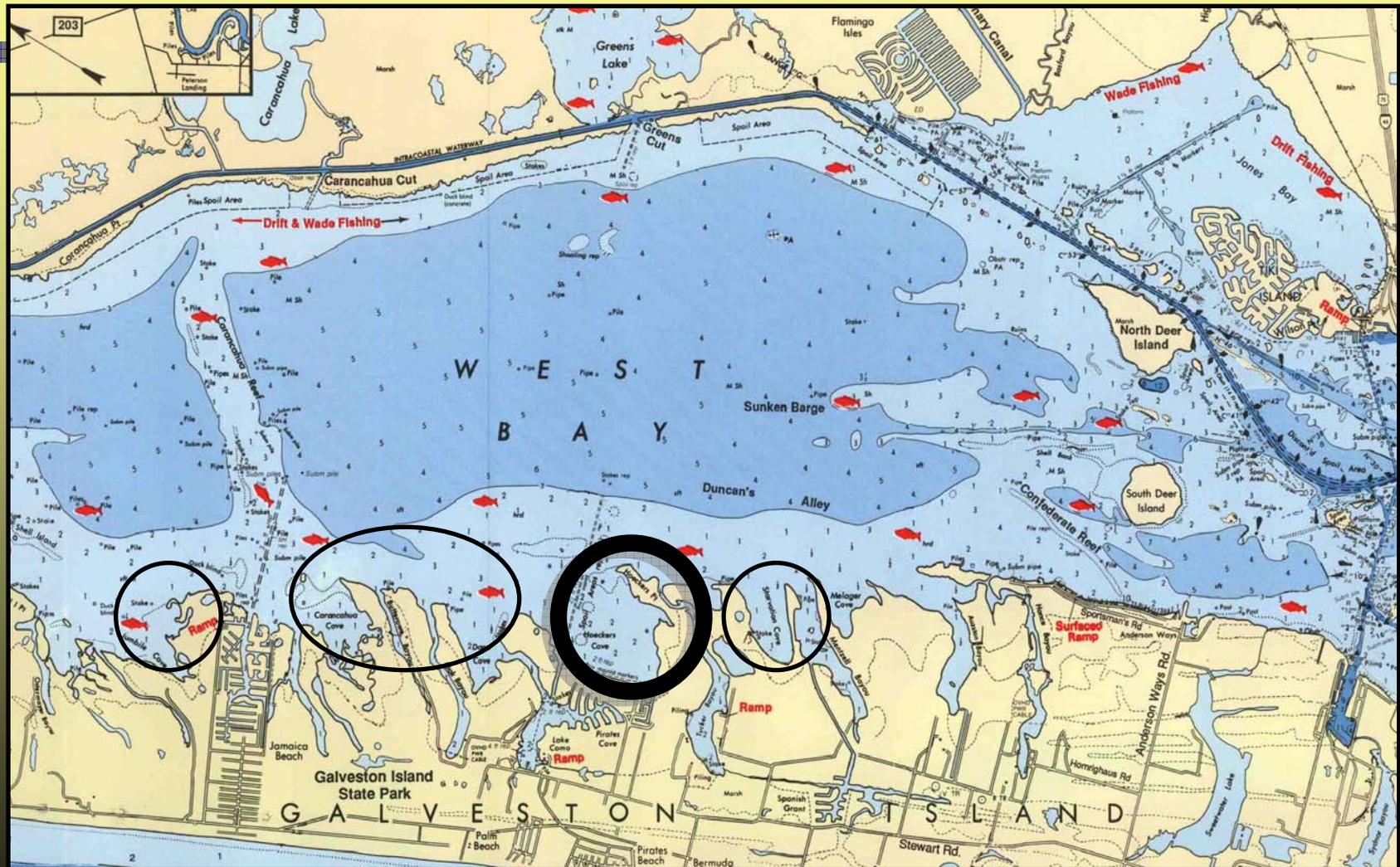
Phase II Construction

- Continue construction of marsh mound
- Constructed 66 marsh mounds





Delehide Cove Wetland Protection and Restoration Project





Project Goals and Facts

- To slow or halt erosion in the Delehide Cove marshes and to create 55 acres of salt marsh
- Erosion has been measured up to 200 feet between 1995 and 2003
- Approximately 200 acres of salt marsh and associated habitats will be protected
- Approximately 800 acres of estuarine and palustrine marsh were lost between 1956 and 1989

Project Implementation/cost

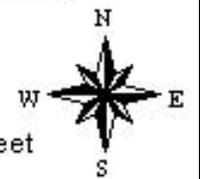
- Project Partners- TPWD, GBEP, TGLO, USFWS, GBF, Pirate's Cove Property Owners Association, Reliant Energy, NMFS
- Original Budget- \$1,899,827
- Final Budget- \$2,044,827
- Project Engineer- Shiner-Mosely and Associates
- Project Contractor- Southwind Construction



Area of Concern--10 feet wide



Approximate Location Of Geotube
2003 Shoreline
1995 Shoreline



Construction





Smooth cordgrass
germinating in dredged
material placement area



Virginia glasswort
germinating in dredged
material placement area



Completed breakwater
at low tide



Completed breakwater
at normal tide level



Planted marsh mounds
at low tide



Planted marsh mounds
at high tide

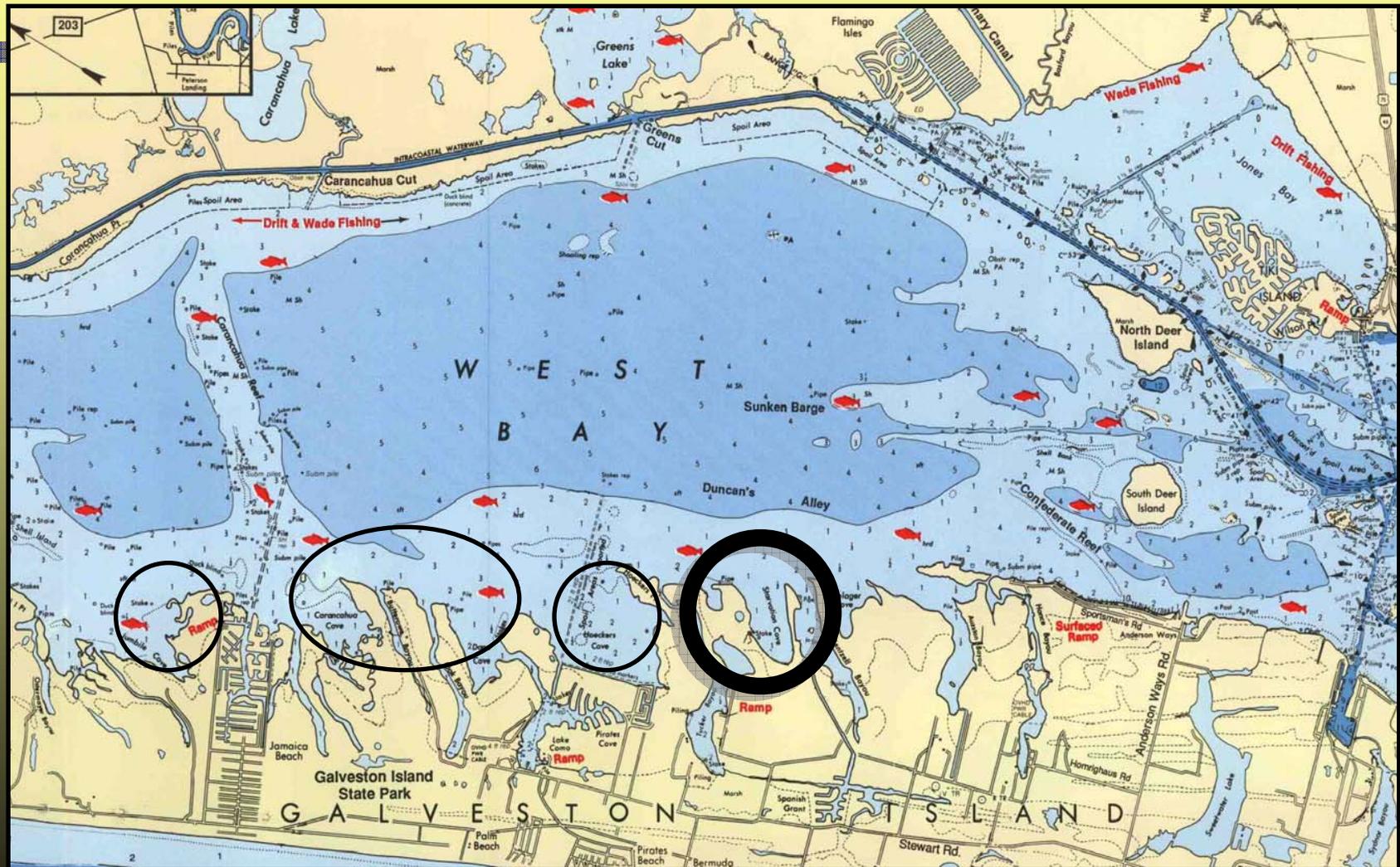






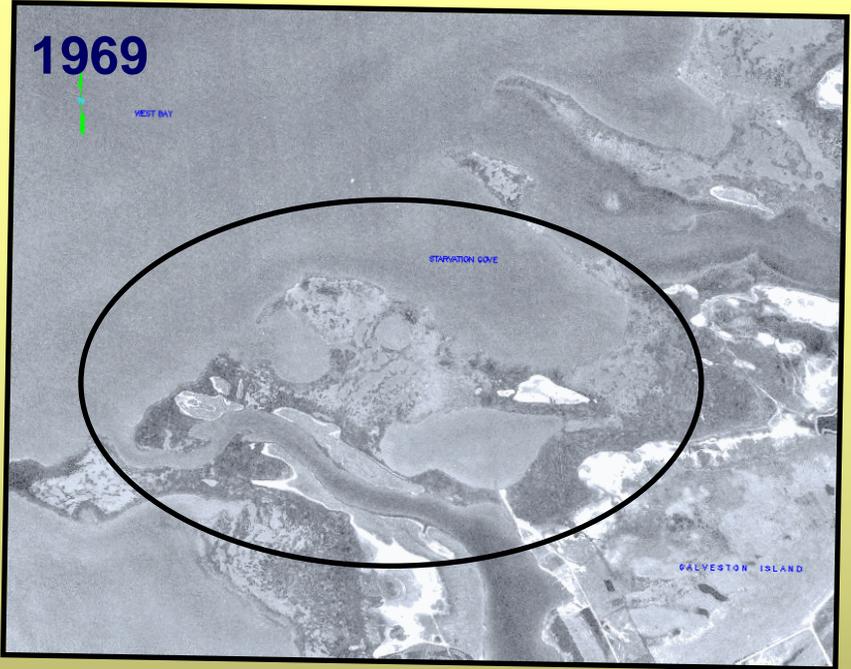
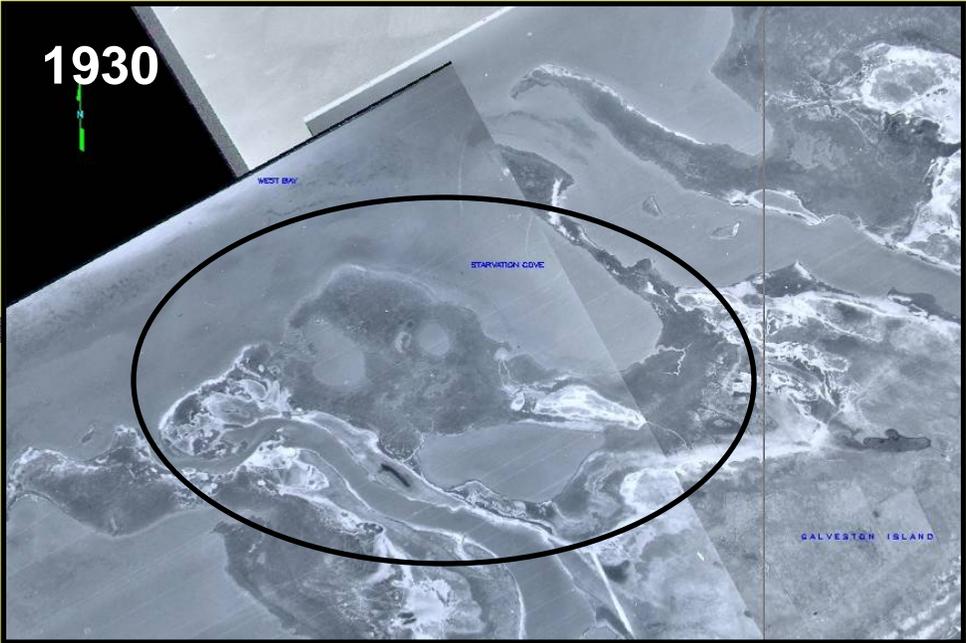


Starvation Cove Wetland Protection and Restoration Project



Project Goals and Facts

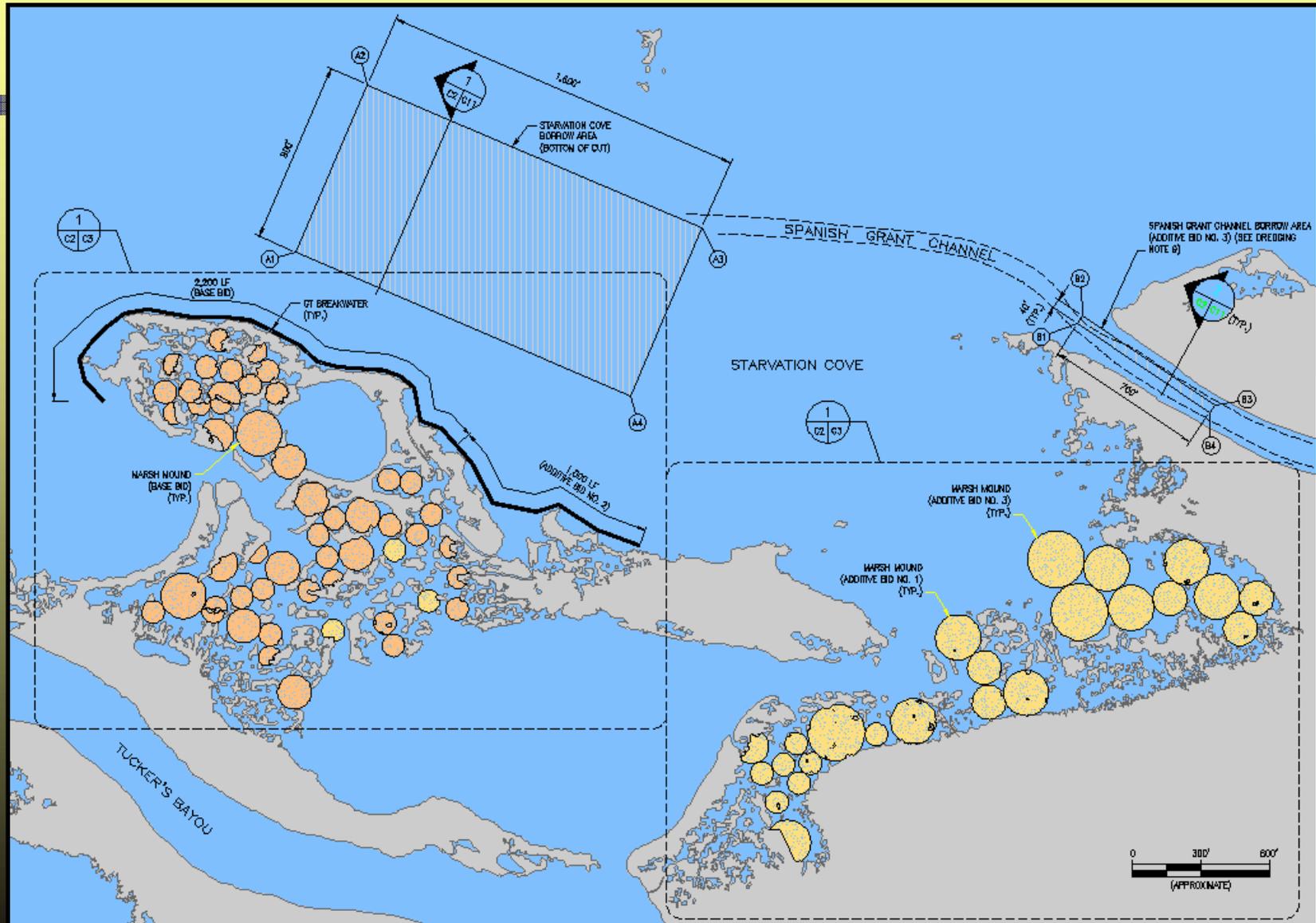
- To slow or halt erosion in the Starvation Cove marshes, restore intertidal marsh, and improve conditions for seagrass transplanting/colonization



Project Implementation/cost

- Funding Partners- TPWD, GBEP, TGLO, CWPPRA, USFWS Coastal Program, GBF, Texas Genco, Trust for Public Land
- Construction cost- \$710,271
- Engineering, surveying, and sediment analysis cost- \$98,345
- Project Contractor- Apollo Environmental Strategies Inc.,
- Project Sub-contractor- Five Star Dredging

Project Design



Construction

-
- Construct 3,200' of geotextile tubes
 - Construct 66 marsh mounds







September 2005



September 2005



September 2005

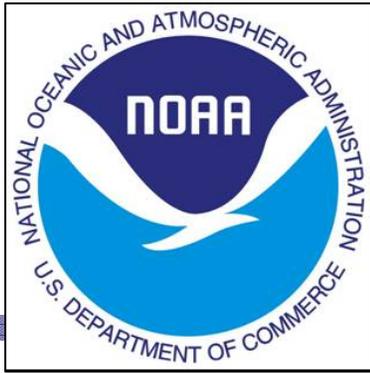


Photo courtesy of Jeff DallaRosa

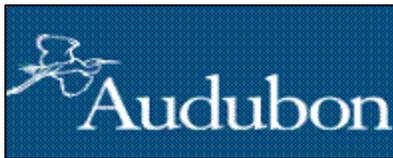
July 2006

Fundamentals for Restoration Projects

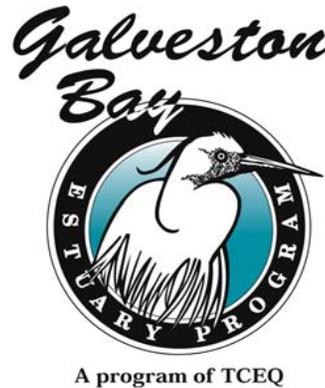
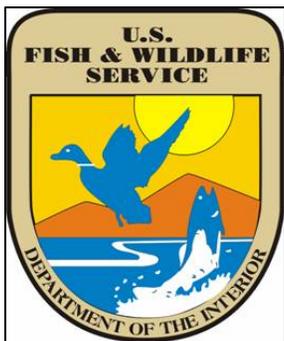
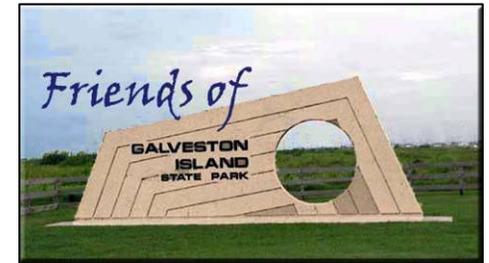
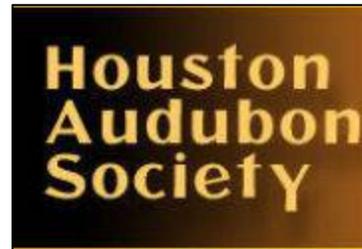
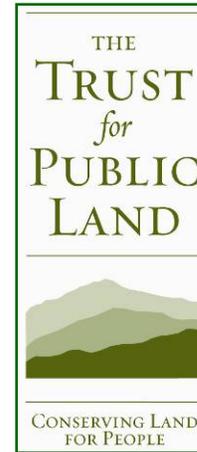
- Biologist active and readily available during construction
- Biologist should have the final say on approving final construction, specification changes, etc.
- Biologist, engineer, and contractor all have to work as a team from beginning to the end of construction. Continuity of folks is critical
- Outcome over process



NOAA
Community-Based
Restoration Program



SCENIC GALVESTON,
Inc.



Pinellas' Property Owners Assoc.

