

GALVESTON BAY FOUNDATION-BUILDING RESILIENCY THROUGH PARTNERSHIPS: CASE STUDIES-PIERCE WETLAND

Bob Stokes
President
Galveston Bay Foundation



US Army Corps
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GALVESTON BAY
FOUNDATION

Guardian of Galveston
Bay since 1987

BENEFICIAL USE OF DREDGE MATERIAL FOR RESTORATION OF PIERCE MARSH

Bob Stokes
President

Mission

The mission of Galveston Bay Foundation is to preserve and enhance Galveston Bay as a healthy and productive place for generations to come.

Vision

We envision a future Galveston Bay that is brimming with vitality, connected to people, and contributing to the community in every possible way.

Galveston Bay Foundation Program Areas



Education



Restoration



Water Protection



Conservation



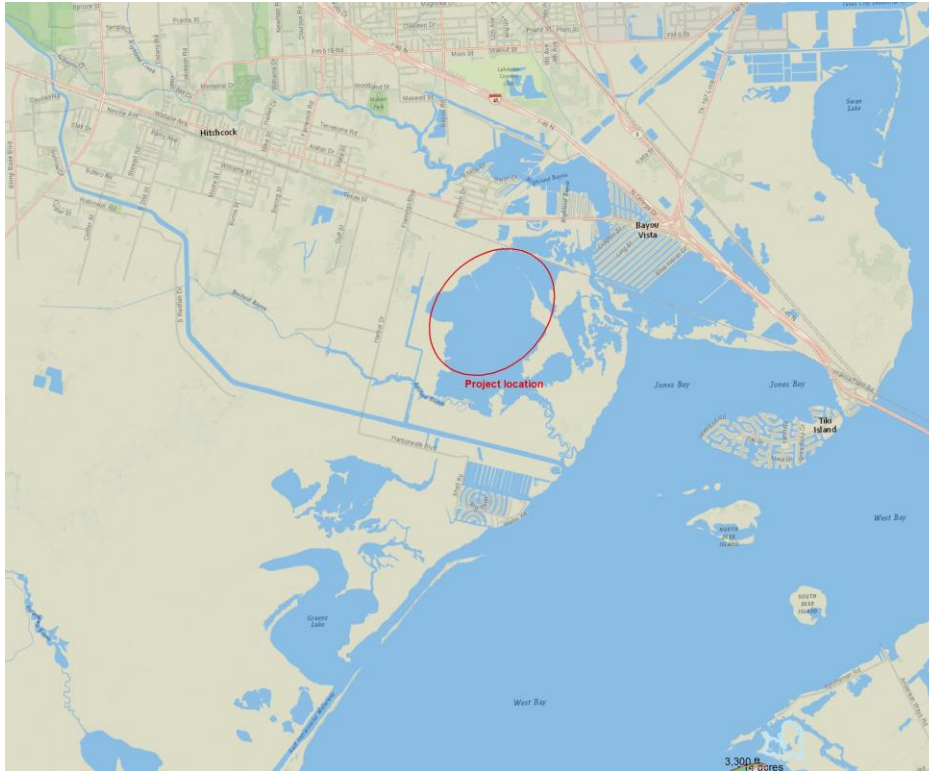
Advocacy



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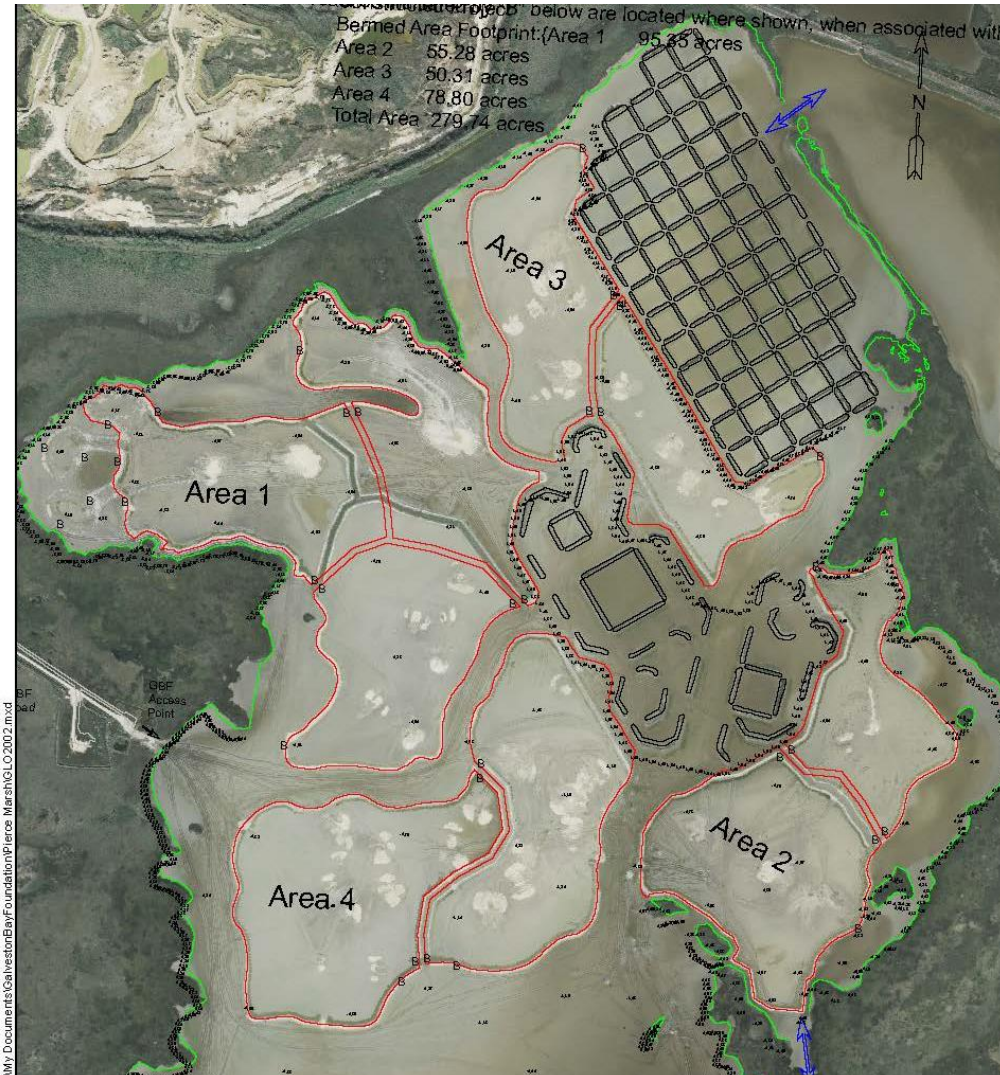
Pierce Marsh – 2,346 acres

1,361 acres owned jointly by Galveston Bay Foundation and The Nature Conservancy and 985 acres owned by GBF. State of Texas owns submerged land.



Pierce Marsh

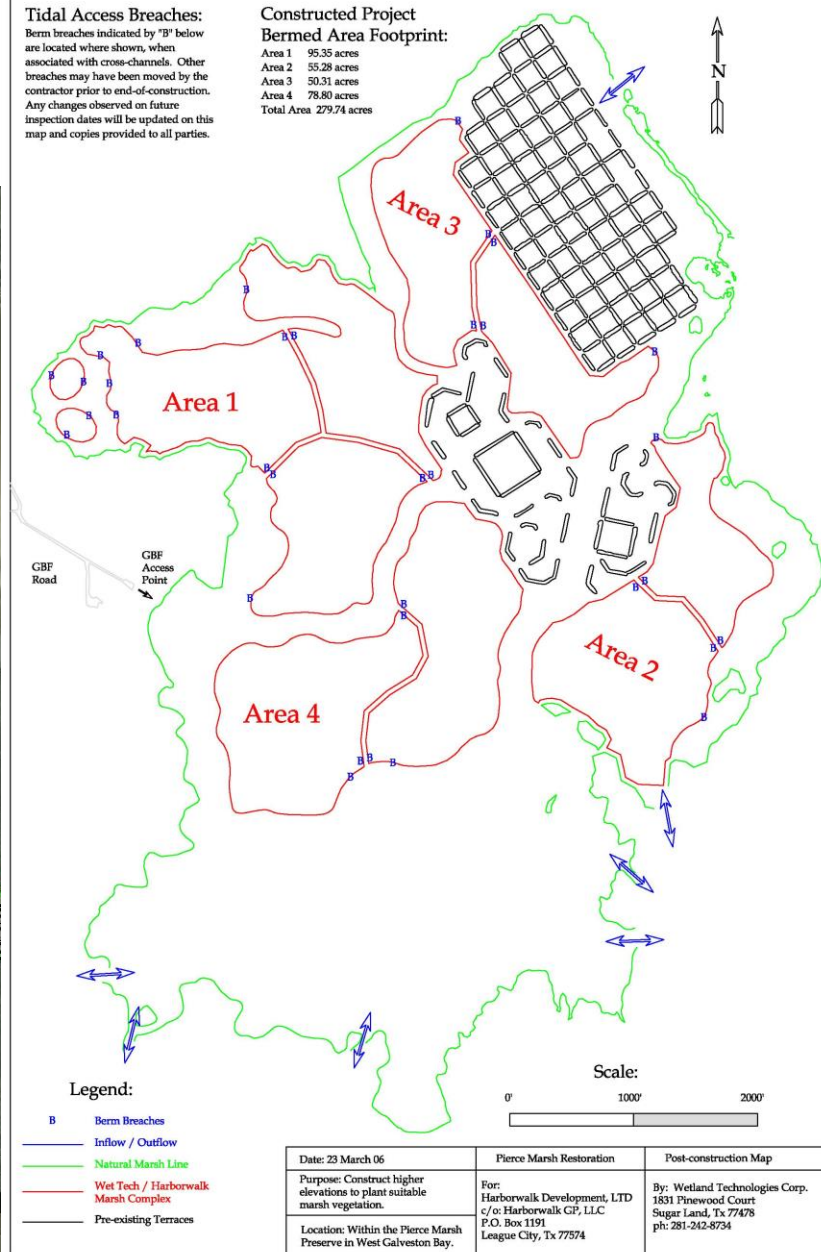
Multiple restoration projects dating back to 1999



Tidal Access Breaches:
Berm breaches indicated by "B" below are located where shown, when associated with cross-channels. Other breaches may have been moved by the contractor prior to end-of-construction. Any changes observed on future inspection dates will be updated on this map and copies provided to all parties.

Constructed Project Bermed Area Footprint:

- Area 1 95.35 acres
- Area 2 55.28 acres
- Area 3 50.31 acres
- Area 4 78.80 acres
- Total Area 279.74 acres

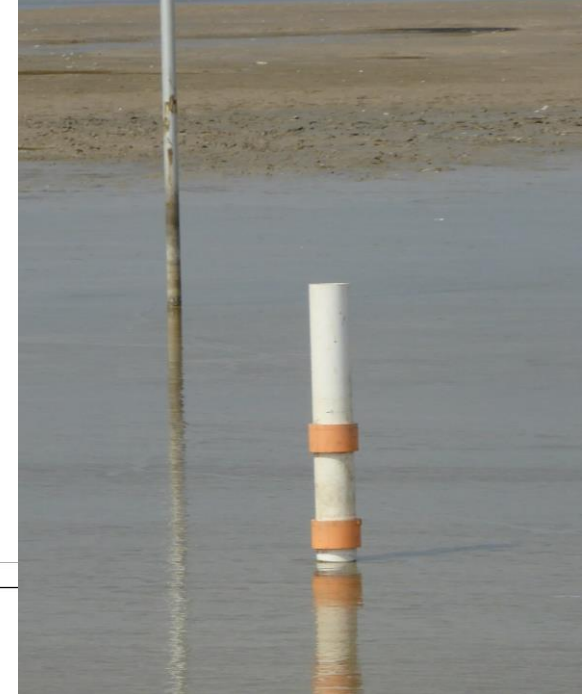
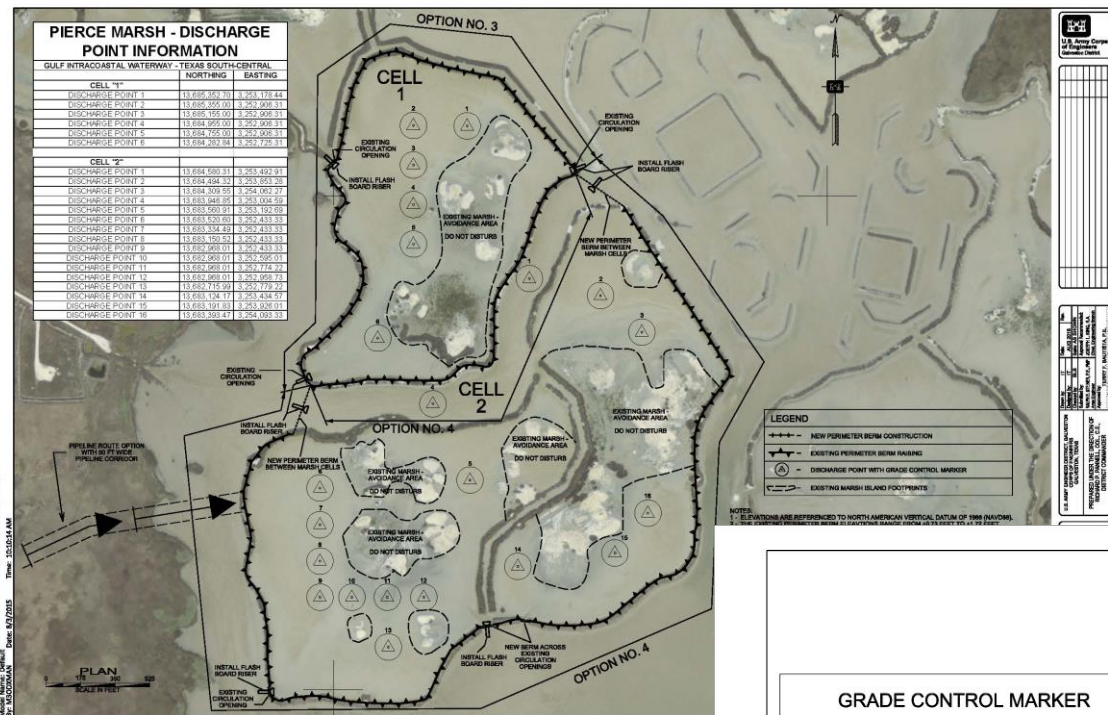


2005 — utilized dredge material from the development of the HarborWalk community. Upon completion, the containment cells have additional capacity for restoration.

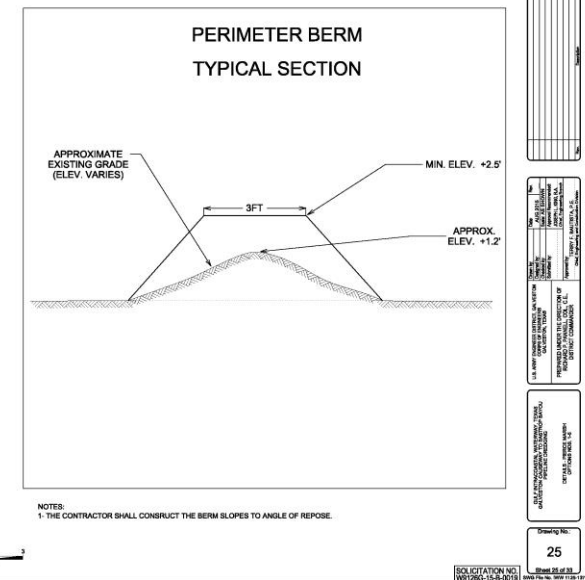
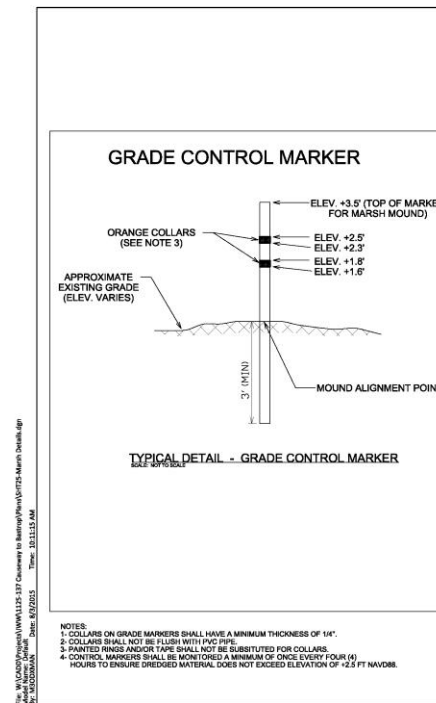


2015

- USACE planning to dredge GIWW adjacent to Pierce Marsh.
- The technical advisory team recommends BU material from the USACE project in Pierce Marsh
- GBF (or partners) would need to secure funding for incremental cost estimates within an extremely short timeframe. Traditional funding sources could not be secured along this timeline
- NRDA trustees provide funding from Malone Services Company settlement, Texas City
- GLO entered agreement with USACE to provide incremental costs
- Trustees entered agreement with GBF to provide funds for oversight, monitoring, and adaptive management
- Under guidance of technical advisory team a plan is made to BU material for restoration within Pierce Marsh



Raise existing
containment
berms and
add material
to a max
elevation of
+2.5 NAVD 88



2016 – construction begins





Construction completed
summer 2016

Site ready for
vegetation
efforts



Seeding and transplanting smooth cordgrass



Seeding progression



Transplant progression



2017 – Seeding via airboat path



Seeding path several months later



9.21.2017



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Pre-construction 2016





Spring 2019





Berms in low fetch area lowered to marsh elevation in fall 2019.

This will enable more water exchange with the “contained” site and open water.

Lowered berms will be revegetated.



Results

- A total of 197,536 cy of material placed within Pierce Marsh
- Approximately 80 acres of estuarine marsh complex restored
- Significant cost savings compared to non-BU
- Construction only costs approximately \$10,000 per acre
- Non-BU estimates for similar restoration \$25,000+ per acre

How to

- Communicate potential project site with USACE and other state and federal stakeholders
- Have regulatory authorizations in hand
 - USACE permit and GLO lease
- Secure funding for incremental cost
- Communicate/Communicate/Communicate

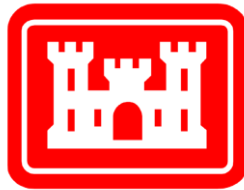
Lessons Learned (from NGO perspective)

- Funding structure needed for local partner may be difficult (or not possible) with more traditional grant funding sources
 - USACE requires estimated incremental cost to be provided upfront
 - Project timing
 - Dredge cycles and grant timeline would need to line up. If dredge cycle is missed it could be several years before the next opportunity, which may fall outside of grant funding timeline.
 - Predicted dredge cycle could be altered such as storm sedimentation (dredge sooner) or lack of material quantity (dredge later)
- Ability for NGO to enter into a cooperative agreement with USACE
 - May require a state/federal agency partner to enter agreement with USACE and transfer funds
- Communication
 - Recommend frequent site visits with partners during construction. This will allow partners to identify any issues real time that can quickly be addressed by USACE.
- Trust
 - It can be unnerving (at first) to be the permit holder, be on the hook for specific outcomes to funders, etc. but not be construction contract owner. Must develop a layer of trust with USACE and other partners that any issues will be addressed appropriately.

At the end of the day, all parties involved have the same goal in mind. Deliver the best habitat restoration project possible.

Moving Forward

- Planning/Engineering and Design for remaining areas of Pierce marsh in progress. Funds provided by Restore Act Bucket 2 (administered by GLO)
- NRDA (BWH) providing funds to restore up to 150 additional acres within Pierce via BU. Bidding for a 2020 cycle were overbudget and not awarded.



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