



DREDGING SUMMIT & EXPO 2015

June 23, 2015

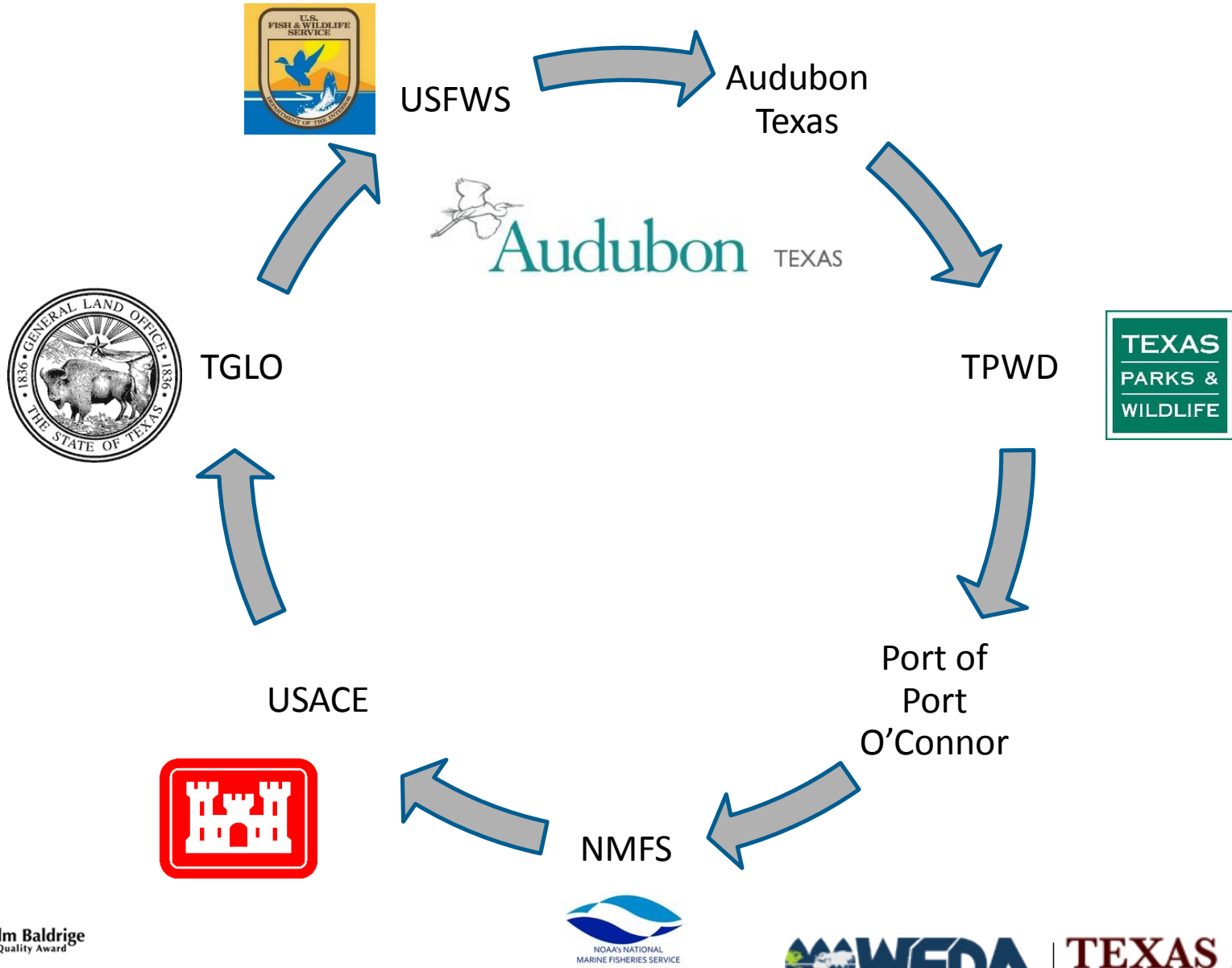


MAINTENANCE MATERIAL PLACEMENT AND BIRD ISLAND RESTORATION AT SUNDOWN/CHESTER ISLAND, MATAGORDA BAY, TEXAS

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Audubon Texas, National Audubon Society

Task Force Members



Project Location



Colonial Bird Nesting Island



"The Migratory Bird Treaty Act prohibits activities which harm colonial waterbirds or their nest or eggs"

Priority Species

- American Oystercatcher
- Black Skimmer
- Caspian Tern
- Gull-billed Tern
- Royal Tern
- Sandwich Tern



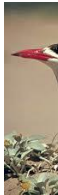
Colonial Bird Nesting Island



"The Migratory Bird Treaty Act prohibits activities which harm colonial waterbirds or their nest or eggs"

BREEDING BIRDS

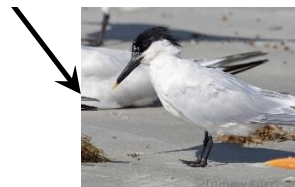
- Brown Pelican
- Great Blue Heron
- Great Egret
- Snowy Egret
- Little Blue Heron
- Tricolored Heron
- Reddish Egret
- Cattle Egret
- Black-crowned Night-Heron
- White Ibis
- Glossy Ibis (occasionally)
- White-faced Ibis
- Roseate Spoonbill
- American Oystercatcher (occasionally)
- Laughing Gull
- Gull-billed Tern
- Royal Tern
- Sandwich Tern
- Black Skimmer
- Red-winged Blackbird
- Black-bellied Whistling Duck



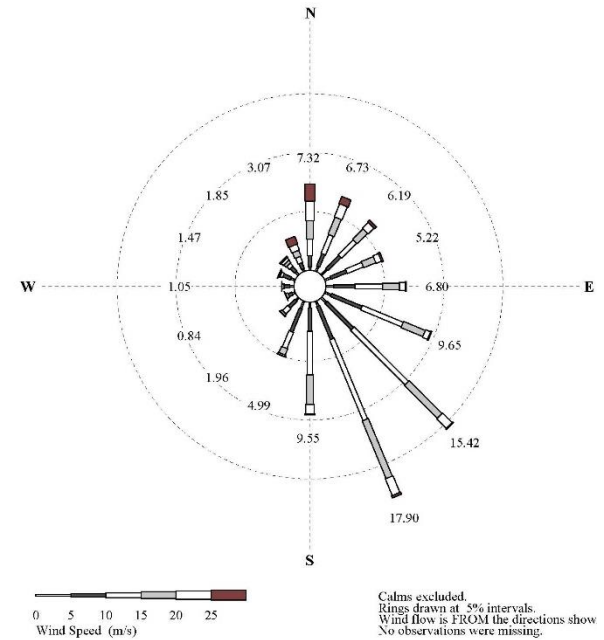
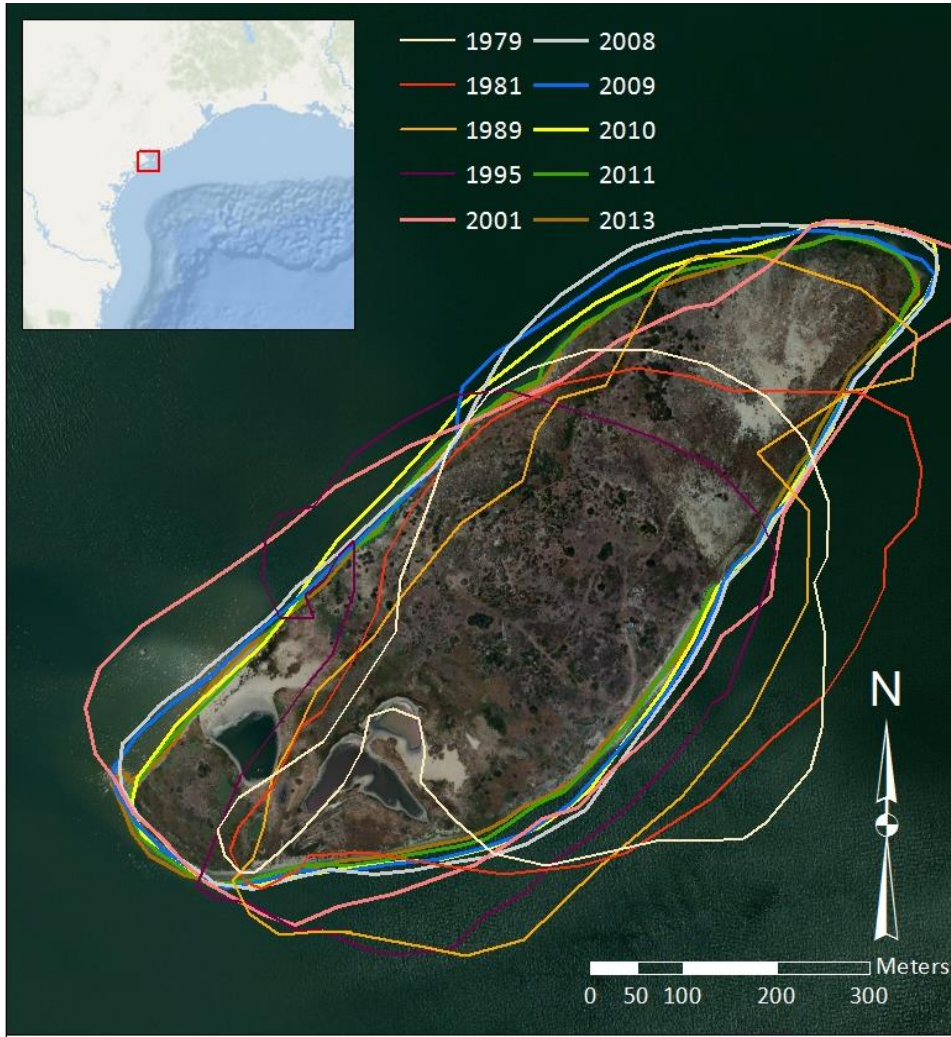
PART TIME RESIDENTS (Partial List)

- American White Pelican (w)
- Magnificent Frigatebird (s)
- Double-crested Cormorant (w)
- American Wigeon (w)
- Mottled Duck (w)
- Blue-winged Teal (w)
- Northern Shoveler (w)
- Green-winged Teal (w)
- Redhead (w)
- Lesser Scaup (w)
- Black-bellied Plover (w)
- American Avocet (w)
- Ruddy Turnstone (w)
- Sanderling (w)
- Ring-billed Gull (w)
- Herring Gull (w)
- Forster's Tern (w)
- Horned Lark (w)
- Yellow-rumped Warbler (w)
- Common Yellowthroat (w)
- Savannah Sparrow (w)

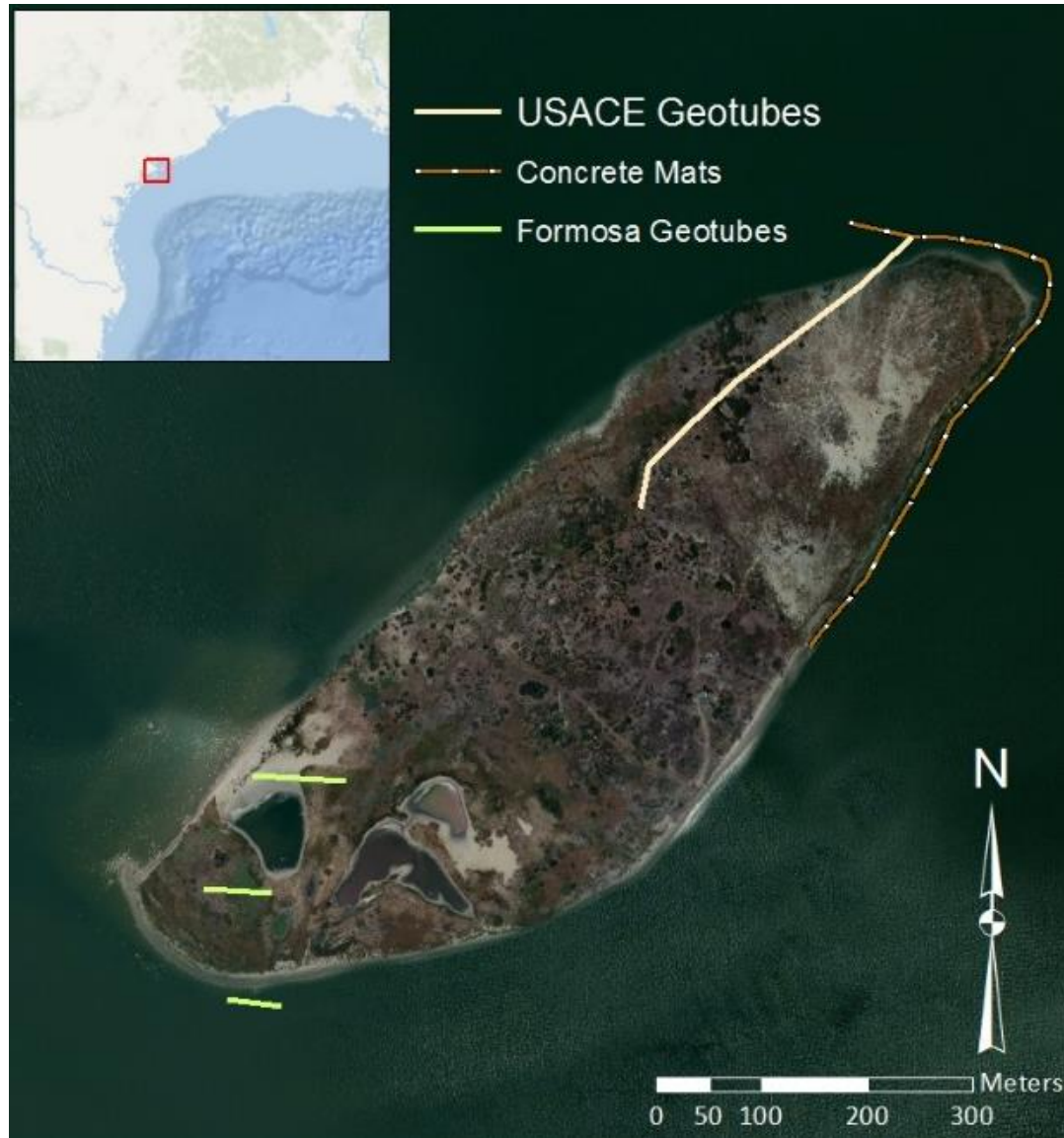
(w = winter, s = summer)



Island Shoreline History



Existing Structures



Existing Structures



Concrete Mats (2005/2008)



USACE Geotubes (2001)



Formosa Geotubes (1995)



Structural Failure (2014)



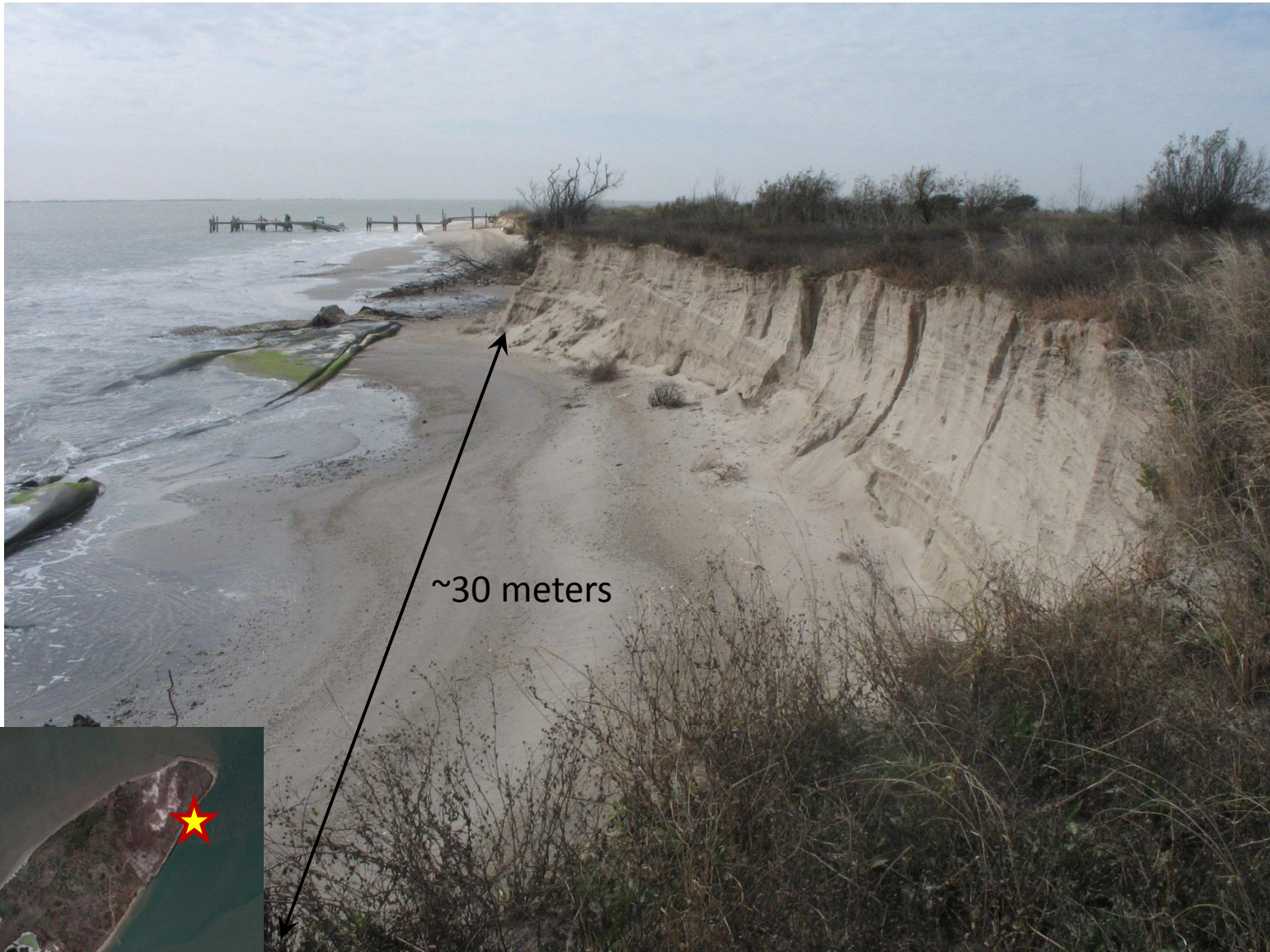
Structural Failure (2014)



Structural Failure (2014)



Structural Failure (2014)



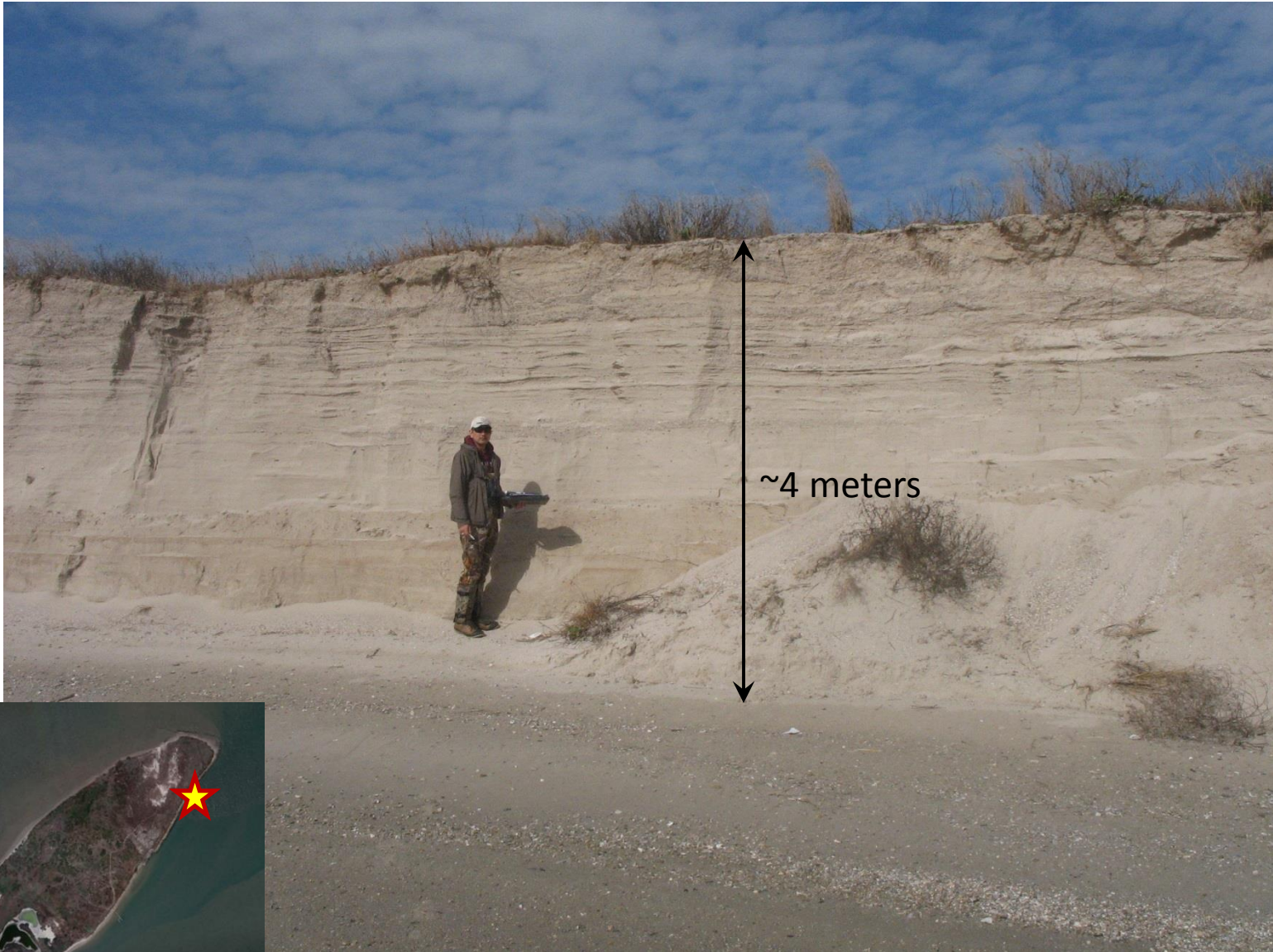
~30 meters



Structural Failure (2014)



Structural Failure (2014)



Structural Failure (2014)



Why Place Dredge Material



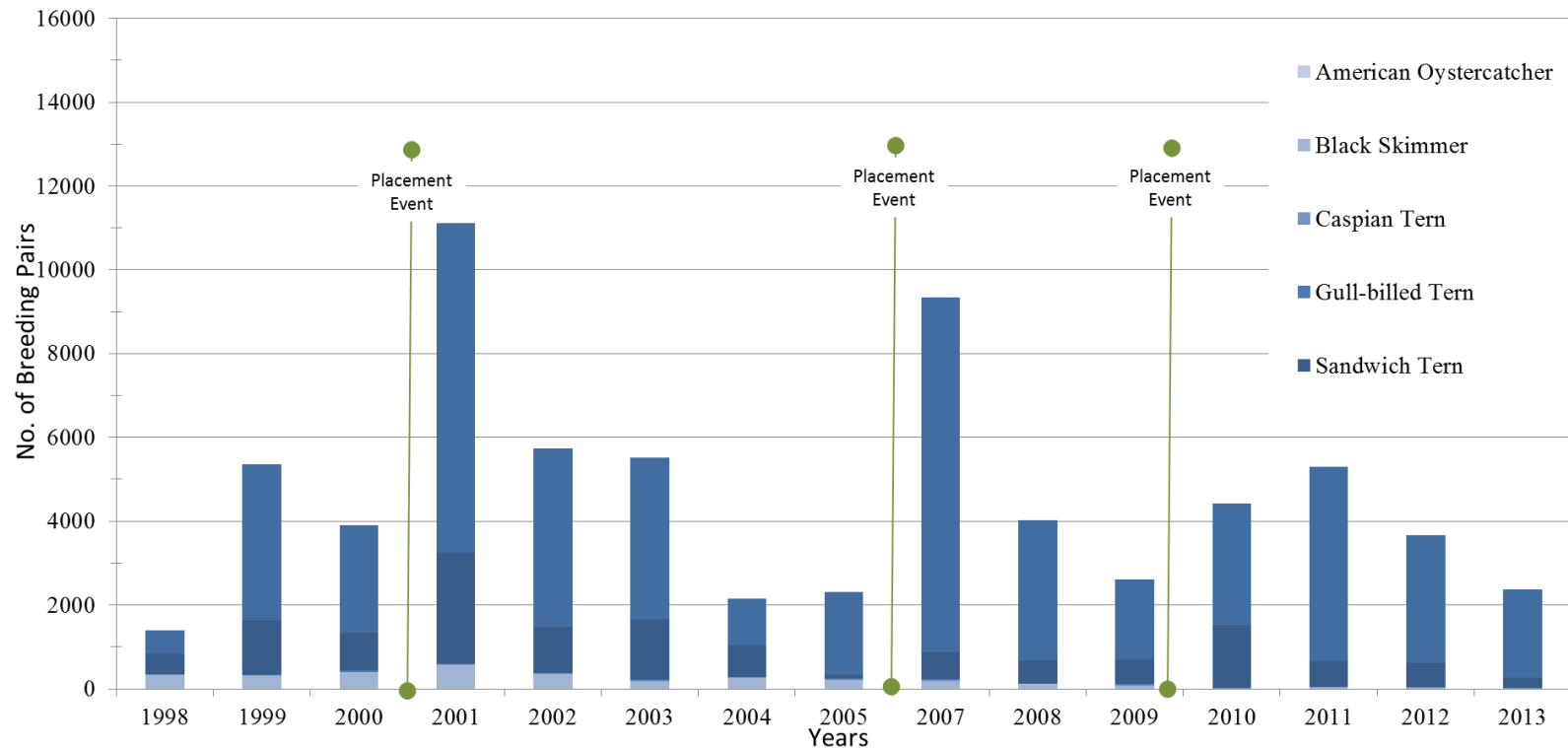
- Material placement creates colonial bird nesting habitat and protects existing infrastructure



Why Place Dredge Material



- Renourishment “resets” vegetation system more conducive to shorebird priority species



Why Place Dredge Material



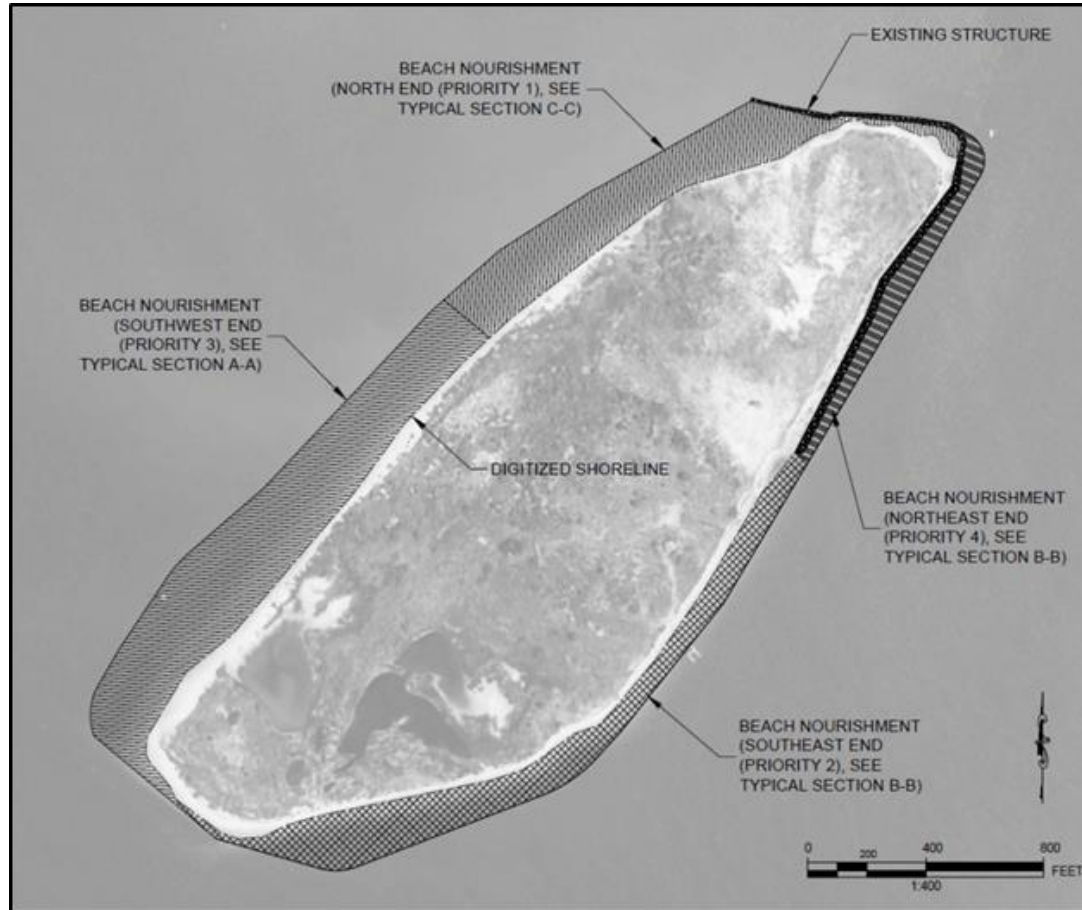
- Renourishment “resets” vegetation system more conducive to priority species and reduces attractiveness to nuisance species



Why Place Dredge Material



- Provides sediment volume for island sustainability



Previous Dredge Placement Operations

- 2001 Northwestern Shoreline



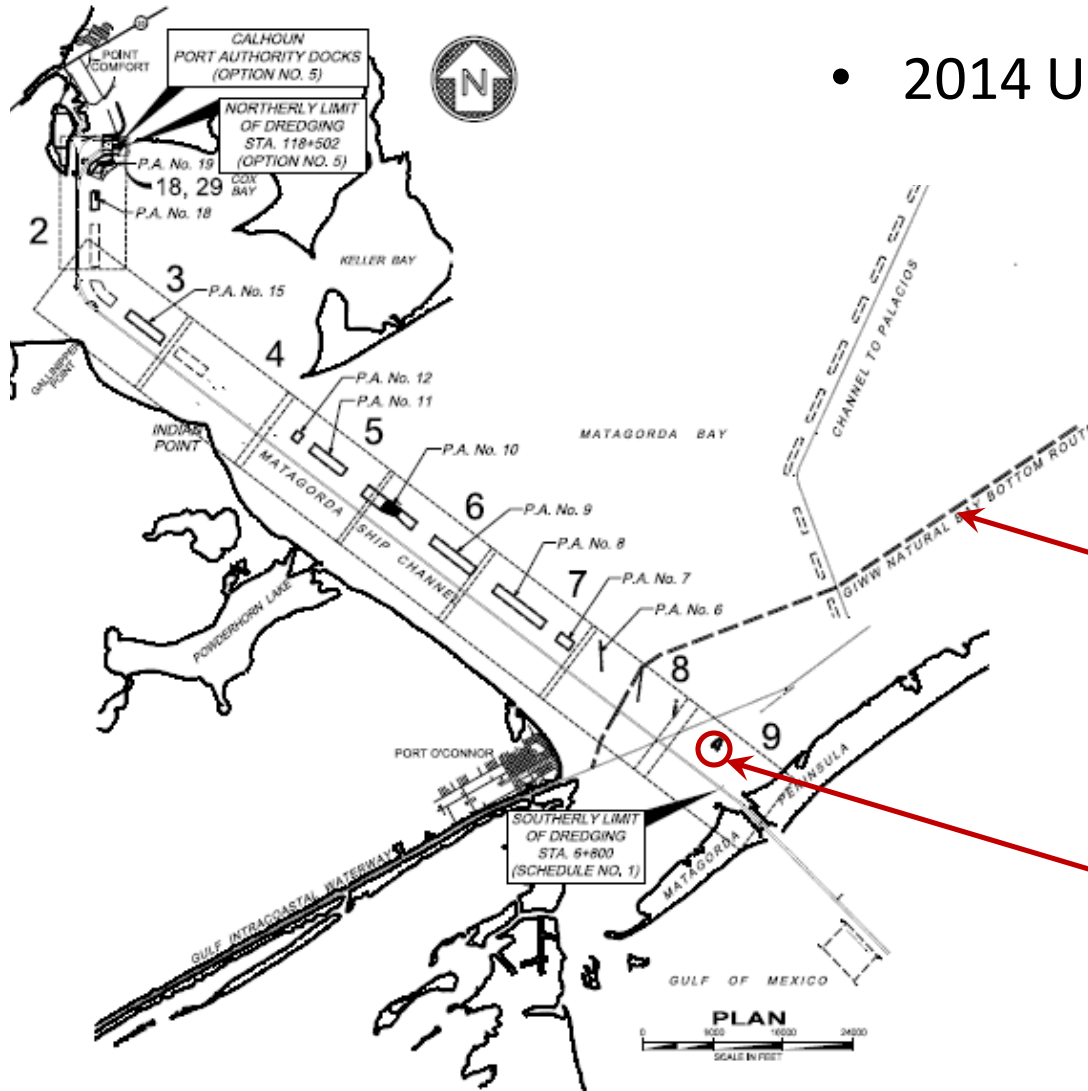
- 2005 Northern and Southwest Shorelines



Recent Dredge Placement (2014)



- 2014 USACE Dredge Plan



This project was designed by the Galveston District of the U.S. Army Corps of Engineers. The initials or signatures and registration designations of individuals appear on these project documents within the scope of their employment as required by ER 1110-1-8152.

SOLICITATION NO. W9126G-14-B-0005

Drawing No.:
1
Sheet 1 of 39
File No. GUAD 706-233



Recent Dredge Placement (2014)



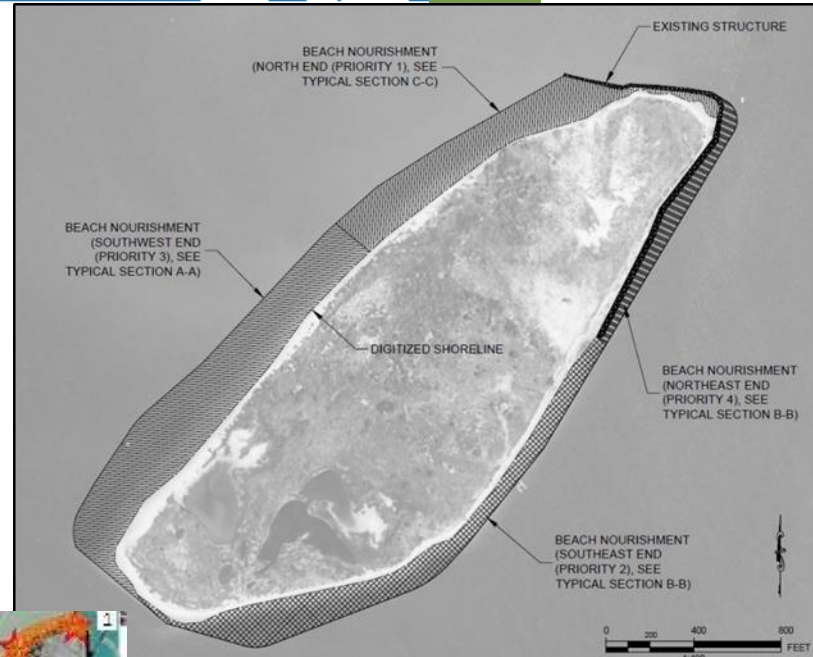
Recent Dredge Placement (2014)



Recent Dredge Placement



- Duration
 - 21 days over (4 weeks)
- Quantity Placed
 - Area: ~1 hectare (2.5 acres)
 - Volume: ~90,000 cu m (110k cy)
- Quantity Available
 - Volume: 767,690 cu m (1,004,100 cubic yards)



Sundown Island, Next Steps

- Needs Assessment
 - Sustain critical island habitat
 - Assess MSC ship wake impacts
 - Mitigate intermittent sediment placement
 - Protect from ongoing erosional processes

Sundown Island, Next Steps

- Identify Solutions
 - Coordination with Agencies and local stakeholders
 - Identify (and permit) additional sediment sources
 - Identify alternative bird island locations
 - Sustain Sundown until alternative locations are viable habitat (and adopted by birds)
 - Remove/repair dilapidated structures
 - Targeted studies *and data collection*

ERDC/CHL TR-08-7
Coastal and Hydraulics Laboratory

US Army Corps of Engineers
Engineer Research and Development Center

Coastal Inlets Research Program
**Matagorda Ship Channel, Texas:
Jetty Stability Study**
Nicholas C. Kraus, Lihua Lin,
Brian K. Butler, and Gary L. Brown
August 2006

ERDC/CHL TR-11-2
Coastal and Hydraulics Laboratory

US Army Corps of Engineers
Engineer Research and Development Center

Coastal Inlets Research Program
**Analysis of Dredged Material Placement
Alternatives for Bottleneck Removal,
Matagorda Ship Channel, Texas**
James Rosati III, Ashley E. Frey, Mitchell E. Brown,
and Lihua Lin
April 2011

ERDC TR-11-8
Engineering Research and Development Center

US Army Corps of Engineers
Engineer Research and Development Center

**Risks to Navigation at the Matagorda Ship
Channel Entrance, Texas, Phase 2: Evaluation
of Significant Risk Factors**
Christopher T. Raymond, Lihua Lin, Nicholas C. Kraus,
Dennis W. Webb, Gary Lynch, Ronald E. Wahl,
Daniel A. Leavelle, Don E. Yule, and Joseph B. Dierker
August 2011

ERDC/CHL TR-12-11
Coastal and Hydraulics Laboratory

US Army Corps of Engineers
Engineer Research and Development Center

**Erosion Control and Environment Restoration
Plan Development, Matagorda County, Texas**
Phase 1: Preliminary Investigation
Robert Thomas and Lauren Denkin
July 2012

ERDC/CHL TR-13-10
Coastal and Hydraulics Laboratory

US Army Corps of Engineers
Engineer Research and Development Center

ERDC
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for a safer, better world

Coastal Inlets Research Program
Dredging Operations and Environmental Research Program
Regional Sediment Management Program
**Regional Sediment Management Studies of
Matagorda Ship Channel and Matagorda Bay
System, Texas**
Sathurtha S. Lemhart, Sheridan S. Wiley, Tricia Campbell,
Robert C. Thomas, Huiqun Li, Lihua Lin, and Timothy L. Weip
August 2013

Questions?



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