

PERICO PRESERVE RESTORATION – FARMLAND CONVERSION FOR SEAGRASS HABITAT CREATION

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St. Augustine, FL

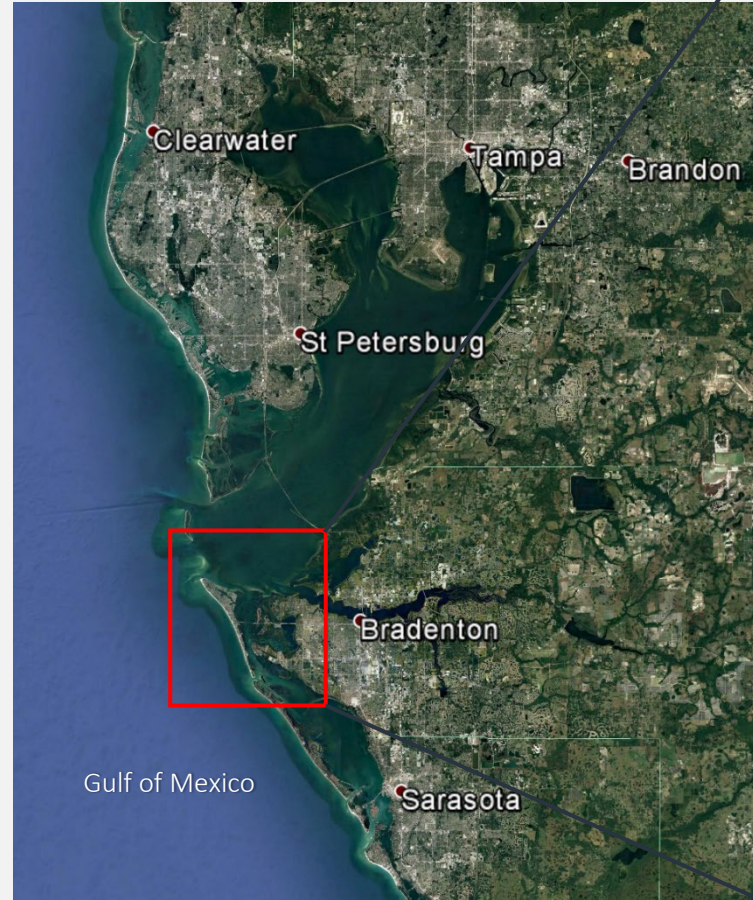
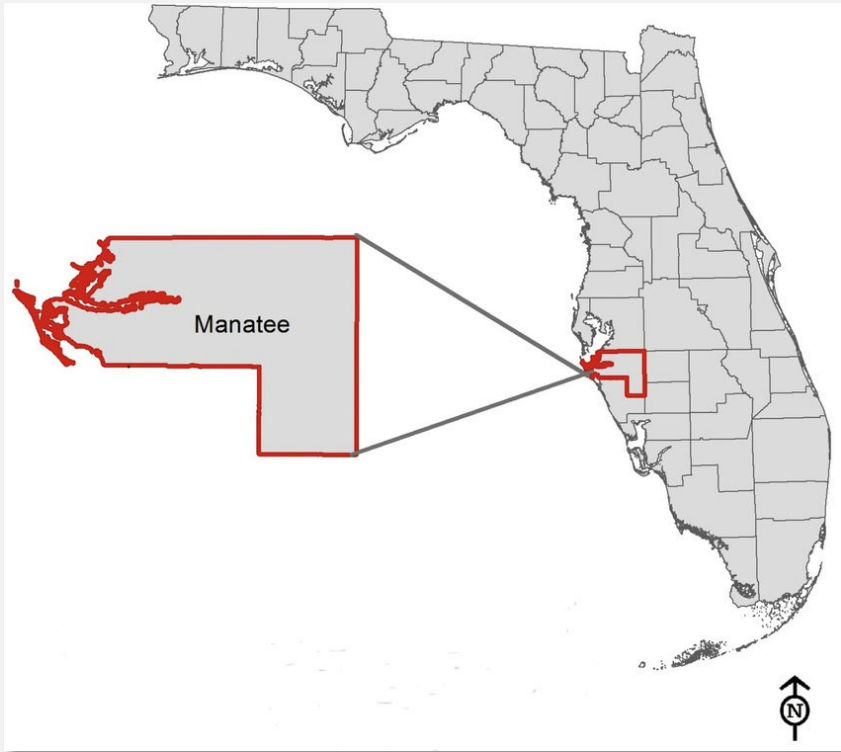
OUTLINE

- History of Perico Preserve, Manatee County, Florida
- Perico Preserve Seagrass Basin
 - Goal and Purpose
 - Seagrass Mitigation for Lido Key HSDR Project
 - Southwest Florida Regional Water Quality Issues
 - Algae Issues in Seagrass Basin and Perico Bayou
 - Adaptive Management of Perico Preserve Seagrass Basin
- Status and Next Steps for Perico Preserve Seagrass Basin

HISTORY OF PERICO PRESERVE



PERICO PRESERVE, MANATEE COUNTY, FLORIDA



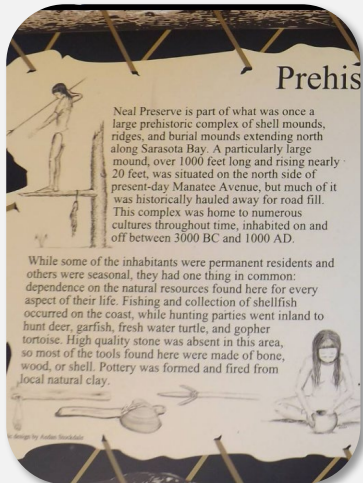
PERICO PRESERVE TIMELINE

Prehistoric / Pre-Agriculture

- Prehistoric Native American use of the site, shell middens
- 1780-1840s - Cuban Ranchos, Perico Pompon
- Pine flatwoods and coastal scrub, rimmed with mangroves and coastal wetlands

1500

1840



PERICO PRESERVE TIMELINE

Prehistoric / Pre-Agriculture

Agriculture and Mosquito Ditches

- Early 1900s site cleared for agriculture
- Varying crops and intensity
- Ditches dug to drain marsh and eliminate mosquito habitat
- Australian pines and Brazilian peppers

1500

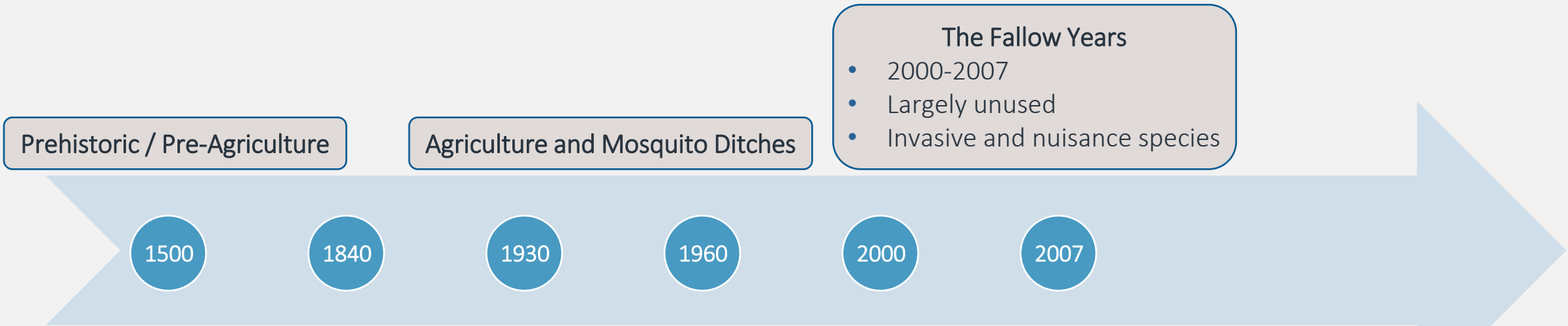
1840

1930

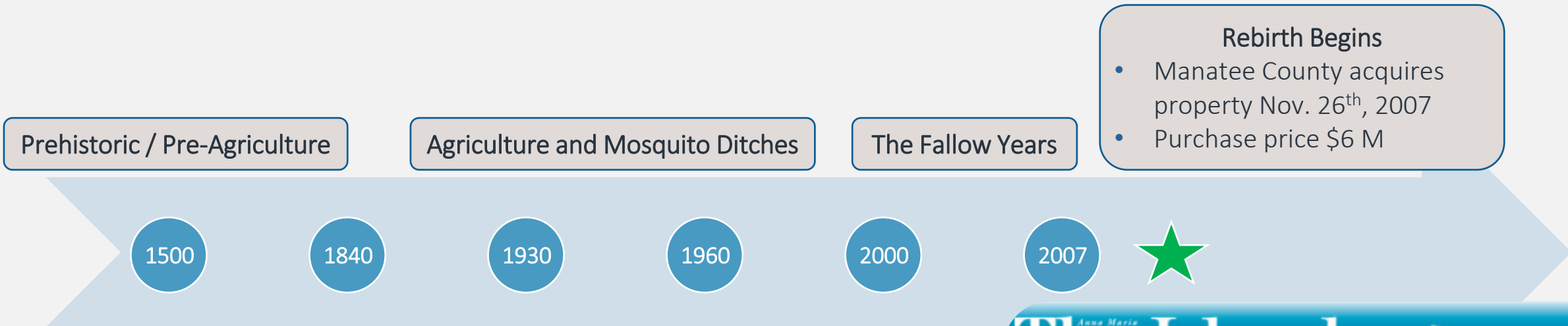
1960



PERICO PRESERVE TIMELINE



PERICO PRESERVE TIMELINE



Anna Maria
The Islander
Skimming the news... 2/28/2007

County commission OKs Perico purchase
By Lisa Neff islander Reporter

Manatee County commissioners voted 7-0 to purchase and conserve more than 231 acres of land on Perico Island during a special meeting Feb. 20.

The unanimous vote followed about 10 minutes of discussion but years of consideration and hours of talks.

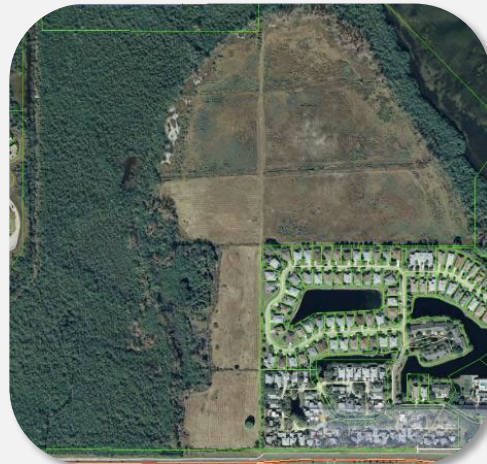


PERICO PRESERVE RESTORATION TIMELINE

Manatee County
Purchases 176 acres:

- 56 acres upland
- 98 acres wetland
- 22 acres bay bottom
(submerged land)

2007



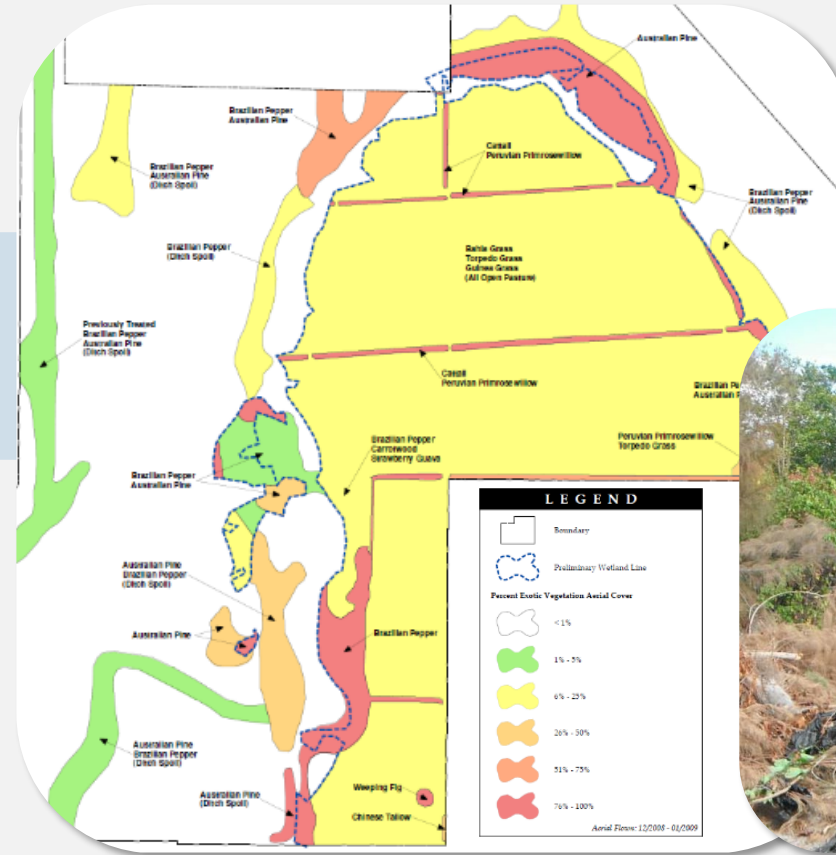
PERICO PRESERVE RESTORATION TIMELINE

County Purchases Property

Exotic Species Removal

2007

2009



PERICO PRESERVE RESTORATION TIMELINE

County Purchases Property

Exotic Species Removal

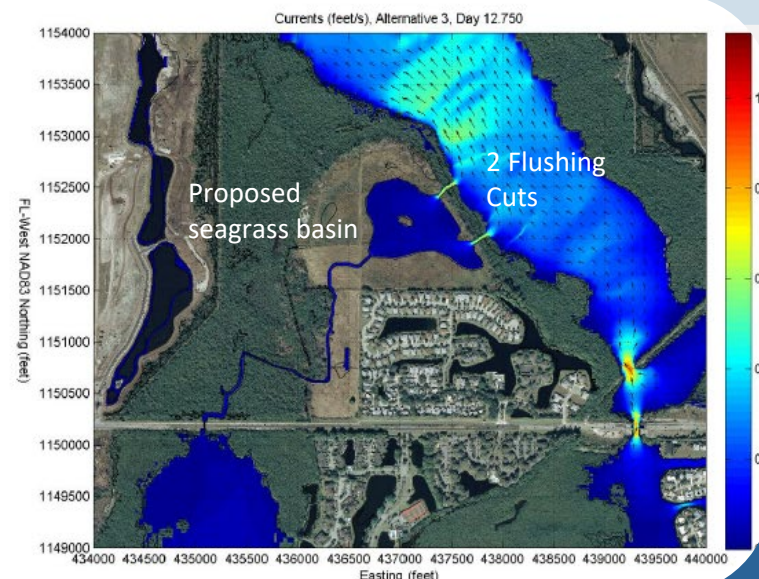
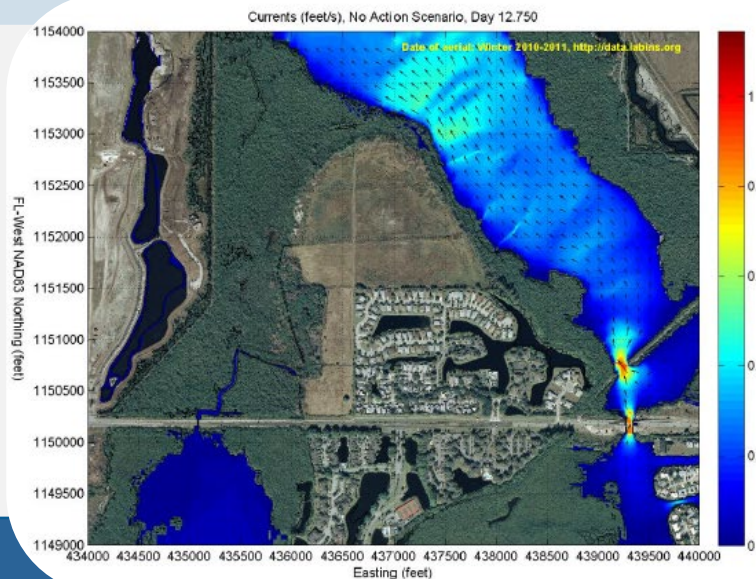
- Design & Permitting
- Creation of seagrass and mangrove habitat
 - Delft3D FLOW numerical modeling study

2007

2009

2010

2012



PERICO PRESERVE RESTORATION TIMELINE



PERICO PRESERVE RESTORATION TIMELINE

County Purchases Property

Exotic Species Removal

Design & Permitting

Plantings & Basin Excavation

Basin Connected

- Two flushing cuts
- Basin connected to Perico Bayou 9/16/2015

2007

2009

2010

2012

2013

2015

2014



2015



PERICO PRESERVE RESTORATION TIMELINE

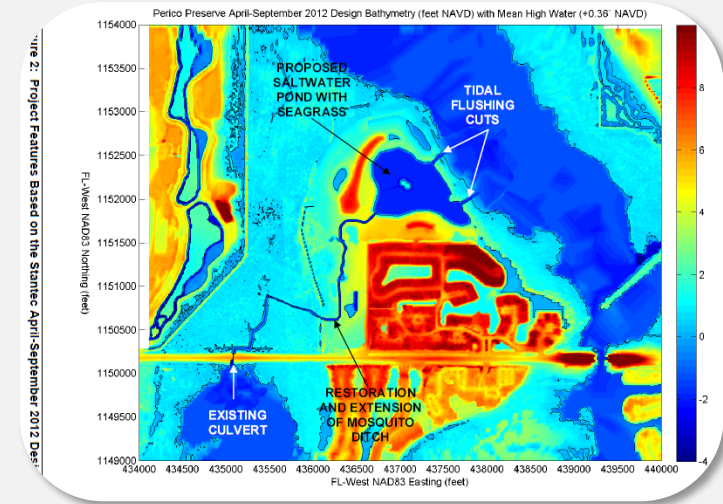


PERICO PRESERVE SEAGRASS BASIN



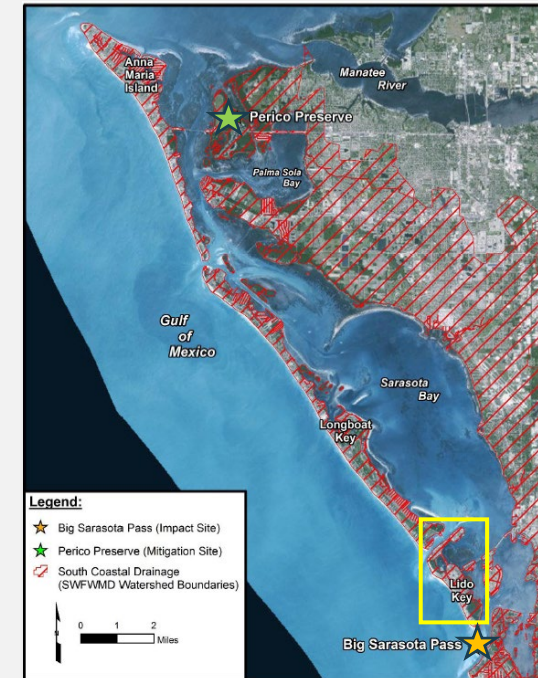
PERICO PRESERVE SEAGRASS BASIN

- **Goal:** Creation of tidal basin dominated by seagrass similar to adjacent Perico Bayou
- **Purpose:** Provide additional habitat components while generating revenue to cover the restoration costs through the sale of compensatory mitigation for seagrass impacts associated with public projects
- **Area:** 16.4-acre basin excavated with goal of creating 12.25-acre seagrass basin
- **Permits:** The seagrass mitigation basin was authorized and constructed under USACE and SWFWMD permits



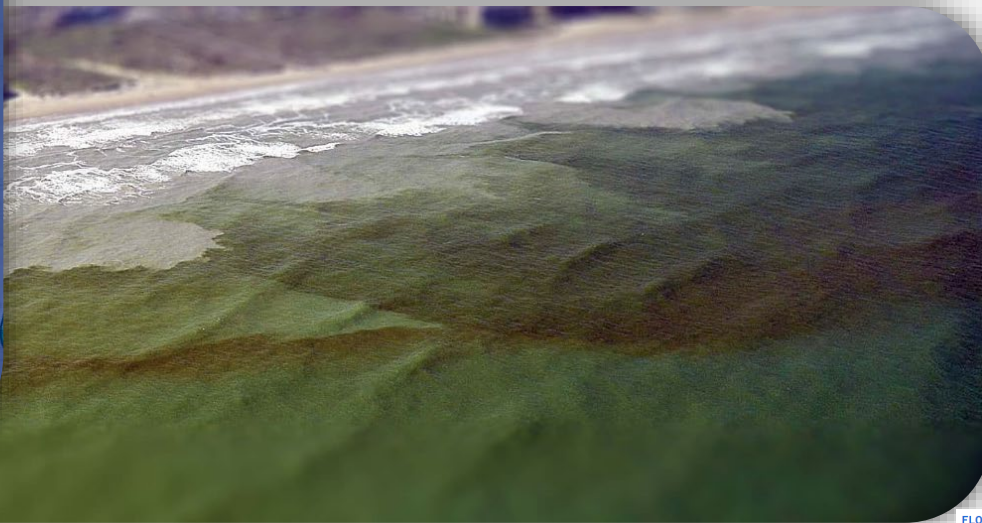
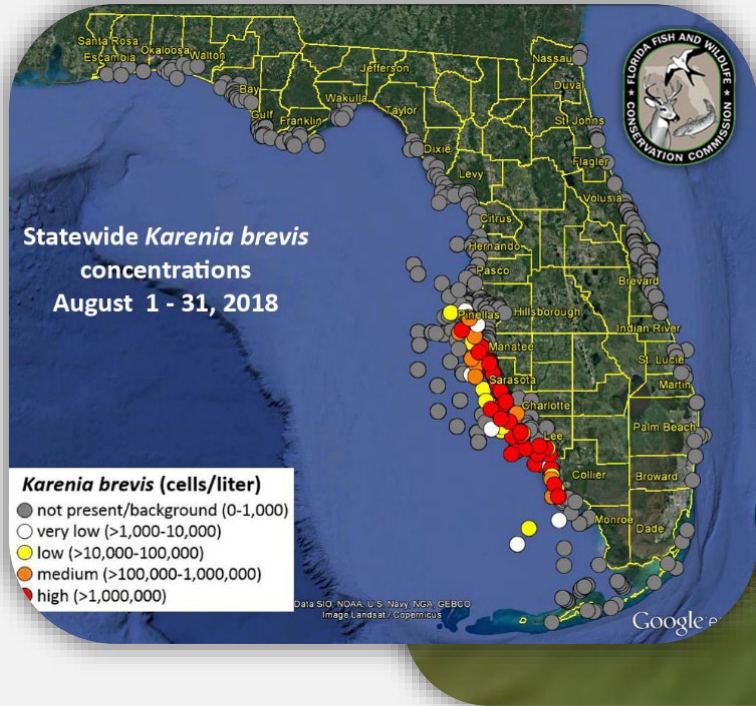
SEAGRASS MITIGATION FOR LIDO KEY HSDR PROJECT

- Lido Key HSDR Project – federally authorized beach nourishment and groin construction project on Lido Key, Sarasota County
- Borrow areas in Big Sarasota Pass resulted in impacts to seagrass
- FDEP approved seagrass mitigation site within Perico Preserve that was identified as the Lido Key Mitigation Site (LKMS)
- UMAM evaluation determined 3.2 acres of seagrass would need to be created to offset impacts to 1.68 acres in Big Sarasota Pass
- Mitigation plan includes harvesting donor material from Perico Bayou and transplanting it into the LKMS
- Lido Key HSDR Project constructed July 2020 – April 2021
- Seagrass mitigation has faced delays in implementation



REGIONAL WATER QUALITY ISSUES

- Multiple Harmful Algal Blooms (HAB) and Red Tides
- 2018 Severe Red Tide Event



Significant seagrass loss alarms researchers

Seagrass Is Dying by Tampa and Sarasota as Red Tide Worsens

By Associated Press | April 1, 2023, at 6:07 p.m.

The Troubling Impacts of Florida's Piney Point Pollution

Florida's water quality woes point to many smoking guns

Dying seagrasses and algae blooms found in Tampa Bay could be lingering effects of Piney Point releases

WUSF Public Media - WUSF 89.7 | By Jessica Meszaros
Published October 7, 2021 at 4:22 PM EDT

Struggling seagrass in Sarasota Bay shapes up as an environmental, economic worry

WUSF Public Media - WUSF 89.7 | By Catherine Hicks - Community News Collaborative
Published August 13, 2023 at 5:00 AM EDT

FLORIDA

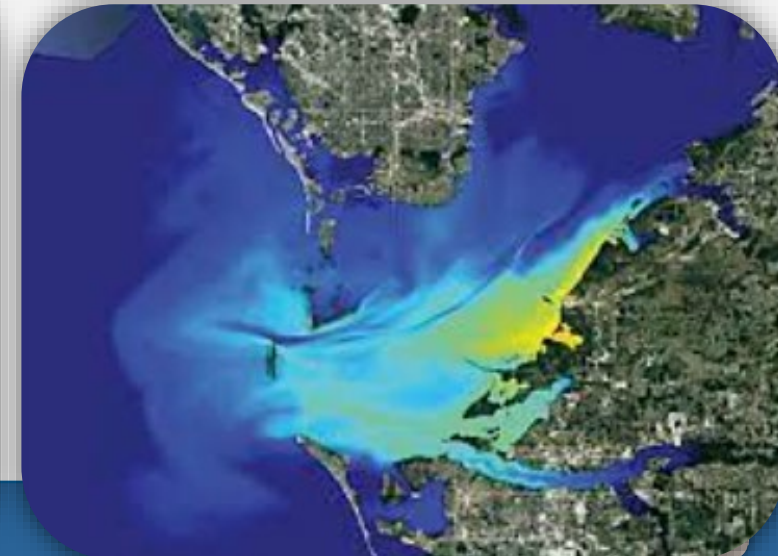
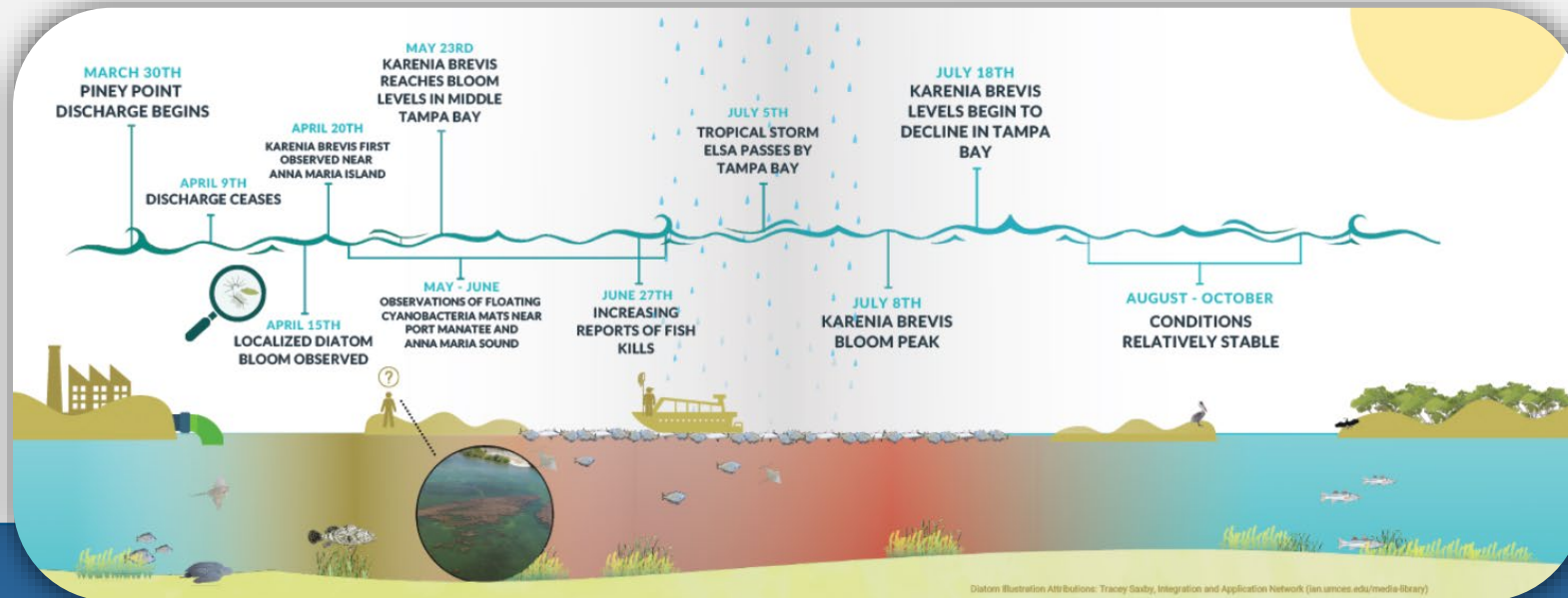
Researchers say vital seagrass is dying off at rapid rates in Florida

In some areas, like the Indian River Lagoon, "well over half" of the seagrass had died off over the last 50 years.

By Kaitlyn Schwanemann - Published August 5, 2023 - Updated on August 5, 2023 at 3:34 pm

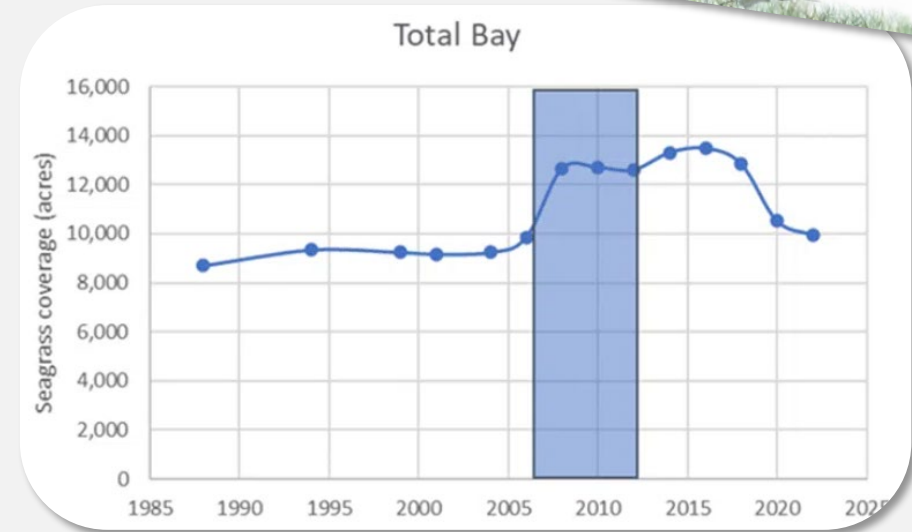
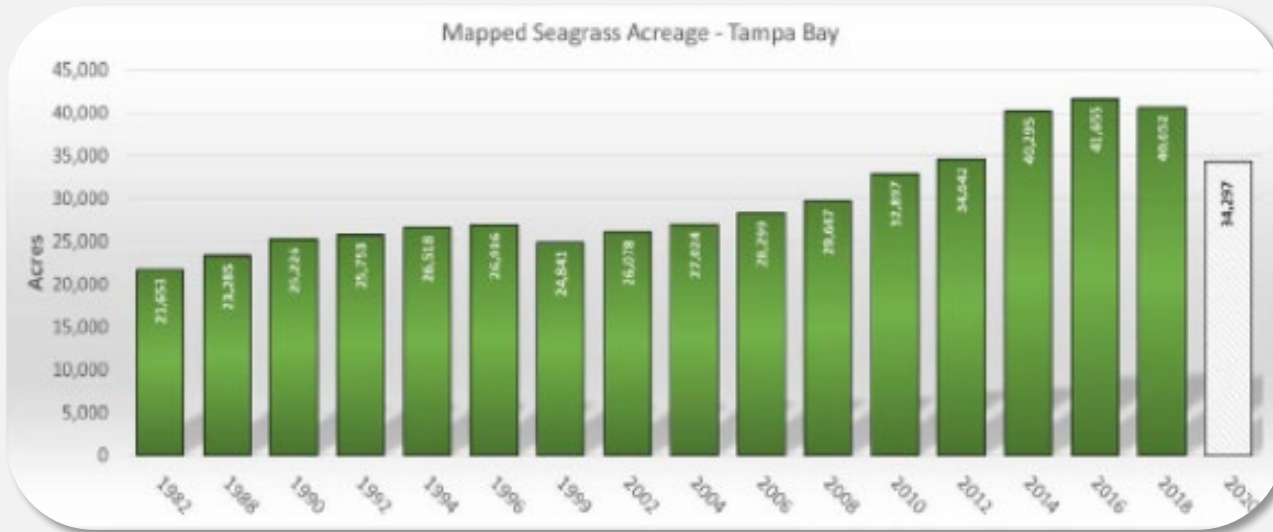
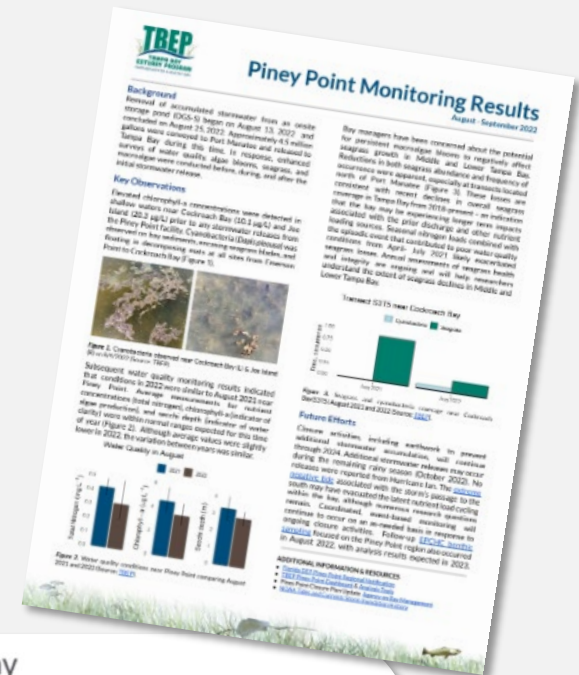
REGIONAL WATER QUALITY ISSUES

- Multiple Harmful Algal Blooms (HAB) and Red Tides
- 2018 Severe Red Tide Event
- 2021 Piney Point



REGIONAL WATER QUALITY ISSUES

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- 2021 Piney Point



ALGAE ISSUES IN SEAGRASS BASIN AND PERICO BAYOU



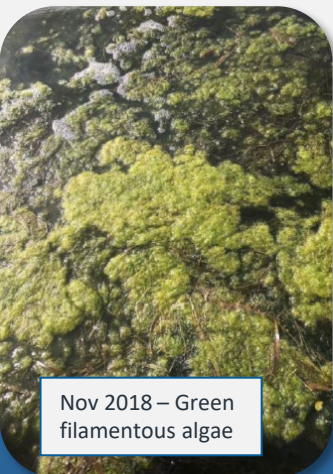
Lyngbya – Late Spring Early Summer



Drift/Macro Algae – Late Fall to Early Spring



Green Filamentous – Late Summer to Early Winter



Nov 2018 – Green filamentous algae



Jan 2019 – Very heavy cover by drift/macro algae in basin and bayou



May 2020 – Very heavy Lyngbya cover in basin



March 2021 – Very heavy cover by drift/macro algae in basin and bayou

ADAPTIVE MANAGEMENT OF PERICO PRESERVE SEAGRASS BASIN

- Pilot Seagrass Planting (Sept 2020)
- Vertical Oyster Gardens (VOG)
- Seaweed Booms

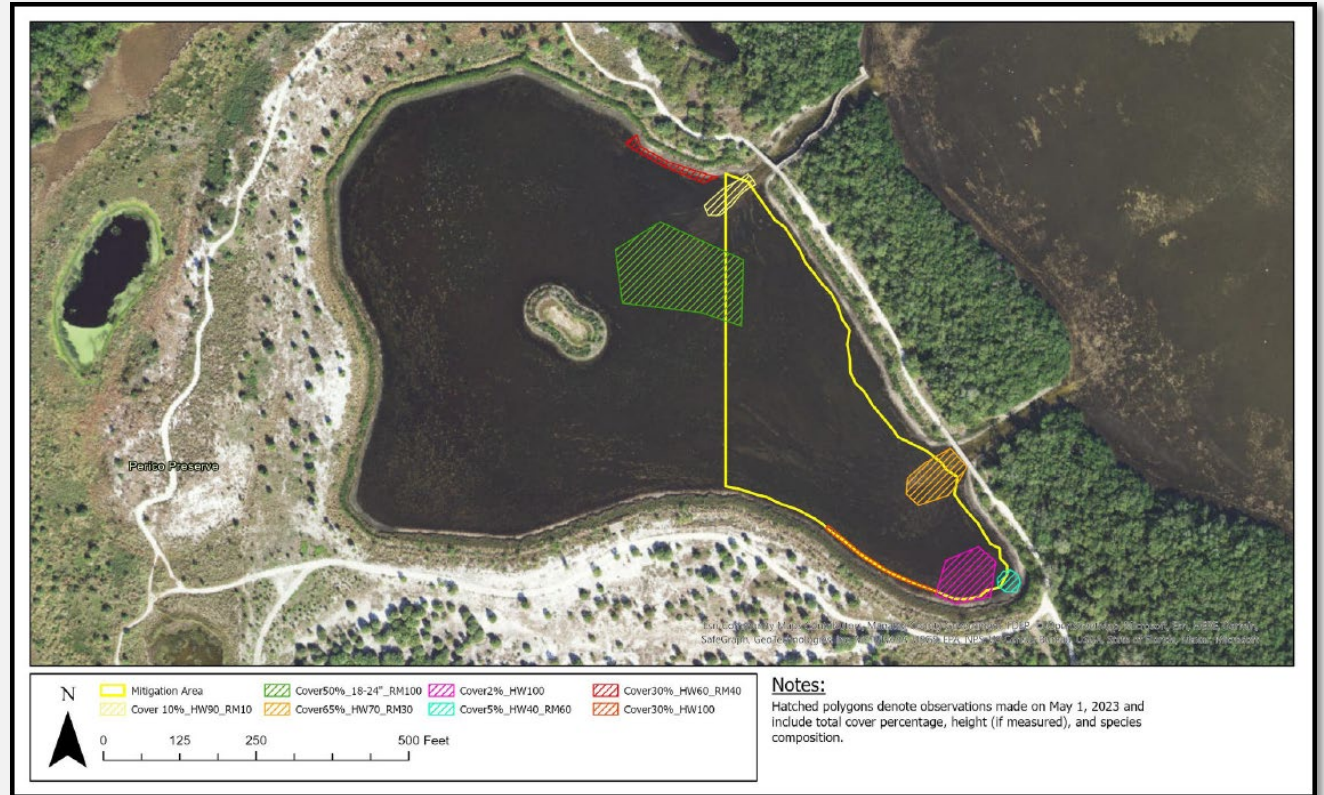


AGENCY COORDINATION

- July 2020: Pre-Planting Site Visit (APTIM, B&N)
- July 2020: Agency Conference Call (City, County, FDEP, NMFS, USACE, APTIM, CPE, ESA)
- September 2020: Pilot Planting Project
- April 2021: Agency Conference Call & Deployment of Vertical Oyster Gardens
- August 2021: Site Visit (FDEP, County) & Deployment of Seaweed Booms
- November 2021: Site Visit (City, County, APTIM, CPE)
- April 2022: Agency Conference Call
- June 2022: Site Visit (County, ESA)
- July 2022: Agency Conference Call
- May 2023: Site Visit (County) & Agency Conference Call
- June 2023: Site Visit (City, County, NMFS, ESA) & Agency Conference Call
- July 2023: Agency Conference Call

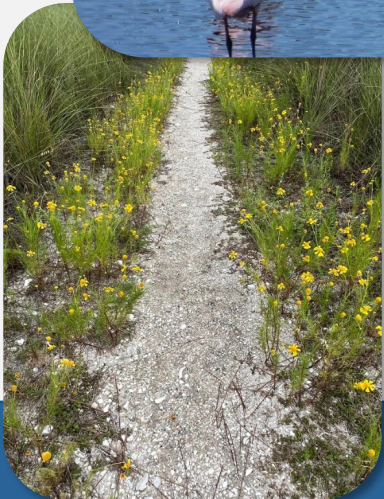


STATUS AND NEXT STEPS FOR PERICO PRESERVE SEAGRASS BASIN



STATUS AND NEXT STEPS

- Perico Preserve is a thriving and biologically diverse estuarine habitat
- Seagrass is naturally recruiting and growing in the basin



STATUS AND NEXT STEPS

- County to implement focused monitoring program in seagrass basin
- Continued monitoring of water quality with adaptive management strategies to exclude floating algae and Lyngbya
- Mitigation Plan was modified to add additional donor sites
- Consider revising / expanding LKMS boundaries
- Discuss revising mitigation plan to eliminate donor sites and include nursery grown seagrass planting and/or natural recruitment
- Maintain coordination with state and federal agencies to ensure permit compliance and science-based decision making



Photos taken November 3, 2024

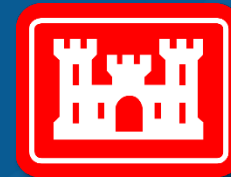
THANK YOU



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