Oyster Reef Habitat Restoration in St. Andrew Bay

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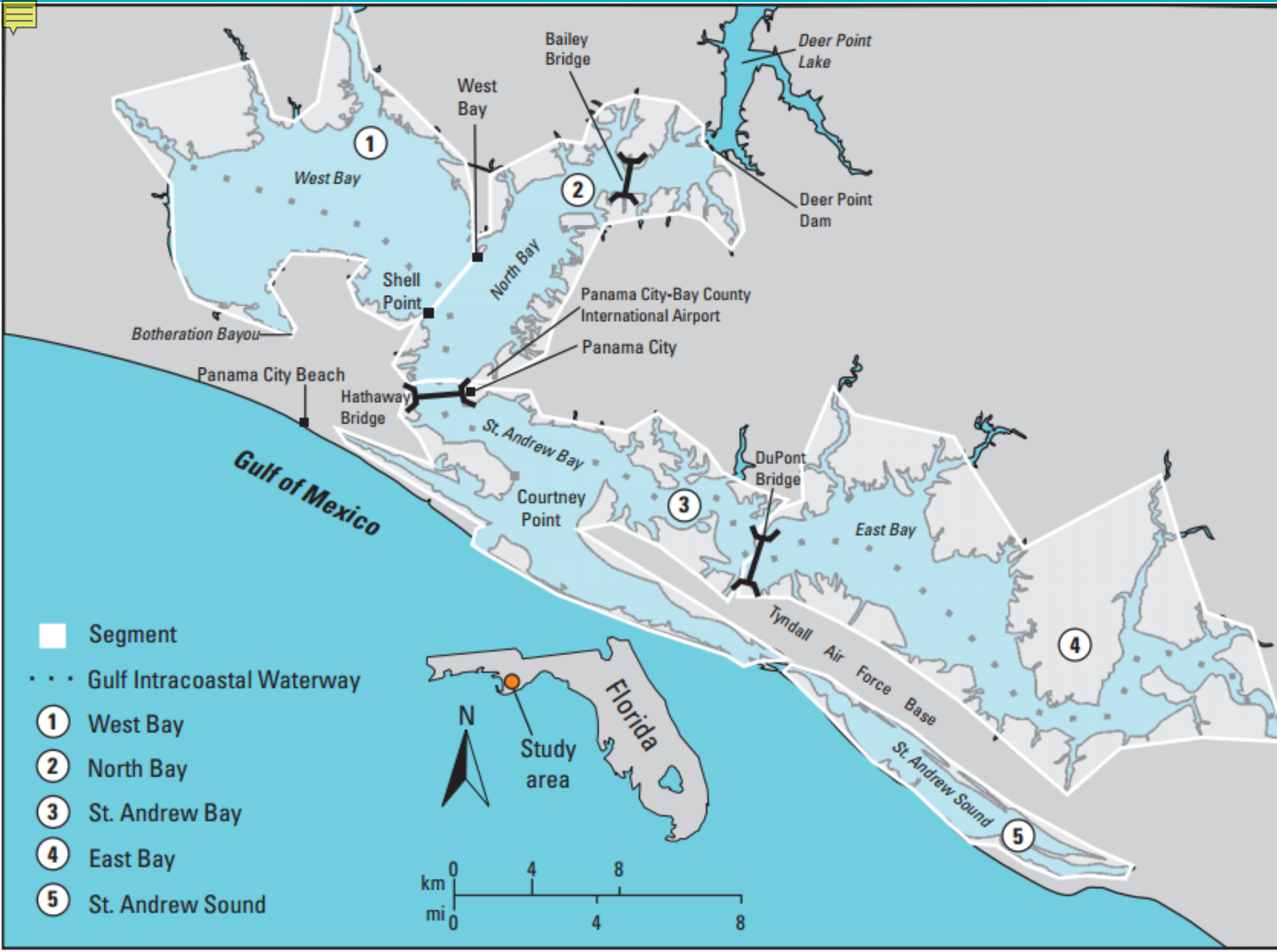
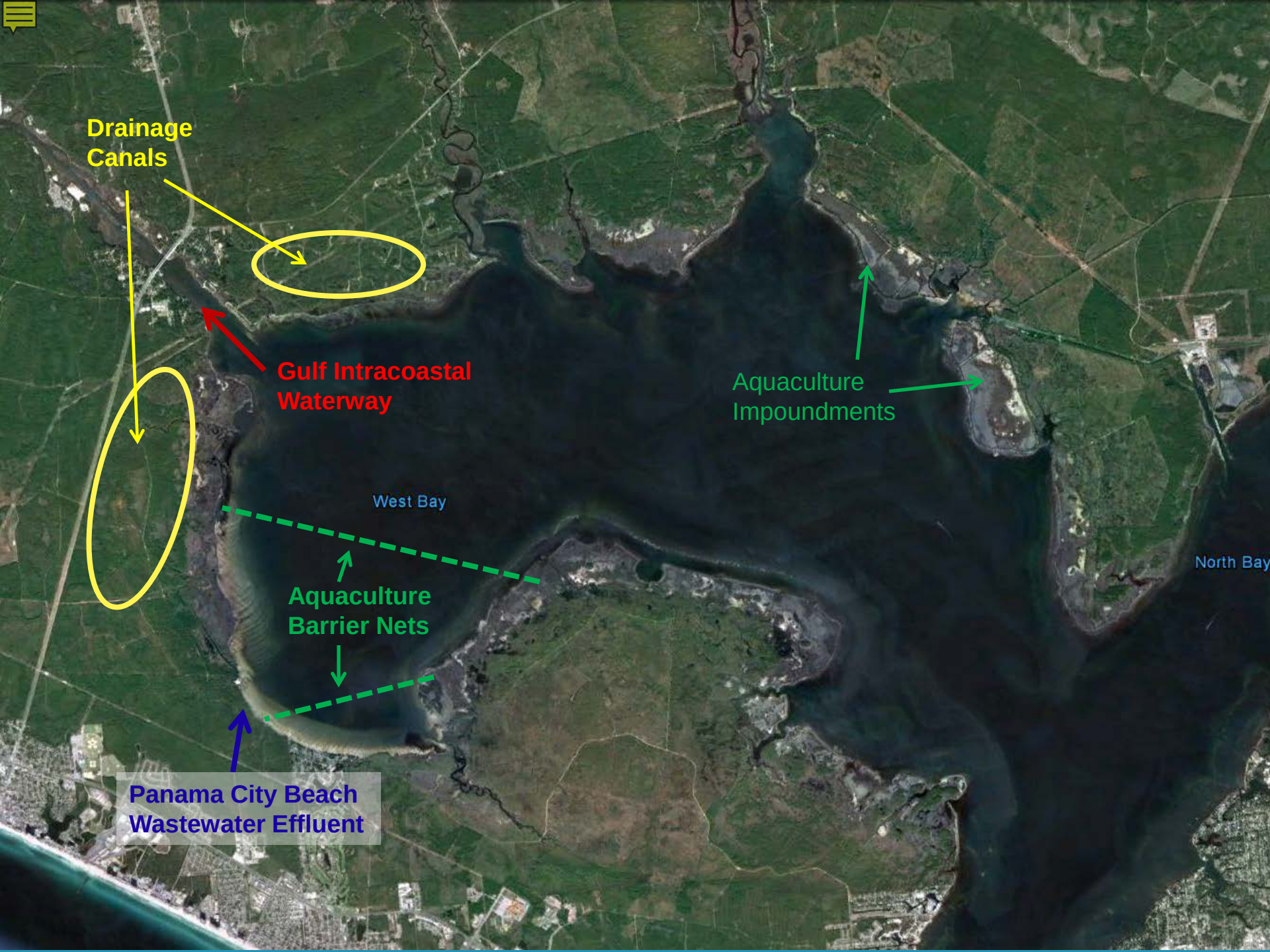
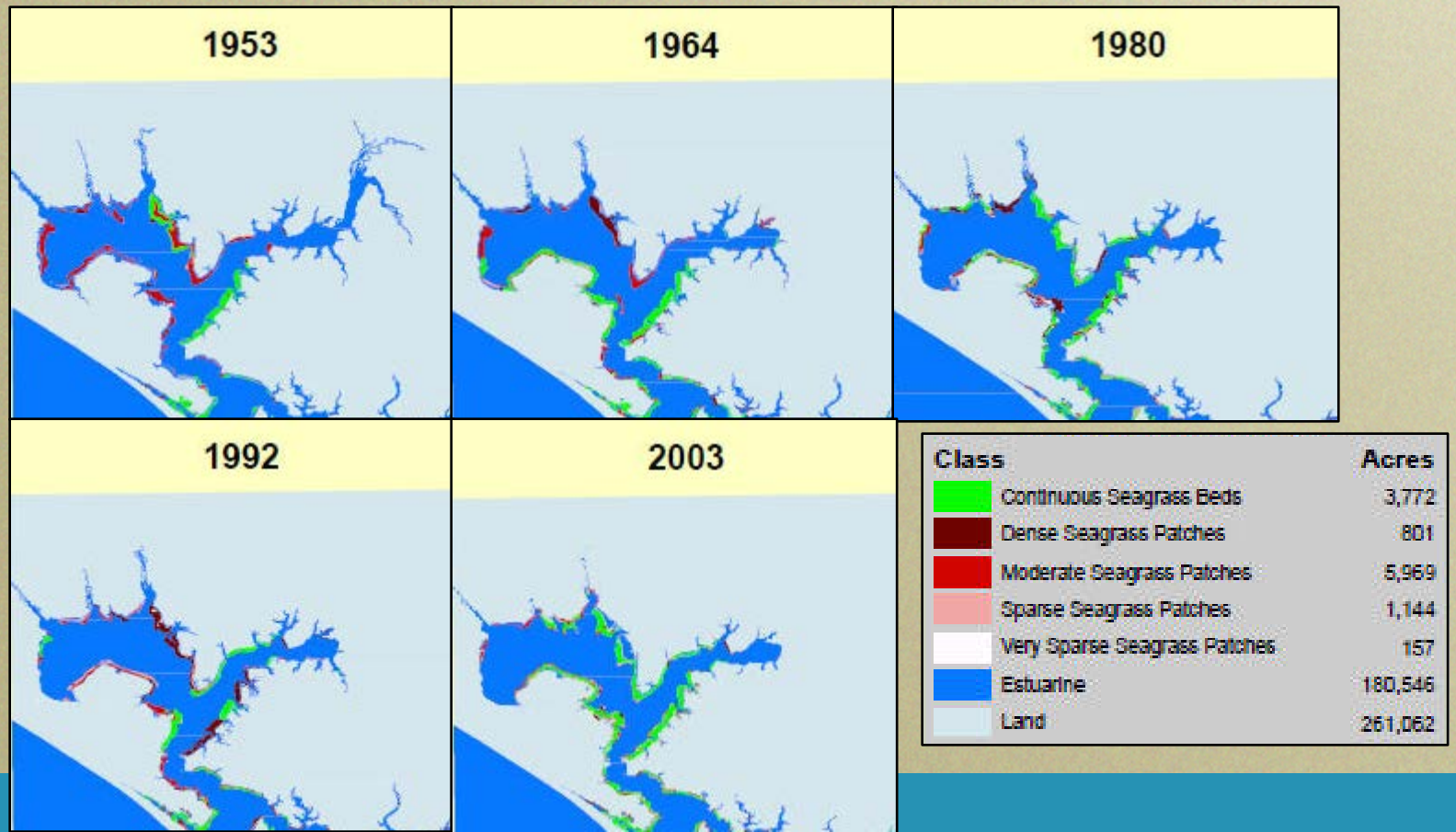
Aquatic Habitat Conservation and Restoration


Bailey Bridge
Deer Point Lake
West Bay
Deer Point Dam
West Bay
North Bay
Shell Point
Panama City-Bay County International Airport
Botheration Bayou
Panama City
Panama City Beach
Hathaway Bridge
St. Andrew Bay
Gulf of Mexico
Courtney Point
DuPont Bridge
East Bay
Tyndall Air Force Base
St. Andrew Sound
Segment
Gulf Intracoastal Waterway
1 West Bay
2 North Bay
3 St. Andrew Bay
4 East Bay
5 St. Andrew Sound
N
Florida
Study area
km 0 4 8
mi 0 4 8


Drainage Canals
Gulf Intracoastal Waterway
Aquaculture Impoundments
West Bay
North Bay
Aquaculture Barrier Nets
Panama City Beach Wastewater Effluent

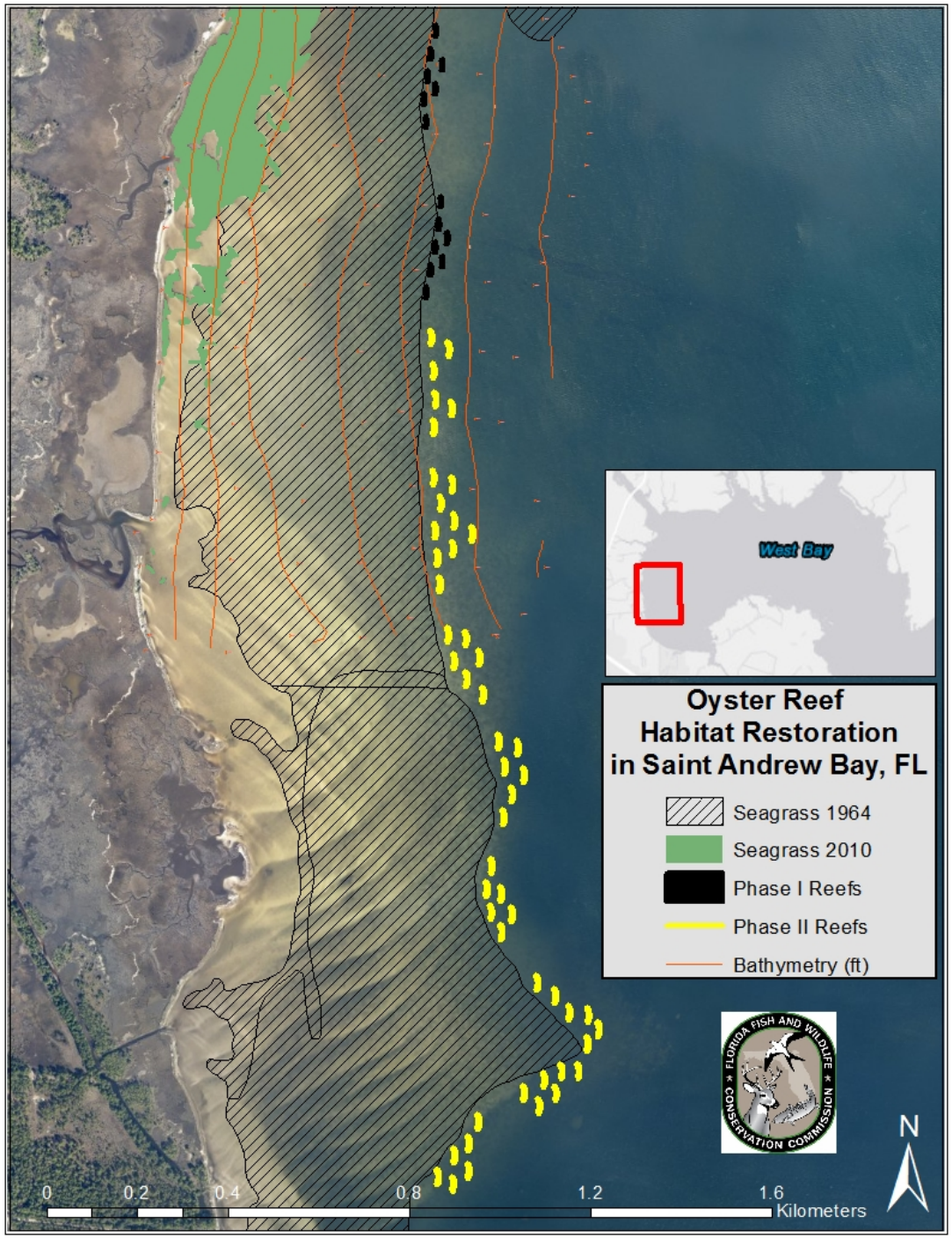
Seagrass Trends

- West Bay has suffered the greatest seagrass loss in the St. Andrew Bay estuary system ; approximately 2000 acres since 1953 (Costanza et al. 1997)



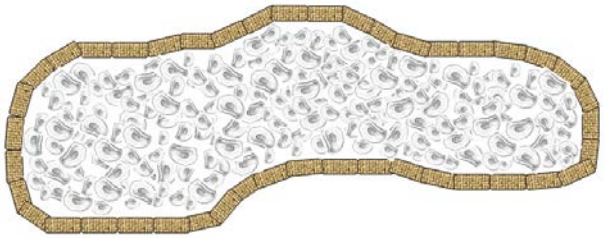
Project Goals:

- Strategically place subtidal oyster reef networks that will:
  - Increase oyster population
  - Improve water quality
  - Attenuate wave energy
  - Provide shoreline protection
  - Enhance fisheries habitat
  - Create conditions more suitable for seagrass recruitment in adjacent habitat
- Educate the public about the many benefits that healthy oyster populations can provide. Engage community volunteers/students.
- Use new techniques in oyster restoration that could be used as a model for future restoration efforts in NW Florida.

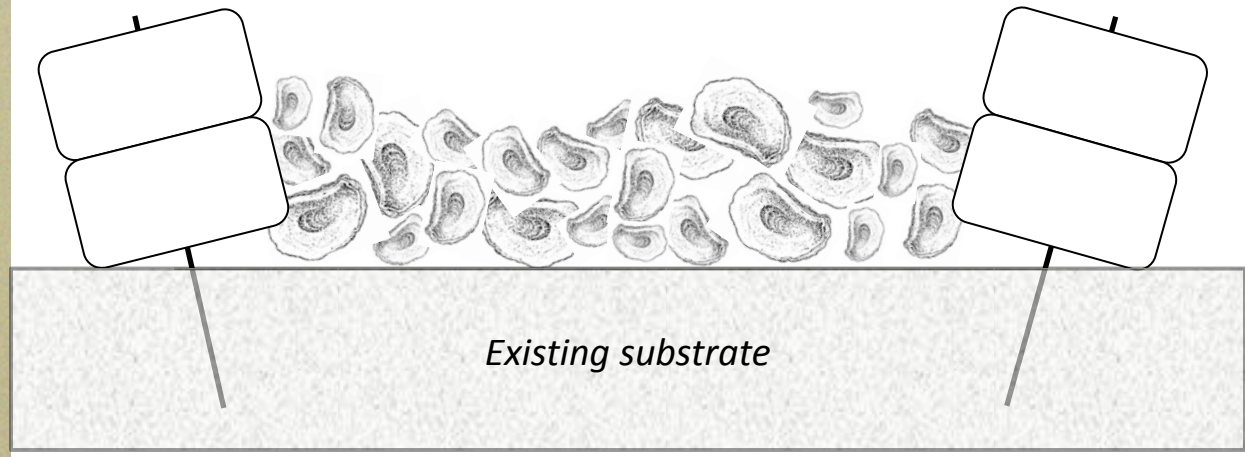

West Bay
Oyster Reef
Habitat Restoration
in Saint Andrew Bay, FL
Seagrass 1964
Seagrass 2010
Phase I Reefs
Phase II Reefs
Bathymetry (ft)
0
0.2
0.4
0.8
1.2
1.6
Kilometers
N

Oyster Bag Wall with Cultch Center

Overhead View

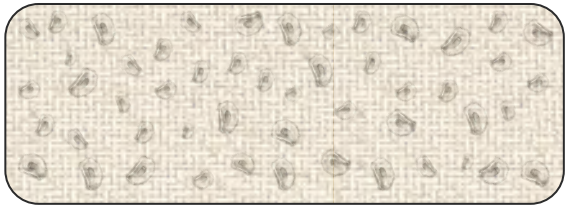


Cross Section View

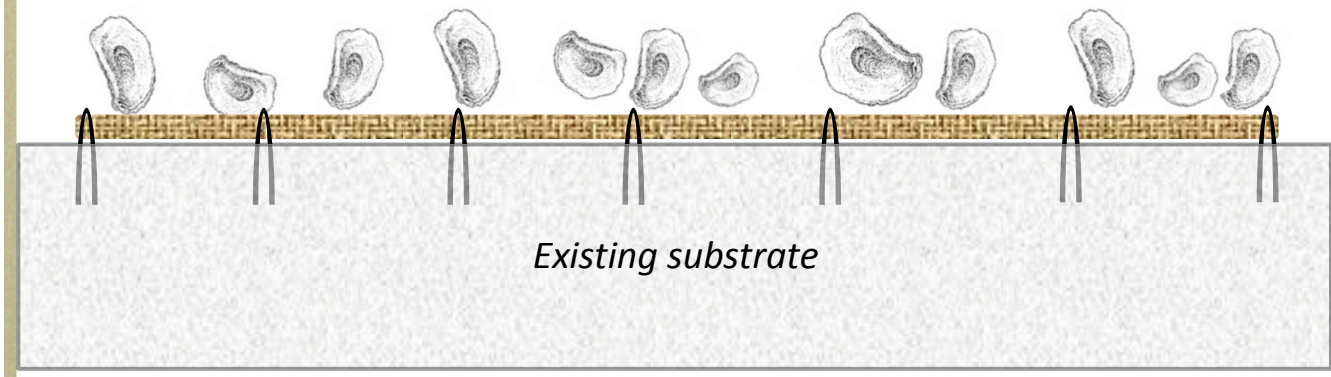


Coir Mat with Attached Oyster Shell

Overhead View



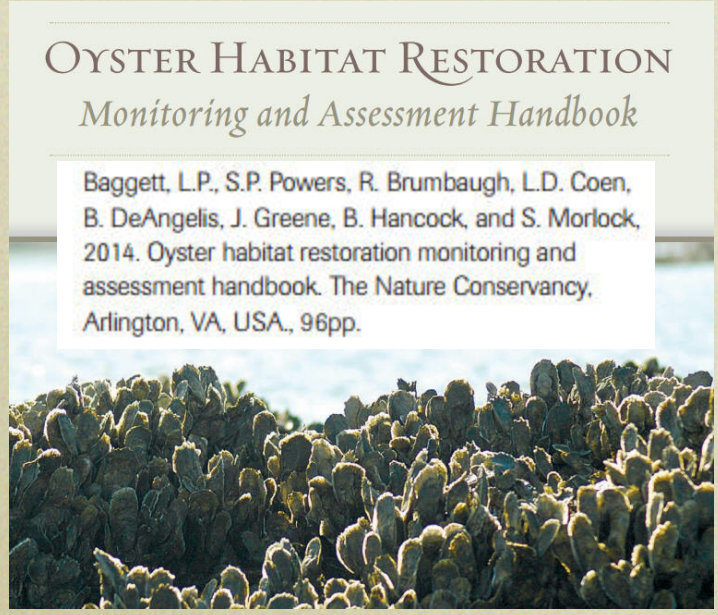
Cross Section View



Coconut Fiber

Measuring Success

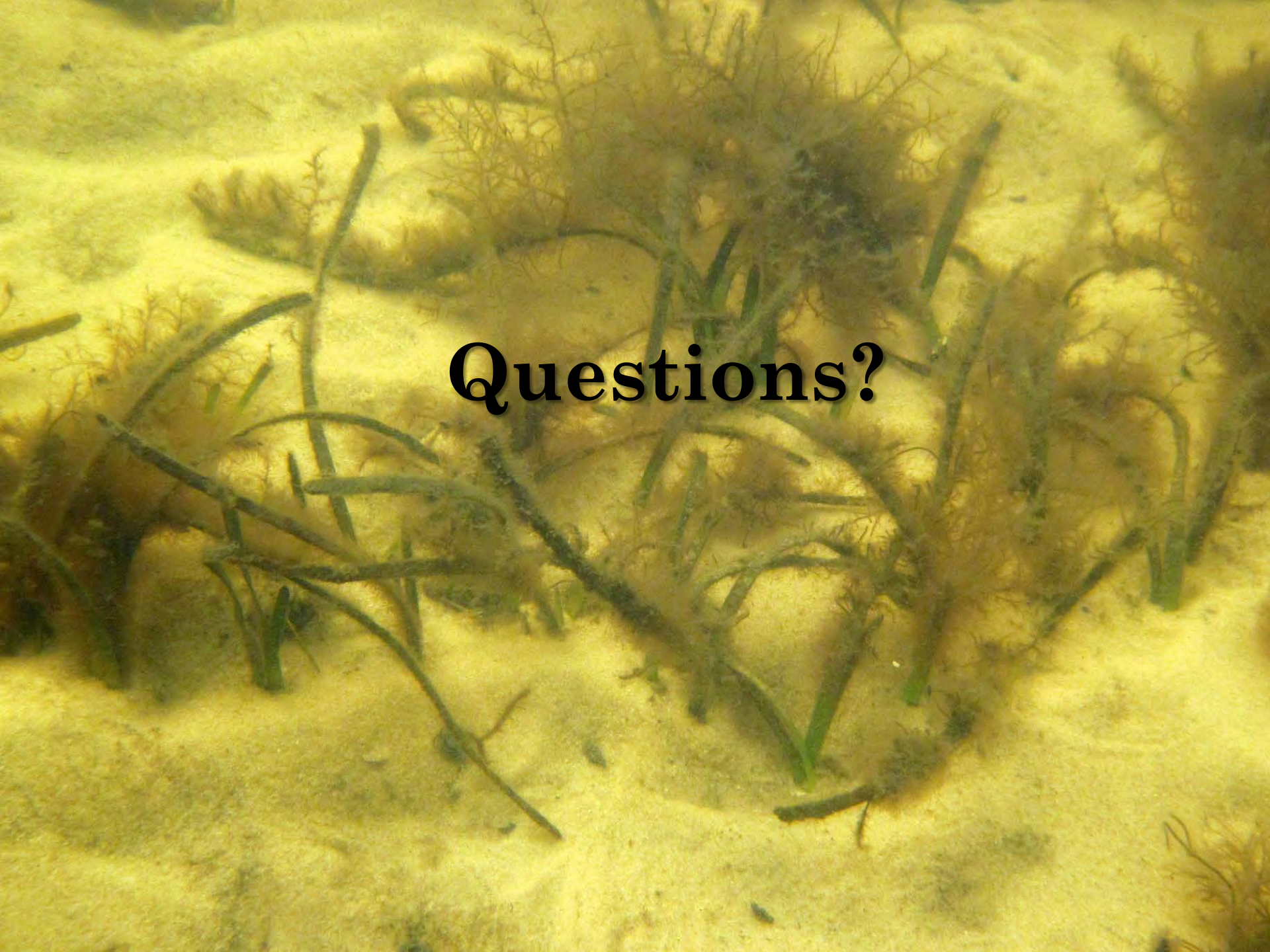
Monitoring to determine whether reefs are achieving restoration goals and allow for adaptive management.



- Reef height and areal dimension
- Oyster density and size-frequency distribution
- Water quality measurements (e.g., salinity, DO)
- Seagrass coverage

RESTORE Act Multi-Year Implementation Plan objectives:

- 1.7 Recreation
- 1.8 Conserve and protect natural resources
- 2.1 Improve and protect the St. Andrew Bay watershed
- 2.2 Improve and protect water quality
- 2.3 Protect seagrass beds
- 2.4 Increase awareness of wildlife habitat
- 2.6 Preserve and restore dune systems and living shorelines
- 2.7 Contribute to the protection and recovery of protected species


Questions?