

RESTORE Act Bucket 2 Planning Public Meeting

James C. Gibeaut, Ph.D.
Coastal and Marine Geospatial Sciences
Harte Research Institute for Gulf of Mexico Studies
Texas A&M University – Corpus Christi

Public Meetings
December 2018



Texas Coast

Shoreline Length:

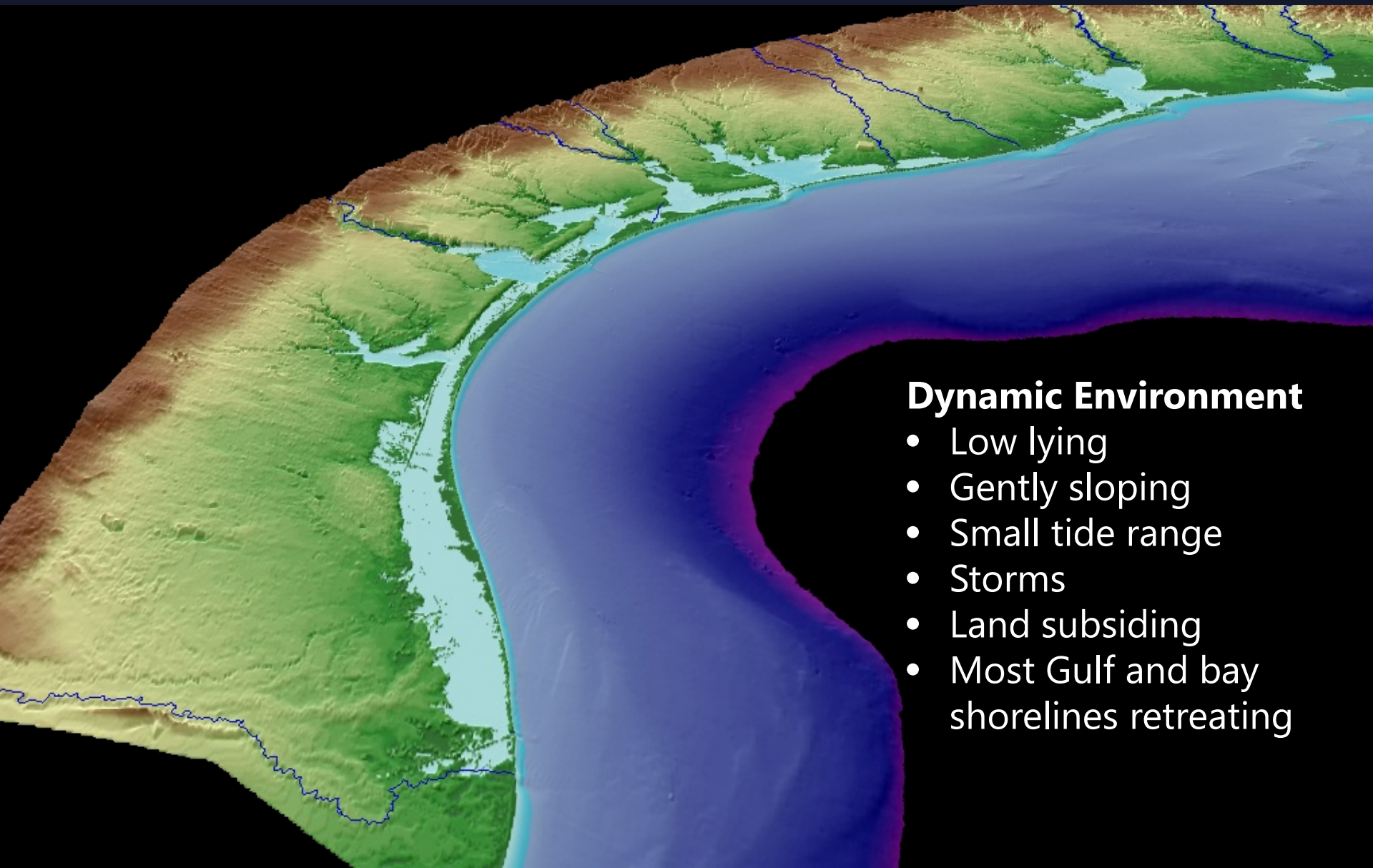
Gulf = 375 miles

Bays = 5,850 miles



Gulf of Mexico

Texas Coastal Plain Topography and Bathymetry



Dynamic Environment

- Low lying
- Gently sloping
- Small tide range
- Storms
- Land subsiding
- Most Gulf and bay shorelines retreating

Community and Economic Resilience

- Texas coast is important to the state and the country
- Population expected to increase 50% from 2010 to 2050
- Need to protect environment, community, and economy



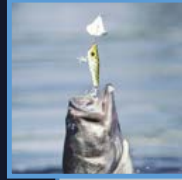
\$25 billion of cargo passing through GIWW



\$59 billion exported petroleum and coal products



29% of the nation's total refining capacity



\$369 million expenditures on recreational fishing trips



\$278 million in commercial seafood landings



\$19.7 billion spent by tourists traveling to Texas coast

Texas Coastal Ecosystem



Wetlands



Rivers



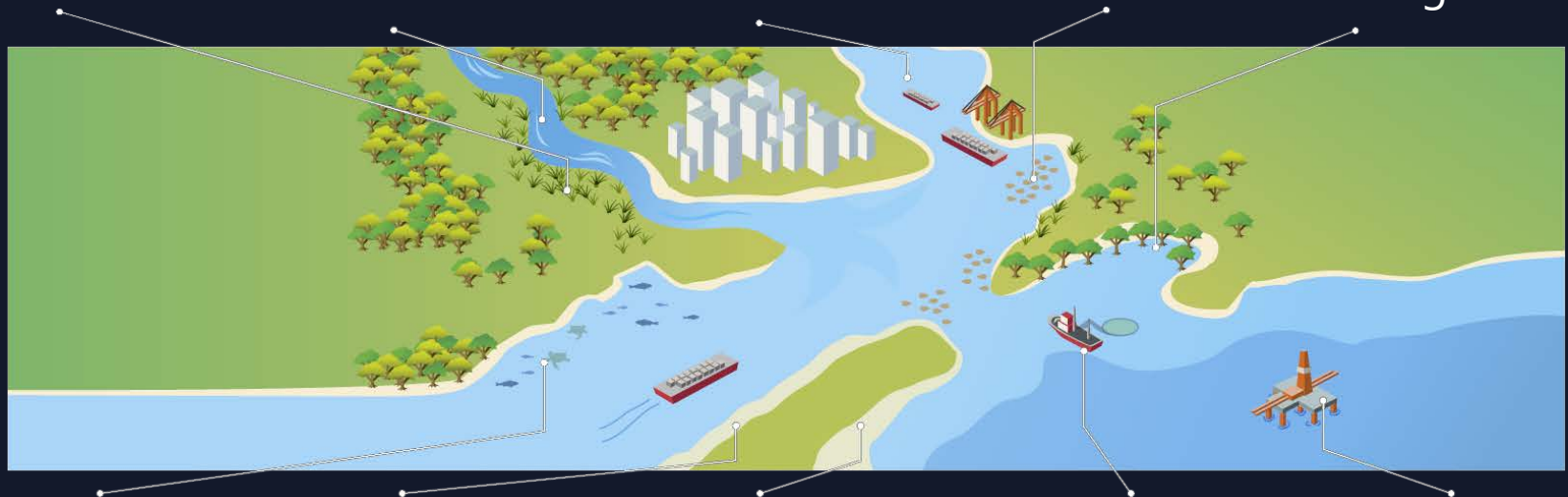
Water Quality



Oysters



Coastal Vegetation



Estuaries

Beaches

Dunes

Fisheries

Industry



State of the Coastal Ecosystem

Coastal Erosion



Long-term Shoreline Change

Feet per year

20 to 114

0 to 20

-5 to 0

-20 to -

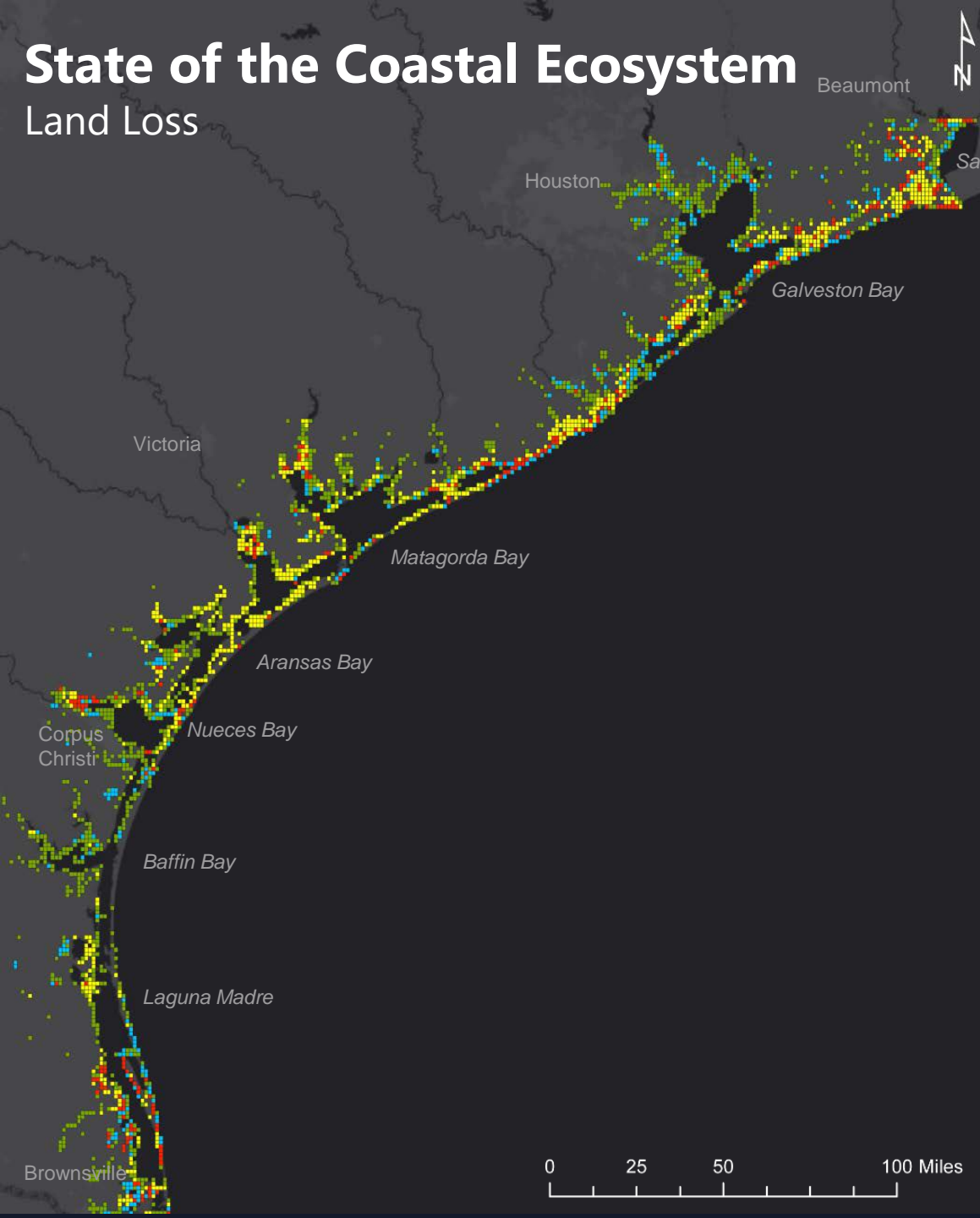
-64 to -20

Advancing

Retreating

State of the Coastal Ecosystem

Land Loss



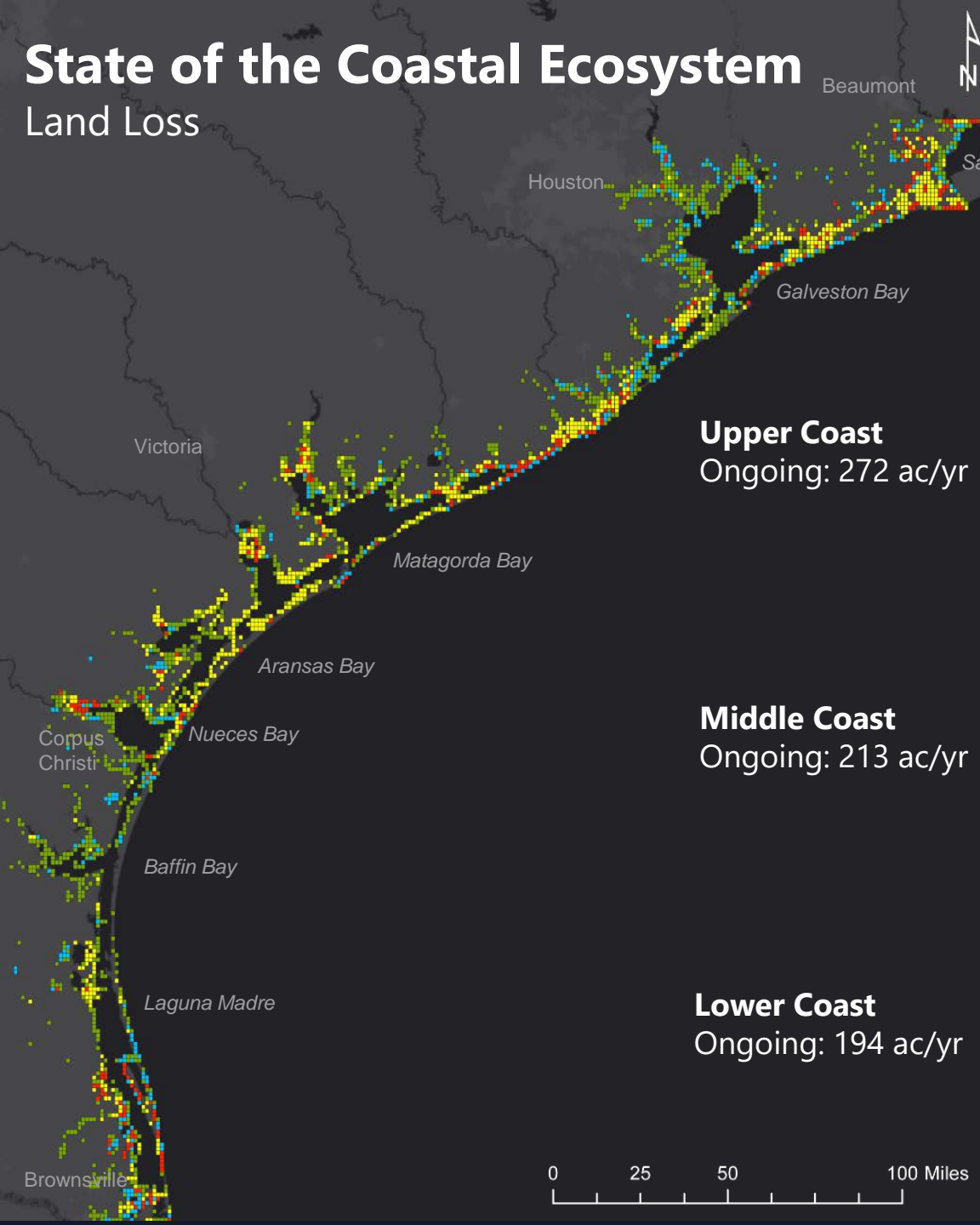
Conversion of land to open water

- Below average ongoing & future loss
- Above average ongoing loss
- Above average future loss
- Above average ongoing & future loss

Average ongoing loss: 6.7 acres since 1984
Average future loss: 84.6 acres to 2100

State of the Coastal Ecosystem

Land Loss



Conversion of land to open water

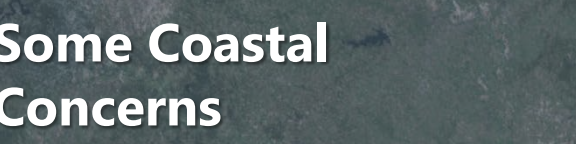
- Below average ongoing & future loss
- Above average ongoing loss
- Above average future loss
- Above average ongoing & future loss

Coast-wide Loss:
Ongoing: 679 ac/yr
(about 1 square mile/year)

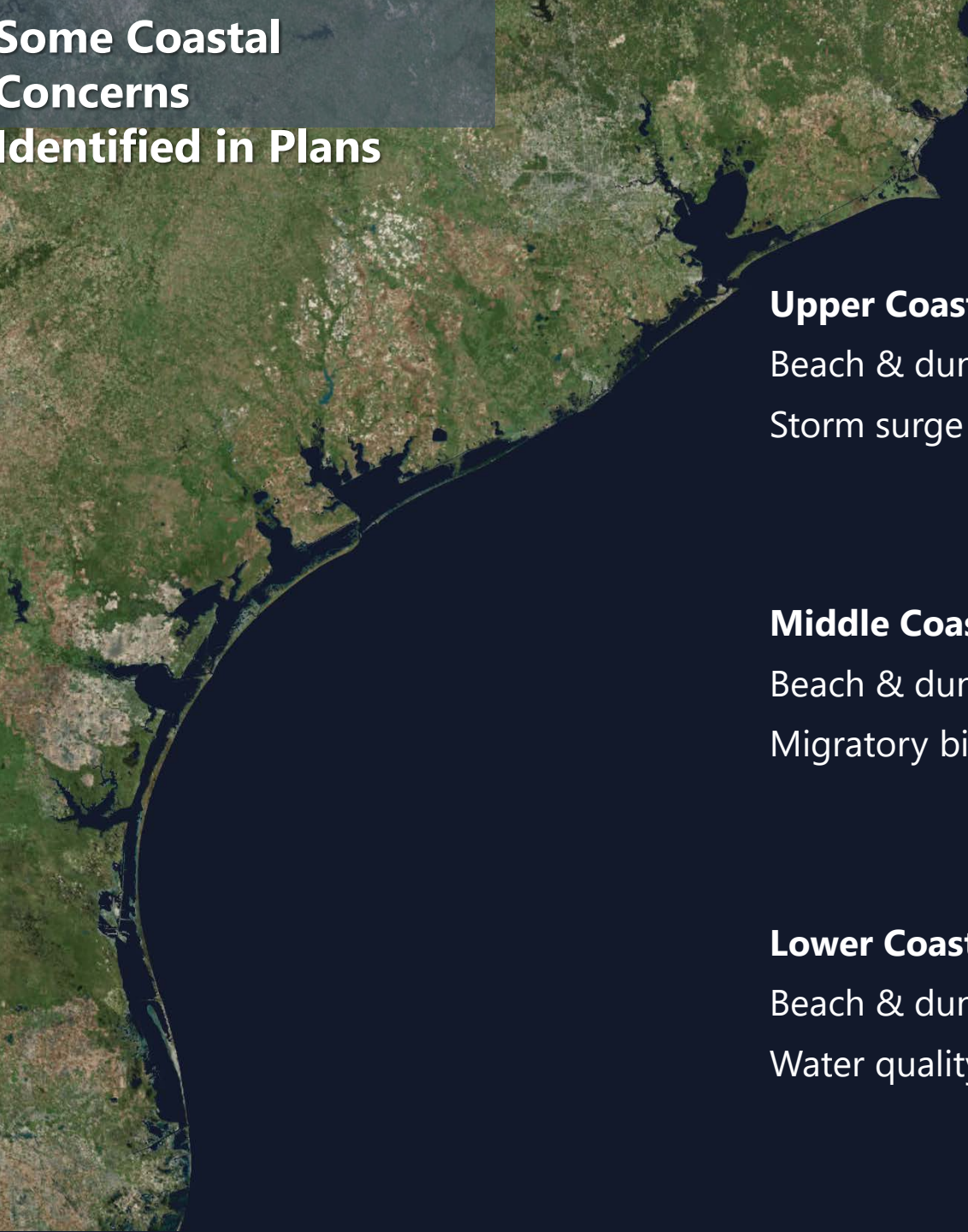
State of Restoration Planning in Texas

- Inventorying other restoration plans
 - Federal, state, regional, and local plans (still compiling – not all listed here)

* = includes projects			
Ecosystem Restoration	Coastal Hazard Mitigation	Ecosystem Restoration And Coastal Hazard Mitigation	Supporting Plans
1. Restoring the Gulf for Coastal Waterbirds* 2. Restoring Colonial Waterbirds on the Texas Coast* 3. Gulf-Houston Regional Conservation Plan* 4. Coastal Bend Bays Plan* 5. Restoration of Wetlands, Coastal, and Nearshore Habitats* 6. Final Programmatic Damage Assessment and Restoration Plan and Final Programmatic Environmental Impact Statement* 7. Salt Bayou Watershed Restoration Plan* 8. Laguna Madre Initiative* 9. Texas Mid-Coast Initiative* 10. Chenier Plain Initiative* 11. Seagrass Conservation Plan For Texas*	1. Storm Surge Suppression Study* 2. Community Resilience Collaborative*	1. Texas Coastal Resiliency Master Plan* 2. Coastal Texas Protection and Restoration Feasibility Study* 3. Sabine Pass to Galveston Bay Corps Feasibility Study Re-Scoping Project* 4. Restore Act Direct Component Texas Multiyear Implementation Plan *	1. Status and Trends of Coastal Hazard Exposure and Mitigation Policies for the Texas Coast 2. Texas Coastal Sediment Sources General Evaluation Study 3. Texas Prairie Wetlands Project 4. Texas Coast-wide Erosion Response Plan Update 2018* 5. Laguna Madre Estuary Program Environmental Strategic Plan* 6. Partners in Flight Bird Conservation Plan 7. King Rail Conservation Plan* 8. Little Blue Heron Conservation Plan* 9. Reddish Egret Plan* 10. Mottled Duck Conservation Plan* 11. Laguna Madre GIWW Dredged Material Management Plan*



Some Coastal Concerns Identified in Plans



Upper Coast

- | | |
|------------------------|--------------|
| Beach & dune erosion | Lost habitat |
| Storm surge & flooding | Oysters |

Middle Coast

- | | |
|------------------------|--------------|
| Beach & dune erosion | Lost habitat |
| Migratory bird habitat | Seagrasses |

Lower Coast

- | | |
|--------------------------|--------------------|
| Beach & dune erosion | Lost habitat |
| Water quality & quantity | Endangered species |