Mobile Bay National Estuary Program
Project Implementation Committee

March 10, 2022, 1:00 pm – 3:00 pm
Virtual Meeting

Agenda

Meeting Objectives:

a) Provide update on activities related to the Perdido Watershed.
b) Other project status updates

1. **Welcome and Introductions**
   PIC Co-Chairs:
   Judy Haner, The Nature Conservancy
   Patric Harper, U.S. Fish & Wildlife Service

2. **Review and Approval of Minutes**

3. **Old Business**
   a) Management Conference Committee Status Updates

4. **New Business**
   a) Perdido Watershed Project Updates
      a. Perdido Islands Management and Restoration Alternatives – Katie Baltzer, The Nature Conservancy
      b. Mobile District Regional Sediment Management Program – Don Mroczko, US Army Corps of Engineers
      c. City of Orange Beach Updates – Nicole Woerner, City of Orange Beach
      d. Perdido Watershed Management Plan – Wade Burcham, Geosyntec
      e. Submerged Aquatic Vegetation Restoration and Monitoring – Dottie Byron, Dauphin Island Sea Lab
   b) Watershed Planning and Project Implementation Update
   c) Off-cycle topical meeting – D'Olive site visit complete poll
   d) Next meeting **May 19**

5. **Adjourn**

Project Implementation Committee Meeting – March 2022

Welcome!

Please put your name, organization, and email in the chat box to sign in.

Please note: This meeting is being recorded!

This presentation provides minutes of the March 10, 2022, Project Implementation Committee. Additional notes are added as needed.

Attendees: Katie Baltzer, Don Blancher, Mary Kate Brown, Wade Burcham, Dottie Byron, Katherine Dawson, Mike Eubanks, Casey Fulford, Leslie Gahagan, Judy Haner, Patric Harper, Webb Jackson, Don Mroczko, Amy Newbold, Autumn Nitz, Melissa Pringle, Justin Rigdon, Sam St. John, Kelly Swindle, Chris Warn, Connie Whitaker, Nicole Woerner

MBNEP Staff: Bethany Hudson, Jason Kudulis, Christian Miller, Roberta Swann

The chat for the meeting was lost during processing so an accurate list of attendees was not available. If you attended and are not listed please let me know.

Project Implementation Committee Agenda

Welcome and Call to Order:

Co-Chairs: Judy Haner, The Nature Conservancy, & Patric Harper, U.S. Fish and Wildlife Service

Review and approval of September 2021 minutes

Old Business: Management Conference Committee Updates

New Business:

- Perdido Watershed Project Updates
- Watershed Planning and Project Implementation Updates
- Off-cycle Topical Meeting – D'Olive Site Visit
- Next Meeting May 19

The meeting was called to order at 1:04pm.

Minutes from the September 2021 meeting were distributed for review prior to the meeting. Dottie Byron motioned to accept the minutes; Sam St. John seconded the motion.

Old Business: MBNEP staff provided updates for the other Management Conference committees.
Science Advisory: The SAC continued ongoing efforts to increase committee participation in the Stressor Evaluation Matrix update and engaged in an exercise to assess monitoring priorities for habitats, ecosystem services, and stressors identified in the current CCMP.
Business Resource: The committee issued their first loan from the Coastal Alabama Fisheries Fund, and it is being used to nearly double production capacity at a Mobile County farm.
Government Network: The committee is getting more versed about available funding forthcoming via the infrastructure act. The U.S. Corps of Engineers also updated the group on the proposed Upper Bay Beneficial Use Wetland project.
Community Action: Member organizations discussed methods and strategies to strengthen individual and collective efforts for membership recruitment and engagement and community awareness.

New Business:
Presentations focused on monitoring, planning, and restoration activities in the Perdido Watershed. Slides from presentations follow and supplemental notes are included as needed.

Committee will schedule another field trip – D'Olive restoration projects will be the destination. Idea for next field trip perhaps visiting City of Orange Beach to learn more about their marine debris activities.

Project Implementation Committee Agenda

Perdido Watershed Project Updates

- Perdido Islands Management and Restoration Alternatives – Katie Baltzer, The Nature Conservancy
- Mobile District Regional Sediment Management Program – Don Mroczko, US Army Corps of Engineers
- City of Orange Beach Updates – Nicole Woerner, City of Orange Beach
- Perdido Watershed Management Plan – Wade Burcham, Geosyntec
- Submerged Aquatic Vegetation Restoration and Monitoring – Dottie Byron, Dauphin Island Sea Lab


Project Update:
Lower Perdido Islands
The Nature Conservancy
moffatt & nichol
OBA

Katie Baltzer with The Nature Conservancy provided the update for the Lower Perdido Islands project.

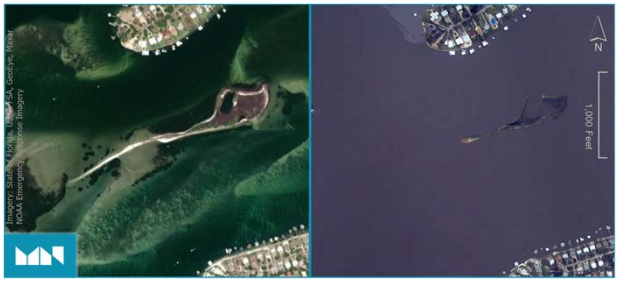
- A Conservation Management Plan was developed for the resource islands (Walker, Bird, and Robinson).
    - Plan keys in on conservation strategies – management actions by habitat type and anthropogenic impacts, while the second component included modeling and sediment efforts to guide future restoration.

Habitats of the Perdido Islands

- Host to a range of habitats and inhabitants
- Seagrasses—important nurseries for many gulf species
- Marsh—important foraging areas and nursery habitats
- Upland habitats of scrub shrub, some trees, marsh, and open beach habitat—Robinson
- Herons and other roosters like the trees on the island while shorebirds like the shoals and beach habitat—least tern babies
- **Since the area around these islands is highly developed, these small islands are an important stopover for the region's wildlife**
- Rooftop nesting?

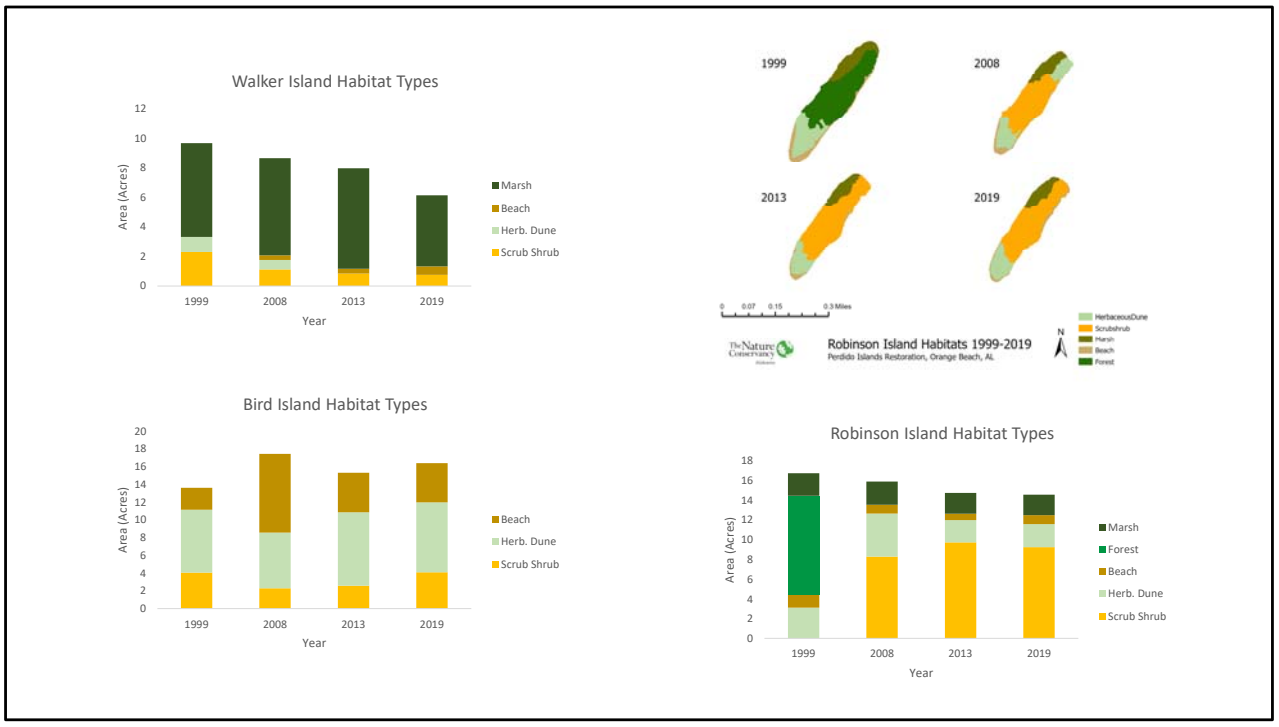
Challenges

- Storms & rising sea level
- People
- Habitat loss



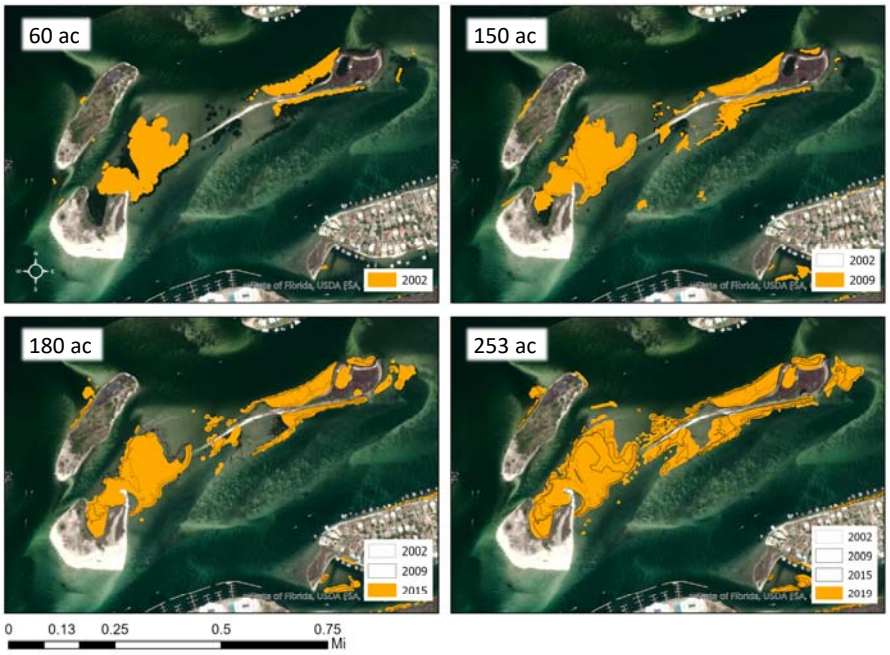
Bottom right photo is a before and after of Walker Island during Hurricane Sally.

These islands are loved to death – recreation and water activities.



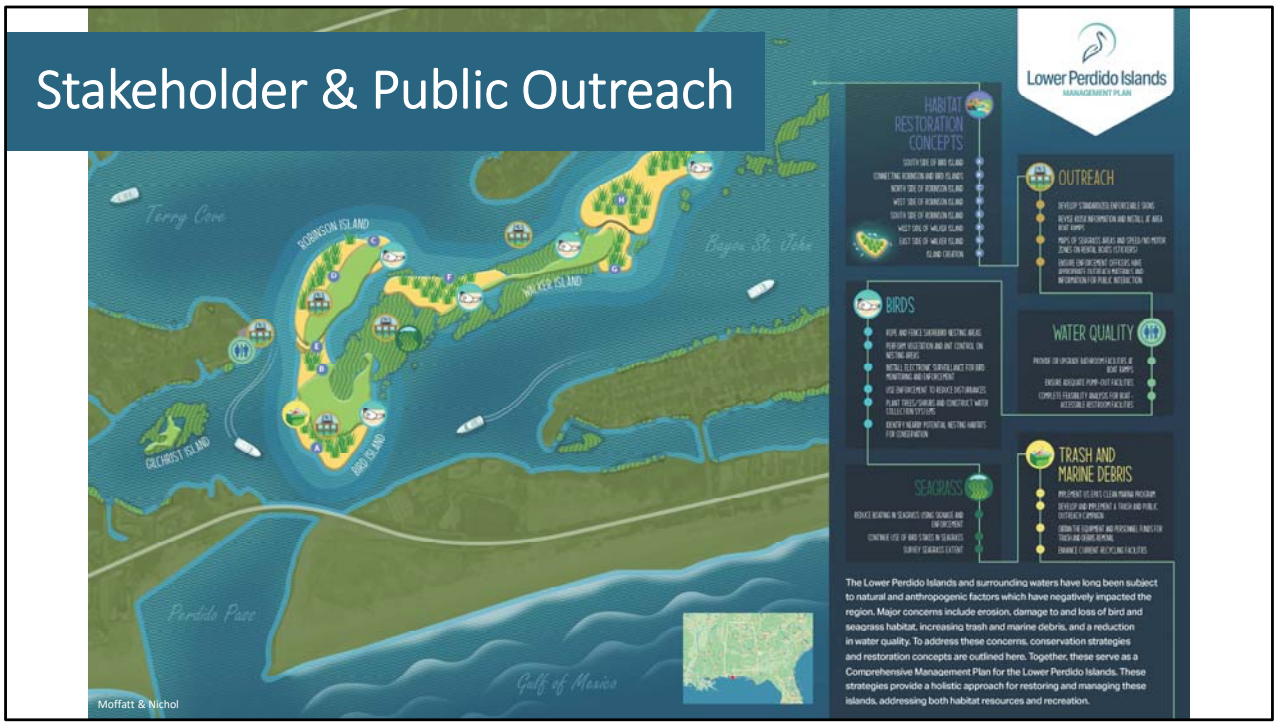
- Mapped and quantified the different habitats on each island including scrub shrub, herbaceous dune, beach, marsh and forest.
- Walker Island is heavily dominated by marsh, and has been losing acreage steadily, while Bird has fluctuated up and down with relatively stable habitat types.
- Robinson Island has seen a significant changes, where a big portion of the island hosted large trees, now has more scrub shrub habitat—when you think about this in relationship to the wildlife that uses these areas, you can't dismiss the fact that this will have a significant impact on wildlife use.

Seagrass Habitat Changes



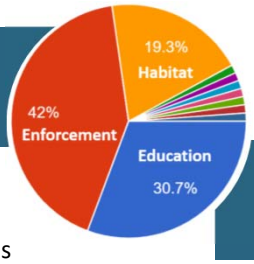
- There are also extensive seagrass beds in the area, and these have been increasing in size in the last 20 years based on monitoring conducted by DISL.
- This is great news, but also makes it even more important to have measures in place to protect this habitat and the fish and invertebrates that use it.

Stakeholder & Public Outreach

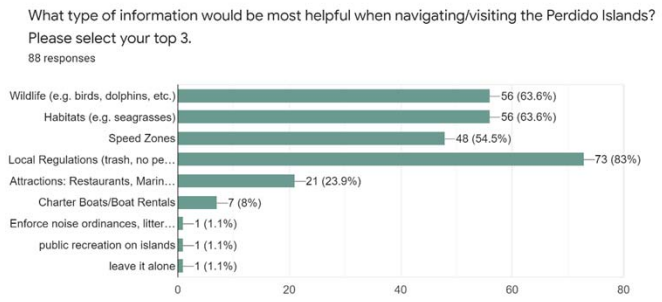


- Another major component of the Plan included feedback from stakeholders and the general public. Enforcement challenges play a large role.
- This graphic highlights areas for placement and habitat creation as well as management actions.

Public Feedback



- More enforcement & education
- Need for more info on local regulations
- Don't restrict public access
- Keep islands natural & enhance habitats

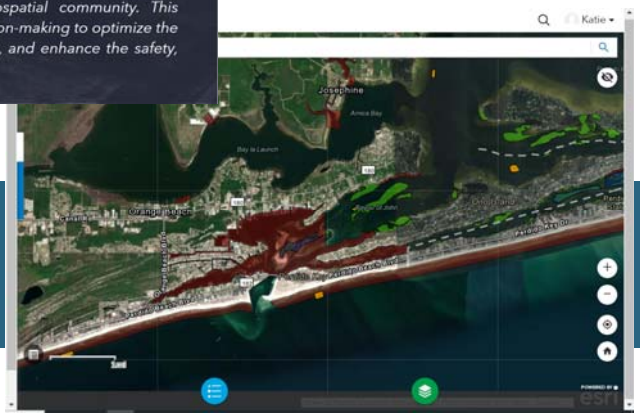


Law Enforcement

- Improve public knowledge of no wake zones, rules & regs
- Signage improvements & maintenance
- State vs. municipal jurisdiction
- Legislative backing & personnel support
- More restrictions won't work

- Received 88 responses to surveys – greatest conservation needs are enforcement, education, and protection of habitats – need more information on regulations and that limiting access would not go over well.

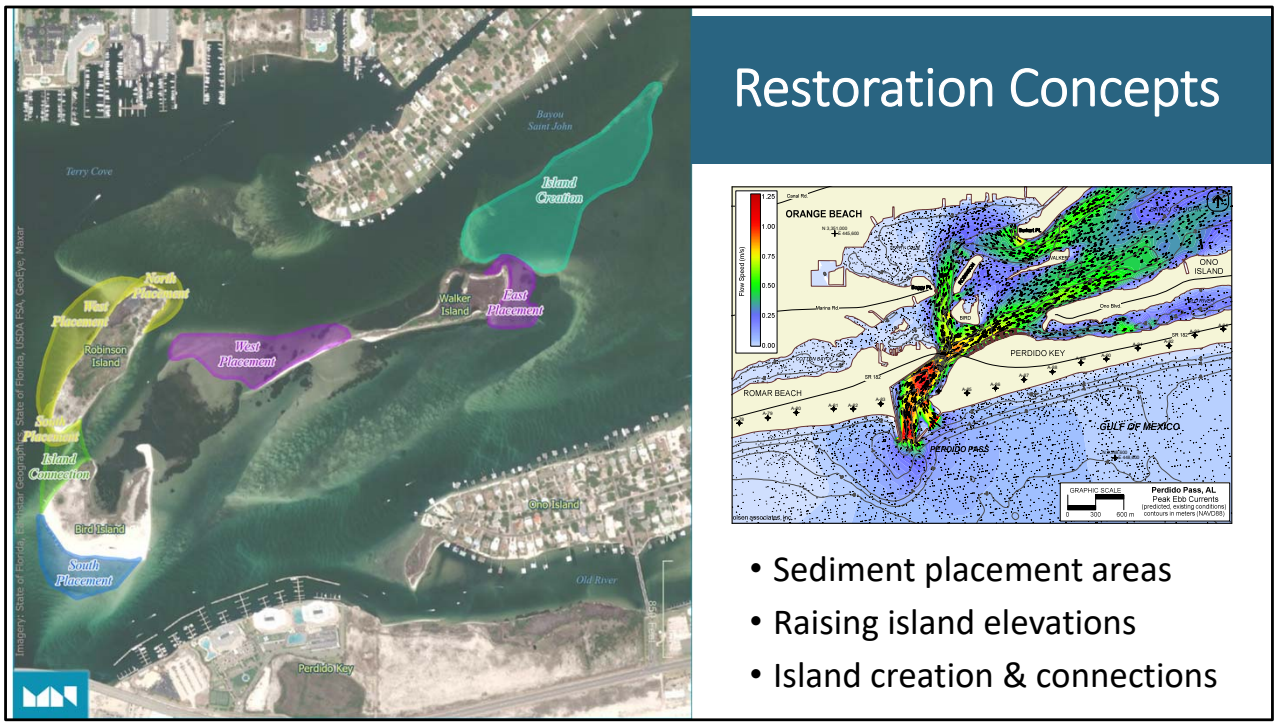
https://alic-algeohub.hub.arcgis.com/



GIS-Linked App

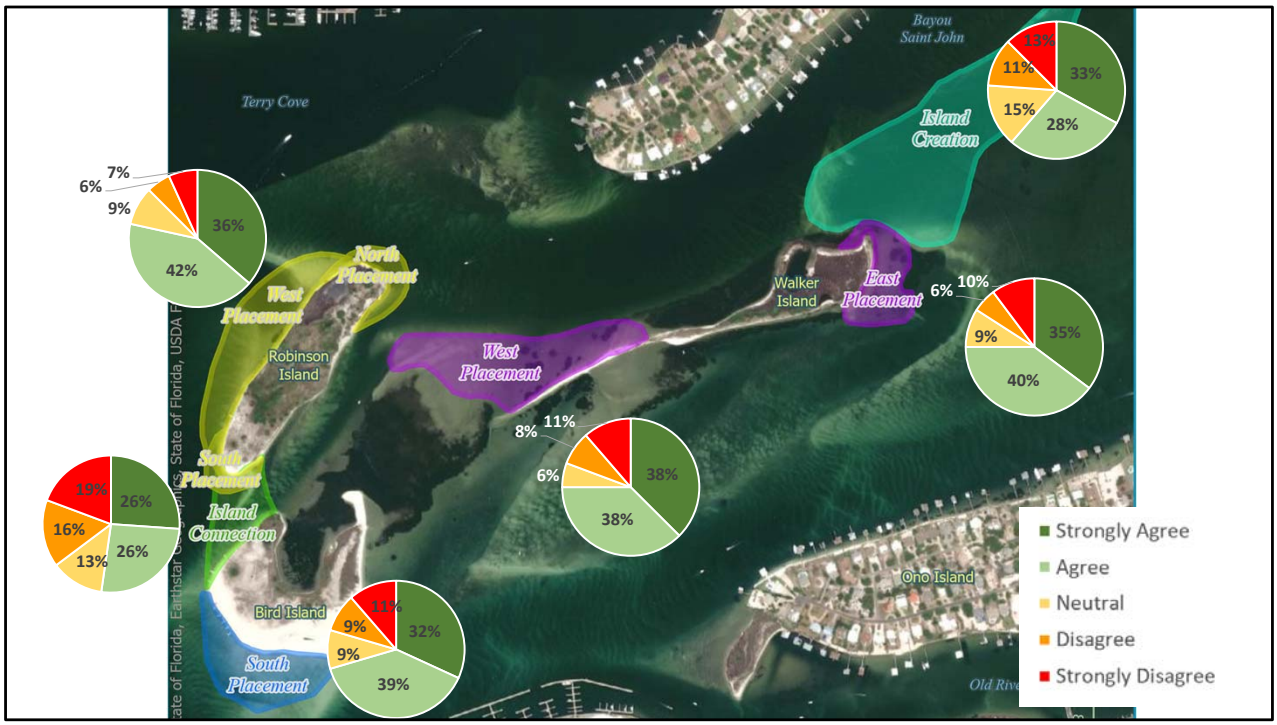
ALEA/MRD/TNC Collaboration

- Signage was an easy way to tackle some concerns. In a later presentation by Nicole Woerner at the City of Orange Beach provided more details.
- Created a GIS-web-based app. Users can use on mobile devices to know where they are in relation to no wake zones and other navigational information.



- On top of conservation strategies with proposed management actions, Moffat and Nichol and Olsen engineering drafted some restoration concepts to **balance human uses with the conservation, restoration, and long-term sustainability of the area.**
- Modeling and engineering to understand the system was coupled with the priorities and concerns from stakeholder discussions and public feedback.
- This includes beneficial use of sediment north of Perdido Pass for sustainable creation and enhancement

of island habitats with sediment placement areas highlighted in the map, raising island elevations to make them less susceptable to inundation, and connecting and creating new islands.



- Three concepts moved forward are Robinson Island concept and the two Walker Island.


LOWER PERDIDO
ISLANDS RESTORATION
Breakwater
Marsh Habitat (+1.5 ft NAVD88)
Scrub Shrub Platform (+4 ft NAVD88)
Dune Habitat (+4 to +5 ft NAVD88)
Upland Platform (+6 ft NAVD88)
0 200 400 800 1,200 Feet


Thanks!
Email: k.l.baltzer@tnc.org
OBA

Don Mroczko with the U.S. Army Corps of Engineers shared an update on the Corp's Regional Sediment Management efforts.

- Idea of beneficial use expands beyond Perdido – considering entire area of operation as potential sources.

Acknowledgments

- **ERDC Staff:**
  Brandon Boyd, Jarrell Smith, Danielle Tarpley and Earl Hayter
- **Mobile District Staff:**
  Herb Bullock, Elizabeth S. Godsey and Don Mroczko
- **Stakeholders/Partners:**
  Alabama Port Authority and Nature Conservancy……..

Study Overview

- Collaborative effort between Mobile District, ERDC, and Regional Stakeholders
- Funded by the FY20 and FY21 RSM National Program to develop a framework to implement beneficial use of dredge material for wetland and delta system resiliency.

Scope:

Evaluate **cost effective** and **sustainable** beneficial use options that promote resiliency. Data collection and model tool development to assess the current and future states of marsh and sand transport in the system nearby to Mobile Harbor upland dredge material placement sites.

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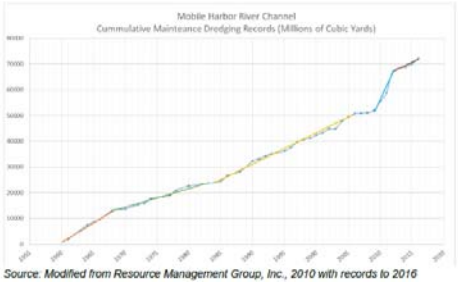
A Two-fold Need



Source: Modified from Resource Management Group, Inc., 2010 with records to 2016

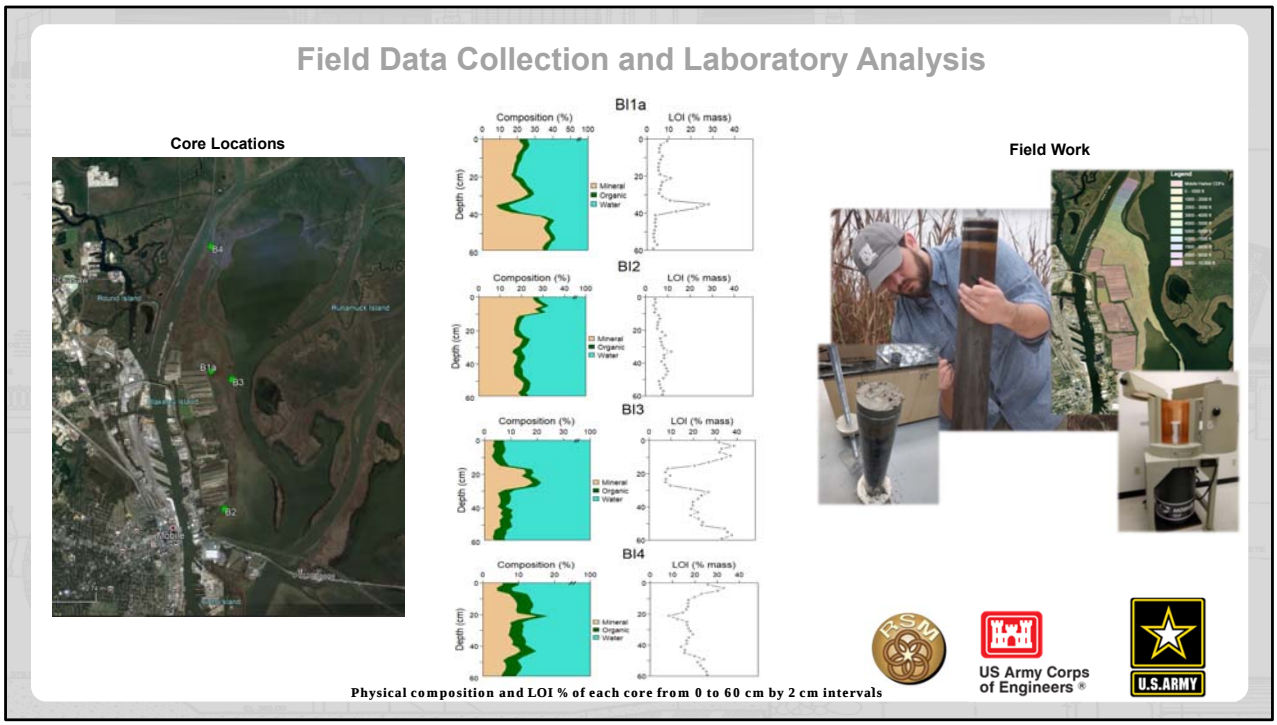
	Area (Acres)[1]	Projected Maximum Dike Elevation (ft)[1]	Total Idealized Volumetric Capacity (CY)[1,2]
North Blakeley	69	50	3,172,000
Mud Lake 6	70	46	3,388,000
Mud Lake 7	129	46	8,562,000
South Blakeley	196	65	12,087,000
North Pinto	48	47	3,434,000
Totals	512		30,644,000
20 year Project Capacity Needs of River Channel (1.3 mcy/year)			26,247,000
Remaining Capacity After 20 Years			4,396,000

1) Taken from Table 7 of Resource Management Group, Inc., 2010 updated with USACE dredge material placement records through 2016.
2) Idealized volumetric capacity includes interior capacity plus the volume to build projected maximum dike height cross-sections minus the volume in the spur dikes.

Source: Modified from Resource Management Group, Inc., 2010.

Need is two-fold, consisting of limited long term available capacity projected out past 20 years in the existing upland disposal and limited available land for new disposal in the upper harbor. With an average 1.3 mcy/yr of dredged material coming from the river, finding viable beneficial use opportunities today that provides cost effective means to maintain capacity within existing sites is critical. In addition, regional research, which indicates that in the northern gulf of Mexico marshes within in Grand Bay, Weeks Bay, Apalachicola Bay, Pascagoula River and along Dauphin Island are at increased risk under the higher projected rates of sea level change and may be unable to accrete at rates to keep pace with projected sea level rise.

Recent 2020 South Atlantic Division Regional Sediment Management Optimization Update highlighted that 42% of the dredged material from the Mobile Harbor Federal Navigation Project is managed by regional sediment management (RSM) strategies that bring a conservative annual average RSM value of over $13.2 million to the nation. Given the interest of the USACE to integrate RSM strategies as well as incorporate natural and nature base feature systems for coastal storm risk management, potential for widespread adoption of beneficial use practices to provide sediment sources is increasing.



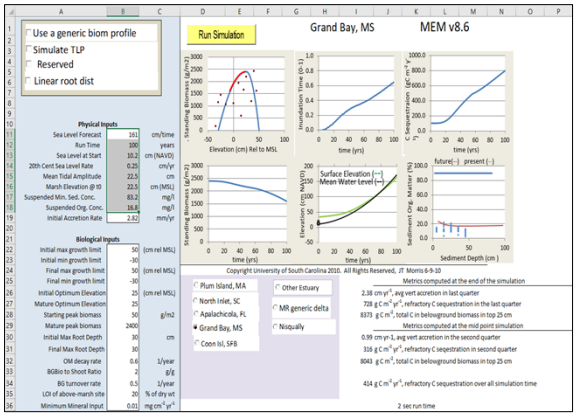
USACE is leveraging in-house data and tools from the Mobile Harbor General Reevaluation Study, including field data collection in the delta (flow, suspended sediment fluxes, and wetland mapping). The marsh adjacent to Blakeley Island is about 1,400 acres in area and ranges from low marsh to upland habitat. Vegetation surrounding the sites includes typical high marsh species such (common reed), (switchgrass), (common cattail), and *Baccharis halimifolia* (eastern baccharis; Berkowitz et al. 2018).

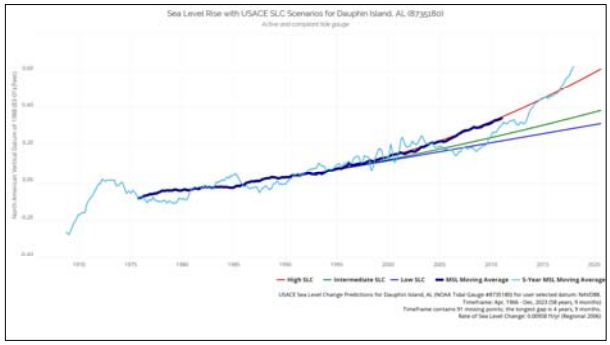
In addition to this data, soil composition and elevations in the marsh and accretion rates were needed. To assess marsh soil conditions and recent (decadal) sediment accumulation rates at the wetland adjacent to the Blakeley Island sites, sediment cores were collected from four areas in the marsh of varying elevation and vegetation diversity.

Cores were processed via loss-on-ignition (LOI) and gamma spectroscopy to measure organic matter and radionuclide activity, respectively. Radionuclide analysis was incomplete due to COVID-19 restricted laboratory access.

Model Evaluation and Future Marsh Conditions

Marsh Equilibrium Model Interface





Values for input variables used in MEM. Low, medium, and high values were determined based on the literature to capture a variety of potential scenarios.

Rate	SLR (cm/century)	SSC (mg/L)	Marsh Elevation (cm MSL)	Placement
Low	30	23.8	-5	15 cm every 10 years
Med	61	47.5	8	NA
High	161	95	50	30 cm every 20 years
Source	USACE 2017	Ramirez et al. In Review	Morris et al., unpublished data, 2016	

To supplement post-data processing a Marsh Equilibrium Model (MEM) was utilized. A MEM is a 1-D numerical model used to predict coastal marsh elevation given mineral and organic contributions in different sea level rise scenarios.

Results from model initialization of MEM scenarios were compared to data from sediment cores collected on site for optimization and to assess applicability.

Marsh Thin Layer Placement Options

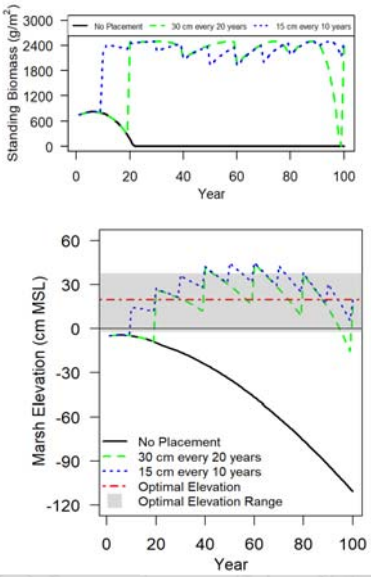
Two distinct TLP strategies to restore elevation were simulated. The two scenarios placed 15 cm every ten years and 30 cm every 20 years.

Analysis applied the most extreme elevation deficit (high SLR, low SSC, low initial marsh elevation) to determine maximum placement capacity and develop a conservative BU estimate

The two placement scenarios developed belowground biomass through high vegetative productivity

Placement strategies increased marsh elevation to an elevation near optimal for vegetative productivity for most of the model timespan.

In each placement scenario marsh elevation was outside of the optimal range at some point, indicating that an adaptive placement strategy would be required.

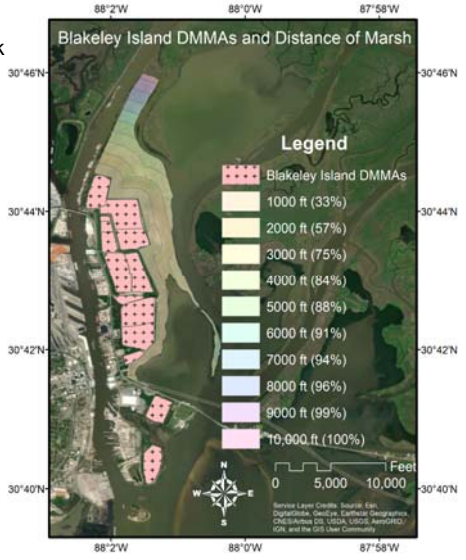


Marsh Thin Layer Placement Options

Over half of the marsh area (57%) is within 2,000 feet of a CDF and the bulk of the marsh area (84%) is within 4,000 feet.

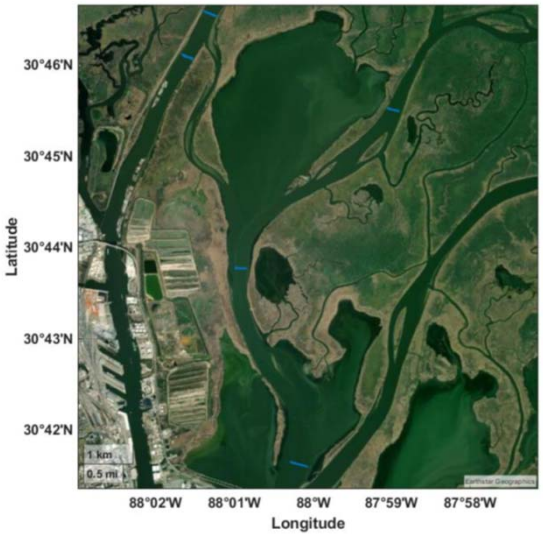
A minimum cost increase, estimated to be $1-$2, is expected to be incurred by bypassing the CDF and directly placing dredge material into the wetlands.

Despite the increase in cost, wetland nourishment is still viable option when compared to offshore haul-out of material which ranges from $10-$12 per cubic yard.



Cost of placement is dependent on equipment and method utilized for marsh nourishment. Assuming similar restoration strategies and placement volumes, it would require placement in an additional 2900 acres of wetlands, approximately 2.1 times the marsh area of Blakeley Island, in order to conserve remaining CDF fill volume to capacity over a 50-year timespan

Strategic Sand Placement Options



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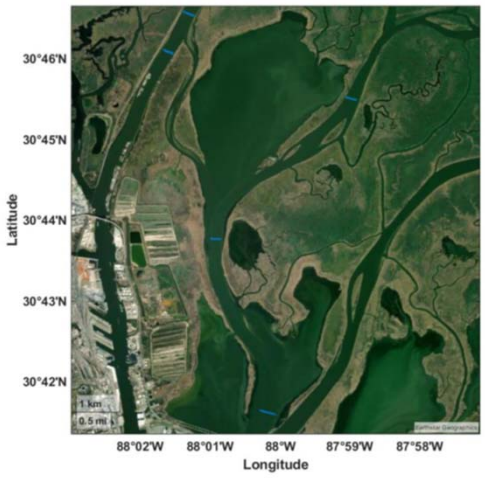
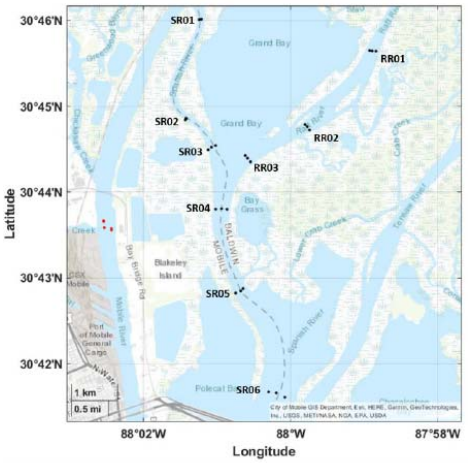
The Corps is examining adjacent marshes for beneficial placement to feed downstream system, but feasibility and cost must be factored. Historic practices of simply removing the material from the system are no longer a limiting option. Opportunities to partner with management conference members undertaking restoration activities is welcomed.

Field Data Collection and Laboratory Analysis



Flow Exchange Survey Transects



Bottom Sediment Sampling

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In FY22 Corps is furthering field data collection to understand the system and provide data for model validation. This data collection has included hydrographic surveys, flow exchange and bottom sediment sampling. Still collecting and still refining.

Status and Next Steps

- ❑ Refinement of sand/mixed grain sediment transport modeling tools (Sed-Hydro Modeling)
- ❑ Evaluation of sediment transport in the system
- ❑ Identification of optimum placement locations
- ❑ Work with agencies to develop an Action Strategy for a potential demonstration project
- ❑ Work with agencies to develop and implement a Monitoring Plan

File Name

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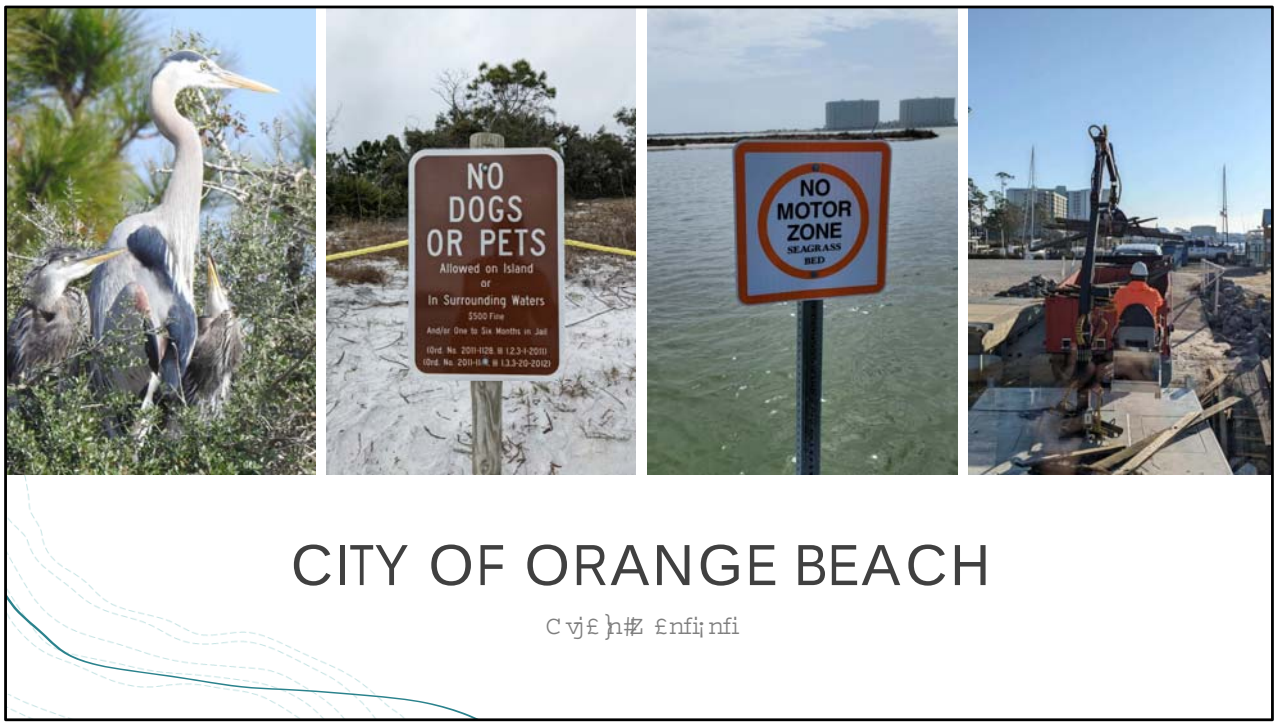
Please contact Don if you have a need for material or wish to further discuss.



Nicole Woerner with the City of Orange Beach provided an update on the City's efforts to restore and manage resources in and around Perdido.

PREPARING FOR SPRING/SUMMER

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- Boots on the ground activities that the City does ahead of Spring Break and the summer tourist wave.

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North end riprap

- City had a permit with the Corps to save trees on the north end of Robinson Island. Aided resilience during Hurricane Sally. Trees serve as a rookery for heron. Some even nesting on the ground due to a lack of canopy.

ROBINSON ISLAND

- Perdido Pass was dredged, and spoils were placed on the south end of Robinson. Planting was also included to stabilize the nourishment site.

SIGNAGE ON THE ISLANDS

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ROBINSON ISLAND SIGNAGE

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City used NFWF funds in 2013 to purchase Walker Island. Boat wakes and shore recreation were causing erosion. City passed an ordinance to prevent motorized visitors to the island and a no wake zone was created.

BIRD ISLAND




- Owned by the State of Alabama.
- No successful nesting in recent years.

MONITORING AREAS

'˘#nfl#vt#lv#nfl#v#E fa¡tn#naju

- City has partnered with Audubon to monitor nesting sites in the area.

2021 STATS

10 sites

234 nests

37 pairs in one area on PK/OB

27 fledglings

SHORELINE CLEANUP

- GOMESA funded project through 2024.

NEWEST VESSEL- CRANE BARGE

- Primarily to remove derelict debris.

LEAVE ONLY FOOTPRINTS

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LEAVE ONLY
FOOTPRINTS

- In year six.

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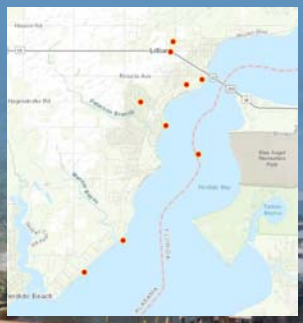
Wade Burcham provided an update on development of the Western Perdido Bay Watershed Management Plan.

Community Engagement

Steering Committee

- Identified members early
- Tasked them with creating a vision statement to guide their goals
- Tasked them with distribution of a community survey (SWOT)
  - 24 responses so far
  - 300 is the goal

"We strive to preserve our community and culture to pass on to future generations a future with resilient watersheds, abundant wildlife, and streams and rivers open for recreation."



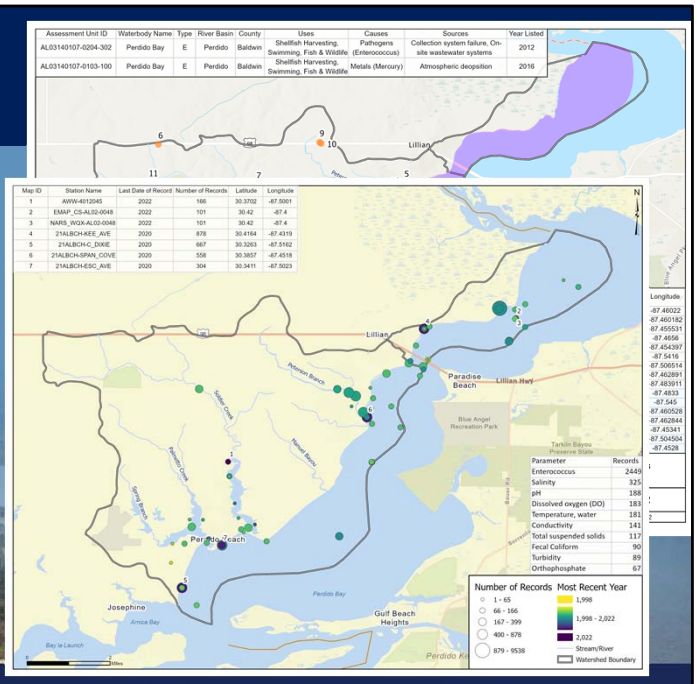
- Stakeholders are already moving forward with Alabama Water Watch monitoring and have interest in starting their own grassroots organization.
- Area is tidally influenced and unfortunately not a lot of recent monitoring data is available.

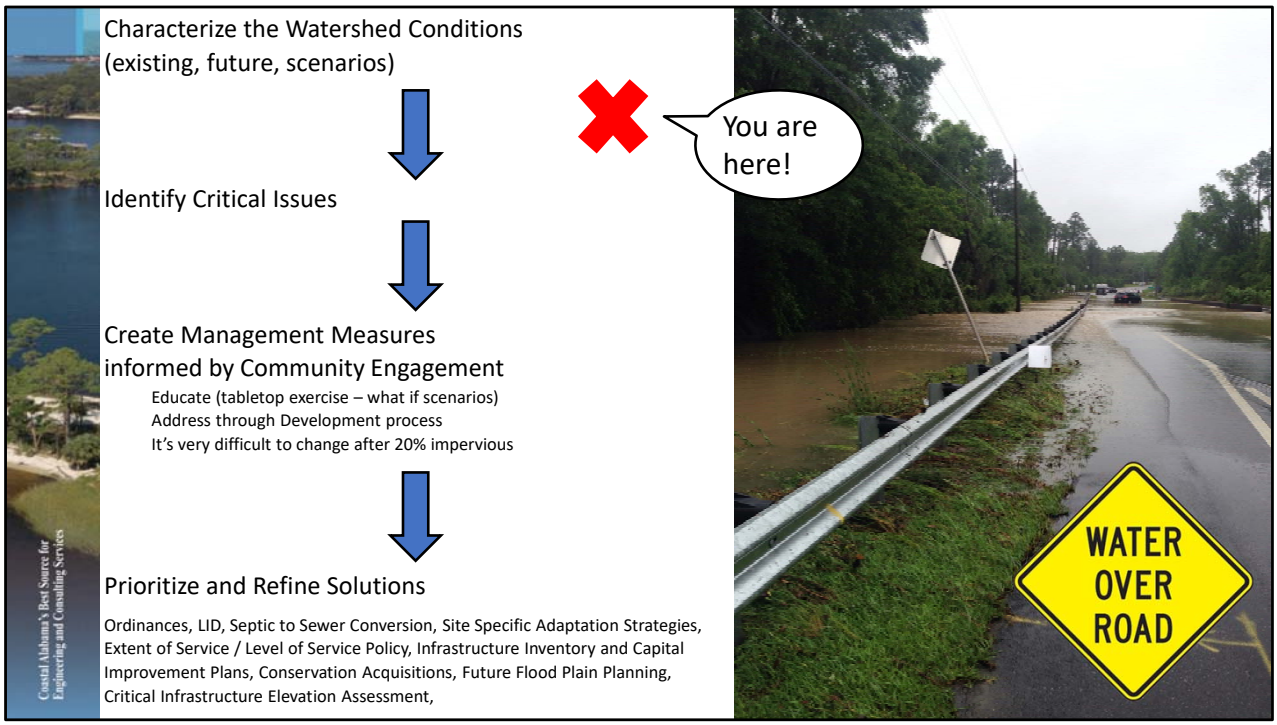
Monitoring

An initial step in the WMP process is to evaluate existing data availability.

Use this data to identify gaps.

Train willing volunteers to collect data and develop a citizen science monitoring program to fill data gaps.





- Current status of Plan development shown on slide.

Open Discussion and Questions

Geosyntec.com

Dottie Byron provided an update on the Alabama RESTORE submerged aquatic vegetation (SAV) restoration and monitoring program.

SAV Mapping & Monitoring: Present & Future

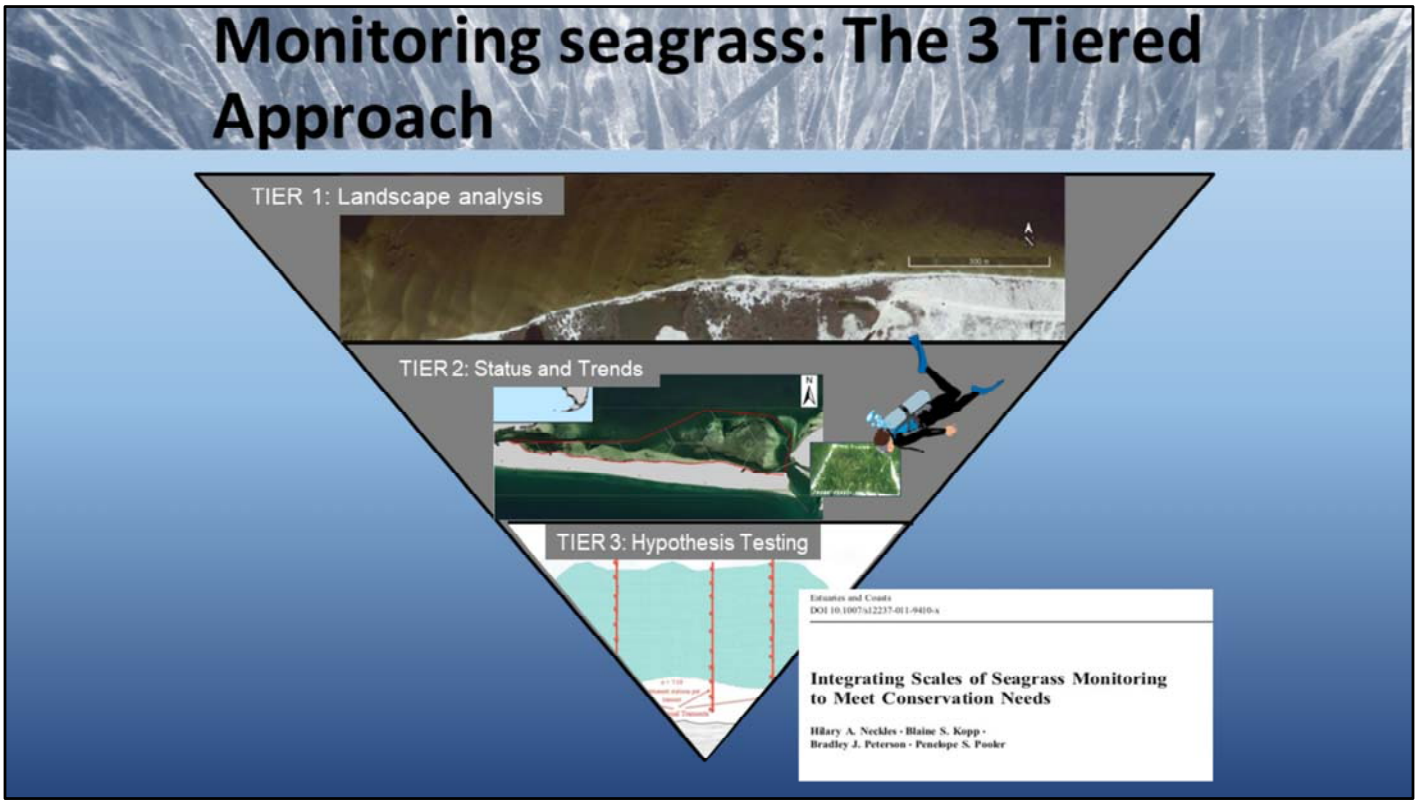
1. Map SAV across coastal Alabama in 2019 & 2022

Acquisition of aerial imagery

SAV polygon development

Field Ground-truthing

- This program is for all of coastal Alabama but today's talk will focus on Lower Perdido.
- 2019 was the first year the sea lab led SAV mapping and are now on a three-year cycle.

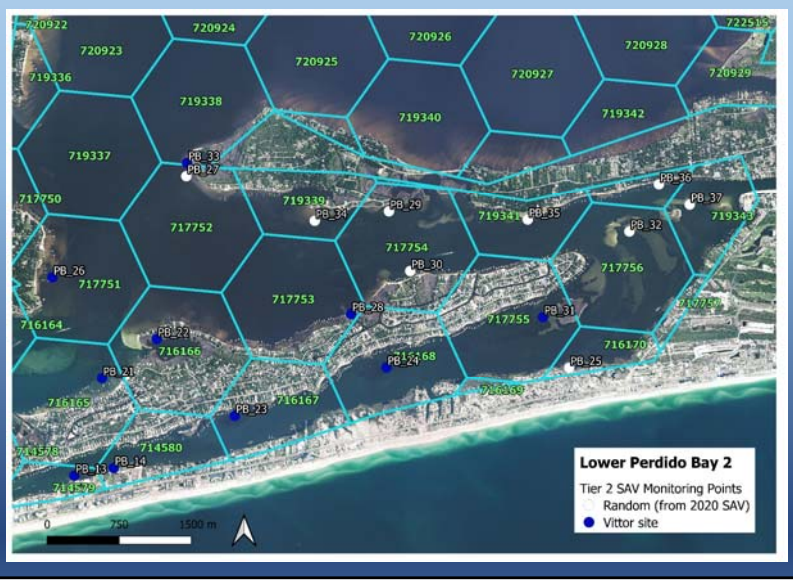


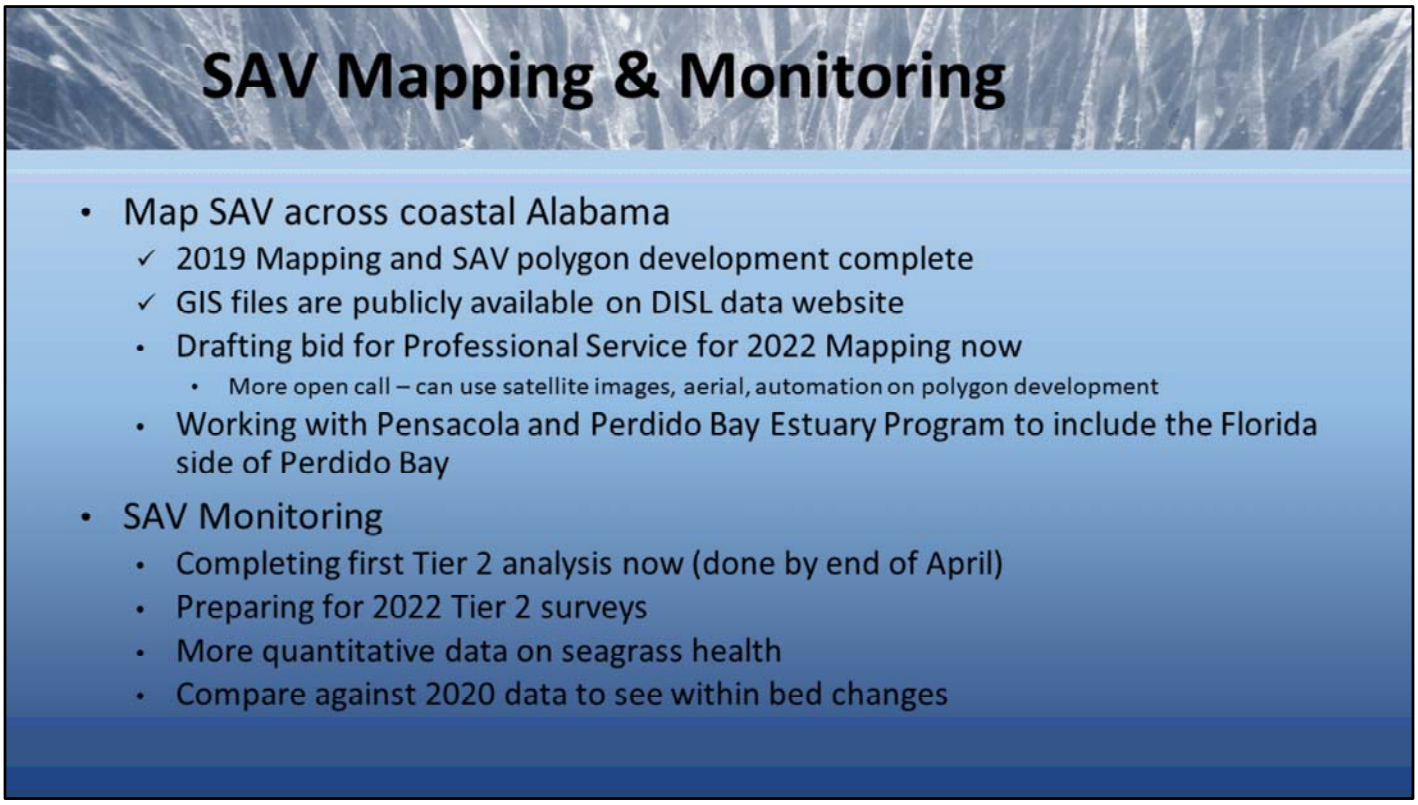
- Had some qualitative data but wanted on the ground tiered approach to better determine acreage of SAV, types and health.

Lower Perdido Monitoring Hexagons

- Overlay gridded hexagon system over the area (750m each).

Lower Perdido Monitoring Hexagons





- Status of project currently listed on slide.
- Received supplemental funding from Perdido Estuary Program to include Florida portions of the bay.

- Placed bird stakes to keep boats off the grass beds. Doesn't always work but is a lost cost/effort way to protect threatened areas damaged by boat props.

SAV Restoration: Present & Future

2. Restore *Halodule wrightii* in lower Perdido Bay damaged by prop scarring

Progress to Date		
2020	Robinson Island ~ 135m Rabbit Island ~ 36m	Total restored to date: 223 linear meters
2021	Robinson Island ~ 28m Rabbit Island ~ 24m	

Additional research: Drone imagery to examine no motor zone regulations (2020)

- Seagrass is being enriched by the bird stakes – aiding it to grow and fill in prop scars.

SAV Protection: Present & Future

3. Install education signage & navigation aids

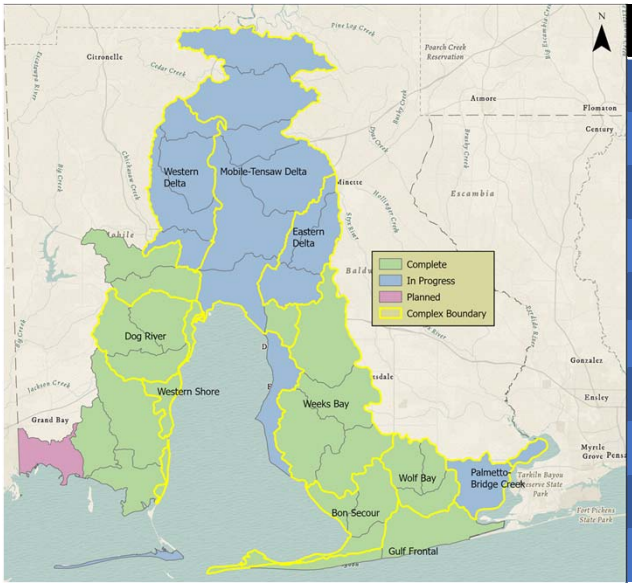
Progress to date:

- Provided 5000 educational brochures in 2019 to City of Orange Beach for distribution.
- Coordinating with TNC on educational kiosk for Lower Perdido
- Discussions regarding proper signage for navigation aids (buoys versus signs)

Thanks!

- **ADCNR** (Kelly Swindle)
- **TNC** (Judy, Mary Kate, Katie)
- **Vittor & Associates** (Tim, Howard)
- **Heck lab members (Present and Past)**
  Eme Marshall, Nick Bartkowiak, Cissie Havard and Alex Rodriguez

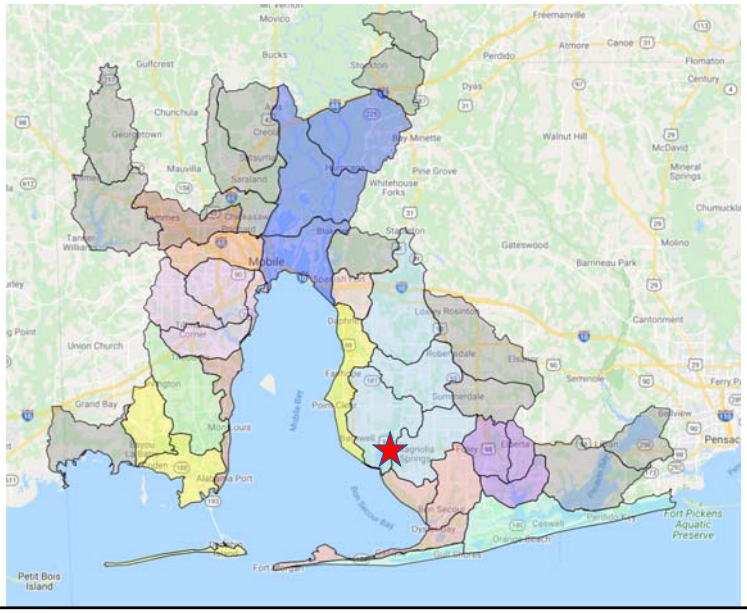
Watershed Planning Update



Watershed	Status
Western Shore	Complete
Gulf Frontal	Complete
D'Olive Update	Complete
MTA Delta	In progress – Final June '22
Eastern Shore	In progress – Final July '22
Dauphin Island	In progress – Final July '22
Perdido	In Progress
Western Delta	In Progress
Eastern Delta	In Progress
Grand Bay	On Deck

- Western Shore draft will be released for comment the first of June
- Gulf Frontal and D'Olive drafts should be released ~July
- Further watershed baseline/sediment work was not needed for the Western Delta watersheds. These will be the next released via RFQ. These will be grouped into a complex Sediment/baseline analysis work getting underway on the Eastern Delta complex. RFQ for WMP to be released later in the year
- Additional monitoring work going on in Gulf Frontal and potentially Lower Chasaw (pathogens).
- Grand Bay will be the last of the RESTORE funded Plans to be developed.

Lower Fish River Restoration



Lower Fish River Restoration

Project Lead:

- Mobile Bay National Estuary Program

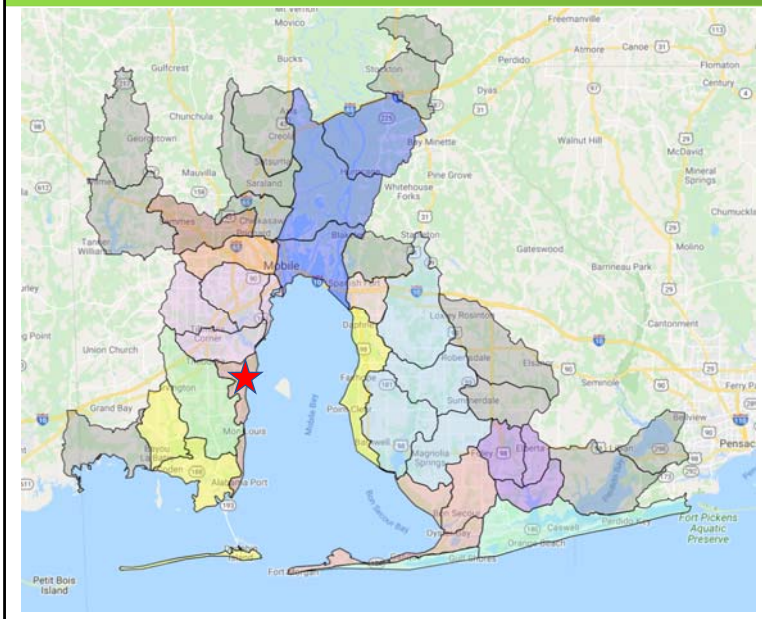
Project Funding:

- NFWF GEBF

- Magnolia River Watershed – E&D underway for three segments.
- Marlow project construction March 15

- Three segments in Magnolia River under engineering and design.
- Construction at Marlow will start mid-March.

Deer River Marsh and Shoreline Stabilization



Project Lead:

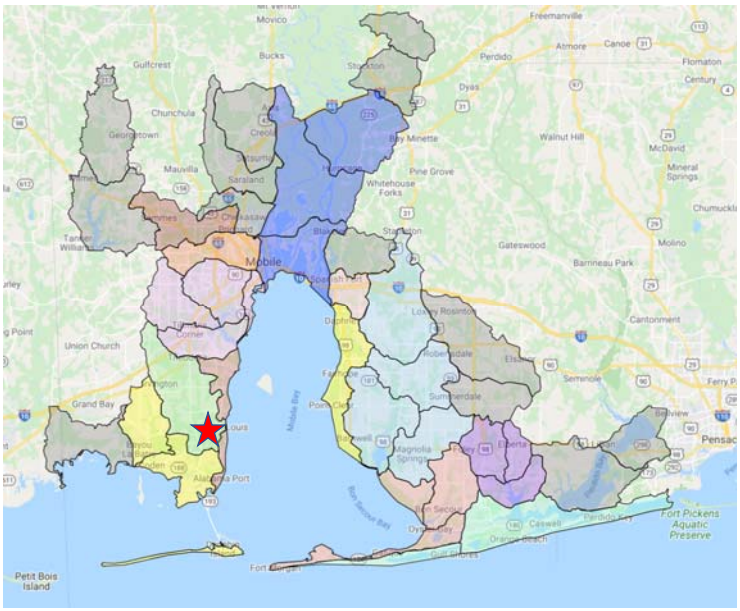
- Mobile Bay National Estuary Program

Project Funding:

- NFWF GEBF

- Construction funding awarded
- Tweaking design

Fowl River Spits



Project Lead:

- Mobile Bay National Estuary Program

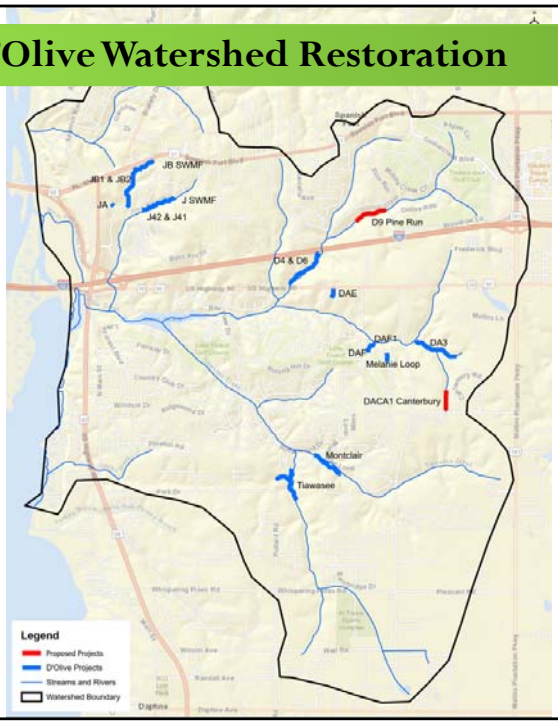
Project Funding:

- NFWF GEBF

- Construction funding awarded
- Permit submitted
- 60% design
- Outreach roll out

- 60% design to be delivered in April.
- Working on an outreach plan to roll out the project in the community.

D'Olive Watershed Restoration



Project Lead:

- Mobile Bay National Estuary Program

Project Funding:

- NFWF GEBF/ADEM 319

- Two projects (~1,500 LF & 272 LF)
- Canterbury construction April 1
- Pine Run emergency repair underway
- Daphne SWFs completed – 206k cu ft retrofits

- Motion to adjourn was made by Dottie Byron, seconded by Don Blancher. Meeting was adjourned at 3:02pm.