

**APALACHICOLA BAY SYSTEM INITIATIVE**  
**COMMUNITY ADVISORY BOARD**  
**COMMUNITY WORKSHOP — 19 OCTOBER 2022**  
**FACILITATOR’S SUMMARY REPORT**

**APPROVED UNANIMOUSLY 30 NOVEMBER 2022**

**APALACHICOLA NATIONAL ESTUARINE RESEARCH RESERVE**  
**EASTPOINT, FLORIDA**



**MEETINGS FACILITATED AND SUMMARIZED BY JEFF A. BLAIR**

**APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD  
 COMMUNITY WORKSHOP — 19 OCTOBER 2022  
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19 OCTOBER 2022 COMMUNITY WORKSHOP FACILITATOR'S SUMMARY REPORT**



## **OVERVIEW OF COMMUNITY WORKSHOP**

**WEDNESDAY, OCTOBER 19, 2022**

### **I. WORKSHOP SUMMARY AND OVERVIEW**

At the 19 October 2022 Community Workshop the Apalachicola Bay System Initiative (ABSI) Community Advisory Board (CAB) conducted the second in a series of Community Workshops planned for Phases IV and V of the ABSI project. The Community Workshops was convened for the purpose of seeking public feedback on restoration experiments and projects, and on a variety of possible management scenarios for modeling using the Fisheries (Socioecological) Model developed by Ed Camp of the University of Florida. The Workshop was conducted at the Eastpoint Firehouse.

During the Workshop the Community: were provided an overview of the Project Workplan and Schedule; received an update and provided feedback on ABSI restoration experiments; received an update and provided feedback on the FWC NFWF funded restoration project; and received an overview and provided feedback and input on a suite of possible management scenarios for modeling.

## II. WELCOME AND INTRODUCTIONS

Jeff Blair, ABSI CAB Facilitator, opened the Workshop at 6:00 PM and welcomed all participants. Each participant was invited to provide their names and something on their background.

## III. WORKSHOP PARTICIPATION

The following Apalachicola Bay Community members participated in the Wednesday, October 19, 2022 Workshop conducted in-person at the Eastpoint Firehouse in Eastpoint, Florida:

See *Attachment 1 – Workshop Participation*.

### PROJECT TEAM MEMBERS PARTICIPATING

Jeff Blair, Sandra Brooke, Ross Ellington, Jared Fuqua, and Joel Trexler.

*(Attachment 1 — Workshop Participation)*

### MEETING FACILITATION

Meetings and workshops are facilitated and reported on by Jeff Blair of Facilitated Solutions, LLC. Information at: <http://facilitatedsolutions.org>.



### PROJECT WEBPAGE

Information on the Apalachicola Bay System Initiative project and the Community Advisory Board, including agenda packets, meeting reports, draft Plan frameworks, and related documents may be found at the ABSI CAB Webpage. Located at the following URL:

<https://marinelab.fsu.edu/the-apalachicola-bay-system-initiative/>

## IV. WORKSHOP OBJECTIVES

Jeff Blair reviewed the Workshop objectives as follows:

- To receive an update on the Project Workplan and Schedule.
- To provide update and receive community feedback on ABSI restoration experiments.
- To provide update and receive community feedback on FWC restoration project.
- To provide an overview and receive community feedback on potential management scenarios for modeling.
- To review next steps.

*(Attachment 2—Workshop Agenda)*

*Community Workshop 19 October, 2022 – Eastpoint Firehouse*



## **V. REVIEW OF UPDATED PROJECT WORKPLAN AND SCHEDULE**

Jeff Blair provided the Workshop’s participants with a review of the updated Project Workplan and Schedule and answered members’ questions. The 18 October 2022 CAB meeting represented the CAB’s fifth meeting of Phase IV which focused on the evaluation of the Draft Adaptive Management and Restoration Plan Framework’s prioritized restoration and management strategies, restoration projects selection and implementation, and funding planning.

The CAB will work with available and emerging research and data, which will be incorporated into and evaluated by decision support tools including predictive models. These tools will be used to evaluate the CAB’s recommendations relative to specific performance measures and expected outcomes by forecasting the effects of policy actions on the likelihood of achieving oyster management and restoration objectives with the goal of implementing the best combination of management and restoration approaches, and priority restoration projects for achieving the Apalachicola Bay System Initiative’s overarching goal of restoring the health of the Apalachicola Bay System.

In addition, Phase IV includes a significant public engagement initiative. The next CAB meeting is scheduled for 30 November 2022. Jeff reported as follows:

- At the October meeting the CAB evaluated an initial set of modeled scenarios (strategies) towards the goal of determining the best combination to achieve restoration and management objectives for the Bay using decision support tools including predictive models generally, and the Fisheries (Socioecological) Model specifically, coupled with available and emerging data and research. The CAB will vet their draft recommendations with restoration and management agencies, evaluate the priority and efficacy of



strategies and actions, and identify specific recommended restoration projects and management approaches.

- The CAB's Community Outreach Subcommittee has initiated a community feedback initiative by soliciting and reviewing community input on the Plan Framework. The Community Outreach Committee will continue to communicate and meet with community stakeholders providing them with information and updates regarding the purpose and progress of the Apalachicola Bay System Initiative. The CAB's prioritized strategies are being vetted with the larger ABS community through multiple formats including a questionnaire administered through a variety of methods including Facebook, online via the ABSI website, and direct mailings. In addition, public workshops are being scheduled and will be held in-person.
- The CAB is planning for transitioning to a Successor Group whose role will be to organize a group of key stakeholders committed to working collaboratively for the long-term once the CAB process is complete. The CAB Successor Group will ensure that the Plan is implemented, monitored, and adaptively managed over time with the support of the Community. The CAB is scheduled to finalize their recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan at the 29 November 2023 meeting, and the CAB Successor Group is anticipated to formally convene in early 2024.
- In addition, the FSU ABSI Project Team continues to work with the Restoration Funding Working Group to seek resources and political, governmental, and organizational support for the CAB's priority recommendations.

Jeff reported that Phase V (2023) will consist of six meetings and conclude with the final CAB meeting on 29 November 2023 when the CAB will adopt their final package of recommendations for inclusion in the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan. The CAB Successor Group is expected to initiate in early 2024 to ensure that the Plan is implemented, monitored, and adaptively managed over time with the support of the Community.

Jeff noted that the Project Team will keep the Community updated and share additional information as it becomes available.

*\*The Draft Plan Framework is available at the following URL: <https://marinelab.fsu.edu/absi/cab/>*

*(Attachment 3 — Workplan, Schedule, and Project Flowchart)*

## **VI. UPDATE AND COMMUNITY FEEDBACK ON ABSI RESTORATION EXPERIMENTS**

### **ABSI SCIENCE AND DATA COLLECTION UPDATE**

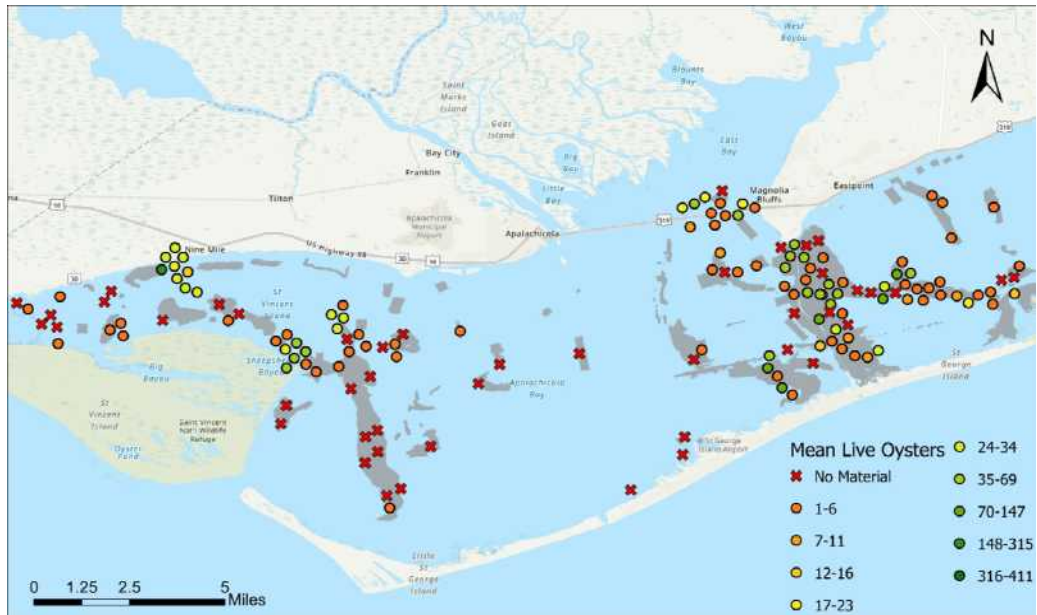
Sandra Brooke, FSUCML Faculty and ABSI Principal Investigator, provided the participants with an update on ABSI restoration experiments.

Presentations are available on the project webpage: <https://marinelab.fsu.edu/absi/cab/>.

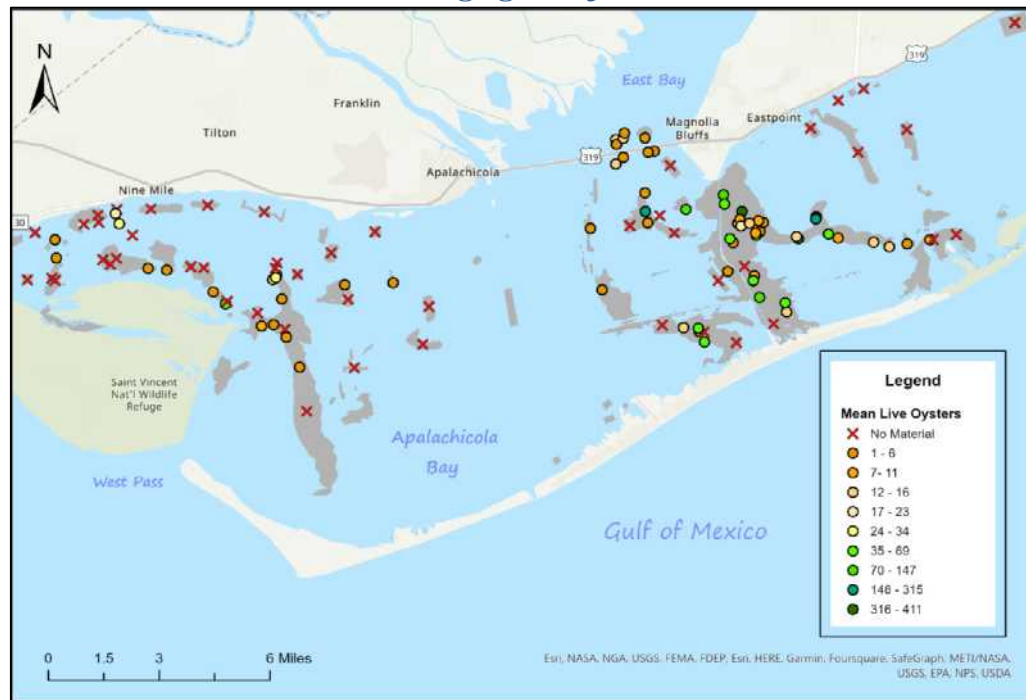
### **Summary and Overview of Presentation**

The Community Workshop presentation focused on updates on the status of oyster populations in the Bay. Data presented included ABSI tonging surveys from 2020-2021 and 2021-2022, plus tabulated summaries from the latest FDEP and FWC restoration projects. These data show that only 3 of the 55 restored sites.

### Subtidal Tonging Survey 2020-2021



### Subtidal Tonging Survey 2021-2022



*Summary of Florida DEP and FWC Restoration Data*

**Only 3 sites of 55 reached the 300 bags/acre threshold**

**FWC monitoring 2022**

Parcel Name	2022 (Number of Bags Per Acre)				
	Jan	Feb	Mar	May	Sep
Bulkhead			0		0
North		29		14	
South		14		34	
Cabbage Top			58		29
Cat Point			0		0
Restoration	10			5	
Shallow	0			0	
Dry Bar North			0		0
East Lumps			0		0
Restoration	0			0	
Easthole #7			0		0
Green Point			5		48
6		14		96	
Halfmoon			5		0
East		0		0	
Hotel			0		0
West		0		0	
Lighthouse			5		0
Restoration		0		5	
8		0		0	
Normans			0		0
Paradise Flats			10		38
Platform			0		0
Porters			0		0

**FLDEP RESTORE project**  
Deployed 317 acres in 2017  
Sampling 12/2020-6/2021

Site	Round 3
8-Mile	175.07
9-Mile B	4.80
Cabbage Top	33.58
Cat Point	97.53
	441.27
East Hole #1	31.18
East Hole #2	2.40
Hotel Bar #1	4.80
Hotel Bar #2	28.78
King 9-Mile	81.54
	285.39
North Spur #2	0.00
	402.90
	652.32

**FLDEP NRDA project**  
Deployed 124 acres in 2015  
Sampling 7-12/2021

Site	Bags/acre
Bayou Flats	23.98
Cabbage Lumps	14.39
Cabbage Top	0
Cat Point	4.8
Dry Bar	0
Eleven Mile North	4.8
Eleven Mile South	19.19
Green Point	0
Hotel Bar	0
Lighthouse	16.79
Little Gully	0
Norman's Bar	
Middle	9.59
Norman's Bar North	21.58
North Spur	0
Redfish Creek 1	4.8
Redfish Creek 2	4.8

**ABSI Restoration Experiment May – June 2021**


*ABSI Experimental Design and Location -1*


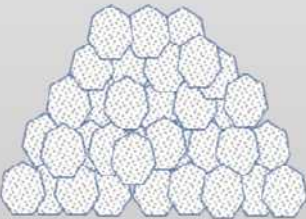
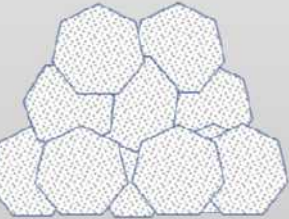
Restoration experiment May –June 2021

Reef size and height  
30 ft x 30 ft x 1 ft = 50 Cubic Yds of material

**Materials**

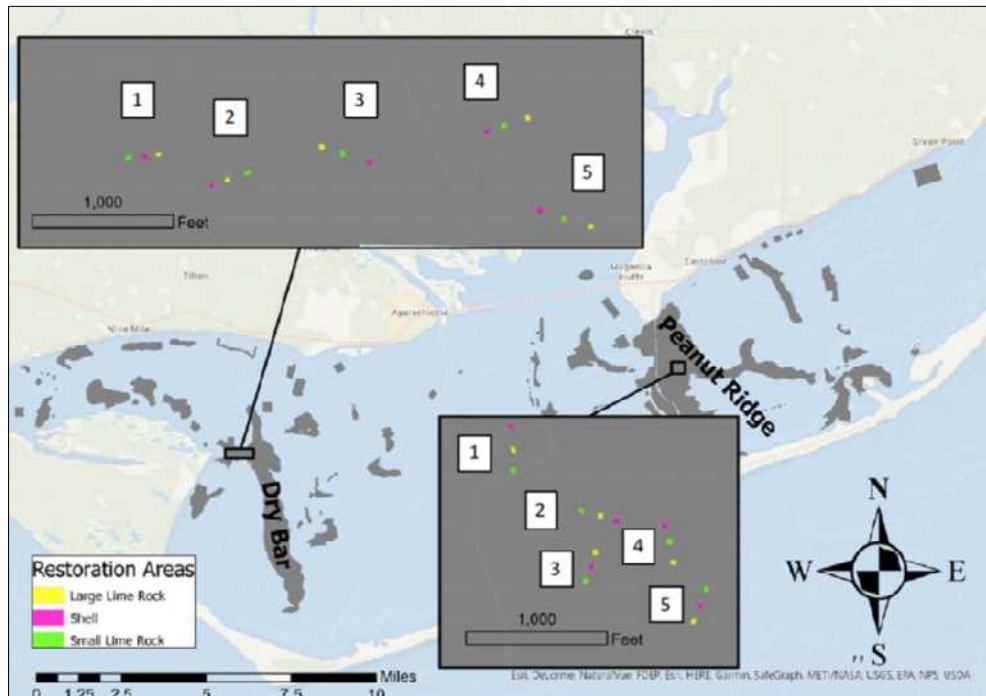
- Natural oyster shell – good for spat settlement, can be harvested with tongs
- Small Limerock (2") creates mound, small spaces, many layers, can be harvested with tongs
- Large Limerock (6-8") – creates stable structure, medium spaces, few layers, good for habitat development, can be harvested with tongs.





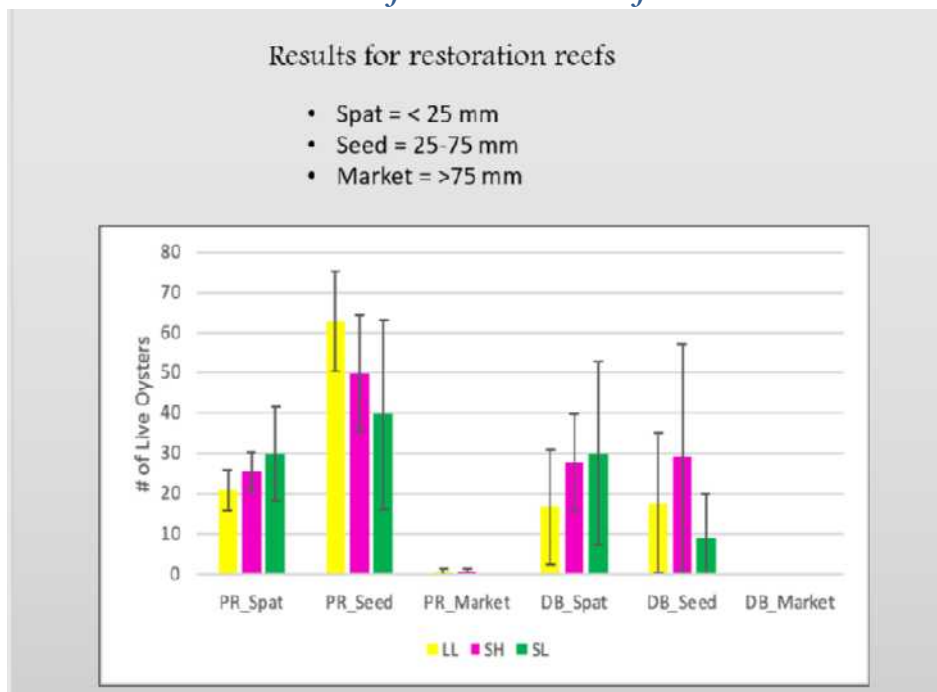
*ABSI Experimental Design and Location -2*



**Results of Tonging Surveys from April 2022**

This graph shows that spat set is similar on Peanut Ridge and Dry Bar and no significant differences between materials, but the large limerock has high seed counts on Peanut Ridge, and the large limerock is more stable than shell. A few market sized oysters were found on Peanut Ridge large limerock and shell. Small limerock performed well for spat but not seed.

*Results for Restoration Reefs*



### *Proposed Location for Next ABSI Restoration Experiment – Cat Point*



#### **Proposed ABSI Restoration Experiment Fall 2022 or Spring 2023**

- **Option 1: Examine reef height.**
  - **Location:** NE Cat Point: 4 treatments, 5 replicates = 20 reefs (15 x 15 m)
  - **Reef Height:** 25 cm (10 inches), 50 cm (20 inches).
  - **Material Size:** 15-20 cm (6-8 inches) = Medium.
  - **Material Type:** Limerock = occurs naturally in NW Florida, relatively stable.
- **Option 2: Examine different materials**
  - **Location:** NE Cat Point: 4 treatments, 5 replicates = 20 reefs (15 x 15 m).
  - **Reef Height:** 25 cm (10 inches).
  - **Material Size:** 15-20 cm (6-8 inches) = Medium.
  - **Material Type**
    - Limerock = occurs naturally in NW Florida, relatively stable.
    - Concrete = not natural, readily available, less expensive.

#### **Summary of Questions, Responses, and Comments:**

*(Note initials are only used to identify ABSI Team members, presenters, and state agency representatives)*

- Is there any hope at all of not using lime rock? Does not think lime rock should be used in the Bay. Rocks when thrown back in water after harvest damage reefs. Prefers concrete or other materials. Rocks are too heavy.
- Concrete should be tried.
- We worked Suwannee Sound 20-30 years ago, but the oysters did not come back after large lime rock restoration.
- Spat on shell? SB: ABSI is experimenting with spat on shell and with seed and adults.

- Scatter different types of materials all over the place. There are areas where the natural bottom does not support oyster settlement.
- One tong lick sampling may not be representative of how many oysters there are ? SB: Some areas have dense shell hash. We also dive to verify results.
- We had oyster shell being deposited all the time in the past. When it stopped, oysters went down. JB: This is one of the management strategies recommended by the CAB, continuous restoration. JB: Funding will be needed to restart shelling.
- How do you figure out how many oysters per acre in terms of bag numbers? SB. We use SCUBA (diving) sampling.
- Have you considered spat and seed predators. SB: We don't see black drum but we do see oyster drills. FWC does look at drills and disease.
- Questions about tonging get deep enough to bring up the oysters. SB: Describes the tonging procedure so that the tong penetrates into the mud layer underlying the layer of oysters, shell, rocks.
- Black drum are feeding on oysters. They are not here now but they can migrate back. The black drum attack spat. SB: ABSI has tried caging experiments to counter predation.
- We would limit to eliminate the limits on black drum so they are reduced and cause less predation of the oysters.
- I like the experiments, but sediment is killing off the spat. If we were able to work the oyster reefs to break up the burrs this could lead to harvestable oysters. SB: Actually we like to see burrs, they protect the spat so they can grow.
- Small clam shells worked as substrate. SB: Shells do not last.
- What is the reason for the Bay closure? SB: There were insufficient oysters to sustain fisheries.
- Is the same person doing the tong licks?
- The material deployed in the past should have been shells, we have to get the shell back.
- What about a shell buy-back program? SB: We cannot get enough shell to do restoration on the scale we are working on. We could put a foundation down (substrate) and then put shell on top of it.
- If they can afford to pick up shells and drive them back to Louisiana why can't we do it here? SB: We would need massive amounts of shell for our restoration, and they are not available.
- We could gradually stockpile shell.
- Will we be able to harvest the restoration sites? DR: This has not been determined, but it is unlikely reefs would be closed. FWC will listen to feedback before making any decisions.

## **VII. UPDATE AND COMMUNITY FEEDBACK ON FWC RESTORATION PROJECT**

Devon Resko, FWC Division of Marine Fisheries Management, provided participants with an update on the FWC restoration project funded by the National Fish and Wildlife Foundation (NFWF). Devon reported:

### **Summary and Overview of Update**

- Workshop to discuss FWC restoration activities was held in Tallahassee on Sept. 7<sup>th</sup>, which included NFWF, FWC scientists and management, FSU, UF, and other state management agencies.
- NFWF expressed preference to FWC testing multiple treatments during pilot study à 1) reef height and 2) material size
  - NFWF understands that testing multiple treatments will increase the pilot study's budget significantly.

- Pilot study’s general framework is to test two rock sizes (6-8 in. & 12-14 in.) and two reef heights (1-1.5 ft. & 2-2.5 ft.) with each treatment being a 1-acre reef. Each replicate will consist of 4 1-acre reefs. Number of replicates will be dependent on budget, but we’d like to get 5-7 total.
- General consensus on testing multiple reef heights. Only issue is to avoid navigational hazard risks. FWRI will begin scoping out potential reef locations soon.
- Issues were brought up regarding the larger rock size.
  - Oystermen discussed issue with using non-tongable rock. FWC discussed the general need to build the oyster reefs back up off the bottom. If no difference is seen between rock sizes, FWC would of course utilize tongable sizes for larger-scale restoration, by “covering” larger, non-tongable rock with the smaller rock.
  - FWRI discussed potential issues with sampling large rock. Divers would be unable to extract such large material off the reef and onto the vessel for analyses. UF and FWC HSC (habitat and species conservation division) staff suggested different sampling techniques for large rock. FWRI is discussing methodology for large rock sampling, and will updated FWC this month.

### **NFWF Gulf Environmental Benefit Fund – \$20,057,000**

- National Fish and Wildlife Foundation funded.
- Apalachicola Bay and Suwannee Sound
- Oyster restoration
- Develop oyster management plans
- Multiple partnerships
- Important to stress collaboration with management agencies, universities, and local, public stakeholders

### **Stage 1 – \$3,277,029**

#### **Approach**

- Data collection
- Harvest management system
- Compile information
- Data workshop
- Habitat restoration decision

#### **Data Collection**

- Mapping of hard substrate important to determine current reef heights: Informs restoration efforts.
- Apalachicola Bay: 3-D mapping, Bottom profiling, Ground truth tonging,
- Suwannee Sound: 3-D mapping
- Baseline oyster community sampling
- Apalachicola Bay
  - Oyster densities
  - Oyster spat densities
  - Sedimentation rates
  - Predatory snail densities
- Suwannee Sound
  - Oyster population survey

#### **Harvest Management System**

- Develop regionally-specific oyster fishery management plans.
- Stakeholder-informed

- Apalachicola Bay
- Suwannee Sound
- Statewide Strategic Oyster Fishery Management Plan.
- Will continue to progress through later stages of program.

### **Compile Information and Data Workshop**

- Meet with state management agencies, university researchers
- Discuss previous restoration and research
  - What's worked? What hasn't worked?
  - How to be better informed moving forward.
- Habitat restoration decision
  - Where?
  - What materials?
  - Densities - how high?
  - How much (acres)?
- Meet with public to discuss preliminary plans

### **Stage 2 – Oyster Restoration in Apalachicola Bay**

- Restoration
  - Where?
  - What materials?
  - Densities-how high?
  - How much (acres)?
- Monitoring
  - Inform management

### **Data and Restoration Workshops**

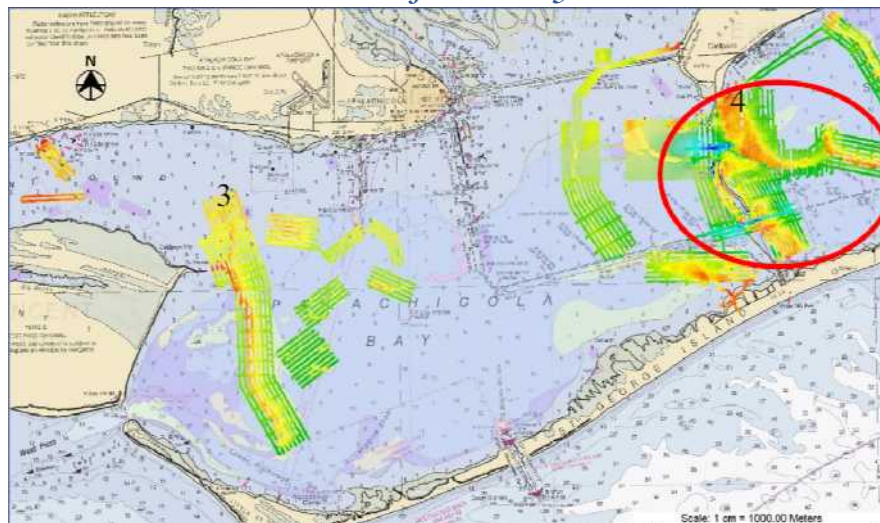
- Data collection
  - ANERR
  - ABSI
  - FWRI
- Data workshop – June '22
- Restoration workshop – Sept. '22
  - Where?
  - What materials?
  - Densities - how high?
  - How much (acres)?
- NFWF has expressed concerns over approving the remaining \$16M for restoration activities.
  - Past restoration operations in the Bay did not perform as well as expected.
  - *“The definition of insanity is doing the same thing over and over again and expecting different results.”*
- Large number of unknowns still present.
- Perform a large-scale pilot study.
  - FSU will conduct complementary study.
- FWRI will conduct sampling and monitoring oversight.
- Utilizing these studies, FWC will have more data to construct and perform larger restoration activity.



## Pilot Study Details

- Reef height treatments: 1 ft (low) and 2 ft (high).
- Material size: 6" (small) & 12" (large) FL limestone.
- Location: East side of Apalachicola Bay.
- Reef size: 1.0 acre.
- Replicates: 5-7.
- Monitoring criteria: 1) density of live oysters/m<sup>2</sup>, 2) size classes, and 3) cultch weight and/or volume.
- Monitoring effort: *Before, After, Control* design for shell budget, diver-excavated sampling, environmental monitoring equipment.
- Cost: \$6.97 M for scientifically-sound study that produces ~24 acres of treated oyster habitat.

### Location of Pilot Study



## Material Size

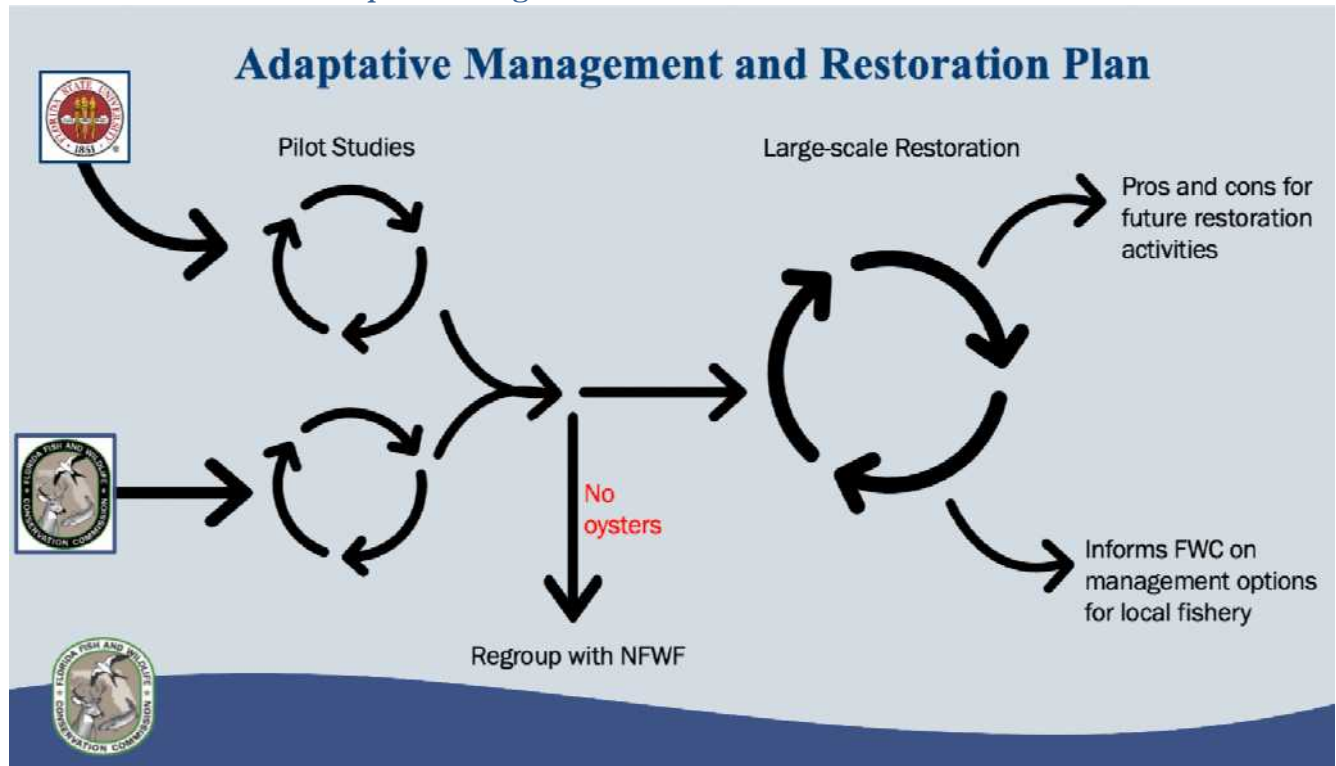
- Material size: 6" (small) & 12" (large) FL limestone.
- Major concern is overall degradation of the Bay's reefs.
  - "Flattened out and looks like a parking lot."
- Utilizing large-sized material if an effective strategy to rebuild reefs off bottom.
- Testing two sizes is scientifically important, strongly encouraged by funding partner.
- If no significant difference is observed between sizes, tongable material would be used for harvestable reefs during future large-scale restoration.
- Proposal to layer smaller, tongable size rock over the 12" foundation.
  - May benefit local stakeholders.
- Use 12" pilot study reefs as sanctuary reefs, closed permanently to oystering.

## Reef Locations

- Location: East side of Apalachicola Bay, near current oyster populations.
  - Replicates: 5-7.
- 6 → Approximately 24 acres for restoration.
- Important to control for ecological conditions.
- Main steps in choosing sites for pilot study:
  - Map all recent restoration work, mapping data from University of New Hampshire.

- FWRI will select potential locations to ground truth.
- Listen to recommendations from local stakeholders on historically productive areas.

### *Adaptive Management and Restoration Plan Flowchart*



### Next Steps

- Oystermen, Community workshops this week.
  - Potentially additional FWC outreach events in near future.
- Continued internal, external coordination in drafting pilot study design.
- Design, methodology, spend plan will be publicly available for review.
- FWC will submit to NFWF for approval.
- Goal is to have contractor, material in water summer 2023.

### Conclusion

- \$20 M+ for preliminary data gathering and analyses, restoration efforts, stakeholder-informed, regionally-specific oyster management plans.
- Although past restoration efforts did not meet biological objectives, still helpful takeaways, roadmap to springboard off.
- Pilot study testing multiple reef heights, material sizes beginning summer 2023.
  - Inform FWC for large-scale restoration.
- Successful Apalachicola Bay oyster restoration through the culmination of work from management entities, university researchers, and local stakeholders.

### Current Oyster Conditions in Apalachicola Bay

- Recent mapping suggests approximately 2,000 acres of potential oyster habitat remain in Apalachicola Bay.

- The oyster habitat over most of this 2,000-acre area is degraded to a point where the cultch (shell hash) does not support oyster spat settlement.
- Currently, the east and central east sides of the Bay, where recent restoration has been focused, are the main areas supporting oysters and likely represents the core of the oyster population in the Bay.
- Since 2015, \$5.8 million in Deepwater Horizon oil spill funds have been spent in attempts to restore approximately 400 acres of oyster reef.
- To date, only 56 acres from one project (FDEP-RESTORE) have densities of oysters that meet a traditional threshold (300 bags/acre) used to identify areas suitable for harvest.
- Considerations regarding opening commercial harvest:
  - If harvest were to reopen, it might delay the implementation or reduce the potential success of the upcoming NFWF restoration. Commercial tonging on restored areas could undo recent gains from restoration.
  - Removal of oysters in the harvest and habitat degradation from commercial activities will likely increase the time needed to restore oyster populations in the Bay.

### **Summary of Questions, Responses, and Comments:**

*(Note initials are only used to identify ABSI Team members, presenters, and state agency representatives)*

- For the \$20M NFWF funding oystermen could put a lot of shell out into the Bay. DR: NFWF is driving the process. \$3M went into obtaining important data needed for restoration success.
- I don't think any rocks should be put out in the Bay. There are plenty of shells out there. SB: We need enormous amounts of shell for restoration. One option is to put rock down and layer shell on top of it. DR: NFWF is asking for data and shell may emerge as a viable option. SB: We need material that will stay around for any long-term success.
- When there was barge traffic there were 4 spat sets per year, but now we have 1-2 sets per year. SB: Discussion of water flow has not been part of the current evaluation. DR: FWC is looking at spat settlement and funding is available to put instruments out.
- My father knows a lot about the Bay and he says oysters only grow on the shell. Lime rock changes chemistry of Bay.
- I think all shells being returned to the Bay. The shells should be put back.
- On the south side the bottom is solid so material when deployed will not sink in. DR: We will bring maps to next CAB for oystermen to mark locations.
- Have you checked out north of the bridge? East bay? This is the closest area to the river. SB: There is a little patch NE of bridge and there is a foundation there for oyster settlement. This might be a good site for restoration, north of the bridge.
- What are the timelines for the pilot project? DR: 12-18 months of collecting data. SB: We will conduct continuous monitoring to see what works best to get oysters to market size. The shells got scattered even though mound was 12" tall.
- 95% oystermen do not work main bars but use drag chains along the edges of the bars to test for oysters.
- Are there investors for the restoration? Where does the money come from? DR: Oil spill penalty funds.
- Why not hire oystermen to help with restoration? SB: We hired oystermen to deploy restoration materials, and we will do so for the next restorations as well.
- Have you determined where to deploy materials? DR: We are working on it and would like input from oystermen before deciding. SB: Are the areas you mentioned part of summer bars? Yes, they get closed periodically due to high river levels.

- Out of a 12 month season we might fish 7-9 months, about 2 ½ weeks per month due to closure for water quality issues.

## VIII. OVERVIEW AND COMMUNITY FEEDBACK ON POTENTIAL MANAGEMENT SCENARIOS FOR MODELING

**OVERVIEW.** The Community Advisory Board (CAB) is evaluating a suite of potential scenarios (strategies) proposed to achieve restoration and management goals for the Apalachicola Bay System. The scenarios are being evaluated with the overarching goal of restoring oyster reef habitat to a level that can sustainably provide needed ecosystem services for the System, and concurrently provide for a sustainable and economically viable level of commercial oyster harvesting. The CAB will evaluate a broad suite of strategies predicted to achieve the dual goals of restoration and management of the oyster resource. Decision support tools including predictive socio-economic and ecological models coupled with available and emerging data and research will be used to identify viable management and restoration options. **Evaluating scenarios (strategies) does not imply support for any specific scenario.**

Final decisions on recommendations for inclusion in the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan) will be made once the CAB reaches consensus on the best combination of strategies predicted to achieve restoration and management objectives for the Bay. The CAB's recommendations will be submitted to the FSUCML ABSI Team who will subsequently develop and submit the final Plan to relevant management and restoration agencies. These entities will decide whether to approve and implement all or part of the Plan.

**SCENARIOS.** The Community Advisory Board unanimously agreed by consensus to approve initial scenarios (combinations of strategies) for evaluation by the Fisheries (Socioecological) Model:

- An Active harvest management scenario similar to the AL approach using monitoring and an oyster abundance minimum density threshold.
- Different management strategies under a range of different assumptions to see what works best.
- A put-and-take sustainable wild oyster harvest fishery.
- Restoration approaches using data from the restoration projects and the restoration experiments and pilot projects (specific locations, size, height/spatial configurations, type of cultch material, density of cultch, etc.).
- Limited entry commercial oyster fishery.
- A combination of limited entry and active management.

Each of these scenarios will initially be evaluated with a spatially implicit model (for simplicity, time, and practicality should only a limited area be opened). This will require making assumptions about the area of submerged land that is open for oyster harvest and specifically that is being considered when making density calculations (for Scenario B). These areal measurements have not been assessed.

Modeled Simulations Include:

- Closed seasons
- Bag limits
- Potential for bioeconomic entry (i.e., based on assumptions about profitability and variable costs, so not capped at number of trips/participants), as is most recent status quo.
- Fixed effort remains an option, as does, allowing for an effort cap with bioeconomic operations below that.

- Discard mortality applied to oysters captured but not harvested.
- Potential for density dependent catchability which there is some evidence may occur.

*\* The models still include shell budget information.*

### **When the Model Can Be Extended to a Spatially Explicit Platform, Evaluate:**

- Opening and closing specific oyster bars and potentially even parts of specific oyster bars based on the metrics for sustainability of the resource (e.g., oyster density).
- Different scenarios with the Bay wide-open and various areas of the Bay closed.
- Develop and maintain one area of the Bay (e.g., Cat Point) for high intensity commercial oyster harvesting, and the rest of the Bay will be set aside as protected areas (MPA/Sanctuaries) to provide ecosystem services such as water filtration and marine species habitat, and also to provide brood stock/spat source for the system.
- Updated periodic oyster population evaluations are being conducted and used as the metric for how much and when harvesting is allowed.
- Total Allowable Catch (TAC) as a component of a limited entry and/or minimum density active managed scenarios.
- Seasonal closures.
- Consider the size, spatial configuration, amount and location for oyster reef habitat restoration initiatives.
- Much of the above will require adding some larval transport and dispersal assumptions to spatially explicit modeling.

*(Attachment 4 — Management Scenario and Assumptions for Modeling)*

### **COMMUNITY FEEDBACK ON SCENARIOS FOR MODELING**

The Community Advisory Board unanimously agreed by consensus to approve initial scenarios (combinations of strategies) for evaluation by the Fisheries (Socioecological) Model. The CAB is only evaluating whether specific scenarios are likely to be effective in achieving the goals of establishing a wild harvest oyster fishery along with sustainable oyster reef habitat sufficient to provide needed ecosystem and ecological services. The scenarios under evaluation are **NOT** recommendations at this point in the process.

*Note: there are additional comments related to management scenarios provided under the Summary of Questions, Responses, and Comments section of Agenda Item VII. (Update and Feedback on FWC Restoration Project) above.*

**A) An Active harvest management scenario similar to the AL approach using monitoring and an oyster abundance minimum density threshold.**

**Comments/Recommendations:**

- Opinions were varied. Some supported this option and others were opposed to using grids to designate open areas and wanted the entire Bay open for all months except a summer closure of from June – August.

**B) Different management strategies under a range of different assumptions to see what works best.**

**Comments/Recommendations:**

- There was general support for this approach.



**C) A put-and-take sustainable wild oyster harvest fishery.**

***Comments/Recommendations:***

- There was generally support for this option.

**D) Restoration approaches using data from the restoration projects and the restoration experiments and pilot projects (specific locations, size, height/spatial configurations, type of cultch material, density of cultch, etc.).**

***Comments/Recommendations:***

- There was generally support for this option.

**E) Limited entry commercial oyster fishery.**

***Comments/Recommendations:***

- There was some support for this option; however, most were strongly opposed to this management approach.

**F) A combination of limited entry and active management.**

***Comments/Recommendations:***

- Most were not in support of this approach; however, some felt this was a good strategy.

*(Attachment 5 — Oystermen’s Feedback on Scenarios for Modeling Worksheet)*

## **IX. NEXT STEPS**

Jeff Blair noted that additional community workshops will be conducted during Phase V (2023), and will provide opportunities for the public to provide feedback on a suite of possible restoration and management scenarios that the CAB is evaluating using a Fisheries (Socioecological) Model. The Workshop agenda and summary report will be posted to the project webpage as follows:

<https://marinelab.fsu.edu/absi/cab/>.

The next CAB meeting is scheduled for 30 November 2022 and will focus on:

- ABSI science and data collection updates.
- Sub-committee reports and public engagement initiative update.
- Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios.
- Agreement on next suite of scenarios for model simulations.
- Public comment.

The meeting will be conducted on site at ANERR starting at 8:30am.

## **ADJOURNMENT**

The Facilitator thanked the participants and ABSI Project Team members for their participation, and adjourned the Workshop at 8:00 PM on Wednesday, October 19, 2022.

## ATTACHMENT 1 WORKSHOP PARTICIPANTS

### COMMUNITY MEMBERS PARTICIPATING IN WORKSHOP

Cheryl Carr
Rebekah Chadwell
Mike Davis
Ronnie Gilbert
Matt Polous
Merrell Richardson
Penney Richardson
Roscoe Rolleta
Robert Segree
Ronnie Segree
Crystal Sowell
Zack Thompson
Wayne Williams

### OTHERS IN ATTENDANCE

1. Fabio Caltabellotta	Florida State University (FSU)
2. Jon Creamer	FWC
3. Jared Fuqua	FSU ABSI Outreach and Education
4. Anita Grove	ABSI CAB Member, City of Apalachicola Commissioner
5. Betsy Mansfield	FSU
6. Lt. Randy McDonald	FWC LE
7. Mike O'Connell	ABSI CAB Member, SGI Civic Club/SGI 2025 Vision
8. Devin Resko	FWC
9. Capt. Charlie Wood	FWC LE

### PROJECT TEAM AND CAB FACILITATOR

#### FLORIDA STATE UNIVERSITY

<b>Sandra Brooke</b>	<b>Marine Biologist</b>
<b>Ross Ellington</b>	<b>Professor Emeritus of Biological Science</b>
<b>Joel Trexler</b>	<b>FSUCML Director</b>

#### FACILITATED SOLUTIONS, LLC

<b>Jeff Blair</b>	<b>Community Advisory Board Facilitator</b>
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*The names of Project Team members participating in the workshop are indicated in bold font.*

**ATTACHMENT 2  
WORKSHOP AGENDA**

**WORKSHOP OBJECTIVES**

- ✓ To Provide Update and Receive Community Feedback on ABSI Restoration Experiments
- ✓ To Provide Update and Receive Community Feedback on FWC Restoration Project
- ✓ To Provide Overview and Receive Community Feedback on Potential Management Scenarios for Modeling

**ABSI COMMUNITY WORKSHOP 2 — OCTOBER 19, 2022**

*All Agenda Times—including Public Comment and Adjournment—are Approximate and Subject to Change*

1.)	<b>6:00 PM</b>	<b>WELCOME AND REVIEW OF WORKSHOP PARTICIPATION GUIDELINES</b>
2.)		<b>REVIEW OF WORKSHOP OBJECTIVES AND INTRODUCTIONS</b>
3.)		<b>REVIEW OF UPDATED PROJECT MEETING SCHEDULE AND WORKPLAN</b>
4.)		<b>UPDATE AND COMMUNITY FEEDBACK ON ABSI RESTORATION EXPERIMENT</b>
5.)		<b>UPDATE AND COMMUNITY FEEDBACK ON FWC RESTORATION PROJECT</b>
6.)		<b>OVERVIEW AND COMMUNITY FEEDBACK ON POTENTIAL MANAGEMENT SCENARIOS FOR MODELING</b>
7.)	7:55	<b>NEXT STEPS</b> <ul style="list-style-type: none"> <li>• Public Workshops and CAB Meetings</li> </ul>
	<b>~8:00 PM</b>	<b>ADJOURN</b>

**ATTACHMENT 3**  
**ABSI CAB PROJECT SCHEDULE, WORKPLAN, AND FLOWCHART**

UPDATED AS OF THE 18 OCTOBER 2022 CAB MEETING
<p><b>PHASE I (2019) — STANDING UP AND ORGANIZATION OF THE ABSI CAB — <i>Status Complete</i></b>  <i>May 2019 – December 2019 (Assessment Process, Questionnaire, and 2 CAB Meetings)</i></p>
<p><b>PHASE II (2020) — SCOPING OF ISSUES, IDENTIFICATION OF PERFORMANCE MEASURES &amp; STRATEGIES — <i>Status Complete</i></b>  <i>Jan. 2020 – Dec. 2020 (7 CAB Meeting &amp; 1 Oystermen’s Workshop)</i></p>
<p><b>PHASE III (2021) — BUILDING CONSENSUS ON CAB RECOMMENDATIONS FOR THE ABS ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION PLAN</b>  <b>Adoption of Final Draft Management and Restoration Plan Framework for Phase IV Evaluation — <i>Status Complete</i></b>  <i>Jan. 2021 – Nov. 2021 (7 CAB Meeting &amp; 2 Oystermen’s Workshops)</i></p>
<p><b>PHASE IV (2022) — EVALUATION OF DRAFT ADAPTIVE MANAGEMENT AND RESTORATION PLAN FRAMEWORK’S RESTORATION AND MANAGEMENT STRATEGIES, RESTORATION PROJECTS SELECTION AND IMPLEMENTATION, AND FUNDING PLANNING — <i>Status Initiated</i></b>  <i>Dec. 2021 – Dec. 2022 (6 CAB Meetings, Public Workshops)</i></p>
<p><b>PHASE V (2023) — EVALUATION AND FINALIZATION OF RECOMMENDATIONS FOR INCLUSION IN THE ABS ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION PLAN, RESTORATION PROJECTS SELECTION AND IMPLEMENTATION, AND FUNDING PLANNING — <i>Status Pending</i></b>  <i>Jan. 2023 – Dec. 2023 (6 CAB Meetings, Public Workshops)</i></p>
<p><b>COMMUNITY ADVISORY BOARD (CAB).</b> The CAB initiated Phase IV in December of 2021 and is currently evaluating the best combination of strategies (scenarios) predicted to achieve restoration and management objectives for the Bay using decision support tools including predictive socio-economic and ecological models coupled with available and emerging data and research. The scenarios are being evaluated with the overarching goal of restoring oyster reef habitat to a level that can sustainably provide needed ecosystem services for the System, and concurrently provide for a sustainable and economically viable level of commercial oyster harvesting. During the course of the project the CAB will vet their recommendations with restoration and management agencies to gauge support and feasibility for implementation. The CAB will evaluate the priority and efficacy of scenarios and associated actions and identify specific recommended restoration projects and management approaches for inclusion in the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan). The CAB will vote to approve their package of consensus recommendations during their November 2023 meeting. <i>Status Initiated</i></p>
<p><b>1. COMMUNITY OUTREACH SUBCOMMITTEE - PUBLIC ENGAGEMENT IN 2022.</b> The CAB working through the Community Outreach Subcommittee initiated a community feedback initiative by providing information and seeking community input on the Plan Framework. The CAB will vet the results of their prioritized strategies with the larger ABS community through multiple forums including questionnaires administered through a variety of methods including Facebook, online via the ABSI website, and direct mailings. In addition, public workshops will be conducted in various locations to provide the Community with information on ABSI and solicit community feedback. <i>Status Initiated</i></p>

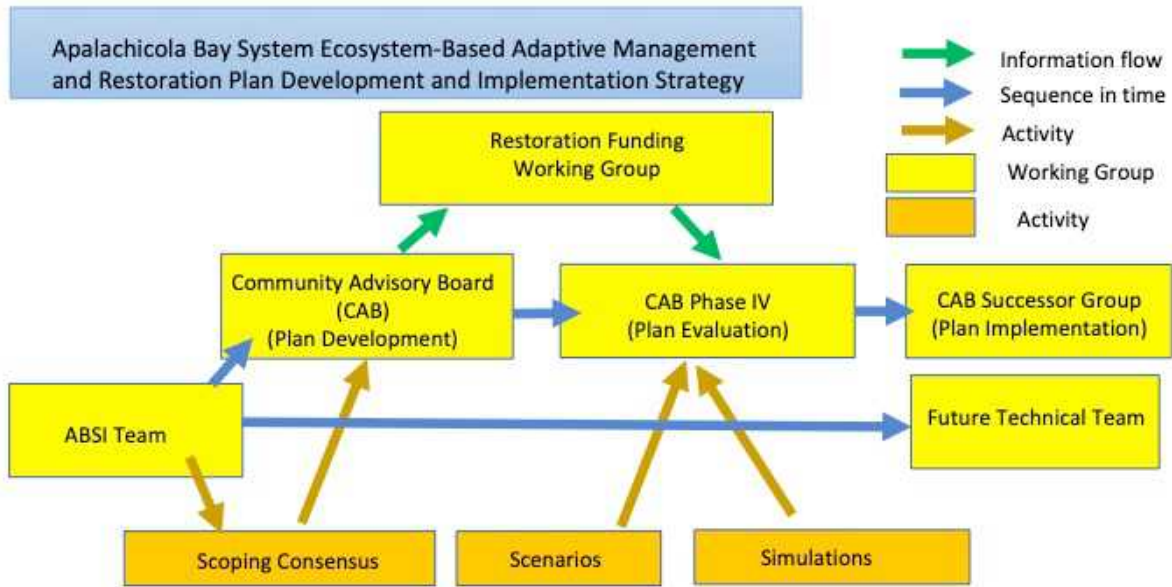
- 2. RESTORATION FUNDING WORKING GROUP (RFWG).** Initiated in late 2021 the Restoration Funding Working Group’s role is to seek resources and political, governmental, and organizational support for the CAB’s priority recommendations. *Status Initiated*
- 3. CAB SUCCESSOR GROUP.** The CAB Successor Group will be ready to convene when the CAB completes their work on the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan. The Successor Group’s role will be to organize a group of key stakeholders committed to working collaboratively for the long-term, once the CAB process is complete and to ensure that the Plan is implemented, monitored, and adaptively managed over time and has the support of the Community. The CAB Successor Group process will formally initiate January 2024. *Status Organizing. Formal Convening Pending CAB Approval of Recommendations for Plan in November 2023.*

<b>Meeting I.</b> Virtual	<b>Jan. 26, 2022</b> <ul style="list-style-type: none"> <li>Review of Predictive Models</li> </ul>	Initiation of Phase IV of ABSI.
<b>Meeting II.</b> ANERR	<b>Mar. 30, 2022</b> <ul style="list-style-type: none"> <li>Fisheries (Socioecological) Model Guidance</li> <li>Management Strategies discussion with FWC</li> </ul>	ABSI Science and data collection update. Sub-committee reports. Public Engagement Initiative strategy and plan discussion and approval of approach. Guidance regarding restoration and management scenarios and performance measures for development of the Fisheries (Socioecological) Model. Comprehensive review and discussion on draft management strategies with FWC Division of Marine Fisheries Management. Public comment.
<b>Meeting III.</b> ANERR	<b>May 25, 2022</b> <ul style="list-style-type: none"> <li>Presentations and discussions on restoration approaches</li> <li>Discussion with FWC/DEP/ANERR on restoration strategies</li> </ul>	ABSI science and data collection and decision support tools update. Sub-committee reports and public engagement initiative update. Chesapeake Bay Oyster Management and Habitat Restoration Modeling presentation, and Alabama Management and Restoration Approach presentation. Comprehensive review and discussion on draft restoration approaches (strategies), and CAB discussion and feedback from FWC Division of Habitat and Species Conservation, FWC Division of Marine Fisheries, ANERR, and DEP Office of Resilience & Coastal Protection on proposed ABSI restoration scenarios (strategies). Public comment.
<b>Meeting IV.</b> ANERR	<b>July 27, 2022</b> <ul style="list-style-type: none"> <li>FWC NFWF restoration project</li> <li>Oyster abundance index data</li> <li>Fisheries model simulation results &amp; scenarios refinements</li> </ul>	Sub-committee reports and public engagement initiative update. Update on FWC (NFWF funded) restoration project. Discussion on approach for encouraging protection and enforcement of restoration and restoration experiment sites. Overarching Considerations for model simulation results briefing. Apalachicola Bay oyster abundance index data presentations. Review and discussion of Fisheries (Socioecological) Model simulation results for initial priority Fisheries Management (Goal B) scenarios (strategies/options). Agreement on next suite of scenarios for Fisheries Model simulations. Public comment.
<b>Meeting V.</b> ANERR	<b>October 18, 2022</b> Fisheries Model Simulation Results & Scenarios Refinements	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
<b>Oystermen’s Workshop</b>	<b>October 18, 2022</b> ANERR	Oystermen’s Feedback on ABSI Restoration Experiments, FWC Restoration Project, and Potential Management Scenarios for Modeling.
<b>Community Workshop</b>	<b>October 19, 2022</b> Eastpoint Firehouse	Community Feedback on ABSI Restoration Experiments, FWC Restoration Project, and Potential Management Scenarios for Modeling.



<b>Meeting VI.</b> ANERR	<b>Nov. 30, 2022</b> <ul style="list-style-type: none"> <li>Fisheries Model Simulation Results &amp; Scenarios Refinements</li> </ul>	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
<b>PHASE V CAB MEETINGS — 2023</b>		
<b>Meeting I.</b> ANERR	<b>Feb. 1, 2023</b> <ul style="list-style-type: none"> <li>Fisheries Model Simulation Results &amp; Scenarios Refinements</li> </ul>	Initiation of Phase V of ABSI. ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
<b>Meeting II.</b> ANERR	<b>April 12, 2023</b> <ul style="list-style-type: none"> <li>Fisheries Model Simulation Results &amp; Scenarios Refinements</li> </ul>	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
<b>Community Workshop</b>	<b>April 12, 2023 Tentative</b>	Community Feedback on ABSI Restoration Experiments, FWC Restoration Project, and Potential Management Scenarios for Modeling.
<b>Meeting III.</b> ANERR	<b>May 31, 2023</b> <ul style="list-style-type: none"> <li>Fisheries Model Simulation Results &amp; Scenarios Refinements</li> </ul>	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
<b>Meeting IV.</b> ANERR	<b>July 26, 2023</b> <ul style="list-style-type: none"> <li>Fisheries model simulation results &amp; scenarios refinements</li> </ul>	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
<b>Oystermen's Workshop</b>	<b>TBD ~ Sept. 2023</b>	Oystermen's Feedback on the CAB's recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan.
<b>Meeting V.</b> ANERR	<b>Sept. 27, 2023</b> <ul style="list-style-type: none"> <li>Fisheries Model Simulation Results &amp; Scenarios Refinements</li> </ul>	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
<b>Community Workshop</b>	<b>TBD ~ October 2023</b>	Community Feedback on the CAB's recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan.
<b>Meeting VI.</b> ANERR	<b>Nov. 29, 2023</b> <ul style="list-style-type: none"> <li><b>Adopt Final CAB Recommendations for ABS Plan</b></li> </ul>	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Finalize and adopt recommendations for strategies and actions (components) for inclusion in the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan) and submit to FSUCML. Public comment.

# ABSI CAB PROCESS FLOWCHART AND PROJECT AREA MAP



**Notes**  
 1. Yellow boxes are groups of people. Blue arrows connecting yellow boxes indicate some or all of the people in one group may comprise the next group in time sequence



*ABSI Project Area Map*

## ATTACHMENT 4 CURRENT AND FUTURE SCENARIOS AND ASSUMPTIONS FOR MODELING

### CURRENT MANAGEMENT SCENARIOS AND ASSUMPTIONS FOR MODELING

**OVERVIEW.** The Community Advisory Board (CAB) is evaluating a suite of potential scenarios (strategies) proposed to achieve restoration and management goals for the Apalachicola Bay System. The scenarios are being evaluated with the overarching goal of restoring oyster reef habitat to a level that can sustainably provide needed ecosystem services for the System, and concurrently provide for a sustainable and economically viable level of commercial oyster harvesting. The CAB will evaluate a broad suite of strategies predicted to achieve the dual goals of restoration and management of the oyster resource. Decision support tools including predictive socio-economic and ecological models coupled with available and emerging data and research will be used to identify viable management and restoration options. **Evaluating scenarios (strategies) does not imply support for any specific scenario.**

Final decisions on recommendations for inclusion in the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan) will be made once the CAB reaches consensus on the best combination of strategies predicted to achieve restoration and management objectives for the Bay. The CAB's recommendations will be submitted to the FSUCML ABSI Team who will subsequently develop and submit the final Plan to relevant management and restoration agencies. These entities will decide whether to approve and implement all or part of the Plan.

**SCENARIOS.** The Community Advisory Board unanimously agreed by consensus to approve initial scenarios (combinations of strategies) for evaluation by the Fisheries (Socioecological) Model:

- An Active harvest management scenario similar to the AL approach using monitoring and an oyster abundance minimum density threshold.
- Different management strategies under a range of different assumptions to see what works best.
- A put-and-take sustainable wild oyster harvest fishery.
- Restoration approaches using data from the restoration projects and the restoration experiments and pilot projects (specific locations, size, height/spatial configurations, type of cultch material, density of cultch, etc.).
- Limited entry commercial oyster fishery.
- A combination of limited entry and active management.

Each of these scenarios will initially be evaluated with a spatially implicit model (for simplicity, time, and practicality should only a limited area be opened). This will require making assumptions about the area of submerged land that is open for oyster harvest and specifically that is being considered when making density calculations (for Scenario B). These areal measurements have not been assessed.

Modeled Simulations Include:

- Closed seasons
- Bag limits
- Potential for bioeconomic entry (i.e., based on assumptions about profitability and variables costs, so not capped at number of trips/participants), as is most recent status quo.
- Fixed effort remains an options, as does, allowing for an effort cap with bioeconomic operations below that.

- Discard mortality applied to oysters captured but not harvested.
- Potential for density dependent catchability which there is some evidence may occur.

*\* The models still include shell budget information.*

### **When the Model Can Be Extended to a Spatially Explicit Platform, Evaluate:**

- Opening and closing specific oyster bars and potentially even parts of specific oyster bars based on the metrics for sustainability of the resource (e.g., oyster density).
- Different scenarios with the Bay wide-open and various areas of the Bay closed.
- Develop and maintain one area of the Bay (e.g., Cat Point) for high intensity commercial oyster harvesting, and the rest of the Bay will be set aside as protected areas (MPA/Sanctuaries) to provide ecosystem services such as water filtration and marine species habitat, and also to provide brood stock/spat source for the system.
- Updated periodic oyster population evaluations are being conducted and used as the metric for how much and when harvesting is allowed.
- Total Allowable Catch (TAC) as a component of a limited entry and/or minimum density active managed scenarios.
- Seasonal closures.
- Consider the size, spatial configuration, amount and location for oyster reef habitat restoration initiatives.

Much of the above will require adding some larval transport and dispersal assumptions to spatially explicit modeling.

ATTACHMENT 5  
COMMUNITY SCENARIOS FEEDBACK WORKSHEET

**SCENARIOS FOR MODELING**

**SCENARIOS.** The Community Advisory Board unanimously agreed by consensus to approve initial scenarios (combinations of strategies) for evaluation by the Fisheries (Socioecological) Model. The CAB is only evaluating whether specific scenarios are likely to be effective in achieving the goals of establishing a wild harvest oyster fishery along with sustainable oyster reef habitat sufficient to provide needed ecosystem and ecological services. The scenarios under evaluation are **NOT** recommendations at this point in the process.

**A) An Active harvest management scenario similar to the AL approach using monitoring and an oyster abundance minimum density threshold.**

*Comments/Recommendations:*

- 

**B) Different management strategies under a range of different assumptions to see what works best.**

*Comments/Recommendations:*

- 

**C) A put-and-take sustainable wild oyster harvest fishery.**

*Comments/Recommendations:*

- 

**D) Restoration approaches using data from the restoration projects and the restoration experiments and pilot projects (specific locations, size, height/spatial configurations, type of cultch material, density of cultch, etc.).**

*Comments/Recommendations:*

- 

**E) Limited entry commercial oyster fishery.**

*Comments/Recommendations:*

- 

**F) A combination of limited entry and active management.**

*Comments/Recommendations:*

-



**WHEN THE MODEL CAN BE EXTENDED TO A SPATIALLY EXPLICIT PLATFORM, EVALUATE:**

<b>A) Opening and closing specific oyster bars and potentially even parts of specific oyster bars based on the metrics for sustainability of the resource (e.g., oyster density).</b>
<i>Comments/Recommendations:</i> <ul style="list-style-type: none"><li>•</li></ul>

<b>B) Different scenarios with the Bay wide-open and various areas of the Bay closed.</b>
<i>Comments/Recommendations:</i> <ul style="list-style-type: none"><li>•</li></ul>

<b>C) Develop and maintain one area of the Bay (e.g., Cat Point) for high intensity commercial oyster harvesting, and the rest of the Bay will be set aside as protected areas (MPA/Sanctuaries) to provide ecosystem services such as water filtration and marine species habitat, and also to provide brood stock/spat source for the system.</b>
<i>Comments/Recommendations:</i> <ul style="list-style-type: none"><li>•</li></ul>

<b>D) Updated periodic oyster population evaluations are being conducted and used as the metric for how much and when harvesting is allowed. Total Allowable Catch (TAC) as a component of a limited entry and/or minimum density active managed scenarios.</b>
<i>Comments/Recommendations:</i> <ul style="list-style-type: none"><li>•</li></ul>

<b>E) Other Options.</b>
<i>Suggested Options for Evaluation:</i> <ul style="list-style-type: none"><li>•</li></ul>