# APALACHICOLA BAY SYSTEM INITIATIVE

## COMMUNITY ADVISORY BOARD
## PHASE IV MEETING III — 25 MAY 2022

## FACILITATOR'S SUMMARY REPORT

## UNANIMOUSLY APPROVED 27 JULY 2022

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


MEETINGS FACILITATED AND SUMMARIZED BY JEFF A. BLAIR

# Apalachicola Bay System Initiative Community Advisory Board
# 25 May 2022 Facilitator's Meeting Summary Report

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# APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD
# 25 MAY 2022 FACILITATOR'S MEETING SUMMARY REPORT

## OVERVIEW OF APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD'S KEY ACTIONS

## WEDNESDAY, MAY 25, 2022

## I. MEETING SUMMARY AND OVERVIEW

At the 25 May 2022 meeting conducted at the Apalachicola National Estuarine Research Reserve (ANERR) in Eastpoint, Florida the Apalachicola Bay System Initiative (ABSI) Community Advisory Board (CAB): received an overview of the updated Project Workplan and schedule; received an update on ABSI science and data collection; received reports and updates from the CAB Successor Group Subcommittee, Restoration Funding Working Group, and Community Outreach Subcommittee; heard presentations on Chesapeake Bay Oyster Management and Restoration Modeling and, Alabama Active Oyster Management and Restoration Approach; and, engaged in a discussion with restoration agency representatives (ANERR, DEP, and FWC) on the CAB's draft restoration strategies.

## II. Welcome and Introductions

Jeff Blair, ABSI CAB Facilitator, opened the meeting at 8:30 AM and welcomed all participants.

### Social Science Survey

The ABSI CAB members are participating in a Social Science Survey that is conducted at the beginning of each meeting to gauge participants' perspectives and attitudes regarding science and data, and stakeholder relationships throughout the ABSI CAB process. Ed Camp, University of Florida, is conducting the Survey that was first administered during the October 2020 meeting and will be continued throughout the duration of the ABSI CAB process.

## III. ABSI CAB Meeting Participation

The following CAB members participated in the Wednesday, May 25, 2022 meeting conducted in-person at the Apalachicola National Estuarine Research Reserve in Eastpoint, Florida:

Mike Allen, Georgia Ackerman, David Barber, Bert Boldt, Frank Gidus, Anita Grove, Chad Hanson, Jenna Harper, Shannon Hartsfield, Gayle Johnson, Katie Konchar, Roger Mathis, Steve Rash, Devin Resko, *Portia Sapp*, *Chad Taylor*, and *Paul Thurman*.

** Members who participated virtually are italicized.*

(17 of 23 members participated — 74%).

*Absent CAB Members:*

Erik Lovestrand, Chuck Marks, Mike O'Connell, Alex Reed (Jenna Harper is also representing DEP), John Solomon, and TJ Ward.

### Project Team Members Participating

Jeff Blair, Sandra Brooke, Ross Ellington, Madelein Mahood, and Joel Trexler.

*(Attachment 2 — Meeting Participation)*

### Meeting Facilitation

Meetings are facilitated and meeting reports prepared 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. AGENDA REVIEW AND APPROVAL

The ABSI CAB voted unanimously to approve the agenda for the 25 May 2022 meeting as presented. Following are the key agenda items approved for consideration:

- ✓ To Approve Regular Procedural Topics (Meeting Agenda and Summary Report)
- ✓ To Review Updated Workplan and Meeting Schedule
- ✓ To Receive ABSI Science and Data Collection Update
- ✓ To Receive Reports from CAB Successor Group, RFWG, and Community Outreach Subcommittee
- ✓ To Hear a Presentation on Chesapeake Bay Oyster Management and Habitat Restoration Modeling
- ✓ To Hear a Presentation on Alabama's Active Oyster Management and Restoration Approach
- ✓ To Evaluate ABSI Draft Restoration Strategies with Agencies Responsible for Restoration
- ✓ To Identify Next Steps: Information, Presentations, Assignments, Agenda Items for Next Meeting

*Amendments to the Posted Agenda:*

None.

*(Attachment 3 — 25 May 2022 ABSI CAB Agenda)*

## V. APPROVAL OF THE 30 MARCH 2022 CAB MEETING FACILITATOR'S SUMMARY REPORTS

The ABSI CAB voted unanimously to approve the 30 March 2022 CAB Meeting Facilitator Summary Report as presented.

*Amendments***:** None

## VI. REVIEW OF UPDATED PROJECT WORKPLAN AND SCHEDULE

Jeff Blair provided the CAB with a review of the updated Project Workplan and Schedule and answered members' questions. The 25 May 2022 meeting represented the CAB's third meeting of Phase IV which is 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 July 27, 2022. Jeff reported as follows:

- Jeff noted that at the July meeting the CAB will begin the process of evaluating the best combination of strategies that will 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 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 will conduct 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 to ensure that the Plan is implemented, monitored, and adaptively managed over time with the support of the Community. 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.
- 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 noted that the Project Team will keep the CAB 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 4 — Workplan, Schedule, and Project Flowchart)*

## VII. PROJECT BRIEFINGS AND REQUESTED PRESENTATIONS

### ABSI SCIENCE AND DATA COLLECTION UPDATE

Sandra Brooke, FSUCML Faculty and ABSI Principal Investigator, provided the CAB with an update on ABSI science and data collection. A science and data update is provided at all CAB meetings.

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

**Summary and Overview of Presentation**

The 25 May 2022 Science and Data Collection update was focused on updates including: submittal of a manuscript to *Coasts and Estuaries* on multidecadal nekton communities in the ABS, establishment of an ABS literature database, tonging data for restoration reefs, reefball experiments, hatchery operations, and future priority tasks.

**Manuscript submitted to Coasts and Estuaries on May 13th**

- Sandra Brooke (FSU), Cheston Peterson (FSU), and David Gandy (FWC) were the authors.
- The manuscript is titled: *Analysis of multidecadal nekton communities is a regulated river-fed estuary: assessing temporal changes relative to river flow rates in the Apalachicola Bay System, Florida.*

- The analysis used 19 years of FWC Fisheries independent monitoring data.
- Major finding of the research is that temperature drives much of the movement in the communities. River discharge did not have a direct effect on fish communities, but factors correlated with river flow, such as salinity, did have an impact.

**Literature Data Base**

- 76 citations with associated documents.
- 17 different categories, searchable database.
- Free software (Zotero.org).
- The database will be posted on the ABSI website in the near future.

**Tonging Data for Restoration Reefs**

- Data provided on:
  - Average number of live oysters (per tong) by treatment and site
  - Average % live oysters (per tong) by treatment and site
- Data provided on Average size class distribution by treatment and site:
  - Spat = < 25 mm
  - Seed = 25-75 mm
  - Market = >75 mm
- The percent of live oysters is very similar with material type.
- Dry Bar is not doing as well.
- Peanut Ridge and some of the other eastern sites are doing better than last year. Most of the oysters are spat, but juveniles are also present plus a few were market size.

**Reefball Experiments**

- Deployed April 2022.
- 4 units per site.
- 1 tray of shell for community analysis.
- Units and trays removed and analyzed quarterly.
- Deployed at four Dry Bar locations, Hotel Bar, and East Hole.
- The reefballs deployed at Dry Bar North were removed by trawling, but replaced.
- There are limitation to the sites for deploying reefballs due to navigation and permitting issues.
- Analyzing oyster recruitment data using 3-D photography.
- Reefballs will be sampled on a regular basis.

**Hatchery Operations**

- Spawned early May with Peanut Ridge broodstock.
- Most were females (> 2 inches).
- Few males – very small (< 2inches).
- Male gonads infected with trematodes (*Bucephalus* sp) – parasitic flatworms.
- Males very small and < 50% of population.
- We did not have a successful spawn because of the issues noted above.
- Prevalence of disease is higher in eastern oyster sites where we have collected broodstock in the past, understanding infection patterns will help guide selection of sites for additional brood stock.

- First spawn ready to set – will be used for experiments.
- Next spawn mid-June.
- Interns hired May 24th – 2 FSU graduates.
- 4 OysterCorps students are assisting.

**Future Priority Tasks**

- Monthly collections at 5 reefs within 4 intertidal sites for condition index, *Perkinsus marinus* (Dermo) and *Bucephalus*. Deploy spat traps and switch out monthly
- Begin larval dispersal modeling
- Repeat spat deployment experiment with adjusted methods
- Deploy Multiparameter datalogger on aquaculture leases in the miles.
- Develop conceptual model and options for interactive tools.

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

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

- Q: what is the size of the lime rock deployed for restoration experiments
- SB: small 1 ½" and large 6".
- Q: how long since the reefs were deployed?
- SB: 1 year and the reefs have degraded in height and footprint in places.
- Q: are the shells doing better than lime rock?
- SB: yes, but the shells were deployed first so they have been in the water longer.
- Question: was the data logger trawled up by accident?
- SB: yes, we do not believe it was intentional.

## VIII. WORKING GROUP AND SUBCOMMITTEE UPDATES AND REPORTS

### A. CAB SUCCESSOR GROUP SUBCOMMITTEE

Shannon Hartsfield and Anita Grove reported that the Subcommittee is in a holding pattern and there was nothing new to report. It was reported at a previous meeting that the Subcommittee has discussed the type of members needed (stakeholder representation) and the structure, format, and key issues for the Subcommittee. In addition, the Subcommittee is collecting ideas and information for use once they are convened at the conclusion of the ABSI CAB process.

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

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

- Jeff Blair, CAB Facilitator, noted that there was no expectation for any specific action from the CAB Successor Group Subcommittee since it is premature to move forward at this point in the ABSI process.

### B. RESTORATION FUNDING WORKING GROUP

**Overview.** The ABSI proposal contemplates a 15-year commitment from FSU, 10 years beyond the 5 years of funding provided by the TRIUMPH Board. The Restoration Funding Working Group (RFWG) will be a team of local, state, private, and NGO stakeholders focused on developing plans for long-term funding of

the broader effort; the goal at the end of the 5-year ABSI period is to have a funding pipeline for restoration secured. Joel Trexler, RFWG Lead, previously reported that the RFWG is meeting regularly, has broad representation, have identified the specific strategies and related actions which would require funding, agreed to a charge, are mapping actions with potential funding sources and approximate funding amounts needed, and understand that it is critical to identify gaps in funding and work to fill the gaps before the Plan is final. In addition, there is potential funding already in place for some CAB recommended actions.

Joel reported as follows for the 25 May 2022 CAB meeting update on the RFWG:

- There were no updates to report since the last CAB meeting.

### C. COMMUNITY OUTREACH SUBCOMMITTEE

**Subcommittee Charge:**

- To work with ABSI leadership to inform the public of who we are and what we are doing.
- To create outreach & community engagement strategies that attract stakeholders and the general public to actively inform the public about the Apalachicola Bay System Initiative's goals and actions.
- To measure effectiveness of these strategies through direct participation in achieving actions (as well as web analytics and media stories).

Chad Hanson reported that the Community Outreach Subcommittee (COC) has been active and they are working on a variety of initiatives. Chad reported as follows for the 25 May 2022 CAB meeting update on community outreach initiatives:

- The Subcommittee held 2 meetings since last the CAB meeting.
- Information was provided during the FSUCML open house in April.
- Subcommittee was not able to participate in the Estuary Days at ANERR due to a traffic accident blocking the road.
- Sandra did a presentation to the Apalachicola City Commission on May 3, 2022.
- Franklin County Commission ABSI update scheduled for June 7, 2022.
- Decided not to do the SGI Shrimp Fest.
- Anita and Sandra are working on ANERR SciCafé event for a summer and fall/winter presentation.
- Local area library talks are scheduled - Apalachicola Library June 9, 2022, and Eastpoint/Carrabelle Library June 21, 2022.
- Workshop planning is underway for Apalachicola in June or July, likely at the Court House Annex and Eastpoint Library.
- Oyster Radio will be used to advertise public ABSI meetings.
- Subcommittee is updating the original Op-Ed with the goal of highlighting public outreach meetings for questionnaire and will have it published soon.
- Questionnaire draft has been prepared by the Subcommittee, and has been pared down to 14 questions focusing on priorities (rank for importance), and 2 open-ended questions to allow respondents to provide feedback.
- Questionnaire will be used for in-person meetings only as the questions need context.

**Public Presentations Update:**

- Franklin County Commission ABSI update scheduled for June 7, 2022.

- Plan to meet with Noah Lockley and Bert Boldt, Franklin County Commissioners.
- Plan to have regular meetings with Smokey Parrish.
- The Subcommittee is planning a public workshop for June or July (4:00 – 6:00 PM). The Apalachicola County Courthouse Annex and the Eastpoint Library are proposed locations. Questionnaire will be distributed during the workshops.
- The Subcommittee is planning presentations at the Eastpoint and Carrabelle library branches, and the Apalachicola Library.

**Other Upcoming Outreach Events Update:**

- The Subcommittee is creating an updated Op-Ed to publish in the Apalachicola Times.

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

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

- Kudos to the Subcommittee for their good work on community outreach generally, and for the ANERR and FSUCML public events specifically.

## IX. OYSTER MANAGEMENT & HABITAT RESTORATION APPROACHES PRESENTATIONS

### A. CHESAPEAKE BAY OYSTER MANAGEMENT AND HABITAT RESTORATION MODELING PRESENTATION

Mike Wilberg (MW), Professor, Chesapeake Biological Laboratory University of Maryland Center for Environmental Science, presented on Chesapeake Bay Oyster Management and Habitat Restoration Modeling. Mike reported:

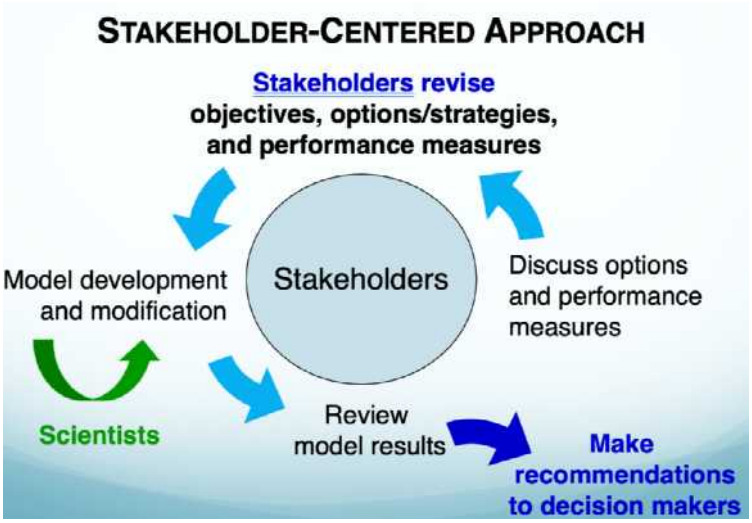
**OysterFutures Project Goal**

- Help a diverse group of stakeholders develop recommendations for oyster restoration and management that meet the needs of industry, citizen, and government stakeholders in the Choptank and Little Choptank Rivers.

**Process**

- Stakeholder-centered process where stakeholders propose objectives, options (strategies), and performance measures for sustainable oyster restoration and management.
- Stakeholders agree on their vision, what management options to evaluate, and what metrics to use to evaluate them.
- Data and model components are presented to stakeholders with uncertainties clearly acknowledged; stakeholders provide missing information when possible.
- Scientists develop models and modify as appropriate.
- Computer model includes scientific and stakeholder knowledge.
- Computer model forecasts outcomes and stakeholders consider the results.
- Stakeholders use a formal ratings process (75% agreement) to move ideas forward and provide alternatives.
- All ratings and comments are compiled and available through the whole process.
- Scientists run model simulations and present results to stakeholders during Workgroup meetings.
- Stakeholders evaluate results and determine next suite of options (scenarios) to run based on model simulation results measured relative to specific performance measures to achieve the goals of the project.

- Stakeholders revise and combine options to achieve desired outcomes.
- Evaluate progress iteratively and interactively.
- Model evaluated over 100 different options.
- Options are evaluated and eliminated or revised until the best performing alternatives remain.
- Process is continued until a package of consensus science-based recommendations for restoration and management outcomes is agreed to.




*Stakeholder-Centered Approach*

**Information Needed**

- Actions (strategies) to consider.
- Important outcomes to consider (performance measures).
- Oyster Biology
- Fishery
- Ecosystem
- Effects of management actions

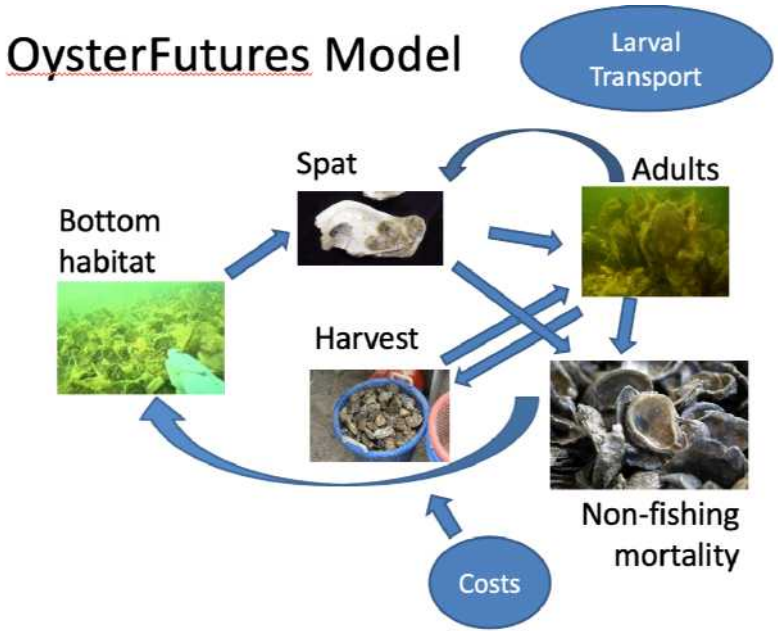

**Options Evaluated**

- Status quo
- Rotational harvest
- Change sanctuary boundaries
- Manage using shell supplements
- Shell additions with rotation

- Plant hatchery-reared oysters
- Increased enforcement of regulations
- Modify size limits
- Placing reefballs
- Completion of restoration efforts

**Simulation Model**

- Models oyster biology
- Models fishery dynamics
- Tracks separate populations on each of 1,132 habitat polygons
- Connectivity between polygons estimated with larval transport model
- Projects 25 years into future




*Components of the OysterFutures Model*

**Oyster Biology Data**

- Growth (scientific literature)
- Maturity (scientific literature)
- Egg production (scientific literature)
- Larval transport (model developed for this project)
- Abundance and mortality (models developed for this project)
- Shell production (scientific literature)

**Fishery Data**

- Regulations
- Maryland Dept. Natural Resources
- Compliance? (stakeholder expert judgement)
- How many oysters are in a bushel?
- Stakeholders provided new information on the number of oysters per bushel
- Price per bushel (Maryland DNR data and stakeholder knowledge)

- Where and when do people fish?
- Discussions with the group
- Stakeholders provided data on costs of fishing
- Developed a bio-economic model to describe oyster fishing based on profitability

**Fishing Data**

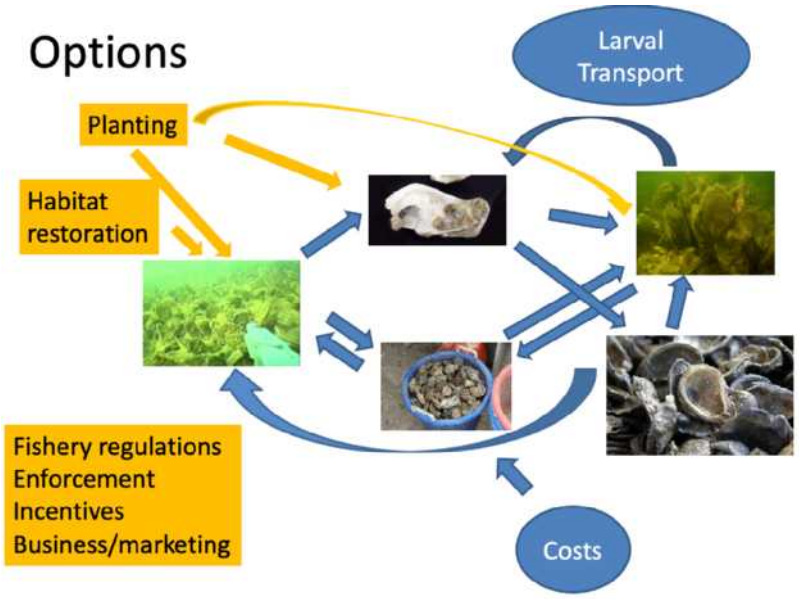
- Four gears
  - Hand tong
  - Diver
  - Sail dredge
  - Power dredge
- All harvestable oysters above a minimum number/sq. m are harvested on each bar
  - Hand tong >4.8-5.3 bushels per day
  - Power Dredge > 7.5-8 bushels per day
  - Diver/Sail dredge – same as power dredge

**Ecosystem Data**

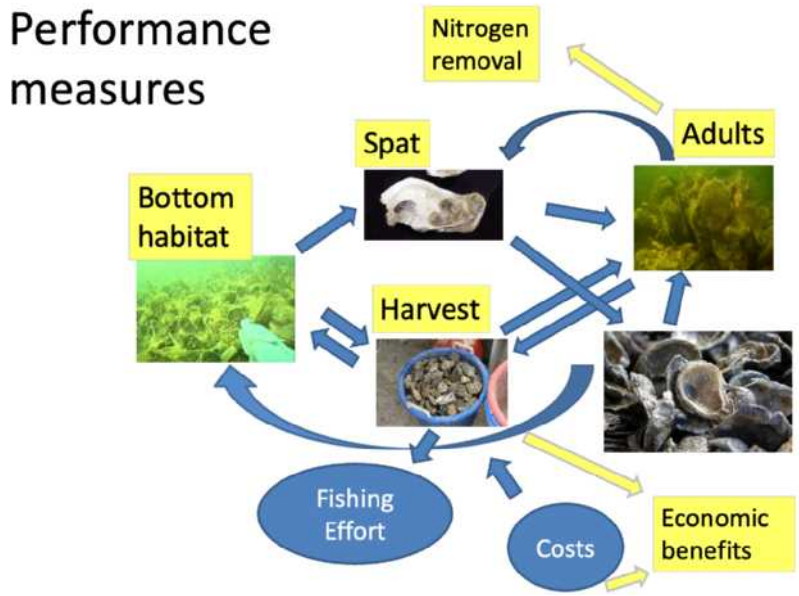
- Location and amount of shell
  - Recent sonar surveys
  - Knowledge of watermen in areas that were not surveyed
- Shell degradation
  - Literature
  - Stakeholder expert judgement
- Ecosystem effects of oysters (scientific literature)
  - Nitrogen removal on oyster reefs
  - Nitrogen removal through harvest
- NOAA Geodatabase Habitat Classifications
  - Habitat classifications and polygons in acoustic survey area based on NOAA's Chesapeake Bay CMECS v4 Substrate Component 01062017 geodatabase
  - 1: Shell fragments
  - 2: Flat (2D) shell, sand/mud
  - 3: Flat (2D) shell
  - 4: Raised (3D) shell
  - 5: Raised (3D) stone

**Effects of Management Actions**

- Effects of planting shell
  - Maryland DNR data and stakeholder expert judgement
- Costs of shell and spat
  - NOAA and Maryland DNR data
- Costs of alternate substrate (usually granite)
  - NOAA data
  - Stakeholder data
- Other constraints
  - Stakeholder expert judgement




*Options Modeled*




*Options Evaluated Relative to Performance Measures*

**Win-Win Options Exist**

- Measuring adult abundance vs. harvest: Change in adult oyster abundance over status quo relative to change in harvest over status quo.
- Win – win options exist: high abundances and high harvest.
- **Important note:** For most options, these strong positive benefits did not start to be realized until around 10 years after implementation.

**Key Observations**

- The process will work best when it's open and transparent.
  - Show and talk about the data and assumptions.

    - Describe the model in ways that help people understand it.
- Everyone has important contributions to make.
    - Listen carefully, and be patient, and express concern when something seems "off."
    - Take the time to learn from one another.
- Positive mindset:
    - Everyone should be thinking about the end goal of making the situation better.

**Oyster Futures Workgroup Recommendations**

- Enhance enforcement
- Explore a limited entry program
- Allow hand tonging in some sanctuary areas
- Plant more shell and spat
- Complete planned restoration
- Place privately funded reef balls
- Combine the above options
- Use *Consensus Solutions* process in MD
- Develop cost effective strategies for shell and substrate
- Coordinate marketing and business plans
- Increase fees and taxes
- Promote education, training, and research

**Project Information**

- https://oysterfutures.wordpress.com/
- www.facebook.com/oysterfutures

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

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

- We visited Horn Point in 2014.
- MW: The Maryland Legislature just funded expansion of facility. It is probably the largest restoration effort in the world, 8 billion spat!
- SB: How do you account for mortality of spat on shell? Is it cost effective?
- MW: 10-20% of spat survive based on hatchery data. It is cost effective in some situations but in some areas the spat disappears. Overall, the investment in the fishery seems to pay for itself.
- SB: How do you disentangle natural spat recruitment?
- MW: In some areas there is no natural spat recruitment. Also spat on cultch deployment is temporally offset (earlier) than natural spat set.
- Describe the process of going from 30 to 6 performance measures?
- MW: This was done in two ways: 1) performance measures that the group kept coming back to were prioritized, and 2) we found that many of the measures were evaluating the same thing so they were not needed and were already being accounted for.
- Were the performance measures only for harvest?
- MW: No, there were multiple measures (e.g., harvest by smaller regions, areas where management actions were taking place, number of watermen harvest would support, ecosystem services, nitrogen removal, water quality, etc.).
- How long does it take oysters to reach adult in Maryland? How many watermen are harvesting oysters?

- MW: 1 year. In MD last year there were ~1,500 oystermen (at low point there were~300).
- Are you seeing positive trends in the Maryland oyster fishery?
- MW: Oyster populations have been on an upturn since 2000 due to restoration/management actions as well as the decrease in incidence of diseases (no large-scale disease mortality events). However, other fisheries have not been doing as well (no increases in blue crab fishery, and the impact on finfish is complex to evaluate, and summer flounder are gone and striped bass are in decline.
- JB: Is the nutrient load reduction a reason for the improvement to the oyster fishery?
- MW: probably not since although there have been efforts to reduce nutrient loading in the Chesapeake Bay the population is increasing rapidly and the overall loading increases as a result.
- JT: Is there a method to validate whether your simulation results for priority strategies are successful vs. other actions?
- MW: Not directly; the modeling approach is most useful for saying a particular set of actions will have positive impact compared to using another set of strategies/actions.

### B. ALABAMA ACTIVE OYSTER MANAGEMENT & HABITAT RESTORATION APPROACH PRESENTATION

Jason Herrmann (JH), Alabama Department of Conservation and Natural Resources (DCNR), presented on the Alabama DCNR Oyster Management and Oyster Reef Restoration Strategy. Jason reported:

**Overview of Presentation**

- The Coastal Alabama Comprehensive Oyster Restoration Strategy as it relates to ongoing oyster reef restoration activities by the Alabama Marine Resources Division (AMRD).
- The role of AMRD and the Alabama Department of Public Health (ADPH) in oyster management.
- The status of Alabama's Public Oyster Reefs.
- How AMRD manages oyster harvest.
- Oyster Reef Restoration Techniques Past, Present, Future Implementing the Coastal Alabama Comprehensive Restoration Strategy.

**Oyster Reef Restoration Guidance Document (Coastal Alabama Comprehensive Oyster Restoration Strategy)**

- Co-Written by AMRD and NOAA,
- Defines Oyster Reef Restoration Goals in Alabama, and
- Aligns Alabama's Oyster Reef Restoration Goals to the Programmatic Damage Assessment and Restoration Plan/Programmatic Environmental Impact Statement (PDARP/PEIS).

**Goals of the PDARP/PEIS**

- "Restore oyster abundance, resilience, and diversity."
- "Restore oyster abundance and spawning stock to support a regional oyster larvae pool sufficient for healthy recruitment levels to subtidal and nearshore oyster reefs."
- "Restore resilience to oyster populations that are supported by productive larval source reefs and sufficient substrate in larval sink areas to sustain reefs over time."
- "Restore diversity of oyster reef habitats that provide ecological functions for estuarine-dependent fish species, vegetated shoreline and marsh habitat, and nearshore benthic communities."

**Specific Goals of the Coastal Alabama Comprehensive Oyster Restoration Strategy**

- Identify and prioritize restoration strategies,

- Identify data gaps, and
- Identify strategies to yield sustainable and resilient oyster populations in coastal Alabama;
- Prioritize potential restoration and enhancement strategies for implementation in the next 3-5 years;
- Identify science and/or data gaps that could help inform future restoration efforts; and
- Identify adaptive management strategies to address uncertainties associated with changing environmental conditions and/or project implementation.
- Identify adaptive management strategies.

**The Conceptual Model for the Plan**

Includes the following elements for each strategy/activity:

- Drivers
- Ecosystem Response
- Resulting Condition (Effect on Oysters)
- Restoration Activities (RA)
- PDARP Restoration Techniques
- Outcomes
- PDARP/RESTORE Oyster Goals

**Roles for Oyster Fishery in AL**

**AMRD Fisheries**

- Collect Fisheries Dependent and Independent Data
- Oyster management includes reef productivity and harvest monitoring
- Planning and Execution of Reef Restoration Projects

**AMRD Enforcement**

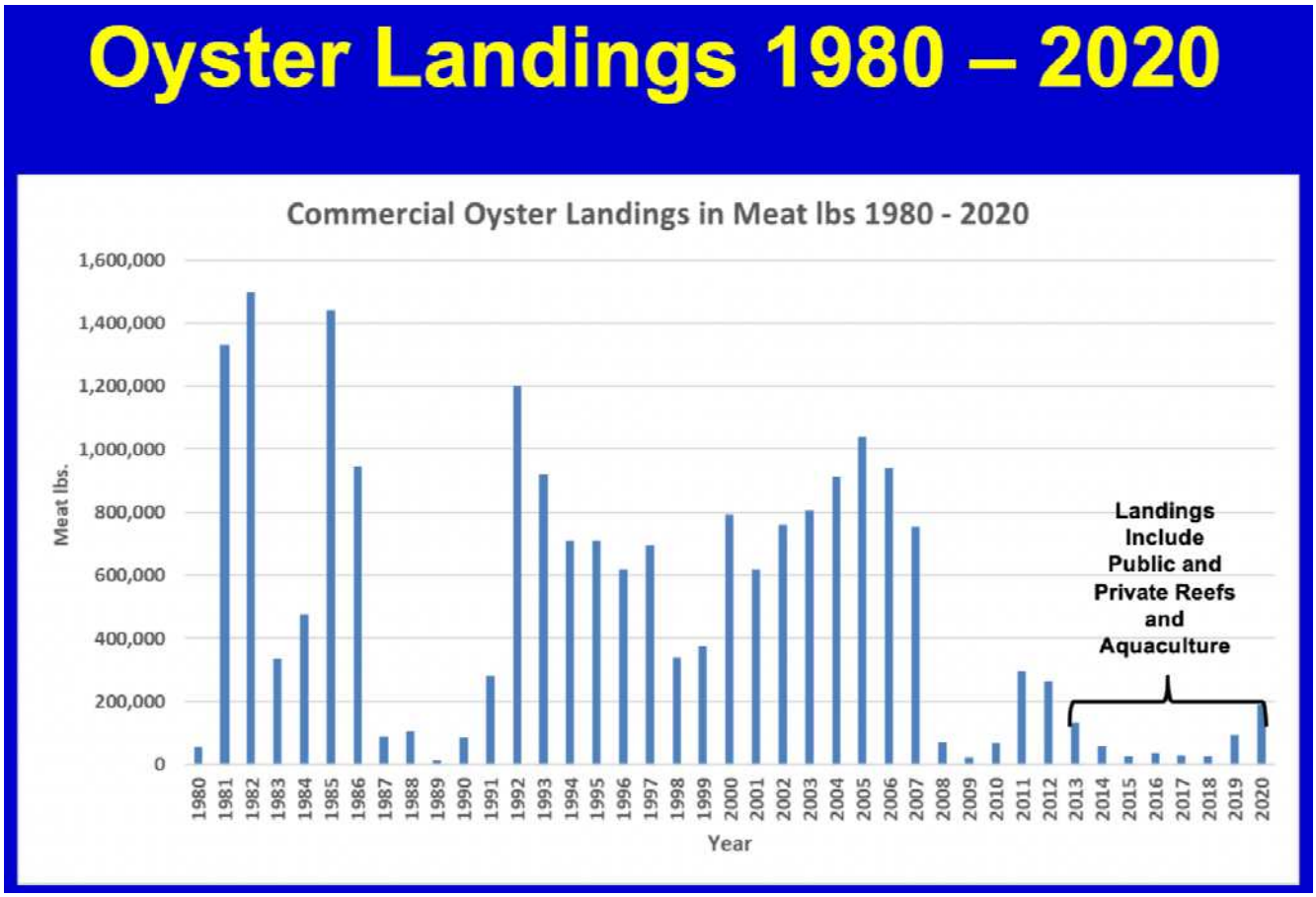
- Enforce Laws and Regs pertaining to catch and size limits and laws established by the Alabama Department of Public Health (ADPH)
- Oyster management includes patrol of harvest areas, enforcement of sack limits, monitoring no harvest zones, confiscation and handling of oysters harvested/ handled outside of legal compliance

**Alabama Department of Public Health (ADPH)**

- Setting harvest/landing time limits based on seasonal water and air temperatures (and other parameters)
- Inspection of seafood dealers / processors for compliance in product handling
- Facilitating Shellfish Harvest Area Openings and Closings based on potential health risk criteria

**Alabama's Main Oyster Reefs and Associated Acreage**

- Buoy Reef - 302.6 acres
- Cedar Point - 2009.2 acres
- Dauphin Island Bay - 521.8 acres
- Heron Bay - 143.6 acres
- Portersville Bay Reefs - 72.9 acres
- Kings Bayou - 66.8 acres
- **Total Acreage: 3116.9**




*Alabama Historic Oyster Landings Data*

| Harvest Season | # Days | # Sacks | Sacks/Day |
|---|---|---|---|
| Fall 2011 - Spring 2012 | 38 | 48,581 | 1,278.4 |
| Fall 2012 - Spring 2013 | 81 | 42,047 | 519.1 |
| Fall 2013 - Spring 2014 | 63 | 12,274 | 194.8 |
| Fall 2014 - Spring 2015 | 56 | 7,151 | 127.7 |
| Fall 2015 - Spring 2016 | 13 | 369 | 28.4 |
| Fall 2016 - Spring 2017 | 35 | 1,280 | 36.6 |
| Fall 2017 - Spring 2018 | 6 | 136 | 22.7 |
| Fall 2018 - Spring 2019 | 0 | 0 | 0.0 |
| Fall 2019 - Spring 2020 | 36 | 11,333 | 314.8 |
| Fall 2020 - Spring 2021 | 47 | 22,070 | 469.6 |
| Fall 2021 - Spring 2022 | 79 | 50,020 | 633.2 |

*Status of Alabama Oyster Reefs*

**Environmental Impacts to the Oyster Reefs**

- Hurricanes
  - Physical Devastation to Oyster Reefs
  - Silting to Occur on Many Productive Reefs
- Droughts
  - Decreased Fresh Water Flows Over Reefs
  - Increased Average Salinity on Alabama's Main Oyster Reefs
  - Ideal Conditions for Oyster Drills to Proliferate and Decimate Oyster Reefs
- Deepwater Horizon Oil Spill
- Conditions lead to more days with increased salinity and dissolved oxygen levels, and an increase in oyster drills (predation of the oysters).

**Oyster Reef Assessment**

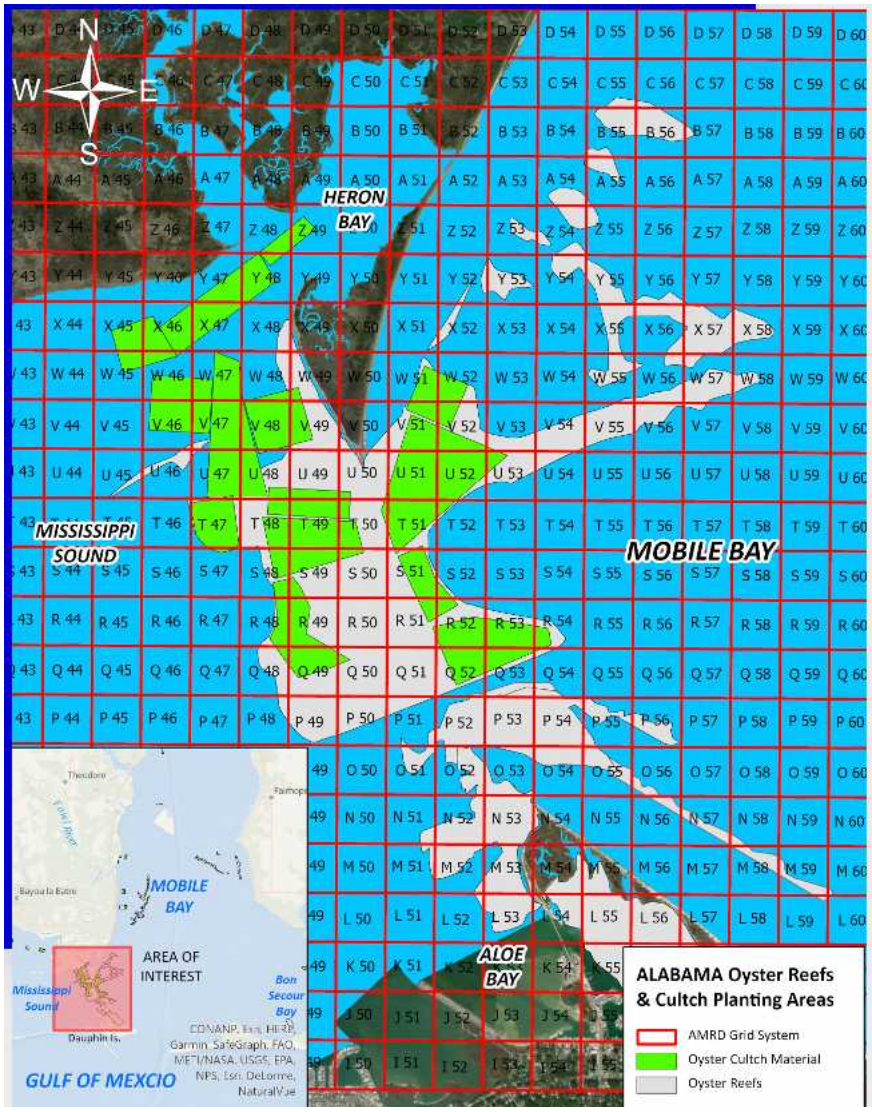
- Annual SCUBA quadrant dives
  - To determine oyster density on public reefs
  - To set initial harvest goal for season
- Hand dredge and hydraulic patent tongs are other sampling techniques used

**Harvest Monitoring**

- Flexible harvest goal utilizing:
  - Oyster Management Station
  - Reef Grid System
  - On-water Harvester Surveys

**Laws and Regulations Changes**

- Changes implemented in 2011
- **Public reef harvest season closed from May 1 – September 31**
- **Establishment of Oyster Management Stations (OMS)**
  - Require harvesters to have an Oyster Management Station Card
  - Dealer and harvester tags
  - Complete an Alabama Oyster Harvest Record Form for harvested oysters
  - The Oyster Management Stations benefit consumer safety, the oyster industry, and the oyster reefs.
- **New tag for recreational oyster harvest required**
  - All recreational oyster harvesters must purchase a recreational harvest tag at the OMS
  - Tags cost $0.35
  - Recreational harvesters may harvest up to 100 legal size oysters per person per day and harvest may only occur during times and in areas open to public harvest.
- **New reef grid system introduced in 2020**
  - Grid system was initiated to help monitor harvest and to reduce overharvesting in specific areas.
  - With better resolution AL may be able to allow additional harvest instead of closing large reef areas.
  - AMRD closes blocks of grids when they are harvested sufficiently.
  - A website was established to assist harvesters with fishing on the correct grid.
  - Harvesters must report the grid fished.
  - AMRD conducts harvester surveys to verify grids reported and to assess harvest status by evaluating oysters and reef material on harvest vessel cull board.




*Alabama Reef Grid System*

**AMRD Oyster Reef Restoration Projects**

- **Past**
  - Cultch Planting
  - Oyster Relaying
  - Oyster Seed Planting
- **Present**
  - Cultch Planting
  - Oyster Relaying
  - Oyster Seed Planting
  - Experimental Projects Including:
    - Remote Setting of Oysters
    - Reef Cultivation
    - Reef Cultch Height and Cultch Configuration
    - Side Scan Sonar and Multibeam Surveys

- **Future**
  - Implementation of the Coastal Alabama Comprehensive Oyster Restoration Strategy.

**Oyster Harvest Reef Support**

- **Cultch Planting**
  - 782,062 cubic yards of cultch material planted between 1972 and 2016.
  - Deployment of oyster shell, limestone, or other cultch material to provide a substrate for oyster settlement and growth.
- **Oyster Relay Operations**
  - Oyster Harvesters were paid to harvest oysters and cultch and deposit on barge (2010) or transplant to deployment area directly (2011).
- **Aquacultured oyster seed planting by AMRD staff.**

| Year | Cultch (Cubic Yards) |
|---|---|
| 2007 | 31,500 |
| 2008 | 24,000 |
| 2009 | 16,733 |
| 2010 | 4,757 (Relay) |
| 2011 | 4,457 (Relay) |
| 2012 | 5,104 |
| Cultch | 77,337 |
| Relay | 9,214 |
| Total | 86,551 |

*Oyster Cultch Plantings and Relays Funded by Emergency Disaster Relief Programs 2007 - 2012*

| Year | Cultch (Cubic Yards) |
|---|---|
| 2014 | 27,957 |
| 2016 | 21,554 |
| Total | 49,511 |

*AMRD Lower Mobile Bay and MS Sound Cultch Plantings Funded by NFWF (2014 and 2016)*

- Mid-Mobile Bay cultch plantings funded by NFWF (2014): 10,960 cubic yards.
- Lower Mobile Bay and MS Sound cultch plantings funded by NOAA (2015): 524 acres.
- Experimental reef cultivation Lower Mobile Bay and MS Sound funded by NFWF (2014 and 2016): 36 acres.
- Experimental remote settings Lower Mobile Bay and MS Sound funded by NFWF (2016 and 2017): 12 deployment events.

- AMRD seed plantings Lower Mobile Bay and MS Sound funded by NFWF (2013 – 2015) were facilitated by seed donations from the Auburn Shellfish Laboratory, Dauphin Island, AL. 41,069,890 individual oysters were provided.
- Remote setting of oysters:
  - Funded by the
  - National Fish and Wildlife Foundation
  - in collaboration with the
  - Auburn University Shellfish Laboratory
  - Purpose of Study:
    - To determine if there is a significant difference in final oyster density of remote set oysters when compared to natural oyster recruitment on cultch material.

**DWH NRDA RESTORE Act Funds Use For**

- Experimental restoration strategies:
  - Evaluating New Areas to Plant
  - Evaluating New Techniques to Plant Cultch
  - Reducing Mortality Through Remote Setting of Oysters
- Oyster reef mapping
  - AMRD is using side scan sonar to survey recent and historical oyster reef footprints.
  - This data will be used to find suitable bottoms for reef restoration and update oyster reef maps by determining the area of known oyster reefs.
  - This will aid in planning future oyster restoration projects.
- Reef height and configuration experiments: small scale experimental projects to evaluate alternative methods of planting cultch including:
  - Planting Cultch in Mounds
  - Planting Cultch in Lines to Create Furrows

**Future DWH NRDA RESTORE Act Funds Projects**

- Deploying remote set oysters strategically in certain areas and in conjunction with certain projects such as living shorelines and marsh restoration.

**AMRD Future Oyster Reef Restoration Projects**

- Cultch Planting various planting techniques
- Oyster Relaying
- Oyster Seed Planting
- Remote Set of oysters on Half Shell
- Side Scan Sonar and Multibeam Surveys to identify additional suitable bottoms for oyster reefs
- Surveys of intertidal oyster populations
- Larval Transport and Flow Modeling
- Seasonal flow and hydrology modeling

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

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

- Is there a limit on the number of harvesters?
- JH: No, we do not limit entry to the fishery.
- Are there harvest amount limits?

- JH: It is based on the status of the stock and is highly flexible. We use and survey grids to determine when to start and end harvesting on a specific grid based on oyster abundance data.
- How is the cultch dispersed for your restorations?
- JH: We use an excavator now; leaves a mound of cultch which is good but is harder to quantify
- I agree that an excavator is the better method to deploy cultch.
- SB: The nice thing about the grid system is that it is adaptive and can respond to real time changes in stock and environmental conditions.
- How many harvesters are there in AL?
- JH: We have about 250 licenses sold, and last year we had about 100 harvesters/day.
- Which entity started the restoration effort?
- JH: Our restoration efforts are driven by funding opportunities such as Deepwater Horizon restoration funds.
- Do you relay oysters from outside of Alabama?
- JH: No, we only use AL oysters.
- Do you have sanctuary (non-harvested) reefs in the restoration plan?
- JH: No, efforts have focused on reefs that will be harvested; ADPH worries that sanctuary reefs may become public health hazards (due to illegal harvest/sale).
- Excellent presentation. How did harvesters react to management scheme?
- JH: The Plan had to go for public review. Also, the Plan did not define the specific harvest and restoration location areas. These areas were determined in collaboration with harvesters and stakeholders.
- The SMARRT group identified the current Apalachicola Bay areas for restoration and three of the sites we selected have done very well.
- JH: Alabama DCNR worked with harvesters to determine sites.
- JT: Do you attribute the recent spike in oyster harvest levels over the past several years to better environmental conditions or management?
- JH: The adaptive management plan has played a significant role in the harvest and habitat increases.

## X. CAB RESTORATION STRATEGIES DISCUSSION WITH RESTORATION AGENCIES

Jeff Blair, Facilitator, stated that the purpose of this agenda item was to discuss and evaluate potential restoration strategies and alternatives with restoration agency representatives. Specifically with representatives from the Apalachicola National Estuarine Research Reserve (ANERR), DEP Office of Resilience & Coastal Protection, FWC Division of Habitat and Species Conservation, and FWC Division of Marine Fisheries Management.

Subsequently, Jeff reviewed the CAB's initial proposed strategies for restoration noting there are 8 restoration strategies with 19 associated actions included as components of the CAB's adopted Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan Framework. Jeff noted that the strategies are numbered sequentially by Goal area based on the CAB's prioritization of the strategies ranked on a 10-point scale, and further categorized as Priority 1 (priority ranking between 10 – 8), Priority 2 (priority ranking between 7 – 5), and Priority 3 (priority ranking between 4 – 1). The ABSI CAB's Restoration and Management Strategies are included as *Attachment 7* to this Report.

**Summary of Discussion, Questions, Responses, and Comments:**
*(Note initials are only used to identify ABSI Team members and partners, presenters, and state agency representatives)*

The CAB participated in an open discussion with representatives from state agencies responsible for restoration. Specifically, with Jenna Harper (JH) from ANERR, Katie Konchar (KK) from FWC Division of Habitat and Species Conservation, and Devin Resko (DR) from the FWC Division of Marine Fisheries Management. The agency representatives provided feedback on the CAB's draft restoration strategies and CAB members discussed and evaluated their restoration approaches with the agency representatives.

*Following is a summary of the discussions, questions, answers, and comments:*

- DR: FWC has $17M of NFWF funding for Apalachicola Bay restoration.
- We will be holding a data workshop Tuesday and Wednesday of next week with PIs, scientists, and representatives from agencies including: FDACS, UF, FSU, FRWI, FWC, and DEP.
- We plan to discuss the CAB's Priority 1 restoration and management strategies, and long-term monitoring and management strategies beyond the initial restoration project.
- I will provide an update on the NFWF restoration project at the CAB's July meeting.
- Q: are there constraints on selecting sites?
- DR: A) NFWF is flexible about sites and strategies for restoration and open to next steps.
- Q: How do we avoid having two separate plans and repeating mistakes of the past? How do we make sure the CAB's Plan is part of the planned restoration project?
- DR: A) There is overlap in goals and the plans will be coordinated. Noted that $17M will not be sufficient to fix the problem and is just a start toward needed restoration.
- DR: FWC's NFWF funding has a time limit, and we won't be able to wait until the CAB process is complete. However, FWC plans to develop a much larger restoration plan. A NFWF 2 could focus on a specific area or a large experiment in coordination with the ABSI Plan.
- A key role of the CAB is to ensure that a coordinated effort will take place on restoration projects
- DE: We will bring our proposed Plan to the CAB's meeting in July for discussion.
- It is important for FWC to look at the ABSI Draft Plan Framework for areas of common interest when deciding on the restoration project.
- DR: A) NFWF wants a long-term monitoring and restoration plan in place beyond the initial restoration project they are funding, and this dovetails with the ABSI Plan. FWC will be helping to implement this.
- KK: suggested that the CAB could advise FWC on where initial restoration should be. It could serve as a pilot study to fill existing gaps in data.
- DR: we will also evaluate the Alabama adaptive management oyster approach for ideas we can use in the Bay.
- DR: We are working on seeking recurring funding from the Legislature to support long-term oyster management and restoration objectives.
- Q: Will the restoration be focused on harvest reefs only?
- DR: A) Perhaps initially but long-term all options are on the table.
- DR: We plan to meet with NFWF in late summer to discuss our restoration approach and plan.
- DR: We plan to operationalize how to fund and implement restoration and monitoring strategies for the long-term.
- BB: The closure of the Bay was an economic blow to Franklin County.
- BB: I would like to see information published regularly in easy to understand lay-terms State-of-the-Bay updates including what is being done toward restoring the Bay's health and the oyster fishery.

- SB: Q) What is the best outlet for getting a one-pager out that will reach the community?
- BB: Franklin County commissioners can spearhead this. We can make sure that the local paper's editor publish it and put it on the Franklin County website. I can be the point-of-contact for the County Commission.
- Bert and Devin were both added to the Outreach Subcommittee because of the discussion.
- To clarify, when the Bay was closed there were few oysters and the System had already collapsed. The closure took place long after the collapse of the Bay and loss of the associated jobs. The Bay closure was the last recourse to try to save and restore the System.
- The Community Outreach Subcommittee is considering another Op-Ed, and coordination with other venues is important.
- DR: FWC's enforcement leadership is changing and outreach to the community will be addressed.
- The failure to coordinate the actions of all players in the Apalachicola Basin has been a long-term problem for achieving funding; we need to focus on this issue especially as it relates to the CAB Successor Group.
- The Riparian County Stakeholder Coalition (RCSC) can help with contacting and communicating with elected officials in the six riparian counties bordering the Apalachicola River (Calhoun, Franklin, Gadsden, Gulf, Jackson, and Liberty).
- KK: provided feedback on the draft restoration strategies noting that having a science-based restoration plan is critical while FWC is looking at habitats. Indicated the CAB's role is to develop a science-based plan for restoration. We need a system-wide vision for habitat restoration across Bay spatially (i.e., where, what kind of material, how much material, and size and spatial configuration, etc.).
- KK: Restoration should start on a smaller scale and monitor results and adapt as needed. Then scale-up Using the results from the ABSI and NFWF restoration experiments.
- KK: A science-based plan will be critical to receive funding. Habitat suitability modeling is needed to ensure the right locations are selected for restoration.
- SB: We do not have to do the same restoration approach everywhere in the Bay. Areas where you can't harvest could be restored for broodstock reefs to create stable and permanent habitat.
- JH: NFWF funding has a shelf life (end of 2025). We may not have time to use the data from ABSI experiments.
- Can we go to NFWF and indicate we don't have all the information needed for long-term restoration, but we do for an initial restoration project? Will NFWF accept an incremental plan?
- Can the NFWF funded restoration be staged using the existing USACE permit, and have funds set-aside for areas that would require a new permit based on the results of ABSI experiments (data)?
- DR: A) Yes, believes they will support this approach.
- Are we constrained to shelling only historic reefs or can we shell new areas?
- DR: A) There are no constraints from NFWF on restoration locations.
- PS (FDACS): A) The USACE permit FDACS holds does restrict the sites. If desired, Corps could be consulted and a permit for a specific location sought by DEP, FWC, and/or FSU.
- SB: Suggested that restoration implementation and research could be done simultaneously so that restoration could be started and research could drive the longer-term projects.
- DR: NFWF indicated that a multi-phase approach is acceptable to them.
- Many of the historic sites lack appropriate hard substrate bottom. Many productive sites are now covered with mud or sand from dredging spoils. When we create new bar we need to be mindful of impacts and locations of dredging to avoid this problem.
- Many of the previous FDACS planted areas have no materials left. 50-60 acres of shelling never grew oysters.

- Habitat suitability modeling is needed to predict where good oyster habitat might be for future restoration projects.
- SB: FSU is working on in a habitat suitability model now. We are working on the challenge of coupling the riverine model with the hydrodynamic model.
- Q) How do we take the information from the model to identify suitable new habitat?
- SB: Difficult due to seasonality issues. We are working to define the waterflows needed to maximize the oyster footprint based on water quality/salinity/flow/wind patterns etc.
- SB: The modelers are running the models to look for the sweet spots. We know that bottom characteristics (substrate) are important for restoration locations. We hope to have the model running by the end of the year.
- What are the performance measures being used in the fisheries model, are they only harvest related?
- EC: almost all of the metrics are based on oysters abundance and the impacts of harvest on this. It essentially boils down to the number of oysters in the System. Restoration activities have a small but significant economic impact.
- Can the restoration project group work with oystermen to get a better picture of existing oyster habitat and potential habitat in the Bay? Run the proposed locations by the oystermen.
- DR: A) FWC would like to develop a habitat map and make it available to stakeholders to provide their feedback. Stakeholder engagement is important on selection of sites for restoration.
- Can we ensure all parties are using the same monitoring protocols for projects and the data is comparable?
- DR: A) This will be discussed next week but is not a specific part of the NFWF funding for the project.
- SB: There is a good argument for using different monitoring approaches (e.g. tonging vs. SCUBA) provided that the methodologies used are clear so that the data can be compared.
- Getting the data from experiments and projects over to the modelers is critical. It is important to coordinate data gathering by stakeholder groups and ensure that the data can be collated and compared.
- DR: This is a good point, and we are trying to address this in our restoration approach.
- How hard is it to create the grid system used in Alabama?
- JH: A) Development of the grid system was challenging, and there was initial resistance to it by the oystermen. This was worked out over time and we consulted with stakeholders on development of the grids.
- It appears that the FWC NFWF 2 restoration project is "ahead" of the ABSI CAB's process. Will there be coordination.
- KK: True, but input from ABSI on the proposed restoration project will be helpful. Anyone (meaning an entity) could pick up a piece of the ABSI Plan and seek funding for implementation.
- JT: What about the attractive nuisance factors for sanctuary reefs, and the cost of enforcement for the AL grid system?
- JH (AL): A) Preventing consumers from getting sick trumps restoration considerations. Enforcement costs did not change as a result of the grid system.
- JH (ANERR): In building the living shoreline in the ANERR it was necessary to have sign stating that it is a closed area to oystering to ensure compliance.
- SB: Non-harvestable cultch (large rock) could be deployed in subtidal areas to restore reefs as habitat that are not meant for harvesting.
- JB: Restoration locations should be decided on working closely with local oystermen and local knowledge and experience.

- SB: Noted restoration work in the Pacific NW got stakeholder users together to map out the areas that they used. This was very useful to avoid conflicts and a similar process could be used in Apalachicola.
- Large buoys could be deployed to delineate restoration sites and avoid conflicts with stakeholder uses including shrimpers.
- My biggest concern is that we do not make the same mistakes as in the past, and we avoid duplication of efforts and priorities. The CAB Successor group will be critical.
- DR: FWC wants to avoid duplication as well. We will have a plan formulated to present to the CAB during the July 27, 2022 meeting for their feedback.

**Next Steps**

- Hold a workshop with ABS user groups can identify on habitat maps of the Bay where their activities take place and where oystermen have observed good substrate and spat settlement. Use the information provided by stakeholders to design restoration sites to avoid user conflicts and in areas that are deemed to be best suited for successful restoration.
- Ed Camp, UF, will be conducting virtual meetings with stakeholders at 7:00 PM approximately every two weeks starting on June 9, 2022. Ed will use FSUCML's ABSI project listserve to invite interested stakeholders to participate in the meetings. Ed will test-drive his fisheries model during the virtual sessions and discuss data sets, assumptions, and preliminary results. Ed will record the sessions, and CAB members are encouraged but not required to participate.

*(Attachment 7 — ABSI CAB Restoration and Management Strategies)*

## XI. PUBLIC COMMENT

The facilitator invited members of the public to provide comments.

*Public Comments:*

Wayne Williams, Oysterman:

- The Bay is coming back now and will come back with the right materials and methods for restoration. Expressed concerns about the long-term. There are lots of things we can do. Regulations should be flexible. There are things we can do to control water quality, such as nutrients coming down the river. "They" are going to start spraying for water hyacinths, and I am concerned about nutrient impacts. Prefer mechanical harvesting to using chemicals. We should not have permanent rules and regulations, as the Bay will change and rules should be flexible as conditions change.

## XII. NEXT MEETING OVERVIEW AND ISSUES

The 27 July 2022 meeting will focus on ABSI science and data collection and decision support tools updates, sub-committee reports, the review and discussion of model simulation results for initial priority Fisheries Management (Goal B) strategies, and agreement on the next suite of scenarios for model simulations.

### NEXT STEPS AND AGENDA ITEMS

- Review of updated Workplan and Meeting Schedule.
- Science and data collection update.
- Subcommittees and Working Group updates.
- FWC Plan for NFWF Restoration Project Update

- Review and discussion of Fisheries (Socioecological) model simulation results for initial priority Fisheries Management (Goal B) strategies.
- Agreement on next suite of scenarios for Fisheries Model simulations.
- Public Comment.

**MEETING CHAT COMMENTS**

Meeting participants were able to provide comments during the meeting through the on-line Chat function. The results are compiled and included as *Attachment 5* of this Summary Report.
*(Attachment 5 — Meeting Zoom Chat Summary)*

**MEETING EVALUATION AND ONLINE SURVEY RESULTS**

The CAB members were requested to complete a meeting evaluation. The results are compiled and included as *Attachment 6* of this Summary Report.
*(Attachment 6 — Meeting Zoom Poll and Written Evaluation Results)*

**ADJOURNMENT**

The Facilitator thanked CAB members, ABSI Project Team members, and the public for their participation, and adjourned the meeting at 2:11 PM on Wednesday, May 25, 2022.

## ATTACHMENT 1
## KEY TO COMMON PROJECT ABBREVIATIONS

| ABBREVIATION | DEFINITION |
|---|---|
| ABS | Apalachicola Bay System |
| ABSI | Apalachicola Bay System Initiative |
| ACFS | Apalachicola-Chattahoochee-Flint Stakeholders |
| ANERR | Apalachicola National Estuarine Research Reserve |
| CAB | Community Advisory Board (ABSI) |
| County | Franklin County |
| DACS or FDACS | Florida Department of Agriculture and Consumer Services |
| DEP or FDEP | Florida Department of Environmental Protection |
| DOH or FDOH | Florida Department of Health |
| EPA | U.S. Environmental Protection Agency |
| FDOT | Florida Department of Transportation |
| FSU | Florida State University |
| FSUCML | Florida State University Coastal and Marine Laboratory |
| FWC | Florida Fish and Wildlife Conservation Commission |
| FWRI | FWC Fish and Wildlife Research Institute |
| NGO | Non-Governmental Organization |
| NOAA | National Oceanic and Atmospheric Administration |
| NRCS | Natural Resource Conservation Service |
| NWFWMD | Northwest Florida Water Management District |
| Plan | Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan |
| RESTORE | Resources and Ecosystems Sustainability, Tourist Opportunities, and Revived Economies of the Gulf Coast Act of 2012 |
| RCSG | Riparian County Stakeholder Coalition |
| RPC | Regional Planning Council |
| SAB | Science Advisory Board (ABSI) |
| SAV | Submerged Aquatic Vegetation |
| TNC | The Nature Conservancy |
| UF | University of Florida |
| UWF | University of West Florida |

## ATTACHMENT 2
## MEETING PARTICIPATION LIST

| MEMBER | AFFILIATION |
|---|---|
| **AGRICULTURE/ACF STAKEHOLDERS/RIPARIAN COUNTIES** | |
| *1. **Chad Taylor*** | Riparian County Stakeholder Coalition/ACF Stakeholders/Agriculture |
| **BUSINESS/REAL ESTATE/ECONOMIC DEVELOPMENT/TOURISM** | |
| 2. Chuck Marks | Business (Insurance Industry) |
| 3. Mike O'Connell | SGI Civic Club/SGI 2025 Vision |
| 4. John Solomon | Apalachicola Bay Chamber of Commerce |
| **ENVIRONMENTAL/CITIZEN GROUPS** | |
| 5. **Georgia Ackerman** | Apalachicola Riverkeeper |
| 6. **Chad Hanson** | The Pew Charitable Trusts |
| **LOCAL GOVERNMENT** | |
| 7. **Bert Boldt** | Franklin County Commissioner |
| 8. **Anita Grove** | Apalachicola City Commissioner |
| **RECREATIONAL FISHING** | |
| 9. **Frank Gidus** | CCA Florida |
| **SEAFOOD INDUSTRY** | |
| 10. **Shannon Hartsfield** | Seafood Management Assistance, Resource Recovery Team (SMARRT) and Oysterman |
| 11. **Gayle Johnson** | Apalachicola Oyster Company |
| 12. **Roger Mathis** | Oysterman and Seafood Dealer (R.D.'s Seafood) |
| 13. **Steve Rash** | Water Street Seafood |
| 14. TJ Ward | Buddy Ward & Sons Seafood |
| **STATE GOVERNMENT** | |
| 15. **Jenna Harper** | ANERR/DEP |
| 16. **Katie Konchar** | FWC Division of Habitat and Species Conservation |
| 17. Alex Reed | FDEP Office of Resilience & Coastal Protection |
| 18. **Devin Resko** | FWC Division of Marine Fisheries Management |
| *19. **Portia Sapp*** | FDACS Division of Aquaculture |
| *20. **Paul Thurman*** | NWFWMD |
| **UNIVERSITY/RESEARCHERS/SCIENTISTS** | |
| *21. **Mike Allen*** | Scientist: Director of UF/IFAS Nature Coast Biological Station (NCBS) |
| 22. Erik Lovestrand | UF/IFAS/Florida Sea Grant/Franklin County Extension |

**The names of CAB members attending the meeting are indicated in bold font.**

***CAB members who participated virtually are indicated in red font.**

** Members whose designated alternates participated for them.*

| PROJECT TEAM AND CAB FACILITATOR | |
|---|---|
| **FLORIDA STATE UNIVERSITY** | |
| **Sandra Brooke** | Marine Biologist |
| **Ross Ellington** | Professor Emeritus of Biological Science |
| **Madelein Mahood** | Outreach and Education |
| **Joel Trexler** | FSUCML Director |
| **FACILITATED SOLUTIONS, LLC** | |
| **Jeff Blair** | Community Advisory Board Facilitator |
| *The names of Project Team members participating in the meeting are indicated in bold font.* | |

| ALTERNATES FOR CAB MEMBERS | |
|---|---|
| **Alternate** | **CAB Member** |
| Ken Jones | Chad Taylor |
| *The names of CAB member's alternates participating in the meeting are indicated in bold font.* | |

| MEMBERS OF THE PUBLIC | |
|---|---|
| 1. *Cameron Baxley* | Apalachicola Riverkeeper |
| 2. Ed Camp | University of Florida (UF) |
| 3. Cheryl Carr | No Affiliation Offered |
| 4. Jared Fuqua | FSU ABSI Outreach and Education |
| 5. Kennedy Hanson | ANERR IT Staff |
| 6. Jason Herrmann | Alabama Department of Conservation and Natural Resources |
| 7. *Jessica Holley* | Florida House of Representatives Representing Rep. Jason Shoaf |
| 8. *Elizabeth Hughes* | Florida House of Representatives Representing Rep. Jason Shoaf |
| 9. *Steve Leitman* | FSU |
| 10. Dan Paasch | Representing U.S. Senator Marco Rubio |
| 11. *Andy Shantz* | FSU |
| 12. Zack Whalen | FWC |
| 13. *Mike Wilberg* | UMCES |
| 14. Wayne Williams | Oystermen |
| 15. Tracy Williamson | Representing Florida Senator Loranne Ausley |
| **The names of members of the public attending virtually are italicized.* | |

## ATTACHMENT 3
## 25 MAY 2022 MEETING AGENDA

### ABSI COMMUNITY ADVISORY BOARD MEETING OBJECTIVES

- ✓ To Approve Regular Procedural Topics (Meeting Agenda and Summary Report)
- ✓ To Review Updated Workplan and Meeting Schedule
- ✓ To Receive ABSI Science and Data Collection Update
- ✓ To Receive Reports from CAB Successor Group, RFWG, and Community Outreach Subcommittee
- ✓ To Hear a Presentation on Chesapeake Bay Oyster Management and Habitat Restoration Modeling
- ✓ To Hear a Presentation on Alabama's Active Oyster Management and Restoration Approach
- ✓ To Evaluate ABSI Draft Restoration Strategies with Agencies Responsible for Restoration
- ✓ To Identify Next Steps: Information, Presentations, Assignments, Agenda Items for Next Meeting

### ABSI COMMUNITY ADVISORY BOARD AGENDA

*All Agenda Times—Including Public Comment and Adjournment—Are Approximate and Subject to Change*

| | | |
|---|---|---|
| **1)** | **8:30 AM** | **WELCOME AND ROLL CALL** |
| **2)** | **8:35** | **SOCIAL SCIENCE SURVEY** |
| **3)** | **8:40** | **AGENDA REVIEW AND MEETING OBJECTIVES** |
| **4)** | **8:45** | **APPROVAL OF FACILITATOR'S SUMMARY REPORT (MARCH 30, 2022)** |
| **5)** | **8:50** | **REVIEW OF UPDATED PROJECT MEETING SCHEDULE AND WORKPLAN** |
| **6)** | **9:00** | **PROJECT BRIEFING**<br>*ABSI Science and Data Collection Update.* Sandra Brooke, FSUCML (20) |
| **7)** | **9:20** | **WORKING GROUP AND SUBCOMMITTEE UPDATES**<br>• *Successor Group Subcommittee Update.* Anita Grove and Shannon Hartsfield (5)<br>• *Restoration Funding Working Group Update.* Joel Trexler (5)<br>• *Community Outreach Subcommittee Update.* Chad Hanson (10) |
| ***~9:45 AM*** | | ***BREAK*** |
| **8)** | **10:00** | **CHESAPEAKE BAY OYSTER MANAGEMENT AND HABITAT RESTORATION MODELING PRESENTATION**<br>• *How Data was Collected, Evaluated, and Agreed To, and How the Model Was Used to Inform the Selection of Restoration and Management Options.* Mike Wilberg, Professor, Chesapeake Biological Laboratory University of Maryland Center for Environmental Science |
| **9)** | **11:00** | **OYSTER MANAGEMENT AND HABITAT RESTORATION APPROACH PRESENTATION**<br>• *Alabama Department of Conservation and Natural Resources (DCNR) Active Oyster Management and Restoration Approach.* Jason Herrmann, DCNR |
| **~12:00 PM** | | ***LUNCH — ON CAMPUS*** |
| **10)** | **12:30** | **ABSI DRAFT RESTORATION STRATEGIES DISCUSSION AND EVALUATION WITH AGENCIES RESPONSIBLE FOR RESTORATION**<br>• ANERR (Jenna Harper)<br>• DEP Office of Resilience & Coastal Protection (Alex Reed)<br>• FWC Division of Habitat and Species Conservation and Division of Marine Fisheries Management (Katie Konchar and Devin Resko) |
| **11)** | **~2:10 PM** | **PUBLIC COMMENT** |
| **12)** | **~2:25** | **ACTION ITEMS AND AGENDA ITEMS FOR NEXT MEETING (July 27, 2022)**<br>• Review of Action Items and Assignments from Meeting<br>• Identify Agenda Items, Presentations, and Information Needs for Next Meeting |
| ***~2:30 PM*** | | ***ADJOURN*** |

## ATTACHMENT 4
## WORKPLAN, SCHEDULE, AND PROJECT FLOWCHART AND MAP

**UPDATED AS OF THE 25 MAY 2022 CAB MEETING**

**PHASE I (2019) — STANDING UP AND ORGANIZATION OF THE ABSI CAB — *Status Complete***

*May 2019 – December 2019 (Assessment Process, Questionnaire, and 2 CAB Meetings)*

**PHASE II (2020) — SCOPING OF ISSUES, IDENTIFICATION OF PERFORMANCE MEASURES & STRATEGIES — *Status Complete***

*Jan. 2020 – Dec. 2020 (7 CAB Meeting & 1 Oystermen's Workshop)*

**PHASE III (2021) — BUILDING CONSENSUS ON CAB RECOMMENDATIONS FOR THE ABS ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION PLAN**

**Adoption of Final Draft Management and Restoration Plan Framework for Phase IV Evaluation — *Status Complete***

*Jan. 2021 – Nov. 2021 (7 CAB Meeting & 2 Oystermen's Workshops)*

**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 — *Status Initiated***

*Dec. 2021 – Dec. 2022 (6 CAB Meetings, Public Workshops)*

**COMMUNITY ADVISORY BOARD (CAB).** The CAB initiated Phase IV in December of 2021 and is currently evaluating the best combination of strategies 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 of implementation. The CAB will evaluate the priority and efficacy of strategies and 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). ***Status Initiated***

1. **COMMUNITY OUTREACH SUBCOMMITTEE - PUBLIC ENGAGEMENT IN 2022.** The CAB working with 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 formats 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 multiple locations to provide information on ABSI and solicit community feedback. ***Status Initiated***

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

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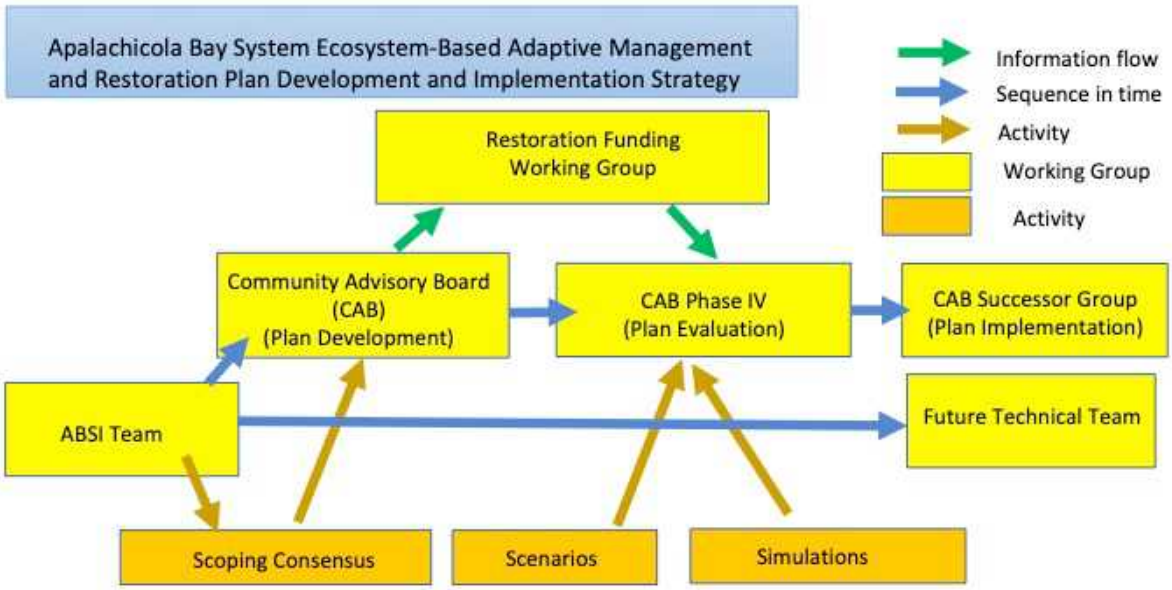
| collaboratively for the long-term, and once the CAB process is complete (~June 2024), to ensure that the Plan is implemented, monitored, and adaptively managed over time and has the support of the Community. | | |
| **Meeting I.** Virtual | **Jan. 26, 2022**<br>• Review of Predictive Models | Initiation of Phase IV of ABSI. Overview of scope and goals for Phase IV. Briefing on collaborative modeling and CAB process for Phase IV. Briefing on ABSI predicative models (Ecological/Oyster, Hydrologic, Hydrodynamic, and Riverine). Public Comment. |
| **Meeting II.** ANERR | **Mar. 30, 2022**<br>• Fisheries (Socioecological) Model Guidance<br>• Management Strategies discussion with FWC | 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. |
| **Meeting III.** ANERR | **May 25, 2022**<br>• Discussion with FWC/DEP/ANERR on restoration strategies<br>• Presentation and discussion on restoration approaches | ABSI science and data collection and decision support tools update. Sub-committee reports. Chesapeake Bay Oyster Management and Habitat Restoration Modeling presentation, and Alabama Management and Restoration Approach presentation.<br>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).<br>Public Engagement Initiative results review. Public comment. |
| **Meeting IV.** ANERR | **July 27, 2022**<br>• Fisheries Model Simulation Results & Scenarios Refinements | Restoration approaches presentation(s), and ABSI science and data collection and decision support tools update. Sub-committee reports.<br>Review and discussion of model simulation results for initial priority Fisheries Management (Goal B) strategies. Agreement on next suite of scenarios for Fisheries Model simulations. Agreement on next suite of scenarios for model simulations.<br>Public Engagement Initiative results review. Public comment. |
| **Meeting V.** ANERR | **Sept. 28, 2022**<br>• Model Simulation Results & Scenarios Refinements | Agenda related presentations, and ABSI science and data collection and decision support tools update. Sub-committee reports.<br>Review and discussion of model simulation results for initial priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) strategies. Agreement on next suite of scenarios for model simulations.<br>Public Engagement Initiative results review. Public comment. |
| **Meeting VI.** ANERR | **Nov. 30, 2022**<br>• Model Simulation Results & Scenarios Refinements | Agenda related presentations, and ABSI science and data collection and decision support tools update. Sub-committee reports.<br>Review and discussion of model simulation results for initial priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) strategies. Agreement on next suite of scenarios for model simulations.<br>Public Engagement Initiative results review. 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 5
## MEETING CHAT SUMMARY (ZOOM)

### MEETING CHAT

- 08:29:38 **Maddie Mahood:** Hi welcome everyone! We are sorting out some image and sound issues as best we can. Thanks for joining us! :)
- 08:30:31 **Michael Allen**: No problem!
- 08:33:25 **Portia Sapp**: Thanks Maddie!
- 08:49:59 **Maddie Mahood:** Hi everyone! Here is the CAB member only social science survey link – sorry for the delay! Thank you! ☺ https://ufl.qualtrics.com/jfe/form/SV_6Xpff7erOzIv370
- 12:48:40 **Chadwick Taylor:** It's not clear who is speaking in the room for us Zoom folks.
- 12:49:02 **Maddie Mahood:** It is Katie Konchar, FWC. Thanks for pointing that out, Chad. ☺
- 12:49:17 **Maddie Mahood:** Devin Resko, also FWC, is speaking now as well.
- 02:03:14 **Maddie Mahood:** Thanks everyone for a great meeting! Mike, Portia, Chad, and Georgia -- I will launch a virtual CAB Member End of Meeting Survey now. Additionally, please answer the following questions, feel free to DM me directly. Thanks!
- 02:08:17 **Maddie Mahood:** I can't see who hasn't answered the end of meeting survey yet, but please do! Thanks!

## ATTACHMENT 6
## MEETING EVALUATION RESULTS (ZOOM POLL AND WRITTEN POLL RESULTS)

*CAB Members used a 5-point polling scale where a 1 meant "Strongly Disagree" and a 5 meant "Strongly Agree." The evaluation summary reflects average rating scores and comments from respondents participating virtually.*

*There were 9 hard copy end of meeting survey questions (Evaluations) completed, and 4 completed virtually.*

**1.) The meeting objectives were clearly communicated at the beginning**

| *Average Rating* | *5. Strongly Agree* | *4. Agree* | *3. Neutral* | *2. Disagree* | *1. Strongly Disagree* |
|---|---|---|---|---|---|
| **4.5 x of 5** | **9** | **2** | **1** | **1** | |

**2.) The meeting objectives were met.**

| *Average Rating* | *5. Strongly Agree* | *4. Agree* | *3. Neutral* | *2. Disagree* | *1. Strongly Disagree* |
|---|---|---|---|---|---|
| **4.5 x of 5** | **9** | **2** | **1** | **1** | |

**3.) The presentations were effective and informative.**

| *Average Rating* | *5. Strongly Agree* | *4. Agree* | *3. Neutral* | *2. Disagree* | *1. Strongly Disagree* |
|---|---|---|---|---|---|
| **4.9 x of 5** | **11** | **2** | | | |

**4.) The facilitation of the meeting was effective for achieving the stated objectives**

| *Average Rating* | *5. Strongly Agree* | *4. Agree* | *3. Neutral* | *2. Disagree* | *1. Strongly Disagree* |
|---|---|---|---|---|---|
| **4.7 x of 5** | **9** | **4** | | | |

**5.) Follow-up actions were clearly summarized at the end of the meeting**

| *Average Rating* | *5. Strongly Agree* | *4. Agree* | *3. Neutral* | *2. Disagree* | *1. Strongly Disagree* |
|---|---|---|---|---|---|
| **4.8 x of 5** | **10** | **2** | **0** | **0** | **0** |

**6.) The facilitator accurately documented CAB Member input**

| *Average Rating* | *5. Strongly Agree* | *4. Agree* | *3. Neutral* | *2. Disagree* | *1. Strongly Disagree* |
|---|---|---|---|---|---|
| **4.6 x of 5** | **10** | **1** | **2** | | |

**7.) The meeting was the appropriate length of time.**

| *Average Rating* | *5. Strongly Agree* | *4. Agree* | *3. Neutral* | *2. Disagree* | *1. Strongly Disagree* |
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| **4.7 x of 5** | **9** | **4** | | | |

**8.) CAB Members had the opportunity to participate and be heard.**

| *Average Rating* | *5. Strongly Agree* | *4. Agree* | *3. Neutral* | *2. Disagree* | *1. Strongly Disagree* |
|---|---|---|---|---|---|
| **4.9 x of 5** | **11** | **2** | | | |

**Open Ended Survey Questions – Virtual Responses**

- Great job Maddie, this went well. Our data workshop next week will hopefully inform this process.
- Thanks for having the virtual option, otherwise I would have this meeting and it was very informative!

# ATTACHMENT 7
## RESTORATION AND MANAGEMENT STRATEGIES
## A COMPONENT OF THE ABSI PLAN FRAMEWORK — ADOPTED 16 NOVEMBER 2021

## APALACHICOLA BAY SYSTEM ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION PLAN — GOAL A

## A HEALTHY AND PRODUCTIVE BAY ECOSYSTEM
## ELEMENTS TO BE CONSIDERED FOR THE PLAN

**GOAL A:** The Apalachicola Bay System is a healthy and productive ecosystem that supports a vibrant and sustainable oyster fishery and other economically viable activities.

## GOAL A PRIORITIZED STRATEGIES

### PRIORITY 1 STRATEGIES

1) Restore and create reef structures suitable for sustained oyster settlement that enhance ecosystem services in designated restoration areas.
   - *Action 1-A.):* Design and implement projects to achieve multiple ecosystem service targets (e.g., commercial and recreational fishing, shoreline protection).
   - *Action 1-B.):* Implement restoration projects simultaneously rather than sequentially.
   - *Action 1-C.):* Relay live oysters to jump start restoration experiments by moving oysters within the same general location and applying them to form a shallow layer of oysters over existing healthy reefs (not recommended as a management approach).

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| ***Lead:*** FWC | ***Partners:*** FSU, UF, FDACS, local Gov., FDOT, NGOs, coastal property owners, CAB |

2) Use experimental evidence and habitat suitability analyses to determine the most suitable substrate (e.g., limestone, granite, spat-on-shell, artificial structures) for restoring, enhancing, and/or developing new reef structures that will increase productivity in the Apalachicola Bay oyster ecosystem.
   - *Action 2-A.):* Conduct restoration experiments to test efficacy of different materials.
   - *Action 2-B.):* Use knowledge gained from experiments to recommend best practices for broad scale restoration in the ABS.

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| ***Lead:*** FSU | ***Partners:*** UF, FWC, FDACS, CAB |

3) Determine area (acres or $km^2$) of oyster reefs that currently support live oysters as well as the area needed to ensure sufficient spat production that will support sustainability of oyster reefs and sustainability of a wild oyster fishery throughout the ABS.
   - *Action 3-A.):* Map existing oyster reefs using multibeam sonar and backscatter, and ground-truth for accuracy.
   - *Action 3-B.)*: Apply model that uses reproductive output, recruitment, natural mortality rates and fishery harvest to assess oyster population dynamics.

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| ***Lead:*** FWC | ***Partners:*** FDACS, FSU, UF |

4) Develop criteria for restoring specific reefs or reef systems damaged by environmental conditions or natural disasters.
   - *Action 4-A.):* Evaluate degree of damage and potential for recovery.
   - *Action 4-B.):* Develop an approach for mitigating damage (e.g., physical repair, spat supplements, or some combination of both).
   - *Action 4-C.):* Determine periodicity of hatchery-produced spat addition (e.g., annually or longer) with a specific timeline for continuing the approach. This approach is not intended to create a put-and-take fishery.

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| ***Lead:*** FSU | ***Partners:*** UF, FWC, FDACS, CAB |

5) Identify monitoring needs for assessing the health of oyster populations (including disease) and detecting changes in environmental conditions and habitat quality (for oysters and other reef-associated species) over time.
   *Action 5-A.):* Continue monitoring intertidal and begin monitoring sub-tidal reefs/habitat monthly and bi-annually using same protocols as FWC sub-tidal monitoring. Adjust to add metrics as needed. Data will be shared between FWC and ABSI.
   *Action 5-B.):* Conduct 'spot-checks' at a large number (TBD) of different locations in the Bay to supplement the more intensive monitoring data. Document volume of rock/shell/oysters, number of spat, medium and market sized live oysters and boxes together with environmental data.
   *Action 5-C.):* Collect long-term in situ environmental data using ABSI instruments and integrate ANERR environmental and nutrient data as correlates with oyster metrics.
   *Action 5-D):* Generate health indicators for ABSI using monitoring data, and other ecological factors (e.g., oyster-associated communities and structural complexity).

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| ***Lead:*** FSU | ***Partners:*** FWC, FDACS, ANERR |

## PRIORITY 2 STRATEGIES

6) Develop ecosystem models that forecast future environmental conditions and oyster population status.
   - *Action 6-A.):* Collect data needed by the models, and follow up with testing the models to refine accuracy of output.
   - *Action 6-B.):* Coordinate with appropriate state and federal agencies, pertinent out of state user groups, and other initiatives working on both geographically-constrained and basin-wide water-flow alterations and management strategies that contribute positively to the health of the ABS.

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| ***Lead:*** UF | ***Partners:*** FWC, FDACS, FSU |

7) Assess existing ecosystem services metrics used for other oyster studies, and develop a list of ABSI specific metrics to assess change over time.
   - *Action 7-A.):* Conduct literature review and work with Florida Oyster Recovery Science (FORS) working group to identify measurable indicators of changes in ecosystem services
   - *Action 7-B.):* Integrate ecosystem services metrics into monitoring program.

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| ***Lead:*** FSU | ***Partners:*** UF, FWC, FDACS, universities, government agencies |

## PRIORITY 3 STRATEGIES

8) Seagrass and other submerged aquatic vegetation (SAV), and wetland and riparian habitat should be restored concurrently on appropriate substrate/bottom to work synergistically with oyster habitat restoration to enhance restoration of the ABS.

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| ***Lead:*** DEP | ***Partners:*** Franklin Co., FSU, UF, FWC, FDACS |

## APALACHICOLA BAY SYSTEM ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION PLAN — GOAL B

## SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES
## ELEMENTS TO BE CONSIDERED FOR THE PLAN

**GOAL B:** productive, sustainably, and adaptively managed Apalachicola Bay System supports sustainable oyster resources.

## GOAL B PRIORITIZED STRATEGIES

## PRIORITY 1 STRATEGIES

1. Evaluate a suite of management approaches that in combination achieve the goal of maintaining a sustainable wild oyster fishery as measured in relation to relevant performance metrics for determining success.
   - *Action 1-A.):* Evaluate and develop standards for a potential limited-entry fishery that would be managed adaptively with the number of entrants in the fishery based on the current sustainable harvest level. Evaluate the potential for establishing a limited-entry oyster fishery program and various management strategies through a transparent representative stakeholder driven consensus-building process that includes vetting the plan with local oystermen and FWC law enforcement.
   - *Action 1-B.):* Implement a Bay-wide summer wild harvest fishery closure.
   - *Action 1-C.):* Provide daily harvest limits in conjunction with a Monday – Friday five-day harvest week.
   - *Action 1-D.):* Implement a recreational wild oyster harvest limit of for example, one 5-gallon bucket of oysters, and allow recreational harvest during the same season the fishery is open to commercial harvest using the same gear.
   - *Action 1-E.):* Manage harvest areas to prevent the concentration of effort in specific locations by allowing all of the legal and approved (FDACS) harvest areas of the Bay to be open during the harvest season and harvesting hours (Strategy 10-B and 10-C above).
   - *Action 1-F.):* Establish the 5% undersize oyster limit for both harvesters and dealers.
   - *Action 1-G):* Clarify that it is an allowable practice for oystermen to weigh oyster bags while on the water to ensure the bags meet the weight limit regulations.
   - *Action 1-H.):* Implement stock-based temporary wild harvest closures in conjunction with regular stock assessments of the oyster density.
   - *Action 1-I.):* Evaluate and determine a metric used to manage oyster reef harvest at a sustainable threshold. Consider a graduated set of thresholds.

- *Action 1-J.):* Implement an annual stock assessment using fisheries dependent and independent data, with data collection methods and site selection done in collaboration with oystermen, for determining a sustainable level of wild oyster harvest for each season.

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| ***Lead:*** FSU/UF | ***Partners:*** FWC, stakeholders |

2. Recommend specific criteria and/or conditions, with related performance measures for the reopening of Apalachicola Bay to limited wild oyster harvesting.
   - *Action 2-A.):* Use ABSI ecosystem health metrics and FWC/UF models to develop criteria for opening and closing wild oyster harvest and for determining sustainable harvest.
   - *Action 2-B.):* Work with FWC and FDACS to ensure that definitions of oyster population health are not only based on harvest metrics.

3. Conduct an oyster stock assessment for the ABS with periodic updates.

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| ***Lead:*** FWC | ***Partners:*** FSU, UF, NGOs, citizen scientists, watermen |

4. Manage the commercial oyster industry and recreational oyster fishing to provide for sustainable spat production and the recovery of oyster populations.
   - *Action 4-A.):* Evaluate management scenarios (e.g., seasonal (summer) closure to wild harvesting, rotational closures, 5-day work weeks, non-harvested spawning reefs (permanent closures), limited entry, transferable license program, closures based on stock levels (stock assessment), reduced bag limits, bag tags, relaying oysters to better habitat, additional enforcement presence, manage harvest areas to prevent the concentration of effort in specific locations (open larger areas).
   - *Action 4-B.):* Develop strategies to limit oyster harvest to periods outside of peak spawning season.
   - *Action 4-C):* Evaluate existing allowable and minimally destructive alternative gear type options and harvest methods, including the use of experimental gear for wild oyster harvesting.

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| ***Lead:*** FWC | ***Partners:*** oystermen, FSU, UF, Sea Grant |

5. Work with FWC Law Enforcement to develop enforcement strategies and appropriate penalties sufficient to deter harvest or sale of undersized oysters as well as violations that harm wild or leased oyster reefs and other natural resources, and that will support restoration efforts in the ABS.
   - *Action 5-A.):* Develop strategies to increase FWC enforcement presence and number of checkpoints to provide a deterrent to illegal activities.
     - Provide law enforcement presence during peak harvesting periods, and on the water during harvest season hours.
   - *Action 5-B.):* Develop strategies to ensure consistent practices are used for enforcement of regulations regarding the harvestable and marketable size of oysters. (See Actions *5-F* and *5-G*)
   - *Action 5-C.):* Revise statutes and/or rules as needed to require FWC to check harvested oysters for size-limit enforcement* before they are washed and processed. Once processed, enforcement of oyster size-limits should be limited to oysters under 2.75" because processing changes shell height.
     ** Sampling and other data collection activities shall not be impacted by this recommendation.*
   - *Action 5-D.):* Evaluate and enhance, as needed, the regulations and enforcement practices to ensure dealers accurately identify the source of oysters after processing and packaging.
   - *Action 5-E.):* Evaluate and revise, as needed, the statutory and/or regulatory requirements to ensure that FWC has authority to enforce oyster regulations at the dealers' location.
   - *Action 5-F.):* Work with FWC and FDACS to implement recommended enforcement changes.

- *Action 5-G.):* Work with oystermen to evaluate current rules and regulations to ensure they are enforced consistently, fairly, and practically with an understanding of real-world on-the-water harvesting practices and constraints.
- *Action 5-H.):* Evaluate and seek authority to implement a tiered system of penalties for purposeful violators (increased fines and license suspensions ranging from increased length of suspension to the permanent loss of license) to keep purposeful violators out of the industry.
- *Action 5-I.):* Encourage community and industry support for consistent judicial imposition of penalties within the exiting penalties framework for oyster harvest violations, including imposing stricter penalties for habitual and willful violators.
- *Action 5-J.*): Prior to the opening of each harvest season FWC should conduct a joint workshop between FWC law enforcement and the oystermen to review the current rule and regulations, identify any changes, discuss enforcement approaches relative to harvest practices and constraints on the water, and to provide mutual two-way education, and enhance communication and collaboration between FWC and oystermen.
- *Action 5-K.):* Work together and with other stakeholders to seek funds to support the recommended increased law enforcement presence in the Bay.

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| ***Lead:*** FWC/FDACS | ***Partners:*** FSU-CAB, CAB Successor Group, oystermen, oyster dealers |

6. Evaluate the development of a policy that would require setting sustainable harvest goals and placing limitations on or a complete closure to harvesting based on the results of data (e.g., stock assessment) collected and evaluated under a comprehensive monitoring program designed to sustainably manage the resource.
   - *Action 6-A.)*: Convene a co-management advisory committee comprised of state and federal agencies, and other appropriate experts, to assess and make recommendations on oyster habitat needs in conjunction with harvest management strategies.
   - *Action 6-B.):* Convene an Oyster Advisory Board within FWC to review and make recommendations on management and enforcement of the oyster fishery once wild oyster harvesting resumes in Apalachicola Bay.

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| ***Lead:*** FWC | ***Partners:*** FDACS, FSU, UF, local governments |

7. Restore and create reef structures suitable in size, location, and substrate type for healthy and sustainable oyster settlement, production, and harvesting.
   - *Action 7-A.):* Include oystermen in discussions to evaluate cultching techniques and materials for growing oysters (e.g., historical non-traditional, trees), adding spat on shell or other substrates.
   - *Action 7-B.*): Include oystermen in discussions on spatial configuration of reefs (height, width, contours, etc.), locations (existing reefs and hard bottom), use of larger rock to protect restored reefs from siltation and sedimentation from prevailing currents and storms.

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| ***Lead:*** FWC | ***Partners:*** FSU, UF, Sea Grant, watermen & aquaculture organizations, local county programs |

   - *Action 7-C.):* Design and implement restoration projects to achieve oyster fishery production targets.
   - *Action 7-D.):* Design restoration projects that include both fished and non-fished reefs.

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| ***Lead:*** FWC | ***Partners:*** FSU, UF, NOAA for funding |

## PRIORITY 2 STRATEGIES

8. Recommend policies and actions that retain and recycle shell for habitat replenishment in the ABS.

- *Action 8-A.):* Develop agency rules and policies that require shell retention and recycling for habitat replenishment through a fee or incentive program.
- *Action 8-B.):* Obtain legislative support for statutes that support or require shell recycling and oyster habitat replenishment. (e.g., Texas House Bill 51 (2017); North Carolina General Statute §130A-309.10 (2010); Maryland House Bill 184; Chapter 157, F.S. (McClellan 1881).
- *Action 7-C.):* Establish and/or expand partnerships with local organizations, stakeholder groups, industry, and universities in shell recycling programs.

9. Use decision-support tools to develop a system of potential closed areas that are well defined in terms of size, location, and longevity and include rotational and seasonal harvest areas, as well as long-term closed areas in strategic locations to provide habitat for year-round protection for brood stock and enhanced spawning opportunities.
   - *Action 9-A.):* Engage local stakeholders in determining total coverage (how much to protect), placement (where to protect), and size (how large) of all types of potential closed areas using gridded maps as well as distributions of selected fishery and ecologically important species.

10. Use ecological quantitative modeling and other decision support tools to evaluate strategies and actions, and define performance criteria for an oyster population that can sustain a pre-determined level of wild oyster harvest, with a stipulated number of harvesters (limited entry), and protocols to ensure sustainability.
    - *Action 10-A.):* Use model outputs to identify the oyster population abundance that can support sustainable harvest.
    - *Action 10-B.):* Use model outputs to identify percentage of the total reef area that is sufficiently productive to support sustainable harvest.
    - *Action 10-C.):* Use model outputs to identify annual; recruitment required to support sustainable harvest.
    - *Action 10-D.):* Use model outputs to determine amount and frequency of habitat replacement to maintain productive oyster reefs.

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| ***Lead:*** FSU/UF | ***Partners:*** FWC, stakeholders |

11. Work with FDACS to ensure that oyster aquaculture practices and locations in the Bay are compatible with the goals and strategies for restoration and management of the ecosystem and are compatible with wild fisheries and the important cultural role of a working waterfront and seafood industry.
    - *Action 11-A.):* Develop maps using FDACs data showing all aquaculture activities in the ABS, superimposed on existing maps of essential fish habitat, fishing activities, seagrass beds, and natural existing hard bottom (reefs/bars) to identify potential conflicts.
    - *Action 11-B.):* Utilize habitat and activity maps from *Action 5. A.* to identify potential new oyster restoration areas and areas that could be used as spawning reefs to enhance recruitment and productivity nearby harvested reefs.

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| ***Lead:*** FDACS | ***Partners:*** FSU, UF, FWC, oystermen |

12. Investigate oyster shell and oyster relay programs to move both cultch and live oysters to more favorable habitat (relay programs are recommended to only be used for restoration experiments).
    - *Action 12-A.):* Use model and mapping information on larval source areas and environmental conditions to inform the potential programs.
    - *Action 12-B.):* Research similar relay programs in other areas for potential models and cautions.

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| ***Lead:*** FDACS/FWC | ***Partners:*** FSU, UF, Sea Grant, FDEP, FDOH, stakeholders (oystermen) |

| **PRIORITY OF STRATEGIES BY GOAL AREA**<br>**ALL STRATEGIES WITHIN EACH PRIORITY LEVEL (1 – 3) ARE OF EQUAL PRIORITY AND WILL BE IMPLEMENTED BASED ON A LOGICAL SEQUENCING** | |
|---|---|
| **Priority 1 Strategies (Prioritization ranking between 10 and 8) = Important To Do Now** | |
| **GOAL A** | **GOAL B** |
| 1.) Restore and create reef structures suitable for sustained oyster settlement that enhance ecosystem services in designated restoration areas. (#1 – 9.6)<br>*(#1 overall rank for Goal A – 9.6 mean/average)* | 1.) Evaluate a suite of management approaches that in combination achieve the goal of maintaining a sustainable wild oyster fishery as measured in relation to relevant performance metrics for determining success. (#1 – 9.3)<br>*(#1 overall rank for Goal B – 9.3 mean/average)* |
| 2.) Use experimental evidence and habitat suitability analyses to determine the most suitable substrate (e.g., limestone, granite, spat-on-shell, artificial structures) for restoring, enhancing, and/or developing new reef structures that will increase productivity in the Apalachicola Bay oyster ecosystem. (#2 - 8.7) | 2.) Recommend specific criteria and/or conditions, with related performance measures for the reopening of Apalachicola Bay to limited wild oyster harvesting. (#2 – 9.0) |
| 3.) Determine area (acres or $km^2$) of oyster reefs that currently support live oysters as well as the area needed to ensure sufficient spat production that will support sustainability of oyster reefs and sustainability of a wild oyster fishery throughout the ABS. (#3 - 8.6) | 3.) Conduct an oyster stock assessment for the ABS with periodic updates. (#3 – 8.8) |
| 4.)^ Develop criteria for restoring specific reefs or reef systems damaged by environmental conditions or natural disasters. (#4 – 8.2) | 4.) Manage the commercial oyster industry and recreational oyster fishing to provide for sustainable spat production and the recovery of oyster populations. (#4 – 8.75) |
| 5.)^ Identify monitoring needs for assessing the health of oyster populations (including disease), and detecting changes in environmental conditions and habitat quality (for oysters and other reef-associated species) over time. (#4 – 8.2) | 5.) Work with FWC Law Enforcement to develop enforcement strategies and appropriate penalties sufficient to deter harvest or sale of undersized oysters as well as violations that harm wild or leased oyster reefs and other natural resources, and that will support restoration efforts in the ABS. (#5 – 8.6) |
| ^*Priority #4 and #5 above received the same ranking.* | 6.) Evaluate the development of a policy that would require setting sustainable harvest goals and placing limitations on or a complete closure to harvesting based on the results of data (e.g., stock assessment) collected and evaluated under a comprehensive monitoring program designed to sustainably manage the resource. (#6 – 8.5) |
| | 7.) Restore and create reef structures suitable in size, location, and substrate type for healthy and sustainable oyster settlement and production, and harvesting. (#7 – 8.3) |

| Priority 2 Strategies (Prioritization ranking between 7 and 5) = Important But Less Time Sensitive | |
|---|---|
| **GOAL A** | **GOAL B** |
| 6.) Develop ecosystem models that forecast future environmental conditions and oyster population status. (#6 – 7.2) | 8.) Recommend policies and actions that retain and recycle shell for habitat replenishment in the ABS. (#8 – 7.7) |
| 7.) Assess existing ecosystem services metrics used for other oyster studies and develop a list of ABSI specific metrics to assess change over time. (#7 – 6.7) | 9.) Use decision-support tools to develop a system of potential closed areas that are well defined in terms of size, location, and longevity and include rotational and seasonal harvest areas, as well as long-term closed areas in strategic locations to provide habitat for year-round protection for brood stock and enhanced spawning opportunities. (#9 – 7.6) |
| | 10.) Use ecological quantitative modeling and other decision support tools to evaluate strategies and actions, and define performance criteria for an oyster population that can sustain a pre-determined level of wild oyster harvest, with a stipulated number of harvesters (limited entry), and protocols to ensure sustainability. (#10 – 7.5) |
| | 11.) Work with FDACS to ensure that oyster aquaculture practices and locations in the Bay are compatible with the goals and strategies for restoration and management of the ecosystem and are compatible with a wild fisheries and the important cultural role of a working waterfront and seafood industry. (#11 – 6.8) |
| | 12.) Investigate oyster shell and oyster relay programs to move both cultch and live oysters to more favorable habitat (relay programs are recommended to only be used for restoration experiments). (#12 – 5.9) |
| **Priority 3 Strategies (Prioritization ranking between 4 and 1) = As Time and Resources Allow** | |
| **GOAL A** | **GOAL B** |
| 8.) Seagrass and other SAV, and wetland and riparian habitat should be restored concurrently on appropriate substrate/bottom to work synergistically with oyster habitat restoration to enhance restoration of the ABS. (#8 – 4.73) | |

# ATTACHMENT 8
# STAKEHOLDER RESOURCES IN SUPPORT OF ABSI

## STAKEHOLDER RESOURCES AVAILABLE AND COLLABORATION INITIATIVES IN SUPPORT OF ABSI — UPDATED 16 NOVEMBER 2021

| ORGANIZATION | RESOURCES AVAILABLE AND COLLABORATION INITIATIVES |
|---|---|
| Riparian County Stakeholder Coalition (RCSC) | • Staff assistance (Ken Jones, coordinator and engineer).<br>• Request funds from the 6 RCSC counties for funding specific stipulated projects.<br>• Established working stakeholder relationships including working with the Apalachicola-Chattahoochee-Flint Stakeholders (ACFS) group on a Sustainable Water Management Plan for the equitable distribution of water to the Basin.<br>• Collaborating with the ABSI on water flow metrics development in the Basin.<br>• Working with stakeholders including Tri-Rivers Commission on navigation issues for the tri-rivers region (ACF). |
| Florida Fish and Wildlife Conservation Commission (FWC) | • Implementing Bay oyster restoration project funded by NFWF.<br>• Potential funding for future smaller restoration projects.<br>• Restoration design and monitoring assistance.<br>• Collaborating with the ABSI on water flow metrics development in the Basin.<br>• Science, data, and research support. |
| City of Apalachicola | • Committed to serving on the ABSI CAB for at least 4 more years to help guide the development of the Bay Management Plan.<br>• Help with convening the CAB Successor Group that will help oversee the implementation of the Bay Management Plan.<br>• Agree to uphold current local regulations that help ensure Apalachicola Bay is free of pollution and allows commercial fishermen to use city boat ramps to access the water. |
| Apalachicola Riverkeeper | • Nimble and can move fast to take action as needed.<br>• Assist with public outreach initiatives including meeting with and educating stakeholders on issues.<br>• Provide field trips to take stakeholders and decision-makers to see locations and issues in the field.<br>• Social media support and communications.<br>• Assist with collaborative initiatives such as working and coordinating with existing partners including Apalachicola-Chattahoochee-Flint Stakeholders (ACFS) and the Riparian County Stakeholder Coalition (RCSC).<br>• Working on watershed restoration initiatives including the current Apalachicola River Slough Restoration project that also includes collaborating with ANERR and other stakeholders.<br>• Share science and data with stakeholders. |
| Florida Department of Agriculture and Consumer Services (FDACS) | • Assist with collaboration and communication between stakeholders. Staff assistance. |

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|---|---|
| | • Field office and laboratory support.<br>• Provide data and research including water quality sampling data and monitoring. |
| The Pew Charitable Trusts | • Working on various management plans across the Region.<br>• Working with National Estuarine Research Reserves (NERR) across the Country<br>• Resources including staffing, funding, research, and data.<br>• Committed to funding the facilitation of ABSI for initial part of Phase IV.<br>• Committed to the development of a broader state-wide oyster management plan.<br>• Committed to staying involved in the development and implementation of the ABS Plan.<br>• Staff to assist with communication, analysis of data and issues, social media and blogs.<br>• Committed to working and communicating with other stakeholders including The Nature Conservancy (TNC).<br>• Pew has an extensive network of stakeholder partners and a national presence.<br>• Assist with funding for projects and in identifying other funding sources.<br>• Funding of economic assistance initiatives such as purchasing farm-raised oysters for restoration projects. |
| Water Street Seafood | • Operational oyster processing house.<br>• Water-side facilities and dock to assist with the project.<br>• Can provide oyster shells at market price or donate on a limited basis. Have experienced staff that could assist. |
| Apalachicola National Estuarine Research Reserve (ANERR) | • Research and monitoring support.<br>• Education, outreach, and training support.<br>• Education to local schools.<br>• Opportunities working with the Conservation Corps of the Forgotten Coast.<br>• Aquaculture education grants.<br>• Relationships and working with agencies.<br>• Working with partner agencies to receive NOAA funding.<br>• Mapping support from existing coastal mapping program, and that could be potentially developed into a single state-wide GIS layer. |
| | |

# ATTACHMENT 9
# ABSI STRATEGIES — LEADS, PARTNERS, AND RESOURCES TABLE

## STRATEGIES AND ACTIONS WITH PROPOSED LEADS, PARTNERS, AND RESOURCES

The following table is for illustrative purposes, and discussion and completion of this table is planned for Phase IV of the CAB process.

| GOAL A: ECOLOGICAL/RESTORATION<br>PRIORITY 1 STRATEGIES/ACTIONS | LEAD/PARTNERS | RESOURCES |
|---|---|---|
| Strategy 1.) Restore and create reef structures suitable for sustained oyster settlement that enhance ecosystem services in designated restoration areas. | **Lead:** FWC/FWRI<br>**Partners:** FSU, UF, local Gov., FDOT, NGOs, coastal property owners, CAB Successor Group | Student help from universities (FSU/UF) |
| *Action 1-A.):* Design and implement projects to achieve multiple ecosystem service targets (e.g., commercial and recreational fishing, shoreline protection). | Same as above and oystermen | Same as above |
| **GOAL B: SUSTAINABLE MANAGEMENT**<br>**PRIORITY 1 STRATEGIES/ACTIONS** | **LEAD/PARTNERS** | **RESOURCES** |
| Strategy 1.) Evaluate a suite of management approaches that in combination achieve the goal of maintaining a sustainable wild oyster fishery as measured in relation to relevant performance metrics for determining success. | **Lead:** FSU/UF<br>**Partners:** FWC, stakeholders | Student help from universities (FSU/UF) |
| **GOAL C: MANAGEMENT & RESTORATION PLAN**<br>**PRIORITY 1 STRATEGIES/ACTIONS** | **LEAD/PARTNERS** | **RESOURCES** |
| Strategy 1.) The ABSI Team and the CAB will continue to have an open and transparent process for the development of the Plan with many opportunities for stakeholder engagement and input in a variety of forums (e.g., workshops, online, public/ government meetings) for generating awareness and support while incorporating any changes the CAB deems appropriate and necessary to fulfill the goals and objectives. | **Lead:** FSU<br>**Partners:** CAB, CAB sub-committee, other stakeholders | Initiated |
| **GOAL D: ENGAGED STAKEHOLDER COMMUNITY**<br>**PRIORITY 1 STRATEGIES/ACTIONS** | **LEAD/PARTNERS** | **RESOURCES** |
| Strategy 1.) Develop a Community Advisory Board (CAB) for the ABS Initiative that provides critical information and perspective to the ABSI leadership and whose members recognize the importance of their role as ambassadors for the initiative. | **Lead:** CAB Community Outreach Subcommittee<br>**Partners:** FSU, CAB, CAB Successor Group, ABS stakeholders | Initiated |
| **GOAL E: THRIVING ECONOMY**<br>**PRIORITY 1 STRATEGIES/ACTIONS** | **LEAD/PARTNERS** | **RESOURCES** |
| Strategy 1.) Engage commercial fishermen in the restoration of the bay and encourage future participation in restoration such as monitoring, shell recycling, shelling, and relaying. | **Lead:** CAB Successor Group<br>**Partners:** Stakeholder groups, Chamber of Commerce, local government | TBD |

# ATTACHMENT 10
# ABSI OVERARCHING MESSAGE INITIAL IDEAS

## ABSI OVERARCHING MESSAGE INITIAL IDEAS

*Initial ideas for an overarching message that would resonate with the ABS Community and solicit action toward implementation of the Plan.*

At the 19 October 2021 meeting CAB was asked to report their ideas for crafting an overarching message with aspirational goals that would resonate with the ABS Community toward fostering support and action toward implementation of the Plan. A rallying call to energize people around implementation of the ABSI Plan. Following are the preliminary comments:

- Keep the message simple and clear: "restoring the Apalachicola Bay oyster fishery." Need to focus message on restoring the oyster fishery with all of the economic benefits and cultural components. Oysters are the lifeblood of Franklin County. "Restore the Bay." Franklin County is known for oysters.
- Money was given to restore the fishery, so it is important to emphasize the central feature of oyster restoration in the effort.
- "Bringing back Apalachicola Bay oysters."
- Broaden focus to include other species such as shrimp and reef fish. Highlight the connection of the abundance of seafood to the health of the Bay. Include the importance of the health of the Bay to recreational activities.
- Broaden the message to make it less oyster-centric. Need to take in (engage) people outside of the Bay.
- Message should resonate with all communities.
- "A healthy Bay = abundant oysters and a thriving community." Broaden the message out.
- "Take care of Bay and it will take care of us." The health of the Bay is good for all of use. Message should convey why it is important to restore the health of the Bay.
- Communicate the habitat and ecosystem services component of the role of oysters and the role in having thriving fisheries and economy.
- Oysters critical to the local Community; the message should not be "diluted" by inclusion of other species and elements.
- Need several messages for different audiences targeted to them.
- The local vs. outside target audiences issue complicates the discussion. Need more discussion.
- This issue needs additional discussion between stakeholders.

The overarching messaging discussion will continue during Phase IV of the ABSI project.