

**APALACHICOLA BAY SYSTEM INITIATIVE
COMMUNITY ADVISORY BOARD**



**MEETING 6 OF PHASE V – NOVEMBER 29, 2023
FACILITATOR'S SUMMARY REPORT**

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



PROCESS DESIGN, MEETING FACILITATION, AND REPORTING BY JEFF A. BLAIR

**APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD
NOVEMBER 29, 2023 FACILITATOR’S MEETING SUMMARY REPORT**

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Florida Peninsula – From Space



APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD
NOVEMBER 29, 2023 FACILITATOR'S MEETING SUMMARY REPORT

Oyster Boats – Eastpoint, Florida



OVERVIEW OF THE APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD'S WEDNESDAY, NOVEMBER 29, 2023 ACTIONS

I. MEETING SUMMARY AND OVERVIEW

At the November 29, 2023 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-Schedule; received updates on ABSI Science and Data, and FWC's NFWF Phase 2 funded restoration project; received reports and updates from the Restoration Funding Working Group, and Community Outreach Subcommittee; and received an overview of the communication and distribution strategy for the CAB's adopted Report and Recommendations for the Plan. Specific actions included unanimous: **1)** Approval of the Organizational Framework for the *Partners for a Resilient Apalachicola Bay* (PRAB) (CAB Successor Group) including the PRAB's *Operational and Procedural Polices and Guidelines* and template for an *Agreement in Principle*; and **2)** Agreement by consensus to adopt the *CAB's Final Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan**, incorporating the revisions agreed to by the CAB during the November meeting, and charging the ABSI Leadership Team with drafting the Final CAB Report and Recommendations and formatting and editing the document for presentation, clarity, and consistency, and distribution of the Report as appropriate.

** The ABSI Leadership Team revised the name of the Plan to align with the order of the Goals in the document.*

(Attachment 7 — Glossary of ABSI Project Terms and Definitions)

II. WELCOME AND INTRODUCTIONS

Jeff Blair, ABSI CAB Facilitator, opened the meeting at 9:00 A.M. and welcomed all participants. Jeff, on behalf of the ABSI Leadership Team, thanked:

- **Ed Camp** for his contributions to the success of the project using his Ecological/Fisheries Model that enabled the CAB to evaluate proposed strategies and scenarios regarding how they perform relative to each other.
- **Jenna Harper and Anita Grove** for ANERR's support generally, and use of the ANERR facility and resources throughout the course of the project specifically.
- **CAB Members** for their commitment and dedication to building consensus on a Plan to restore the health of the Apalachicola Bay System, and commitment toward implementation through the PRAB.

Jeff noted that over the course of the ABSI CAB process there were a total of 28 CAB meetings starting with the October 30, 2019 meeting and concluding with the November 29, 2023 meeting. In addition, there were 4 Oystermen's Workshops and 4 Community Workshops.

SOCIAL SCIENCE SURVEY

The ABSI CAB members participated in a Social Science Survey conducted at the beginning of each CAB 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 November 2020 meeting and was continued throughout the duration of the ABSI CAB process.

III. ABSI CAB MEETING PARTICIPATION

The following CAB members participated in the Wednesday, November 29, 2023 meeting conducted in-person at the Apalachicola National Estuarine Research Reserve in Eastpoint, Florida:

Georgia Ackerman, Frank Gidus, Anita Grove, Chad Hanson, Jenna Harper, Kent Smith alternate for Becca Hatchell, Gayle Johnson, *Katie Konchar*, Chuck Marks, Steve Rash, Devin Resko, Portia Sapp, Grayson Shepard, and *Chad Taylor*.

** Members who participated virtually are italicized.*

(15 of 20 active members participated – 75%).

Absent CAB Members:

Mike Allen, Ottice Amison, David Barber, Shannon Hartsfield, Alex Reed*, and Paul Thurman.

**Jenna Harper is representing DEP.*

LEADERSHIP 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/>

Participants in the November 29, 2023 CAB Meeting



IV. AGENDA REVIEW AND APPROVAL

The ABSI CAB voted unanimously to approve the agenda for the November 29, 2023 meeting as presented. Following are the key agenda items approved for consideration:

- ✓ To Approve Regular Procedural Topics (Meeting Agenda, Workplan, and Summary Report)
- ✓ To Review Updated Workplan and Meeting Schedule
- ✓ To Receive Science and Data Collection, and Restoration Updates
- ✓ To Receive Reports from RFWG and Community Outreach Subcommittee
- ✓ To Approve Organizational Framework of the CAB Successor Group
- ✓ To Receive Public Comment Prior to Adoption of CAB Draft Final Report and Recommendations
- ✓ To Review and Evaluate Community Workshop Forum #3 Input
- ✓ To Review, Evaluate, and Adopt CAB Draft Final Report and Recommendations for the Plan
- ✓ To Receive Public Comment After Adoption of the CAB Draft Final Report and Recommendations
- ✓ To Identify Next Steps

Amendments to the Posted Agenda:

There were no amendments to the posted agenda.

(Attachment 3 – November 29, 2023 ABSI CAB Agenda)

V. APPROVAL OF THE SEPTEMBER 27, 2023 CAB MEETING AND OCTOBER 24, 2023 COMMUNITY WORKSHOP FACILITATOR’S SUMMARY REPORTS

The ABSI CAB voted unanimously to approve the September 27, 2023 CAB Meeting and October 24, 2023 Community Workshop Forum Facilitator’s Summary Reports 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 November 19, 2023 meeting represented the CAB’s sixth and final meeting of the final Phase of the Project, Phase V.

For the November 29, 2023 meeting the CAB approved the Organizational Framework for the *Partners for a Resilient Apalachicola Bay (PRAB)*, and evaluation and adoption of the *CAB’s Final Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan (Plan)*. The components of the Draft Plan were evaluated with the overarching goal of restoring oyster reefs to a level that can sustainably provide ecosystem services for the Bay, and concurrently provide for a sustainable and economically viable level of commercial oyster harvesting.

Throughout the project, the CAB members representing management and restoration agencies have been vetting the strategies and actions under consideration with their leadership to gauge support and feasibility of implementation. The CAB is in the final stages of evaluating the relative priority and efficacy of strategies and associated actions and identifying restoration and management approaches for inclusion in the *Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan*.

Phase V focused on the evaluation and final selection of restoration and management approaches conceptual and broad in scope from the Plan Framework, public engagement, and planning for funding restoration projects and the CAB Successor Group.

Jeff reported as follows:

- The focus of the November 29, 2023 meeting was approval of the organizational framework for the CAB Successor Group, and adoption of the *CAB's Draft Final Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan*.
- 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 including Op-Eds, rack cards, social media posts/texts, ABSI newsletters, and the ABSI website. The CAB's draft recommendations and results of ABSI experiments will continue to be vetted with the larger ABS community through multiple formats, including online via the ABSI website, and in-person public workshops.
- The CAB concluded planning for transitioning to the PRAB (CAB Successor Group) whose role will be to organize a group of key stakeholders committed to working collaboratively for the long-term once the CAB process is complete. The PRAB will continue providing input to natural resource management agencies with the goal of ensuring the Apalachicola Bay System is effectively monitored, and adaptively managed with the support of the Community. The CAB approved the Organizational Framework for *Partners for a Resilient Apalachicola Bay*, and finalized and adopted their recommendations for the *Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan* at the November 29, 2023 meeting. The PRAB is anticipated to formally convene in December 2023 or early 2024.
- In addition, the FSU ABSI Project Team continues to work with the Restoration Funding Working Group to seek resources and political, governmental, and organizational support for the CAB's priority restoration recommendations.

Summary of Community Advisory Board Process

- The CAB process ran from 2019 – 2023.
- The first CAB meeting was held on October 30, 2019.
- There were 28 CAB meetings concluding with the November 29, 2023 meeting.
- There were 4 Oystermen's Workshops and 4 Community Workshops.
- COVID prevented holding additional Community Workshops planned for 2020 – Early 2022 (The CAB met virtually from May 2020 – January 2022).

**The CAB Final Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan is available at the following URL: <https://marinelab.fsu.edu/absi/cab/>*

(Attachment 4 – Workplan, Schedule, and Project Flowchart)

VII. PROJECT RELEVANT UPDATES AND BRIEFINGS PRESENTATIONS

FWC (NFWF PHASE 2) RESTORATION PROJECT UPDATE

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

Summary and Overview of Update

Program Overview

- \$20M agreement with National Fish and Wildlife Foundation (NFWF).
- Increased surveying/monitoring efforts for Apalachicola Bay & Suwannee Sound.
- Restoration activities in Apalachicola Bay.
- Planned development of revised oyster management strategies for Apalachicola Bay & Suwannee Sound.

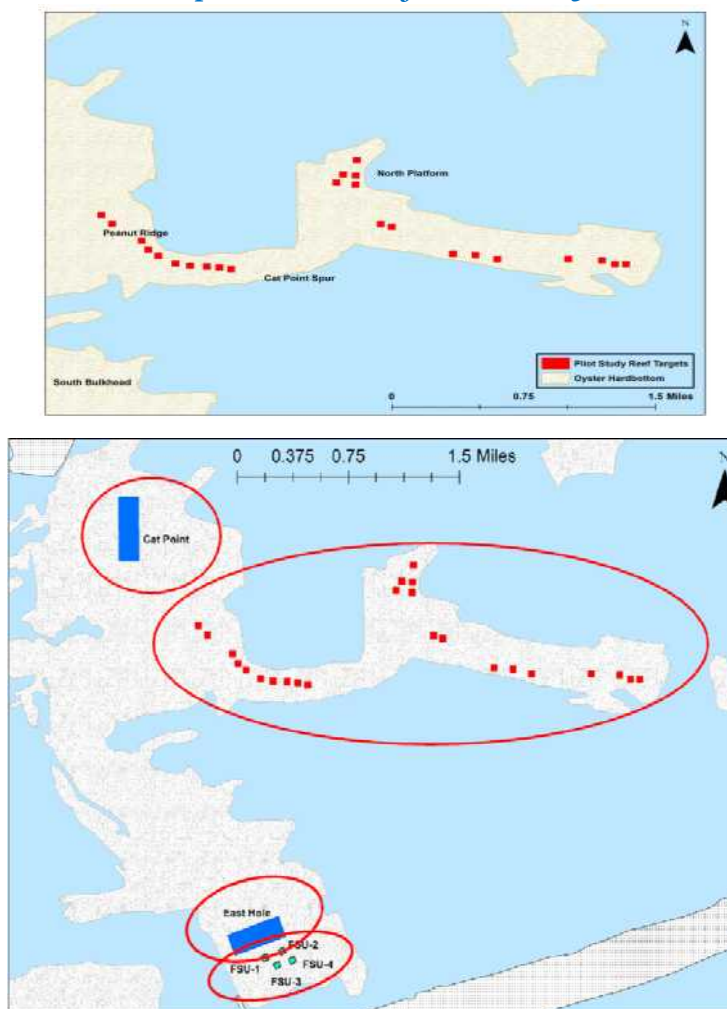
Apalachicola Bay Oyster Restoration – Pilot Study

- \$10 million budget from Governor DeSantis' Framework for Freedom.
- Allows FWC to perform a more robust pilot study, ensuring scientific merit and meaningful restoration.
- Increased *general restoration* given funding allocation from Governors budget – these will be two ~ 30 acre plots (Cat Point and East Hole) with 6" material relief.
- Pilot study will test multiple reef heights: 1 ft (low) and 2 ft (high).
- Material will be *Kentucky Blue* limestone.
- Sized 4 – 8" (+/- 1").
- NOT using large rock that is unable to be tonged.
- Each restored reef for the pilot study will be 1 acre in size.
- Site observer will be hired to oversee restoration efforts, potentially map reefs.
- FWC will exhaust the \$10 million state allocation.
- FWC will provide ABSI with four 1 acre x 1ft reefs at East Hole for research.
- FSU ABSI's study is complimentary to FWC's work.
- ABSI will be monitoring the larger restoration plots
- ABSI/FWC collaboration increases scientific scope of work done in Apalachicola Bay
- Provides more data to assist in future, larger restoration activities.

Reef Characteristics Required for the Restoration

- Hardbottom
- Good waterflow
- Nearby oysters
- Not a navigational hazard
- Navigable for contractor

Proposed Locations for Pilot Study



Apalachicola Bay Oyster Restoration – Pilot Study Next Steps

- Material in water early Spring 2024.
 - Contractor to source and stage material in 2023, deploy material early Spring 2024.
 - Scientific importance to deploy all material during same season.
- Hire part-time site monitor for restoration activities and for mapping sites post deployment.
- Work with FWC researchers and university researchers to develop monitoring and surveying methods.
- Continued monitoring efforts throughout the Bay.
- Continued collaboration with FSU, other partners.

Apalachicola Bay Fishery Management

- FWC continues to gather public feedback to inform oyster fishery management.
- Continue to monitor and analyze biological data.
 - Most recent monitoring efforts have shown improvements where restoration has occurred.
- Decisions on future restoration and reopening of the Bay will be data informed as well as include public input.
- FWC will increase stakeholder engagement efforts in the coming months.
 - Also, leverage the process of the FSU ABSI Successor Group’s future efforts.

- Actively researching additional funding opportunities.

Summary of Questions, Responses, and Comments:

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

- Who is the contractor?
- DR: They are out of Bayou La Batre, Alabama. They were the low-bid contractor and have a proven track record doing restoration work.
- What treatment will FWC use on the 30-acre sites?
- DR: We intend to add 6” of rock using a blanket restoration approach.
- How confident are you that 6” will work?
- DR: It will perform better than no treatment. This approach is a compromise based on the cost.
- SB: 6” is not huge but it is still substantial if the placement is precise.
- DR: The sites will be mapped immediately after placement.
- Appreciate FWC’s candor on the restoration plan development; it is important that FWC and the PRAB are in agreement.
- What percent of the restoration is going to Cat Point?
- DR: About 45%.
- How much pressure was there to increase the number of test sites (24) to improve resolution rather than doing the general restoration?
- DR: This was discussed and determined that 24 sites would provide sufficient rigor.
- Will the remaining NFWF funds will be targeted for restoration?
- DR: Yes; and additional funding sources have been identified.
- Does FWC have a policy in place limiting harvest on restored sites? Texas has a 2-year policy.
- DR: There is nothing on the books, but the topic is under discussion.
- How were the number of treatments determined, was it based on Ed Camp’s work?
- DR: Approximately 75% was based on Ed’s work and 25% FWRI work.
- It seems curious to go forward with 6” effort before reef height study outcomes are known.
- JT: Who will hire the restoration site monitor?
- DR: FWC will. This is part of the NFWF proposal.
- KS: Is there a target restoration acreage?
- DR: 1,000 acres is based on old data, and this is under reconsideration. We don’t have a specific acreage, but will do as much as possible with our existing resources.
- KS: It is always good to have some goal for restoration.
- Recommending an overall restoration target for the Bay could be part of the PRAB’s purview.

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 has been provided at each CAB meeting, with a few exceptions.

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

ABSI overarching goals are:

- Understand why the Apalachicola Bay oyster populations have not recovered and identify optimal restoration approaches that will inform larger efforts.
- Determine whether loss of oyster populations is causing a decline in overall ecosystem health.
- Work with local stakeholders to develop a science-based restoration and management plan for Apalachicola Bay.

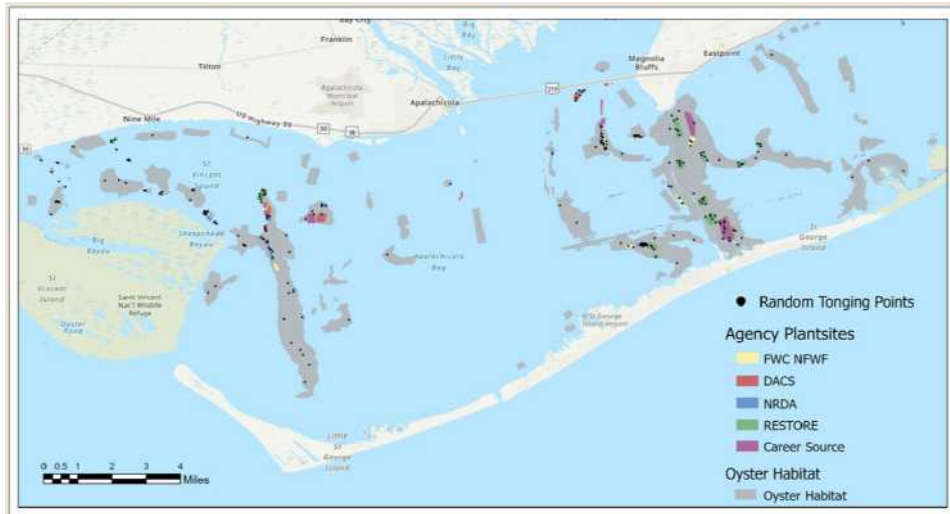
Summary and Overview of Presentation

The November 29, 2023 Science and Data Collection update was focused on updates. Sandra reported as follows:

Status of Oysters in the Bay

- 227 Sites monitored Bay-Wide 2022-2023
- According to FDEP calculations, 21 market oysters per m2 = 381 bags/acre.
- Tongs used in the ABSI experiments are ~ 0.5 m2, so 11-12 oysters per tong licks is about 400 bags/acre.

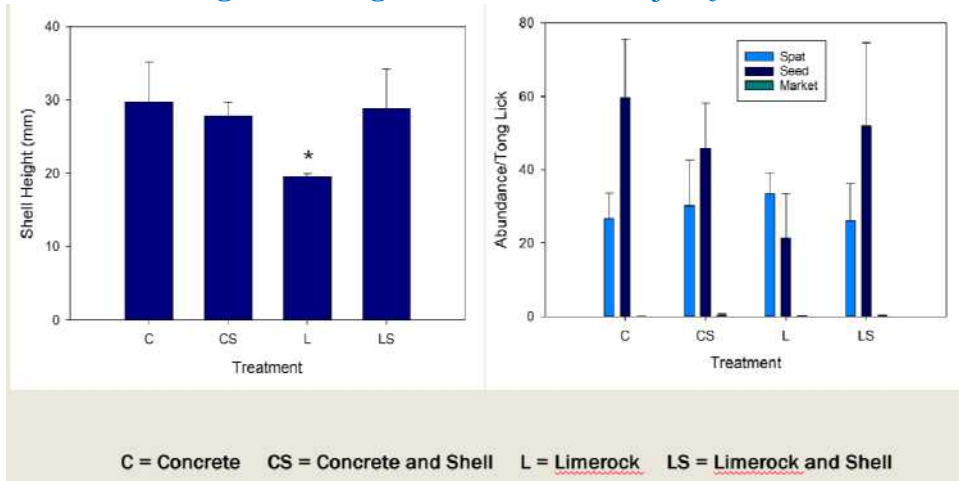
2022 – 2023 Locations for Bay-Wide Monitoring of 227 Sites



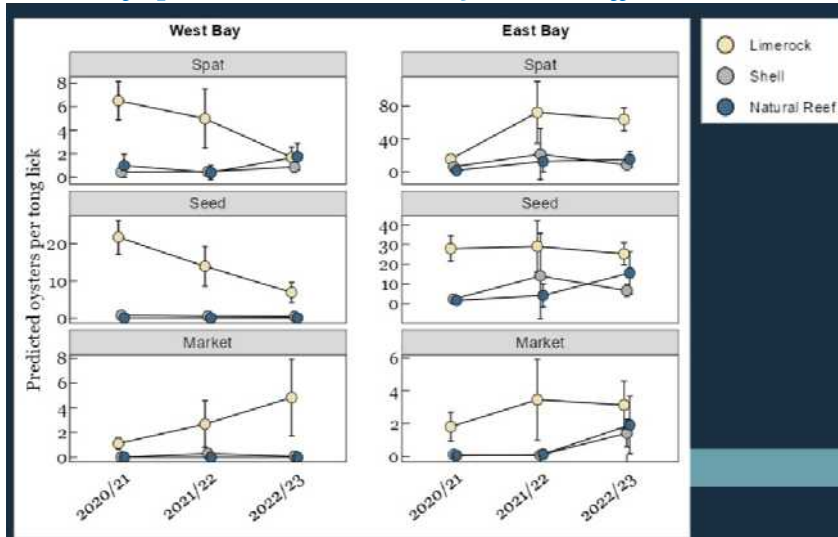
Summary

- **Bay-wide surveys**
 - The eastern side of the Bay is doing better than the west.
 - Areas cultched with small limerock are performing much better than shell or un-cultched areas.
 - Limerock areas are very patchy – some good spots, some not.
- **2021 Restoration Experiment**
 - Large Limerock (5-7 “) is performing best.
 - Small Limerock (2”) is doing better than Shell.
- **2023 Restoration Experiment**
 - Treatments performing equally except for just Limerock, which was larger material than the other treatments. When ABSI ordered the rock it was supposed to be the same as the previous study. The grade was 8 minus, which means everything is less than 8”. The rock that was delivered had larger rocks. This material was deployed for the limerock only treatment but was switched out for the limerock and shell treatment.
 - High abundance of spat and seed and a small number of market oysters on most treatments.

Average Shell Height and Distribution of Size Classes



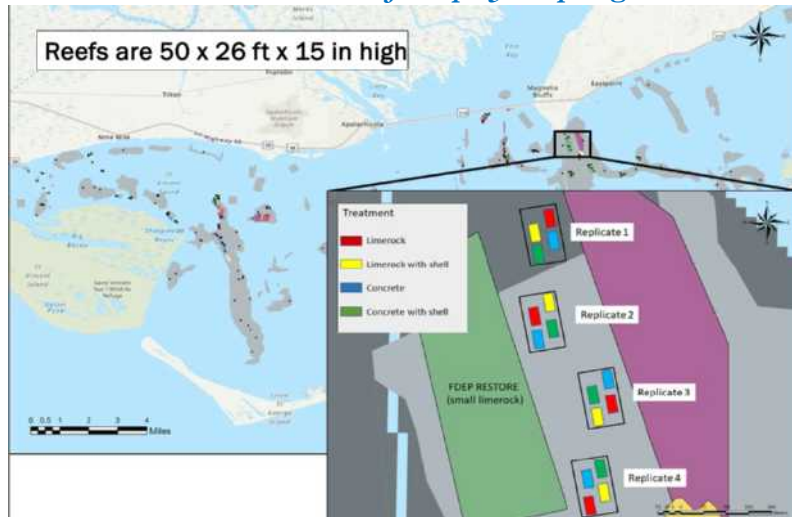
Trends of Spat, Seed and Market Oysters on Different Substrates



Next Steps

- Focus 2023-2024 surveys on limerock areas to assess patchiness in oyster abundance.

ABSI Restoration Reefs Deployed Spring 2023



Assessment of Survival and Growth of Hatchery Juveniles and Spat on Shell in Different Biodegradable Containers

- 10 sites (planted with limerock) deployed in May-June 2023.
- Each site: 5 biodegradable mesh, 5 chicken wire, 5 vexar cages, Water quality datalogger.
- Each container: 100 juveniles or 5 kg of spat on shell, stained with calcein.
- Collected quarterly and assessed for survival, growth, spat recruitment and status of material.

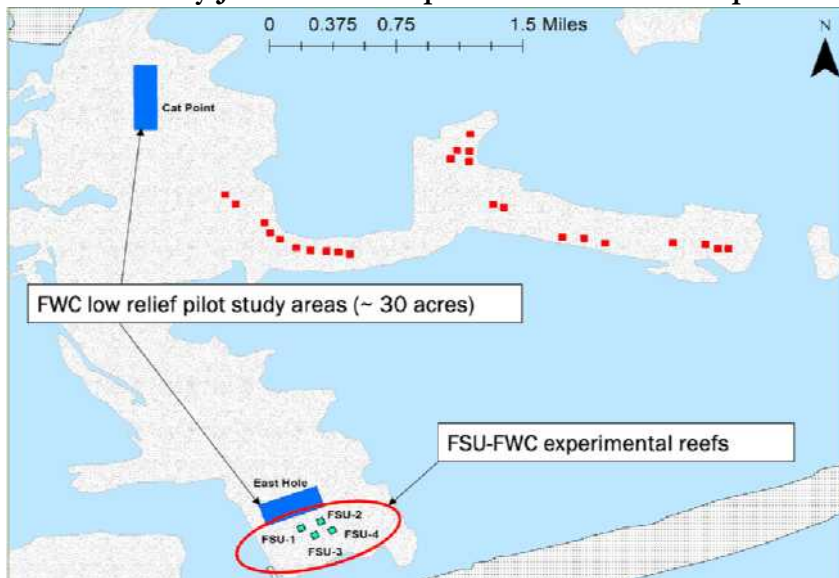
Results after 3 months (July 2023)

- Bags and wire cages functional but compromised (crabs?).

After 6 months (October 2023)

- **West Bay**
 - Most Cage lines found.
 - Some biodegradable bags intact.
 - Many juveniles dead, low spat set.
- **East Bay**
 - Several juvenile cage lines missing Most spat cage lines missing.
 - Bags and wire cages fallen apart.
 - Good survival and spat set on hatchery juveniles.

Survival and Growth of Hatchery Juveniles and Spat on Shell – Next Steps



Summary of Oyster Shell Recycling Programs

- Research document funded by Florida Wildlife Federation Inc. through Pew Charitable Trusts.

Objectives

- Review shell recycling programs along the Eastern Seaboard and Gulf of Mexico to inform expansion and/or initiation of recycling and re-shelling programs for Apalachicola Bay.
- The primary objective of this document is to provide an inventory (database) and synthesis report for selected shell recycling programs throughout the US, with emphasis on the Eastern Seaboard and Gulf of Mexico.
- This review is intended to inform potential future shell recycling and re-shelling programs in Apalachicola Bay, but is applicable for other regions. The synthesis report includes summaries of the

programs by region, the different strategies used by the various programs and an assessment of the positive and negative aspects of each approach.

- For example, some programs rely primarily or entirely on volunteers and private donations.
- This reduces cost but funding may be sporadic and uncertain. Other programs have government support and paid staff, which creates higher overhead but is potentially a more stable structure.
- The authors acknowledge that the database is incomplete as there are many small programs that do not have sufficient information available to warrant a database entry.
- The target users of this database and synthesis are oyster restoration practitioners who require shell for their projects, and resource managers who need material for re-shelling programs as part of a fishery management strategy, particularly for Apalachicola Bay and other areas in Florida.

Summary of Questions, Responses, and Comments:

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

- KS: Did the concrete have rebar in it? Where did it come from?
- SB: No rebar; not sure whether it was salvaged from construction debris.
- Is there competition from the concrete reuse market for purchasing concrete?
- SB: We need to investigate this.
- Is it possible to have a concrete company make concrete specifically for use in reef restoration? Also, you could do spat on concrete experiments.
- SB: It would be possible to have concrete fabricated. This would increase the cost, possibly higher than limerock so concrete would lose the economic advantage. Agreed, we need to look at alternative substrate for spat on cultch. Hatchery has been focused on producing spat on shell for the proof of concept.
- When was the last tonging data taken?
- SB: Winter 2022-2023.

VIII. WORKING GROUP AND SUBCOMMITTEE UPDATES AND REPORTS

A. 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 Triumph Gulf Coast, Inc. The Restoration Funding Working Group (RFGW) is 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, RFGW Lead, previously reported that the RFGW has met several times, has broad representation, has identified the specific strategies and related actions that 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 are potential funding sources for some CAB recommended actions.

Joel reported as follows for the November 29, 2023 CAB meeting update on the RFGW:

- Working with the PRAB to implement NERR funding.
- Discussions underway for submission of pre-proposals for Inflation Reduction Act (IRA) funding.
- It is an ongoing process to seek funding sources.
- Opportunities for funding exist, and we will evaluate the options as appropriate.

- There is money available for restoration and funders are interested in Apalachicola Bay restoration, but want to ensure the restoration will be successful.
- The results from the ABSI and FWC restoration experiments will help provide the necessary data and evidence of success to encourage potential funding sources for future Apalachicola Bay restoration projects.

Summary of Questions, Responses, and Comments:

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

- How long will it take to hire the PRAB coordinator now that the position has been advertised?
- JT: The exact timeline is uncertain, but the process could move quickly after the ad period closes. We could interview candidates and decide quickly once the process is closed. Likely someone could be on-board in late January 2024, assuming there is someone the interview committee feels is suitable for the position in the first pool of applicants.
- What about fundraising efforts? Agencies are looking to fund larger scale projects so our efforts should include the watershed. We should be ready.
- Other Panhandle bays should be included in our funding proposals.
- JT: Talked to Franklin Promise and its efforts are complementary to our efforts.
- I agree that collaborating with other Panhandle bay groups is critical.
- Has anybody looked at how the oyster reef collapse has impacted finfish and how restoration would help?
- SB: We looked for correlation of finfish declines with oyster decline using FWC long term fishery independent monitoring (FIM); none evident, but the FIM program doesn't fish over reef areas so this is really a data gap and need to be more thoroughly evaluated.
- JT: The PRAB should extend their focus to other species including finfish.
- Targeted studies are needed.
- Some Texas studies have shown improvements in finfish populations with elevated reefs.

B. 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 and community engagement strategies that attract stakeholders and the 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. For the November 29, 2023 update, Chad reported on the Subcommittee's Outreach and Messaging Strategies as follows:

- The Subcommittee has been working on the mechanics of the transition from the CAB to the PRAB (CAB Successor Group).
- Outreach vehicles such as the website, newsletter, rack cards, etc. will need to transition to the PRAB.
- The Subcommittee's purpose will be transferred to PRAB.

Summary of Update:

- Recent activity for the Committee was preparing for the October 24, 2023 Community Workshop Forum #3.
- The Committee is currently focusing on transitioning from the CAB to the PRAB.
- The Committee is working on messaging and communication regarding the conclusion of the CAB process and adoption of the CAB's Report and Recommendations for the *Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan*.
- The Committee will coordinate with FSU's Office of Research Communications Department and ensure there is a consistent message for the communication and distribution of the CAB's recommendations.
- The Committee will also coordinate and provide feedback on the 6-8 page glossy Summary Report FSU's Office of Research Communications Department is producing.

Summary of Questions, Responses, and Comments:

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

- There were no questions or comments.

IX. CAB SUCCESSOR GROUP ORGANIZATIONAL FRAMEWORK APPROVAL

The *Partners for a Resilient Apalachicola Bay* (PRAB) (CAB Successor Group) will be ready to convene when the CAB completes their recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan. The PRAB's role will be to organize a group of key stakeholders committed to working collaboratively for the long-term, once the CAB process is complete, and to ensure that the Plan is implemented, monitored, and adaptively managed over time and has the support of the Community. Of note, the PRAB is anticipated to formally convene in December 2023 or early 2024 after the CAB's adoption of their recommendations during the November 2023, meeting.

The CAB discussed a proposed draft organizational framework for the PRAB. Following is a summary of the discussion by topical issues:

Organizational Framework

- The PRAB* (CAB Successor Group) will be ready to formally convene when the Apalachicola Bay System Initiative (ABSI) Community Advisory Board (CAB) completes their recommendations for the *Partners for a Resilient Apalachicola Bay* in November of 2023.
- The PRAB will be comprised of representatives from key stakeholder groups committed to ensuring there is a reliable mechanism and process for the monitoring, funding, and implementation of the ABSI CAB's Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan.
- The PRAB will form as a 501(c)(3) tax-exempt organization.
- The PRAB will secure funding to hire a project coordinator to handle PRAB logistics and administration including, but not limited to, organizing meetings, and maintaining a workplan approved by the PRAB and updated annually.
- The PRAB will adopt a position job description outlining the coordinator's duties and responsibilities.
- The PRAB will adopt Operational and Procedural Policies and Guidelines** to ensure the group operates transparently and equitably, and makes consensus-based decisions and recommendations.

- The PRAB will adopt an Agreement in Principle** providing the organizational structure including the mission, purpose, guiding principles, organization, and decision making and consensus building procedures for the PRAB.
- The PRAB will agree on and approve a Workplan and update it annually as needed.
- The PRAB will require at least a 75% favorable vote of all members present and voting for approving decisions and recommendations.
- A quorum at any PRAB meeting is defined as greater than 50% of the current roster of voting members present. A quorum shall be required for all PRAB decisions and recommendations.
- Stakeholder representatives will be voting members.
- Local government, state agency, and federal agency representatives will be non-voting advisory members.

**At the August 9, 2023 meeting the CAB unanimously agreed by consensus to select Partners for a Resilient Apalachicola Bay (PRAB) as the name for the Successor Group.*

***Jeff Blair, ASBI CAB Facilitator, provided draft documents to serve as templates.*

Current Stakeholder Groups Agreeing to Participate on the PRAB

- Franklin County Commission – Otlice Amison
- Apalachicola City Commission – Anita Grove
- Oystermen – Shannon Hartsfield
- Aquaculture – Gayle Johnson
- Charter Fishing – Grayson Shepard
- Scientists – Mike Allen (UF)
- Scientists – Sandra Brooke and Joel Trexler, FSUCML
- ANERR – Jenna Harper
- UF-IFAS/Florida Sea Grant/Franklin County Extension – Erik Lovestrand
- FDACS – Portia Sapp
- FWC – Devin Resko
- Apalachicola Riverkeeper – Georgia Ackerman
- The Pew Charitable Trusts – Chad Hanson
- The Nature Conservancy – Will provide a representative.
- Riparian County Stakeholder Coalition – Chad Taylor

Summary of Questions, Responses, and Comments:

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

- JT: Will the PRAB be expected to expand beyond the current list?
- JB: Yes, this is a preliminary list and additional stakeholders are being sought, particularly from the local stakeholder community.
- Chad Taylor: Please add the Riparian County Stakeholder Coalition to the PRAB.
- JB: Done.
- Want to ensure the PRAB is more nimble rather than operating under prescribed procedures; important for an executive committee to have authority to make certain decisions timely.

- JB: Agreed, the process in the Operational and Procedural Policies and Guidelines coupled with the Agreement in Principle provides this flexibility, and contemplates an executive or steering committee charged with providing leadership and decision making authority as approved by the partners on the PRAB.
- Who would be a voting vs. non-voting member?
- JB: Clearly local government, state agency, and federal agency representatives will be non-voting advisory members. However, the PRAB should decide on who is voting or non-voting when they convene.
- Would university scientists be voting members?
- JB: That should be up to the PRAB to decide. I would recommend that if a stakeholder wants to be non-voting that should be acceptable to the PRAB.
- SB: I am agnostic regarding whether Joel and I are voting or non-voting partners.
- What is the strategy for advertising the PRAB coordinator position?
- JT: We are open to suggestions and will send the advertisement to CAB members for further distribution.

Comment from Shannon Hartsfield

(Pursuant to the Absentee CAB Member Comment Policy Adopted October 30, 2019)

I support and vote to approve the Organizational Framework for the PRAB including the PRAB's *Operational and Procedural Policies and Guidelines*.

Comment from Mike Allen

(Pursuant to the Absentee CAB Member Comment Policy Adopted October 30, 2019)

I support and vote to approve the Organizational Framework for the PRAB including the PRAB's *Operational and Procedural Policies and Guidelines*.

Following the opportunity provided for questions and answers, and CAB discussion, the CAB took the following action:

ABSI CAB ACTION:

MOTION – The ABSI CAB voted unanimously, 15 - 0 in favor, to approve the Organizational Framework for the *Partners for a Resilient Apalachicola Bay* (CAB Successor Group) including the PRAB's *Operational and Procedural Policies and Guidelines* and template for an *Agreement in Principle* for the partners.

X. PUBLIC COMMENT OPPORTUNITY #1

The facilitator invited members of the public to provide comments.

Public Comments:

- Wayne Williams, Seafood Work and Waterman's Association:
 - The Bay needs large-scale restoration as soon as possible.
 - After restoration, the Bay will be ready to harvest in two years.
 - Coon Bar should be restored.
 - The restoration should use 1"-3" rock, so it is tongable for harvesting.
 - The community will not accept large rock.
- Dan Tonsmeire, citizen: Thanked and congratulated the CAB for a job well done.

XI. EVALUATION OF COMMUNITY WORKSHOP FORUM #3 INPUT

Jeff Blair led the CAB through a review and evaluation of the input received from Community Workshop Forum #3. Jeff reported that the input was general in nature as summarized below:

Participants asked questions and provided feedback regarding:

- Using local watermen to assist with the restoration work.
- Poaching in the Bay is on-going. Won't this work against restoration and how will this problem be mitigated?
- Need strict enforcement of oyster fishery for the restoration to succeed.
- The Plan has a variety of suggested strategies and associated actions. How will these be implemented by the agencies conducting restoration and management? How will the choices of strategies/actions be made?
- What is the role of "the Partnership" in ensuring that the Plan is followed through and implemented?
- The Bay has undergone multiple rounds of restoration, and these do not appear to have produced the desired results. Why? Why do you think that the proposed Plan will achieve a different outcome?
- What the condition of the Bay is regarding oyster production and readiness for harvest.
- When FWC's NFWF funding restoration project would start.
- Feedback on FWC's NFWF funded restoration pilot project including locations, type and size of materials, and height of the restoration reefs.
- General feedback on FWC management approaches and alternatives.

The CAB agreed that the feedback from the Community Workshop Forum has been adequately addressed in the CAB's Report and Recommendations for the Plan, and no revisions were needed based on the feedback.

XII. ADOPTION OF CAB'S DRAFT REPORT AND RECOMMENDATIONS FOR THE PLAN

Jeff Blair led the CAB through a review and discussion of the *CAB's Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan*.

The CAB's Report and Recommendations for the Plan include the CAB's extensive consensus building results in the form of Goals, Vision Themes, Outcomes, Objectives, Strategies, and Associated Actions. The Draft Final Report was posted to the ABSI project webpage and distributed to the CAB members on October 16, 2023.

During the November 29, 2023 meeting the CAB evaluated proposed revisions to the Report and Recommendations recommended by the ABSI Planning Team. These revisions are consistent with the CAB direction from the September 27, 2023 meeting for the Team to review comments from TNC and ANERR, and edit the document for presentation, clarity, and consistency.

Summary of Questions, Responses, and Comments:

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

- There were no questions raised that were not addressed by approval of the Revised Final Report and Recommendations for the Plan.

Comment from Shannon Hartsfield

(Pursuant to the Absentee CAB Member Comment Policy Adopted October 30, 2019)

I support and vote to adopt the Apalachicola Bay System Initiative (ABSI) Community Advisory Board’s (CAB) *CAB’s Draft Final Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan* including the revisions proposed by the ABSI Leadership Team.

Comment from Mike Allen

(Pursuant to the Absentee CAB Member Comment Policy Adopted October 30, 2019)

I support and vote to adopt the Apalachicola Bay System Initiative (ABSI) Community Advisory Board’s (CAB) *CAB’s Draft Final Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan* including the revisions proposed by the ABSI Leadership Team.

Following the opportunity provided for questions and answers, and CAB discussion, the CAB took the following action:

ABSI CAB ACTION:

MOTION – The ABSI CAB voted unanimously, 15 - 0 in favor, to adopt the Apalachicola Bay System Initiative (ABSI) Community Advisory Board’s (CAB) *CAB Draft Final Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan*, incorporating the CAB’s approved revisions, and to charge the ABSI Leadership Team with drafting the Final CAB Report and Recommendations and to format and edit the document for presentation, clarity, and consistency, and when finalized to distribute the Final CAB Report and Recommendations to the appropriate agencies and entities.

(Attachment 8 – Approved Final Draft CAB Report and Recommendations for the Plan)

CAB and ABSI Leadership After Adoption of CAB’s Report and Recommendations



XIII. COMMUNICATION AND DISTRIBUTION STRATEGY FOR CAB REPORT AND RECOMMENDATIONS FOR THE PLAN

Jeff Blair reviewed the schedule for final development of the CAB’s Report and Recommendations, communicating and distributing the Report, and answered members questions. Following is a summary of the schedule:

ABSI CAB REPORT AND RECOMMENDATIONS FOR THE APALACHICOLA BAY SYSTEM ECOSYSTEM-BASED ADAPTIVE RESTORATION AND MANAGEMENT PLAN – DEVELOPMENT AND COMMUNICATION SCHEDULE	
Sept. 27, 2023 CAB Meeting #5	CAB unanimously approved the Draft CAB Report and Recommendations.
Nov. 29, 2023 CAB Meeting #6	CAB unanimously adopted the Draft Final CAB Report and Recommendations.
December 4, 2023	ABSI Leadership Team will distribute Final CAB Report and Recommendations to CAB members for comments.
December 15, 2023	ABSI CAB members will have 2 weeks to provide comments to the Leadership Team (no substantive revisions will be considered).
December 18, 2023	ABSI Leadership Team will decide whether to make any additional revisions, finalize the CAB Report and Recommendations. Revise Title and add Citation.
December 1, 2023 – January 22, 2024	FSU Office of Research Communications Department (Kathleen Haughney) will: <ul style="list-style-type: none"> • Produce a 6-8 page glossy Summary Report for printing and distribution, • Take photos for use in the Report and for media dissemination. • Press release regarding completion of the project and availability of the CAB’s recommendations (Report available online), and • Produce video and radio content regarding project and CAB’s recommendations.
December 1, 2023 – January 22, 2024	The CAB Outreach Subcommittee will coordinate with the FSU Office of Research Communications Department regarding production of the Summary Report, and the message and approach for communication and distribution of the CAB’s Report and Recommendations.
Dec. 13 – Jan. 1	Sandra, Maddie, and Jerod work on Glossy Summary Report over Holidays.
January 3, 2024	Report distributed to ABSI Outreach Committee for review.
January 10, 2024	Outreach Committee comments due and Leadership Team transmits to Kathleen.
January 21, 2024	ABSI Leadership Team reviews and approves final version.
January 22, 2024	FSUCML will distribute Report to the CAB, and post to the project webpage.
January 23, 2024	FSUCML will distribute CAB Report and Recommendations (electronic and Glossy Summary Report) to agencies and entities as appropriate (i.e., FWC, FDACS, DEP, NFWFMD, local governments, legislators, Triumph Gulf Coast, etc.).
January 23, 2024	FSUCML will post CAB Report and Recommendations to the project webpage.

Summary of Questions, Responses, and Comments:

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

- Will there be approval of FSU communication vehicles by the Outreach Subcommittee.
- SB: Yes, but the timeline for turn-around will have to be quick.
- The communication plan and summary report should be shared with the Outreach Subcommittee for input.
- SB: Yes, we will do that.
- DR: It would be good to highlight any additional changes made in the Report.
- SB: We will definitely share communication materials with the Subcommittee.
- JB: The January 22, 2023 date is not a hard deadline.
- The Outreach Subcommittee will work with FSU's communication effort.
- JB/SB: FSU certainly wants the CAB's input on the communication message and Summary Report.
- Appreciate Jeff Blair's leadership with the CAB process and wonder whether he will continue to be involved now that he is off the payroll.
- JB: I am available to provide assistance as needed to ensure the success for the PRAB and consideration for the CAB's recommendations.

XIV. PUBLIC COMMENT OPPORTUNITY #2

The facilitator invited members of the public to provide comments.

Public Comments:

- Wayne Williams, Seafood Work and Waterman's Association:
 - There are 700 members in our association.
 - Members need to be informed as the Plan proceeds.
 - We do not need a limited license; if it is done should be non-transferable.
 - There should be no non-harvest reefs (no sanctuary reefs).
 - There is a problem with the material that will be used for the restoration experiments. It should be between 1"-3" so it is tongable (harvestable).

XV. NEXT STEPS

With the adoption of the *CAB's Draft Final Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan*, the November 29, 2023 meeting represented the CAB's final meeting and conclusion of the CAB process. Of note, there were 28 CAB meetings held between October 30, 2019 and November 29, 2023.

With the CAB's approval of the organizational framework for the PRAB, and funding for hiring a coordinator, the PRAB is on schedule to convene in December 2023 or early 2024. The PRAB's role will be to organize a group of key stakeholders committed to working collaboratively for the long-term, and to ensure that the Plan is implemented, monitored, and adaptively managed over time and has the support of the Community.

ADJOURNMENT

The Facilitator thanked CAB members, ABSI Project Team members, and the public for their participation, and on a vote for approval, adjourned the meeting at 11:37 a.m. on Wednesday, November 29, 2023.

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
PRAB	Partners for a Resilient Apalachicola Bay (CAB Successor Group)
Plan	Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management 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
TRIUMPH	Triumph Gulf Coast, Inc.
UF	University of Florida
UWF	University of West Florida

**ATTACHMENT 2
MEETING PARTICIPATION LIST**

MEMBER	AFFILIATION
AGRICULTURE/ACF STAKEHOLDERS/RIPARIAN COUNTIES	
1. <i>Chad Taylor</i>	Riparian County Stakeholder Coalition/ACF Stakeholders/Agriculture
BUSINESS/REAL ESTATE/ECONOMIC DEVELOPMENT/TOURISM	
2. Chuck Marks	Business (Insurance Industry)
ENVIRONMENTAL/CITIZEN GROUPS	
3. Georgia Ackerman	Apalachicola Riverkeeper
4. Chad Hanson	The Pew Charitable Trusts
5. <i>Katie Konchar</i>	The Nature Conservancy
LOCAL GOVERNMENT	
6. Otlice Amison	Franklin County Commissioner
7. Anita Grove	Apalachicola City Commissioner
RECREATIONAL FISHING	
8. Frank Gidus	CCA Florida
9. Grayson Shepard	Hang on Charters (Charter Fishing)
SEAFOOD INDUSTRY	
10. David Barber	Barber's Seafood
11. Shannon Hartsfield	Seafood Management Assistance, Resource Recovery Team and Oysterman
12. Gayle Johnson	Apalachicola Oyster Company
13. Steve Rash	Water Street Seafood
STATE GOVERNMENT	
14. Jenna Harper	ANERR/DEP
15. Becca Hatchell*	FWC Division of Habitat and Species Conservation
16. Alex Reed	FDEP Office of Resilience & Coastal Protection (<i>Jenna Harper is representing DEP</i>)
17. Devin Resko	FWC Division of Marine Fisheries Management
18. Portia Sapp	FDACS Division of Aquaculture
19. Paul Thurman	NFWFMD
UNIVERSITY/RESEARCHERS/SCIENTISTS	
20. Mike Allen	Scientist: Director of UF/IFAS Nature Coast Biological Station (NCBS)
21. Erik Lovestrand	UF/IFAS/Florida Sea Grant/Franklin County Extension
The names of CAB members attending the meeting are indicated in bold font.	
<i>CAB members who participated virtually are indicated in red font and italicized.</i>	
<i>*Members whose designated alternates participated for them.</i>	

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
<i>The names of Project Team members participating in the meeting are indicated in bold font.</i>	
<i>*Team members who participated virtually are indicated in red font and italicized.</i>	

ALTERNATES FOR CAB MEMBERS	
ALTERNATE	CAB MEMBER
Kent Smith	Becca Hatchell
<i>The names of CAB member's alternates participating in the meeting are indicated in bold font.</i>	

MEMBERS OF THE PUBLIC	
PARTICIPANT	AFFILIATION
1. <i>Anne Birch</i>	TNC
2. Josh Breithaupt	Florida State University Coastal and Marine Lab
3. <i>Ed Camp</i>	University of Florida
4. <i>Cheryl Carr</i>	Seafood Work and Waterman's Association
5. Jon Creamer	FWC
6. Jared Fuqua	Florida State University Coastal and Marine Lab
7. <i>Laura Geselbracht</i>	TNC, ABSI Science Advisory Board (SAB)
8. Kennedy Hanson	ANERR
9. Carrie Jones	FDACS
10. Ken Jones	Riparian County Stakeholder Coalition
11. Steve Leitman	FSU
12. <i>Betsy Mansfield</i>	Florida State University Coastal and Marine Lab
13. Tara Stewart Merrill	Florida State University Coastal and Marine Lab
14. Dan Tonsmeire	Citizen (No Affiliation Provided)
15. Wayne Williams	Seafood Work and Waterman's Association
<i>*The names of members of the public attending virtually are italicized.</i>	

ATTACHMENT 3
NOVEMBER 29, 2023 MEETING AGENDA

ABSI COMMUNITY ADVISORY BOARD MEETING OBJECTIVES

- ✓ To Approve Regular Procedural Topics (Meeting Agenda, Workplan, and Summary Report)
- ✓ To Review Updated Workplan and Meeting Schedule
- ✓ To Receive Science and Data Collection, and Restoration Updates
- ✓ To Receive Reports from RFWG and Community Outreach Subcommittee
- ✓ To Approve Organizational Framework of the CAB Successor Group
- ✓ To Receive Public Comment Prior to Adoption of CAB Draft Final Report and Recommendations
- ✓ To Review and Evaluate Community Workshop Forum #3 Input
- ✓ To Review, Evaluate, and Adopt CAB Draft Final Report and Recommendations for the Plan
- ✓ To Receive Public Comment After Adoption of the CAB Draft Final Report and Recommendations
- ✓ To Identify Next Steps

ABSI COMMUNITY ADVISORY BOARD AGENDA

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

1)	9:00 AM	WELCOME AND ROLL CALL
2)	9:05	SOCIAL SCIENCE SURVEY
3)	9:10	AGENDA REVIEW, MEETING OBJECTIVES, AND WORKPLAN UPDATE
4)	9:20	APPROVAL OF SEPTEMBER 27, 2023 CAB MEETING AND OCTOBER 24, 2023 COMMUNITY FORUM WORKSHOP FACILITATOR'S SUMMARY REPORTS
5)	9:25	SCIENCE AND DATA COLLECTION, AND RESTORATION UPDATES <ul style="list-style-type: none"> • <i>ABSI Science and Data Collection Update.</i> Sandra Brooke, FSUCML (20) • <i>FWC (NFWF Phase 2) Restoration Project Update.</i> Devin Resko, FWC (10)
6)	9:55	WORKING GROUP AND SUBCOMMITTEE UPDATES <ul style="list-style-type: none"> • <i>Restoration Funding Working Group Update.</i> Joel Trexler (5) • <i>Community Outreach Subcommittee Update.</i> Chad Hanson (10)
7)	10:10	PARTNERS FOR A RESILIENT APALACHICOLA BAY (CAB SUCCESSOR GROUP) ORGANIZATIONAL FRAMEWORK APPROVAL <ul style="list-style-type: none"> • <i>Successor Group Subcommittee.</i> Anita Grove and Shannon Hartsfield (35)
10:45 AM		BREAK
8)	~11:00 AM	PUBLIC COMMENT OPPORTUNITY #1 — THREE MINUTES PER PERSON
9)	11:10	REVIEW AND EVALUATION OF COMMUNITY WORKSHOP FORUM #3 INPUT
10)	11:20	REVIEW, DISCUSSION, AND ADOPTION OF CAB DRAFT FINAL REPORT AND RECOMMENDATIONS FOR THE PLAN <ul style="list-style-type: none"> • <i>Review and Adoption of CAB Draft Final Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan</i>
11)	12:00	OVERVIEW OF COMMUNICATION AND DISTRIBUTION STRATEGY FOR CAB REPORT AND RECOMMENDATIONS FOR THE PLAN
12)	~12:10	PUBLIC COMMENT OPPORTUNITY #2 — THREE MINUTES PER PERSON
13)	12:20	ACTION ITEMS AND NEXT STEPS <ul style="list-style-type: none"> • Review of Next Steps • Complete Meeting Evaluation • Project Closing • CAB and Project Team Members Group Photo
12:30 pm		ADJOURN

ATTACHMENT 4
WORKPLAN, SCHEDULE, AND PROJECT FLOWCHART AND MAP

UPDATED AS OF THE NOVEMBER 29, 2023 CAB MEETING
<p>PHASE I (2019) – STANDING UP AND ORGANIZATION OF THE ABSI CAB <i>May 2019 – December 2019 (Assessment Process, Questionnaire, and 2 CAB Meetings) – Status Complete</i></p>
<p>PHASE II (2020) – SCOPING OF ISSUES, IDENTIFICATION OF PERFORMANCE MEASURES AND STRATEGIES <i>Jan. 2020 – Dec. 2020 (7 CAB Meeting & 1 Oystermen’s Workshop) – Status Complete</i></p>
<p>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 and V Evaluation <i>Jan. 2021 – Nov. 2021 (7 CAB Meeting & 2 Oystermen’s Workshops) – Status Complete</i></p>
<p>PHASE IV (2022) – EVALUATION OF DRAFT ADAPTIVE MANAGEMENT AND RESTORATION PLAN FRAMEWORK’S RESTORATION AND MANAGEMENT STRATEGIES, RESTORATION AND FUNDING PLANNING <i>Dec. 2021 – Dec. 2022 (6 CAB Meetings, 1 Oystermen’s Workshops, and 1 Community Workshop) – Status Complete</i></p>
<p>PHASE V (2023) – EVALUATION AND FINALIZATION OF RECOMMENDATIONS FOR INCLUSION IN THE APALACHICOLA BAY SYSTEM ECOSYSTEM-BASED ADAPTIVE RESTORATION AND MANAGEMENT PLAN, RESTORATION FUNDING PLANNING, SUCCESSOR GROUP PLANNING <i>Jan. 2023 – Dec. 2023 (6 CAB Meetings, 3 Community Workshops) – Status Initiated</i></p>
<p>COMMUNITY ADVISORY BOARD (CAB). The CAB initiated Phase V in January of 2023 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 models coupled with available and emerging data, research, and stakeholder knowledge. The strategies are being evaluated with the overarching goal of restoring oyster reefs 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.</p> <p>Throughout the project, the CAB members representing management and restoration agencies will vet the strategies and actions under consideration with their leadership to gauge support and feasibility of implementation. The CAB will evaluate the priority and efficacy of strategies and associated actions and identify restoration and management approaches for inclusion in the <i>Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan</i> (Plan).</p> <p>Phase V focuses on the evaluation and finalization of recommendations for inclusion in the Plan, and restoration projects and funding planning. The CAB will vote to approve their package of consensus recommendations during their November 29, 2023 meeting. <i>Status: Initiated and Ongoing</i></p> <p>1. COMMUNITY OUTREACH SUBCOMMITTEE - PUBLIC ENGAGEMENT. The CAB working through the Community Outreach Subcommittee initiated a community feedback initiative by providing information and seeking community input on the Plan Framework. The CAB will vet the results of their prioritized strategies with the larger ABS community through multiple forums including questionnaires administered through a variety of methods including Facebook, online via the ABSI website, and direct mailings. In addition, community workshops will be conducted at appropriate times to provide the Community with information on ABSI and solicit community input. <i>Status: Initiated and Ongoing</i></p>

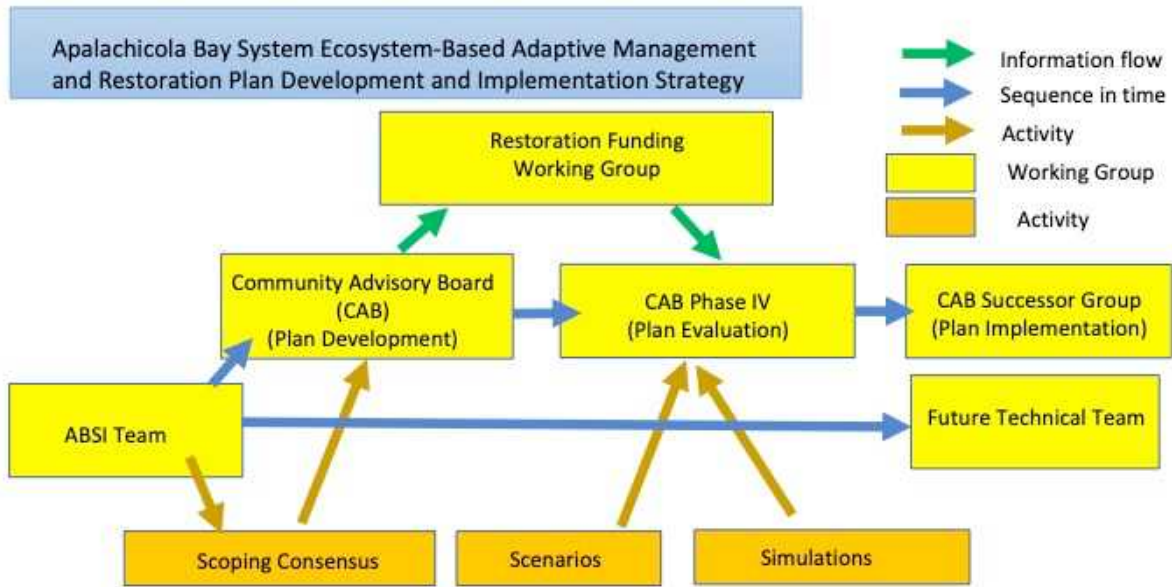
2. **RESTORATION FUNDING WORKING GROUP (RFWG).** Initiated in late 2021 the Restoration Funding Working Group’s role is to seek resources and political, governmental, and organizational support for the CAB’s priority recommendations. *Status: Initiated and Ongoing*
3. **CAB SUCCESSOR GROUP.** The CAB Successor Group will be ready to convene when the CAB completes their work on the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan. The Successor Group’s role is to organize a group of key stakeholders committed to working collaboratively for the long-term, once the CAB process is complete and to ensure that the Plan is implemented, monitored, and adaptively managed over time and has the support of the Community. The CAB will approve the Organizational Framework for the Successor Group at the November 29, 2023 meeting, and the Successor Group process will formally initiate January 2024. *Status: Ongoing Organizational and Planning Meetings. Discussion of Organizational Framework during CAB meetings. Formal Convening Pending CAB Approval of Consensus Recommendations for the Plan and the Organizational Framework for the Successor Group at the November 29, 2023 meeting.*

ABSI CAB PHASE V MEETINGS SCHEDULE AND WORKPLAN – 2023

Meeting #1 ANERR 8:30am	Feb. 1, 2023 <ul style="list-style-type: none"> • Reports and Updates <ul style="list-style-type: none"> • Fisheries Model Simulation Results & Scenarios Refinements • Review of Plan Framework Strategies and Actions • Public Comment 	Initiation of Phase V of ABSI. ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review of the <i>Apalachicola Bay Restoration and Management Plan Framework</i> and Strategies Evaluation Worksheet process. Summary and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
Meeting #2 ANERR 8:30am	April 12, 2023 <ul style="list-style-type: none"> • Reports and Updates • Acceptability Ranking of Strategies and Actions • Public Comment 	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Acceptability ranking of proposed strategies and actions for inclusion in the <i>Apalachicola Bay Restoration and Management Plan Framework</i> using the Strategies Evaluation Worksheet Process. Public comment.
Community Workshop Forum #1	April 12, 2023 ANERR 6:00pm – 8:00pm	Community Input on ABSI Restoration Approaches, ABSI Management Strategies, and ABSI Science.
Meeting #3 ANERR 8:30am	May 31, 2023 <ul style="list-style-type: none"> • Reports and Updates • Acceptability Ranking of Strategies and Actions • Public Comment 	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Evaluation of Community Workshop Forum input. Acceptability ranking of proposed revisions to strategies and actions for inclusion in the <i>Apalachicola Bay Restoration and Management Plan Framework</i> using the Strategies Evaluation Worksheet Process. Public comment.
Meeting #4 ANERR 8:30am	August 9, 2023 <ul style="list-style-type: none"> • Reports and Updates • Acceptability Ranking of Proposed Revision to Strategies and Actions 	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Discussion on the Organizational Framework for the CAB Successor Group. Acceptability ranking of proposed revisions to strategies and actions for inclusion in the <i>Draft Apalachicola Bay Restoration and</i>

	<ul style="list-style-type: none"> • Public Comment 	<i>Management Plan</i> using the Strategies Evaluation Worksheet Process. CAB Report and Recommendations Outline overview. Public comment.
Community Workshop Forum #2	August 9, 2023 ANERR 6:00pm – 8:00pm	Community Input on ABSI Restoration Approaches, ABSI Management Strategies, and ABSI Science.
Meeting #5 ANERR 8:30am	Sept. 27, 2023 <ul style="list-style-type: none"> • Reports and Updates • Approve Draft Report and Recommendations for the Plan • Public Comment 	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Discussion on the Organizational Framework for the <i>Partners for a Resilient Apalachicola Bay</i> (CAB Successor Group). Evaluation of Community Workshop Forum #2 input. Approval of the <i>CAB Draft Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan</i> . Public comment.
Community Workshop Forum #3	October 24, 2023 ANERR 6:00pm – 8:00pm	Community Input on the CAB’s recommendations for the <i>Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan</i> .
Meeting #6 ANERR 8:30am	Nov. 29, 2023 <ul style="list-style-type: none"> • Reports and Updates • Final Plan Revisions • Public Comment • Adopt Final CAB Report and Recommendations for the Plan 	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Approval of the Organizational Framework for the <i>Partners for a Resilient Apalachicola Bay</i> (CAB Successor Group). Evaluation of Community Workshop Forum #3 input. Adoption of the <i>CAB Draft Final Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan</i> , and submittal to FSUCML. Public comment.

ABSI CAB PROCESS FLOWCHART AND PROJECT AREA MAP



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



ABSI Project Area Map

ATTACHMENT 5 MEETING EVALUATION 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 in person and virtually.

There were 13 hard copy end of meeting survey questions (Evaluations) completed, and 0 completed virtually.

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

Average out of 5	5. Strongly Agree	4. Agree	3. Neutral	2. Disagree	1. Strongly Disagree
5.0	13	0	0	0	0

2.) The meeting objectives were met.

Average out of 5	5. Strongly Agree	4. Agree	3. Neutral	2. Disagree	1. Strongly Disagree
5.0	13	0	0	0	0

3.) The presentations were effective and informative.

Average out of 5	5. Strongly Agree	4. Agree	3. Neutral	2. Disagree	1. Strongly Disagree
4.9	12	1	0	0	0

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

Average out of 5	5. Strongly Agree	4. Agree	3. Neutral	2. Disagree	1. Strongly Disagree
5.0	13	0	0	0	0

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

Average out of 5	5. Strongly Agree	4. Agree	3. Neutral	2. Disagree	1. Strongly Disagree
4.8	11	2	0	0	0

6.) The facilitator accurately documented CAB Member input

Average out of 5	5. Strongly Agree	4. Agree	3. Neutral	2. Disagree	1. Strongly Disagree
5.0	13	0	0	0	0

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

Average out of 5	5. Strongly Agree	4. Agree	3. Neutral	2. Disagree	1. Strongly Disagree
4.9	12	1	0	0	0

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

Average out of 5	5. Strongly Agree	4. Agree	3. Neutral	2. Disagree	1. Strongly Disagree
5.0	13	0	0	0	0

Open Ended Survey Questions – In Person Participants

- None were offered.

Open Ended Survey Questions – Virtual Responses

- None were offered.

ATTACHMENT 6

GLOSSARY OF MODELING TERMS

Assumptions – A description of the world that is accepted as true and is based on common knowledge or theory but not on proof.

Baseline – Model output that is used as a starting point for comparison with other sets of model output.

Calibration – Process of adjusting model inputs or parameters to obtain optimal agreement between model output and observations (data).

Circulation/Hydrodynamic Model – A mathematical tool that calculates water currents and water properties (like salinity and temperature).

Data Gap – The lack of data or information necessary for a given scientific study.

Data Set – A collection of observations or measurements.

Deviation – The difference between a data point and a model prediction.

Fishery-Dependent Data – Data collected directly on a fish or fishery from commercial or sport fishermen and seafood dealers.

Fishery-Independent Data – Characteristic of information (e.g. stock abundance, index) or an activity (e.g. research vessel survey) obtained or undertaken independently of the activity of the fishing sector.

Hypothesis – An idea that can be tested.

Larval Transport – The movement of oyster larvae in the water.

Model – A series of mathematical equations that describes, with great simplification, how a part of the world works.

Model Output/Model Result – A solution or a set of solutions obtained from a model simulation.

Performance Measure/Metric – A number used to indicate the effectiveness of an option for achieving a desired outcome.

Population Dynamics – The growth, death, and reproduction of individuals over time that leads to increase, decrease, persistence or extinction of a population.

Simulations – Repeated runs of a model using different inputs (e.g., different options).

Uncertainty – A way to represent how likely model predictions are given the inherent variability in the environment and the difference between model output and observations.

Validation – Comparison of model output with a set of independent data to determine the degree of confidence in model results.

Water Quality – Describes the physical, chemical, biological, and aesthetic characteristics of water and is a measure used to determine the suitability of water for a specific purpose (e.g., drinking, fishing, swimming, etc.).

ATTACHMENT 7

GLOSSARY OF ABSI PROJECT TERMS AND DEFINITIONS

APALACHICOLA BAY SYSTEM: Consists of six bays: Apalachicola Bay, East Bay, St Vincent Sound, East and West St George Sound, and Alligator Harbor comprising a total of 155,374 acres (62,879 Ha). Confined to Franklin County and ending to the north at river mile zero (0). Important considerations include riverine and offshore inputs to the ABS as well as the reciprocal influences of outputs from the ABS to the Gulf of Mexico.

APALACHICOLA BAY SYSTEM, HEALTHY:

A healthy ecosystem is one in which material and energy flows are balanced through interacting biological, physical, and chemical processes (involving microorganisms, plants, animals, sunlight, air, water) that conserve diversity, support fully functional evolutionary and ecological processes, and sustain a range of ecological and ecosystem services.

ECOSYSTEM SERVICES: The direct and indirect contributions of ecosystems to human wellbeing. These services include **provisioning services** (food, raw materials, fresh water, medicinal resources), **regulating services** (climate, air quality, carbon sequestration & storage, moderation of extreme events, waste water treatment, erosion prevention & maintenance of soil fertility), **habitat or supporting services** (habitat for all species, maintenance of genetic diversity), and **cultural services** (recreation for mental & physical health; tourism; aesthetic appreciation and inspiration for culture, art & design; spiritual experience & sense of place).

ESTUARINE METRICS: These are variables that can be measured and used to assess the benefits or impacts of the different upstream management and climate scenarios that influence freshwater flow into the ABS.

GOAL: A goal is a statement of the project’s purpose to move towards the vision expressed in fairly broad language.

GUIDING PRINCIPLES: The Community Advisory Board’s Guiding Principles reflect the broad values and philosophy that guides the operation of the Community Advisory Board and the behavior of its members throughout its process and in all circumstances regardless of changes in its goals, strategies or membership.

OBJECTIVE: Objectives describe in concrete terms how to accomplish the goal to achieve the vision within a specific timeframe and with available resources. (E.g., *by 2023, the State of Florida will have approved a stakeholder developed Ecosystem-Based Adaptive Management and Restoration Plan for the Apalachicola Bay System.*)

OUTCOME: Outcomes describe the expected result at the end of the project period – what is hoped to be achieved when the goal is accomplished. (E.g., *an ecologically, and economically viable, healthy and sustainable Apalachicola Bay System oyster fishery and ecosystem*)

OYSTER RESOURCES: Sources of oysters that provide natural and cultural benefits to humans. These sources can come from the wild or from aquaculture (see ecosystem services). The responsible management of oyster resources for present-day needs and future generations requires integrated approaches that are place-based, embrace systems thinking, and incorporate the social, economic, and environmental considerations of sustainability.

PERFORMANCE MEASURES: The regular measurement of outcomes and results, which generates reliable data on the effectiveness, efficiency, and sustainability of programs and plans.

RESTORATION: The process of establishing or re-establishing a habitat that in time can come to closely resemble a natural condition in terms of structure and function.

STAKEHOLDERS: All interest groups whether public, private or non-governmental organizations who have an interest or concern in the success of a project and can affect or be affected by the outcome of any decision or activity of the project. For purposes of the Apalachicola Bay System Initiative, stakeholders include but are not limited to agriculture, silviculture, business, real estate, economic development, tourism, environmental, citizen groups, recreational fishing, commercial seafood industry, regional groups (i.e., ACF Stakeholders, and Riparian Counties), local government, state government, federal government, universities, and research interests.

STRATEGY: A method, action, plan of action, or policy that can be tested to determine whether it solves a problem and helps to achieve objectives and goals in the context of bringing about a desired future for the Apalachicola Bay System.

VISION: An idealized view of where or what the stakeholders would like the oyster resource and ecosystem to be in the future.

VISION THEMES: The related key topical issue area strategies that characterize the desirable future for the oyster resource and ecosystem. The Vision Themes establish a framework for goals and objectives. They are not ordered by priority.

ATTACHMENT 8

ADOPTED FINAL CAB REPORT AND RECOMMENDATIONS FOR THE PLAN

FINAL ABSI CAB REPORT AND RECOMMENDATIONS FOR THE APALACHICOLA BAY SYSTEM ECOSYSTEM-BASED ADAPTIVE RESTORATION AND MANAGEMENT PLAN

Executive Summary

The Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan (hereafter the 'Plan') is a key deliverable of the Apalachicola Bay System Initiative (ABSI), a multidisciplinary effort led by the Florida State University Coastal & Marine Laboratory (FSUCML). ABSI has been supported primarily by a grant from Triumph Gulf Coast, Inc., with contributions from Florida State University [FSU] (\$1.5M cost-share) and the Pew Charitable Trust. The Plan was developed over the course of nearly four years by a representative group of stakeholders formed into a Community Advisory Board (CAB). The 21 members of the CAB include local government officials as well as representatives from the seafood industry, other local businesses, recreational fishing industry, environmental groups, State agencies and institutions of higher learning.

Plan development by the CAB took place in collaboration with the ABSI scientific leadership team and a professional neutral facilitator (Jeff Blair, Facilitated Solutions, LLC) who provided process design and consensus building. The effort first focused on development of management and restoration vision themes, goals, outcomes, objectives and performance measures. A set of strategies for each goal was then developed with relevant performance measures followed by a prioritization exercise for each set of strategies. The themes, goals, outcomes, objectives and strategies/actions were compiled into a draft management and restoration plan framework. Decision support tools were then used to test support for strategies linked to oyster management and fisheries. Finally, strategies in the plan framework were subjected to rounds of acceptability ranking exercises ultimately producing a Management and Restoration Plan approved by the CAB.

The **Plan** consists of structural elements built around the following five **Goals**:

- **Goal A:** The Apalachicola Bay System is a healthy and productive ecosystem that includes oyster reefs in locations and with oyster abundance as similar to historical conditions as possible and that supports a vibrant and sustainable oyster fishery and other economically viable activities.
- **Goal B:** The Apalachicola Bay System is a productive, sustainably, and adaptively managed system that supports sustainable oyster resources and ecosystem services such as water quality and wildlife and fisheries habitat.
- **Goal C:** The Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan is supported by the Apalachicola Bay System stakeholders and is fully funded.
- **Goal D:** A productive and well-managed Apalachicola Bay System is supported by an actively engaged and informed stakeholder community and public.
- **Goal E:** The broader Apalachicola Bay Region is thriving economically as a result of a fully-restored Apalachicola Bay System.

Each **Goal** has an accompanying **Vision Theme** and defined **Outcome**. Each **Goal** also has a series of **Objectives**. To achieve these **Objectives**, each **Goal** has a series of **Strategies** with associated **Actions** to implement these **Strategies**. **Performance Measures** have been selected to follow progress towards attainment of **Outcomes**.

Goal A focuses on restoration of the ABS ecosystem so as to promote enhanced ecological and ecosystem services including a sustainable oyster fishery. **Goal B** is more narrowly focused on the establishment through adaptive management of a sustainable oyster fishery in the Bay. It is anticipated that the major end-users of the elements and recommended actions defined in **Goals A and B** would be State agencies charged with implementation of restoration and new management efforts including the Florida Fish and Wildlife Conservation Commission (FWC), Florida Department of Environmental Protection (FDEP) and Florida Department of Agriculture and Consumer Services (FDACS). It is also likely that Federal agencies and non-governmental organizations (NGOs) may play a role in these activities. **Goals C, D and E** involve advisory recommendations for the implementation of the restoration and management Plan, outreach and interface with all stakeholders as well as broader economic development issues. It is anticipated that the *Partners for a Resilient Apalachicola Bay* (CAB Successor Group) will be the primary end-user of these elements of the plan.

The management and restoration Plan is intended to be adaptive. By this we mean that as chosen strategies and linked actions are implemented, monitoring and assessment of results will shape the trajectory of future actions. The Plan contains a broad spectrum of suggested strategies, linked actions and performance measures as potential options to be used by stakeholder groups to achieve management and restoration goals.

ABSI CAB Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan

Franklin County and Its Oyster Fishery

Commercial fishing has been the most important economic activity in Franklin County throughout its history. The oyster industry of Apalachicola Bay has historically been a critical economic engine for the county and nearby portions of northern Florida, producing approximately 10% of the oysters harvested in the U.S. and 90% of the oysters harvested in Florida waters. Revenue from oyster harvest accounted for nearly half of Franklin County’s income prior to its decline but was always variable among years (Whitfield and Beaumariage, 1977). Commercially harvested oyster bars produced between to 1,200 bushels/acre/year, depending on rainfall and river flows, hurricanes, red tides, and market demand. Dockside oyster landings ranged from less than 500,000 pounds to over six million pounds in the 1980’s (Ednoff, 1984; Edmiston 2008). Unfortunately, the harvest crashed in 2013 (Fig. 1) despite increased fishing effort. Federal fisheries managers declared a fishery disaster in 2013. Harvest continued until 2020, when the FWC implemented a year fishery closure (FWC 2020).

The commercial fishing industry in Apalachicola Bay is an important economic engine for Franklin County and the surrounding region. It is estimated to have been responsible for \$134 million in annual economic output before its decline and

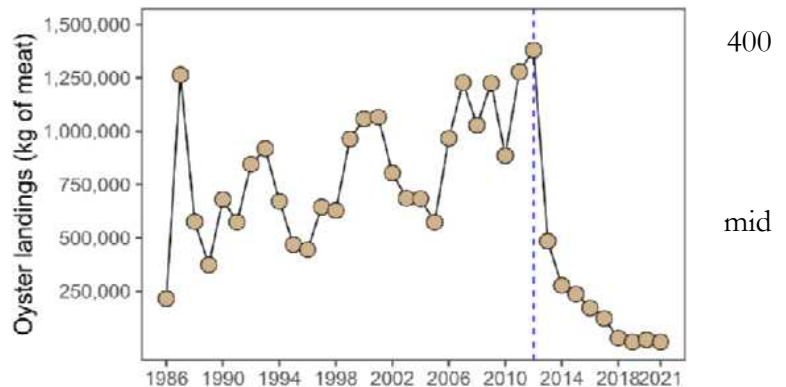


Figure 1. Apalachicola Bay Oyster Landings from 1996 to 2021. Data from the Commercial Fisheries Landings in Florida database compiled by the Florida Fish and Wildlife Conservation Commission (FWC).

<https://myfwc.com/research/saltwater/fishstats/commercial-fisheries/landings-in-florida/>

closure, with an additional \$71 million in value-added benefits (Edmiston, 2008). Of this, the oyster industry supplied as much as \$30 million of economic benefits annually. In 2006, Franklin County reported oyster catches totaling 2,127,044 pounds, finfish catches totaling 1,813,240 pounds, and shrimp landings totaling 1,272,660 pounds (Commercial Fisheries Landings in Florida <https://myfwc.com/research/saltwater/fishstats/commercial-fisheries/landings-in-florida/>).

The most recent annual estimate of economic contributions of marine commercial fishing in Franklin County from direct and indirect sources is in excess of \$18 million for 2019 (Camp et al. 2021a). It is estimated that between 60 and 85 percent of Franklin County residents made their living directly or indirectly from the fishing industry (Rockwood 1977). The Bay supported a diverse fishing industry beyond oyster production. While the oyster industry employs more people, the shrimp fishery generates more economic value (Cato 1977). Shrimp landings typically average between two and five million pounds annually and include both bay and offshore harvests. On July 1, 1995, Florida implemented a constitutional amendment closing State waters to commercial fishing with entanglement nets (gill nets), limiting harvest of estuarine finfish to recreational fishers. Recreational saltwater fishing in Apalachicola Bay is an important economic driver for the region, annually contributing over \$150 million to the local economy and supporting an estimated 1,960 jobs (Edmiston 2008). The most recent estimate of economic contributions of all marine recreational fishing trips from Franklin County in 2019 alone was greater than \$68.6 million (Camp et al 2021b). Apalachicola also supports a blue crab fishery, although historically smaller than oysters or shrimp, is also an important contributor to the local economy.

Franklin County, which surrounds most of Apalachicola Bay, is among the least populated counties in the state with 12,729 people in 2022 (BEER 2022). Per capita income in the County in 2021 was \$26,933, compared to \$35,216 for the state of Florida. Approximately 21% of the individuals earned below the poverty level, compared to 13.1% for Florida (US Census Bureau 2023). Historically over 65 percent of the Franklin County work force were employed by the commercial fishing industry (Edmiston 2008). Franklin County is predominantly rural with 96 percent of the total county area zoned for agriculture (primarily forestry) or conservation lands (Fig. 2). Much of the agriculture and conservation lands are also wetlands. Approximately 80% of the county's lands are in public ownership. Most Franklin County residents live along the coast, leaving the northern and interior portion of the county sparsely populated. There were 309 total employer establishments identified by the US Census Bureau in 2021.

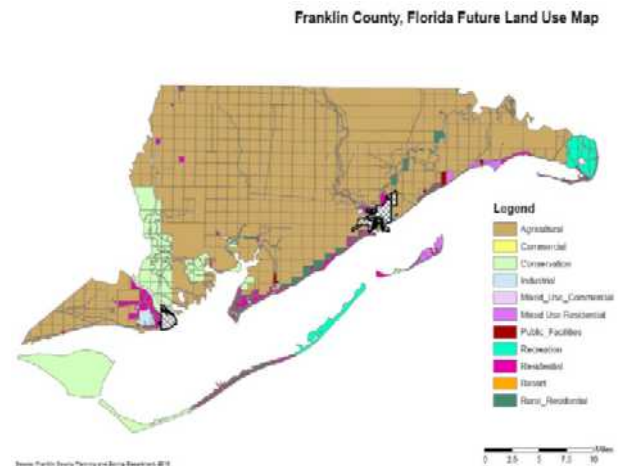


Figure 2. Land use in Franklin County illustrating concentration of population in the coastal zone. Source: Franklin County Planning and Zoning Department 2016

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Apalachicola Bay System Initiative

As the Apalachicola Bay oyster collapse unfolded, leaders at the Florida State University Coastal & Marine Laboratory (FSUCML) and FSU’s Office of the Vice President for Research concluded that the University could play a key role in addressing issues relating to the deterioration of the Bay ecosystem. Senior Research Faculty Dr. Sandra Brooke, FSUCML Director Dr. Felicia Coleman, Vice President for Research Dr. Gary Ostrander and Associate Vice President for Research Dr. W. Ross Ellington prepared and submitted a preproposal to Triumph Gulf Coast, Inc. in November of 2017 briefly outlining a program of research, restoration and management plan development as well as outreach. The effort, called the Apalachicola Bay System Initiative (ABSI), was formalized in a major proposal submitted to Triumph Gulf Coast, Inc. in the late spring of 2018. A favorable review and subsequent negotiations led to the awarding of a grant on March 15, 2019. The period of support from Triumph Gulf Coast extends to June 30, 2024. The report contained in this document constitutes one of the deliverables of the ABSI effort. We first will describe ABSI and the processes that led to the recommendations in this report.

The primary area of interest for this effort is the ABS, which consists of six bays (Apalachicola Bay, East Bay, St Vincent Sound, East and West St George Sound and Alligator Harbor; Fig. 3) comprising a total of 155,374 acres (62,879 Ha). Within this region, oysters have provided a livelihood for Apalachicola fishers for over a century. Oyster population decline has changed that, bringing a fishery collapse that heralds ecosystem decline and consideration of Apalachicola Bay and the Apalachicola-Chattahoochee-Flint (ACF) watersheds an endangered river system (AmericanRivers.org 2016).



Figure 3. Map of the ABSI study area

Tremendous focus has been placed on recovering historical freshwater input as a solution to ecosystem decline. While freshwater inflow to the estuary is important, it is only one of a number of forces influencing the success or failure of oysters in Apalachicola Bay; harvesting, climate, habitat, recruitment and survival all impact oyster populations. The ABSI has evaluated the influence of these and other factors on oyster reefs

and their communities, and through the CAB, have generated a series of management tools, and identified alternatives for management and restoration of the ABS.

The ABSI project was built on a foundation of prior and on-going work conducted by several entities including FSU, FWC, Florida Fish and Wildlife Research Institute (FWRI), University of Florida (UF), University of South Florida (USF), Apalachicola National Estuarine Research Reserve (ANERR), the Florida DEP, the Florida DACS and The Nature Conservancy (TNC). Over the past four years the ABSI science team has produced an extensive body of research into various aspects of the biology, ecology and geochemistry of the ABS, including a series of experiments to evaluate restoration approaches. The ABSI project annual reports summarize the research and outreach accomplishments and can be found on the FSUCML ABSI website (<https://marinlab.fsu.edu/absi/about-absi/>).

Apalachicola Bay System Initiative Mission Statement

ABSI seeks to gain insight into the root causes of decline of the Bay's ecosystem and the deterioration of oyster reefs, and understand why they haven't recovered despite significant restoration efforts. Ultimately, the ABSI will develop a management and restoration Plan for the oyster reefs and the health of the Bay.

Project Statement

The overall ABSI effort aims to undertake a series of scientific approaches intended to aid in the development of an ecosystem-based oyster management and restoration plan (hereafter referred to as the **Plan**) for the Apalachicola Bay System. The Plan is informed by science while involving representative stakeholders and the public in its creation, development and potential implementation by state and federal management agencies. Developing such a plan will help the state agencies responsible for marine resources improve the overall health and the rich biological diversity of the bay, including ecologically and economically important species. Because oyster populations are declining in estuaries across the Florida panhandle, ABSI project leads have worked with scientific, non-profit and governmental entities working on similar issues throughout this region to develop consistent oyster management recommendations.

The vitality of Apalachicola Bay is key to the socio-economic prosperity of Franklin County and the surrounding area. The decline of oyster habitat and loss of harvestable oysters has resulted in loss of employment in the seafood industry and reduced economic security for many Franklin County residents whose livelihoods are tied to the Bay.

ABSI's Overarching Goals

- Understand why the Apalachicola Bay oyster populations declined and why they have not recovered and identify restoration approaches that will inform larger efforts.
- Determine whether loss of oyster populations is causing a decline in overall ecosystem health
- Work with local stakeholders to develop an ecosystem-based adaptive management and restoration plan (the Plan) for Apalachicola Bay.

Purpose of the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan

The purpose of the Plan is to provide the roadmap for restoration of the Bay ecosystem and its services as well as the re-establishment and management of a sustainable wild oyster fishery. The Plan is a suite of options intended for use by the State and Federal agencies and NGOs implementing restoration and subsequent resource management. A critical component of the Plan is the role of a local stakeholder group that will replace the existing CAB and will monitor progress in implementation of adaptive management for the ABS and serve as a conduit for bidirectional information flow for all stakeholders.

Plan Development Leadership, Partners and Participant Groups

ABSI Leadership

- Principal Investigator: Dr. Sandra Brooke, Senior Research Faculty, FSUCML, FSU
- Co-Principal Investigator: Dr. Felicia Coleman (2019-2020) Director of FSUCML; Dr. Joel Trexler (2021-present), Director of FSUCML and Professor of Biological Science, FSU
- Collaborator, Dr. W. Ross Ellington, Professor Emeritus of Biological Science, FSU

Facilitated Solutions, LLC

Jeff Blair, with Facilitated Solutions, LLC, provides independent third-party neutral facilitation for the ABSI Community Advisory Board. Jeff designed the Consensus Solutions Process (see below) used by the CAB and led the Assessment Process that included interviewing stakeholders and providing recommendations for CAB membership and representation.

Plan Technical Partner

- Dr. Ed Camp, Assistant Professor of Fisheries and Aquaculture Governance, School of Forest Resources and Conservation, University of Florida. Dr. Camp has played a critical role in the development of decision support tools used in evaluating the suite of potential management strategies and actions.

Community Advisory Board

A key component of the ABSI project is to involve stakeholders in a meaningful consensus building process for development of an ecosystem-based oyster management and restoration plan. This is accomplished through the CAB, assembled by ABSI and tasked with providing input into that initiative. The 22 members of the CAB include local government officials as well as representatives from the seafood industry, commercial and recreational fishing industry and environmental groups.

- List of past and current members is found in Appendix A.
- List of CAB meetings is found in Table 1 with links to meeting reports.
- Assisting the CAB are three subcommittees: Outreach Subcommittee (Appendix B), CAB Successor Group Subcommittee (Appendix C) and Restoration Funding Working Group (Appendix D).

The Role of the Community Advisory Board in Plan Development

The overarching goal of the ABSI-CAB is to develop a package of consensus recommendations informed by the best available science, data, and stakeholders' experiences for the management and restoration of the ABS, and to ensure there is a reliable mechanism and process for the monitoring, funding, and implementation of the Plan.

A critical component of the Plan is oyster reef restoration with full consideration of factors affecting the biology, ecology and sustainable management of the resource. Restoration related actions, as indicated above,

should be informed by the best available science and shared stakeholder values, that in turn, result in an economically viable, healthy, and sustainable ABS.

The process is designed so that members can explore and evaluate oyster fishery practices and management options, and restoration policies in the ABS. The CAB’s consensus recommendations, in the form of the Plan, will be delivered to the ABSI Project Team and directed to natural resource managers and environmental regulators, and other agencies/entities as appropriate.

Overall Scope of Effort of the CAB in Development of the Plan

The CAB met 28 times over the course of nearly four years (Table 1 shows the chronology of these meetings). A consensus process was used to achieve objectives at each meeting (next section will describe in detail the **Process**). The effort first focused on development of management and restoration vision themes, goals, outcomes, objectives and performance measures. A set of strategies for each goal was then developed with relevant performance measures followed by a prioritization exercise for each set of strategies. The themes, goals, outcomes, objectives and strategies/actions were assembled into a draft management and restoration plan framework. Decision support tools were then used to test support for strategies linked to oyster management and fisheries. Finally, strategies in the plan framework were subjected to rounds of acceptability ranking exercises ultimately producing an approved draft Management and Restoration Plan.

Table 1: Chronology of CAB development of the Apalachicola Bay Ecosystem-Based Adaptive Management and Restoration Plan by Meeting [Summary reports for each meeting can be found on this link <https://marinelab.fsu.edu/absi/cab/documents/> .]

DATE	ACTIVITY
PHASE I (2019)	
Oct. 20, 2019	Organizational and Procedural.
Dec. 18, 2019	Development of vision themes, goals, outcomes, objectives and performance measures.
PHASE II (2020)	
Jan. 8, 2020	Development of vision themes, goals, outcomes, objectives and performance measures.
March 11, 2020	Development of vision themes, goals, outcomes, objectives and performance measures.
May 22, 2020	Development of strategies/actions to achieve goals and relevant performance measures.
July 16, 2020	Development of strategies/actions to achieve goals and relevant performance measures.
Sept. 9, 2020	Development of strategies/actions to achieve goals and relevant performance measures.
October 15, 2020	Development of strategies/actions to achieve goals and relevant performance measures.
Nov. 12, 2020	Development of strategies/actions to achieve goals and relevant performance measures.
PHASE III (2021)	
Jan. 13, 2021	Prioritization of strategies to achieve goals.
Feb. 24, 2021	Prioritization of strategies to achieve goals.

April 21, 2021	Review and approve revisions to draft management and restoration plan framework.
June 16, 2021	Review and approve revisions to draft management and restoration plan framework.
August 14, 2021	Review and approve revisions to draft management and restoration plan framework.
October 19, 2021	Review and approve revisions to draft management and restoration plan framework.
Nov. 16, 2021	Review and final approval of draft management and restoration plan framework.
PHASE IV (2022)	
Jan. 26, 2022	Plan development using plan framework- process
March 30, 2022	Plan development using plan framework- fisheries and management modeling scenarios as decision support tools.
May 25, 2022	Plan development using plan framework- fisheries and management modeling scenarios as decision support tools.
July 27, 2022	Plan development using plan framework- fisheries and management modeling scenarios as decision support tools.
October 18, 2022	Plan development using plan framework- fisheries and management modeling scenarios as decision support tools.
Nov. 30, 2022	Plan development using plan framework- fisheries and management modeling scenarios as decision support tools.
PHASE V (2023)	
Feb. 1, 2023	Plan development using plan framework- fisheries and management modeling scenarios as decision support tools.
April 12, 2023	Acceptability ranking of strategies.
May 31, 2023	Acceptability ranking of strategies.
August 9, 2023	Acceptability ranking of strategies and final approval of draft Apalachicola Bay Ecosystem-Based Adaptive Management and Restoration Plan.
Sept. 27, 2023	Approval of the CAB Report format and <i>Draft Report and Recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan.</i>
Nov. 29, 2023	Adoption of the Final Draft CAB Report and Recommendations <i>for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan.</i>

Consensus Development Process

The ABSI-CAB sought consensus on its recommendations for options to be evaluated using the best available science and decision-support tools for management and restoration of the ABS. The Process and procedure for consensus development were adopted by the Board on October 30, 2019.

General consensus is a participatory process whereby, on matters of substance, the members strive for agreements which all of the members can accept, support, live with or agree not to oppose. In instances where, after vigorously exploring possible ways to enhance the members' support for the final package of recommendations, and the CAB finds that 100% acceptance or support is not achievable, final consensus recommendations will require at least 75% favorable vote of all members present and voting. This super majority decision rule underscores the importance of actively developing consensus throughout the process on substantive issues with the participation of all members and which all can live with.



The CAB developed its recommendations using consensus-building techniques with the assistance of the facilitator. Techniques such as brainstorming, ranking and prioritizing approaches were utilized. The CAB's consensus process was conducted as a neutrally facilitated consensus-building process. Community Advisory Board members, project staff, and the facilitator were the only participants seated at the table. Only CAB members participated in discussions and voted on proposals and recommendations. Since a majority of the recommendations within the Plan will be provided to FWC, FWC personnel seated on the CAB abstained from all voting procedures. Throughout the process Project Team and CAB members were provided opportunities to request specific clarification from members of the public in order to assist the CAB in understanding an issue. Observers/members of the public were welcome to speak during the public comment periods provided at each meeting, and all comments submitted in writing were included in the next meeting's facilitator's summary report.

Acceptability Ranking Process

The final series of CAB meetings involved acceptability ranking of the adopted Plan strategies using the evaluation worksheet. A portion of the evaluation worksheet for the August 9, 2023 CAB meeting can be found in Appendix E. During the meetings, CAB members were asked to develop and rank strategies (options/scenarios) using a 4-Point acceptability ranking scale. This process was consistent with the Consensus Building Procedures unanimously adopted by the CAB October 30, 2019. Once ranked for acceptability, strategies with a ≥ 3.0 average ranking (75%) were considered preliminary consensus recommendations for inclusion in the package of recommendations for the Plan.

This was an iterative process, and strategies were reevaluated and re-ranked multiple times at the request of any CAB member. The status of a ranked strategy was not final until the final CAB meeting, when a vote was taken on the entire package of consensus ranked recommendations to the FSUCML. The CAB finalized their recommendations for the Plan at the November 29, 2023 meeting.

CAB members were requested to be prepared to state their minor and major reservations when asked, and to offer proposed refinements to the strategy to address their concerns. If a CAB member was not able to offer refinements to make the strategy acceptable (4) or acceptable with minor reservations (3) they were advised to rank the strategy with a 1 (not acceptable).

The following scale was utilized for the ranking exercises:

ACCEPTABILITY RANKING SCALE	4 = Acceptable, <i>I agree</i>	3 = Acceptable, I agree <i>with minor reservations</i>	2 = Not Acceptable, I don't <i>agree unless major</i> reservations <i>addressed</i>	1 = Not Acceptable
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CRITERIA TO CONSIDER FOR PROPOSING AND EVALUATING STRATEGIES AND RECOMMENDATIONS	
CRITERIA	EXPLANATION
IMPORTANCE	Is this proposed strategy and associated actions critically important to achieving the goals of the Adaptive Management and Restoration Plan?
TIMELY	Will things get worse if the proposed strategy and associated actions are not implemented?
FEASIBLE/ PRACTICAL	Is it likely that the proposed strategy and associated actions will be successful in achieving the relevant goals of the Adaptive Management and Restoration Plan?
RESOURCES	Are there resources available, or likely to become available for implementing the proposed strategy and associated actions? Is implementation cost effective?
COMMITMENT	Is there commitment from the stakeholders and regulators regarding implementation of the proposed strategy and associated actions?

Process Design and Facilitation

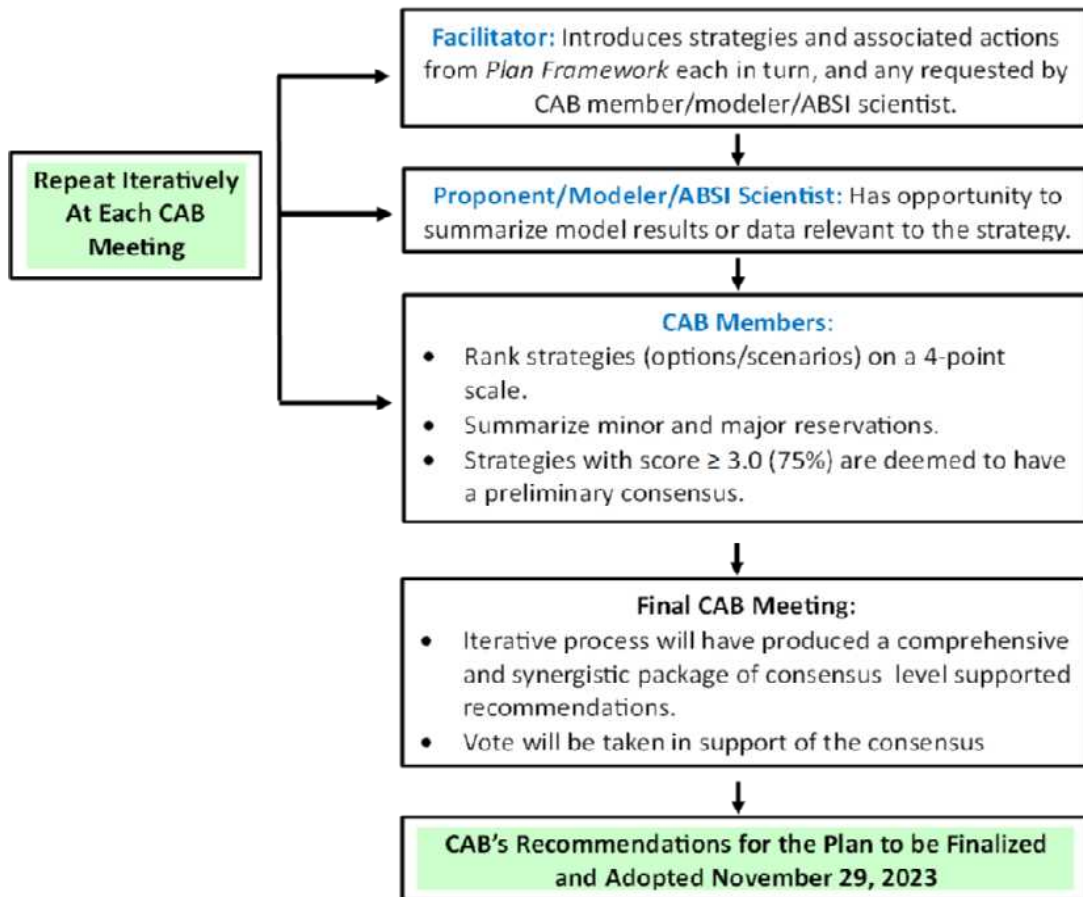
The *Strategies Acceptability Ranking Exercise Process* and the *Consensus Solutions Process* (Fig. 4) was designed by Jeff A. Blair of Facilitated Solutions, LLC. In addition, CAB meetings and community workshops were facilitated and reported on by Jeff A. Blair.

<http://facilitatedsolutions.org>.

An overview of the Consensus Solutions Process follows:

- Facilitator introduced each strategy and associated actions from the *Plan Framework* in turn.
- Proponent, Modeler, and/or ABSI Scientists as appropriate were offered an opportunity to provide a summary of the results of modeling or experimental data results relevant to the strategy as appropriate.
- CAB members were offered an opportunity to ask clarifying questions.
- The strategies and associated actions were ranked, each in turn using the 4-Point Acceptability Ranking Scale.
- CAB members were provided the opportunity to briefly summarize their minor and major reservations.
- Strategies and associated actions that achieved a ranking score of ≥ 3.0 (75%) were deemed to have a preliminary consensus level of support and would be further evaluated as appropriate.
- Strategies and associated actions could be refined to enhance support across stakeholder interests.
- This process was repeated iteratively during each CAB meeting until a comprehensive and synergistic package of recommendations achieved a consensus level of support.
- The only vote was taken at the end of the last meeting in support of the consensus package of recommendations. A 75% or greater level of support was required for consensus.
- All ranking results were preliminary until the vote was taken at the conclusion of the final meeting.

Figure 4: Flow scheme for the iterative process of acceptability ranking of Plan Strategies.



Input From Other Stakeholder Groups in Plan Development

Input and feedback from various stakeholder groups was critical in development of the Plan. Four workshops were held with oystermen from the local region (see Appendix F for list of workshops and links to workshop summary reports). Three community workshops were held (see Appendix G for list of workshops and links to workshop summary reports). In addition, a broad spectrum of outreach vehicles was employed including meetings with elected government bodies, op-ed pieces, TV and radio interviews, presence at local events and one-on-one meetings with stakeholders (see Appendices H and I for representative listings).

Structure of the Adaptive Management and Restoration Plan

The **Plan** consists of structural elements built around the following five **Goals**:

- **Goal A:** The Apalachicola Bay System is a healthy and productive ecosystem that includes oyster reefs in locations and with oyster abundance as similar to historical conditions as possible and that supports a vibrant and sustainable oyster fishery and other economically viable activities.

- **Goal B:** The Apalachicola Bay System is a productive, sustainably, and adaptively managed system that supports sustainable oyster resources and ecosystem services such as water quality and wildlife and fisheries habitat.
- **Goal C:** The Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan is supported by the Apalachicola Bay System stakeholders and is fully funded.
- **Goal D:** A productive and well-managed Apalachicola Bay System is supported by an actively engaged and informed stakeholder community and public.
- **Goal E:** The broader Apalachicola Bay Region is thriving economically as a result of a fully-restored Apalachicola Bay System.

Each **Goal** has an accompanying **Vision Theme** and defined **Outcome**. Each **Goal** also has a series of **Objectives**. To achieve these **Objectives**, each **Goal** has a series of **Strategies** with associated **Actions** to implement these **Strategies**. **Performance Measures** to follow progress towards attainment of **Outcomes** are described after the Goals A-E narrative.

Prospective End-Users of the Plan

Goal A focuses on restoration of the ABS ecosystem so as to promote enhanced ecological and ecosystem services including a sustainable oyster fishery. **Goal B** is more narrowly focused on the establishment through adaptive management of a sustainable oyster fisheries in the Bay. It is anticipated that the major end-users of the elements and recommended actions defined in **Goals A and B** would be State of Florida agencies charged with implementation of restoration and management efforts including the FWC, FDEP and FDACS. It is also likely that Federal agencies and NGOs may play a role in these activities. **Goals C, D and E** involve advisory recommendations for the implementation of the restoration and management Plan, outreach and interface with all stakeholders as well a broader economic development issues. It is anticipated that the *Partners for a Resilient Apalachicola Bay* will be the primary end-user of these elements of the Plan.

Goal A: A Healthy and Productive Bay Ecosystem

Vision Theme A: The Apalachicola Bay System, including its oyster reef resources, is sustainably managed. Water resources and affected habitats are afforded adequate protection to ensure that essential ecosystem functions are maintained, and a full suite of economic opportunities are realized.

Goal A: The Apalachicola Bay System is a healthy and productive ecosystem that includes oyster reefs in locations and with oyster abundance as similar to historical conditions as possible and that supports a vibrant and sustainable oyster fishery and other economically viable activities.

Outcome: By 2030, the Apalachicola Bay System is a healthy, productive and sustainably managed ecosystem that supports a viable oyster fishery while providing a broad suite of ecosystem services that, in turn, afford additional opportunities for sustainable economic development.

Goal A Objectives

A1) To define measurable ecosystem health metrics (e.g. oyster population demographics, condition indices, reef associated community, water quality, nutrient levels, submerged aquatic vegetation, fish and wildlife populations) that can be used to quantify ecosystem services and determine the effects of change on ecosystem functions (e.g., oyster fishery harvest, habitat for other fishery species, filtration capacity) and societal benefit derived from ABS management and restoration efforts, with target and threshold levels identified.

A2) To help establish a comprehensive monitoring plan to evaluate the health of the oysters and the ABS ecosystem and its measurable ecological functions and ecosystem services with clearly defined performance measures and strong coordination among the various entities conducting research, scientific monitoring, and restoration in the region.

A3) To use observations, monitoring, experiments and modeling to create decision support tools that can inform how a range of natural and human influenced factors will affect the ABS ecosystem.

A4) To use decision support tools to identify viable strategies for restoration and management of the ABS oyster communities and the function of the ABS ecosystem.

Table 2: Goal A — Ecosystem Restoration Prioritized Strategies

STRATEGIES (7)	ACTIONS (33)
<p>A1) Establish bay-wide metrics of ecosystem health to monitor the status of the ABS, including oyster habitat, and establish targets and thresholds that can be used to sustainably restore and manage oyster habitat and the ABS ecosystem.</p>	<p>Action 1-A) Restore and create reef structures suitable in size, location, height, and substrate type that can support a healthy and sustainable oyster ecosystem.</p> <p>Action 1-B) Obtain data at a Bay-wide scale to develop system-wide ecosystem-based metrics and models that will inform restoration and adaptive management decisions.</p> <p>Action 1-C) Design and implement projects to achieve multiple ecological and ecosystem service targets (e.g., provision of habitat for reef-associated species, water filtration, shoreline protection).</p>

	<p>Action 1-D) Implement oyster population enhancement studies to complement cultching for restoration.</p> <p>Action 1-E) Establish performance measures and ecosystem service targets that can be used to guide restoration planning, implementation, and monitoring of restoration progress.</p> <p>Action 1-F) Use habitat suitability analyses and results from oyster larval dispersal models to select optimal locations for restoring, enhancing, and/or developing new reef structures.</p> <p>Action 1-G) Continue conducting restoration experiments to test efficacy of different reef structural designs (e.g., reef dimensions, orientation, shape and/or rugosity.)</p> <p>Action 1-H) Continue using knowledge gained from experiments to recommend best practices for broad scale restoration in the ABS.</p>
<p>A2) Incorporate stakeholder knowledge and experience to help identify suitable substrate(s) (e.g., limestone, concrete, spat-on-shell, artificial structures) and the best locations for restoring, enhancing, and/or developing new reef structures.</p>	<p>Action 2-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.</p> <p>Action 2-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 create stability and protect restored reefs from siltation and sedimentation from prevailing currents and storms.</p> <p>Action 2-C) Include oystermen on material deployment projects for reef restoration to ensure material is deployed correctly and in appropriate locations.</p>
<p>A3) Determine area (acres or km²) of oyster reefs that currently support live oysters as well as the area needed to ensure sufficient spat production that will support development of sustainable oyster populations.</p>	<p>Action 3-A) Continue to update maps of existing oyster habitat using multibeam sonar and backscatter, and ground-truth for accuracy, on a timeframe determined by speed of environmental change (e.g., update mapping of the Bay every 5 years if data indicate detectable changes are occurring on this scale).</p> <p>Action 3-B) Continue to collect data to support estimates of oyster reef areas that support live oysters.</p> <p>Action 3-C) Use ecological modeling that incorporates reproductive output, recruitment (includes reef carrying capacity), natural mortality rates and fishery harvest to assess oyster population dynamics.</p>

	<p>Action 3-D) Study and incorporate into planning efforts the connectivity of shoreline (intertidal) oyster habitat with subtidal oyster reefs (e.g., larval transport modeling) when and where applicable.</p>
<p>A4) Identify monitoring needs for assessing the health of oyster populations and detecting changes in environmental conditions and habitat quality (for oysters and other reef-associated species) over time.</p>	<p>Action 4-A) Monitor intertidal and sub-tidal reef/habitat using protocols and frequencies consistent with existing monitoring. Adjust and add to monitoring program as needed to sufficiently assess oyster habitat and populations. After checking data accuracy, post updated monitoring data on a regular basis on an accessible public website.</p> <p>Action 4-B) Conduct rapid ‘spot-checks’ (e.g. using tong surveys) at a sufficient number of different locations in the Bay to supplement the site-level monitoring. Sufficient number of sites to be determined by statistical analysis of existing data. Document volume of material (rock/shell/oysters), abundance and size of live and box oysters (dead oyster with valves and hinge intact), abundance and type of predator and environmental data.</p> <p>Action 4-C) Continue and expand sites for collecting long-term in situ environmental data (e.g., conductivity, pH, and temperature) and integrate ANERR environmental and nutrient data (e.g., Total Carbon, Nitrogen, and Phosphorus) as correlated with oyster metrics.</p> <p>Action 4-D) Generate habitat condition indicators using monitoring data, and other ecological factors (e.g., oyster-associated communities and structural complexity).</p> <p>Action 4-E) Evaluate the impacts of anthropogenic (human) nutrient loading and pollutants to oyster resources and the Bay ecosystem.</p> <p>Action 4-F) Use data to evaluate status of oyster populations, oyster ecosystem health and quality of ecosystem services.</p> <p>Action 4-G) Integrate ecosystem services metrics into a monitoring and adaptive management program to assess ecosystem recovery progress.</p>
<p>A5) Use and update recently developed ecosystem models that forecast future environmental conditions and oyster</p>	<p>Action 5-A) Ensure data collected for use in ecosystem modeling are entered, receive data quality checks, and are made available to the public in an accessible online format.</p>

<p>population status for management and restoration strategies and decisions.</p>	<p>Action 5-B) Incorporate existing data to forecast acceptable future environmental scenarios (or forecasts) and analyze potential effects on oyster populations and ecosystem-level services and habitat metrics (targets).</p> <p>Action 5-C) Coordinate with appropriate state and federal agencies, out-of-state user groups, and other initiatives working on both geographically-constrained and basin-wide water-flow alterations and management strategies that affect the health of the ABS.</p> <p>Action 5-D) Use models to identify potential oyster restoration areas that could be used as protected spawning reefs to enhance recruitment and productivity of other reefs in the ABS.</p>
<p>A6) Conserve and/or restore Bay (landscape) habitat (i.e., Submerged aquatic vegetation (SAV) including seagrass, and wetland and riparian habitat) to work synergistically with oyster habitat restoration to enhance restoration of the ABS.</p>	<p>Action 6-A) Develop restoration projects in the Bay that work toward meeting the ecosystem-level metrics for the Bay.</p> <p>Action 6-B) Monitor and model changes to foundational habitat (e.g., SAV, mangroves, salt marsh grasses) for identifying management and restoration priorities.</p>
<p>A7) Develop criteria for restoring specific reefs or reef systems that are resilient to adverse environmental conditions or natural disasters and incorporate adaptive management actions into the Plan, as appropriate.</p>	<p>Action 7-A) Restore and manage oyster habitat and reefs that are resilient to adverse environmental conditions, episodic events, or natural disasters and incorporate adaptive management actions into the Plan, as appropriate.</p> <p>Action 7-B) Develop and incorporate metrics established elsewhere in the Plan for monitoring and evaluating the degree of damage and potential for recovery.</p> <p>Action 7-C) Develop an approach for mitigating damage (e.g., physical repair, spat supplements, or some combination of both).</p> <p>Action 7-D) 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.</p> <p>Action 7-E) Apply projected climate scenarios to larval dispersal and habitat suitability models to identify target areas for restoration that will persist under future conditions (i.e., increased temperature, extreme weather, sea level rise).</p>

Goal B: Sustainable Management of Oyster Resources

Vision Theme B: A restored Apalachicola Bay System has resulted in a sustainably managed and adequately enforced wild harvest oyster fishery while also providing opportunities for other economically viable and complementary industries, including tourism and aquaculture. This is accomplished by working collaboratively with stakeholders to create, monitor and fund a plan that ensures that the protection of the habitat and the fishery it supports is informed by science, stakeholder input, and industry experience, and is implemented in a manner that provides both fair and equitable access to and protection of the resource.

Goal B: The Apalachicola Bay System is a productive, sustainably, and adaptively managed system that supports sustainable oyster resources and ecosystem services such as water quality and wildlife and fisheries habitat.

Outcome: By 2030, an engaged and collaborative group of stakeholders will have contributed to and helped spearhead a fully funded science-driven plan to sustainably manage oyster resources in the Apalachicola Bay System.

Goal B Objectives

B1) Using strategies and actions identified in this document (the Plan), develop a separate science-based oyster recovery and adaptive management plan through a transparent and inclusive process involving both commercial and recreational industries and includes: broad stakeholder and community support; a long-term, comprehensive monitoring plan that will be is provided to, with the goal of implementation by state agencies and their contractors; a regulatory framework that allows for rapid modifications when needed to address changing environmental conditions; and enforceable regulations that contain penalties sufficient to deter violations and harm to the resource. This Plan must be constructed with the direct involvement of entities within the State of Florida (e.g., FWC, FDACS, State Legislature) in cooperation with other relevant agencies to enhance the likelihood of consideration for implementation.

B2) To evaluate oyster aquaculture best-management practices that allow for the unimpeded recovery of oyster’s reefs, the oyster fishery, and the ecological and societal health of the ABS ecosystem while providing economic opportunities to the aquaculture industry.

Table 3: Goal B — Prioritized Strategies for Sustainable Management of Oyster Resources

STRATEGIES (9)	ACTIONS (40)
<p>B1. Evaluate a suite of management approaches that in combination achieve the goal of maintaining a sustainable wild oyster fishery as measured in relation to performance metrics for determining success identified in Goal A of the Plan.</p>	<p>Action 1-A) Evaluate the potential for a limited-entry oyster fishery that would be managed adaptively based on an adopted sustainable harvest level through a transparent representative stakeholder driven consensus-building process that includes vetting the plan with local oystermen and FWC law enforcement.</p> <p>Action 1-B) Consider implementation of a Bay-wide summer (June – August) wild-harvest fishery closure.</p>

	<p>Action 1-C) Consider daily harvest limits in conjunction with a Monday – Friday five-day harvest week.</p> <p>Action 1-D) Consider a recreational wild oyster harvest limit (e.g., the hand-harvesting of only one 5-gallon bucket of oysters), and allow recreational hand-harvesting during the same season the fishery is open to commercial harvest.</p> <p>Action 1-E): Evaluate managing harvest areas to prevent the concentration of effort in locations by allowing all of the legal and approved (by FDACS) harvest areas of the Bay to be open during the harvest season and harvesting hours (Action 1-B and 1-C above).</p> <p>Action 1-F): Evaluate existing allowable and minimally destructive alternative gear type options and harvest methods, including the use of experimental gear for wild oyster harvesting.</p>
<p>B2. Develop specific criteria and/or conditions, with related performance measures from Goal A for the reopening and closing of Apalachicola Bay to limited wild oyster harvesting.</p>	<p>Action 2-A.) Use the best available science and decision-support tools to develop criteria for opening and closing wild oyster harvest and for determining sustainable harvest before the harvest season and during the harvest season in conjunction with the annual stock assessments and frequent monitoring.</p> <p>Action 2-B) Select a reasonable but conservative starting target for reopening the fishery and adjust (through adaptive management) the allowable harvest based on monitoring and oyster population analysis (e.g., stock assessments).</p> <p>Action 2-C) Ensure that definitions of oyster population health are based on metrics/criteria specific to the resource in addition to the fishery.</p> <p>Action 2-D) Evaluate harvest-level or oyster population-based metrics used to manage oyster reef harvest at sustainable target levels and above threshold levels. Consider graduated metrics that serve as targets, or indicators when harvest should be limited or closed. This should be applied by area or reef data allows.</p> <p>Action 2-E) Consider temporary wild harvest closures based on the results of oyster population monitoring relative to the established metrics.</p> <p>Action 2-F) Add a spatial component to the ecological and fishery modeling to approximate historical and existing reefs and reassess</p>

	management strategies based on the evaluation of modeling scenarios.
B3. Conduct an oyster stock assessment for the Apalachicola Bay System with periodic updates.	<p>Action 3-A) Conduct annual or biannual stock assessments 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.</p> <p>Action 3-B) Conduct monitoring (i.e., spot-checks) of oyster abundance during the fishing season to facilitate adaptive management of harvest limits.</p>
B4. Recommend FWC Law Enforcement review enforcement strategies and penalties to assure sufficient deterrence of harvest or sale of undersized oysters, violations that harm wild or leased oyster reefs and other natural resources, and other matter that hinder restoration efforts in the ABS.	<p>Action 4-A) Develop strategies to increase enforcement presence and number of checkpoints to provide a deterrent to illegal activities.</p> <p>Action 4-B) Ensure law enforcement presence during peak harvesting periods, and on the water during harvest season hours.</p> <p>Action 4-C) 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)</p> <p>Action 4-D) Statutes and/or rules should be revised 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.</p> <p>* Sampling and other data collection activities shall not be impacted by this recommendation.</p> <p>Action 4-E) Evaluate and enhance, as needed, the regulations and enforcement practices to ensure dealers accurately identify the source of oysters after processing and packaging.</p> <p>Action 4-F) 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.</p> <p>Action 4-G) Work with oystermen to evaluate current rules and regulations to ensure they are enforced consistently and fairly.</p> <p>Action 4-H) FWC should evaluate and seek authority to implement a tiered system of penalties for willful violators (increased fines and</p>

	<p>license suspensions ranging from increased length of suspension to the permanent loss of license) to keep willful violators out of the industry.</p> <p>Action 4-I) Encourage community and industry support for consistent judicial imposition of penalties within the existing penalties framework for oyster harvest violations, including imposing stricter penalties for habitual and willful violators.</p> <p>Action 4-J) Prior to the opening of each harvest season, conduct a joint workshop between law enforcement and the oystermen to review the current rules 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 law enforcement and oystermen.</p> <p>Action 4-K) Work together and with other stakeholders to seek funds to support the recommended increased law enforcement presence in the Bay.</p> <p>Action 4-L) Establish the 5% allowable undersize oyster limit for both harvesters and dealers.</p> <p>Action 4-M) 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.</p>
<p>B5. Establish co-management advisory committees to provide advice and oversight to state managing agencies on oyster habitat and wild harvest. Evaluate the development of a policy that would require setting sustainable harvest goals and placing limitations on or a complete closure to harvesting in certain areas (e.g., important spawning reefs) based on the results of data (e.g., stock assessment, larvae transport modeling) collected and evaluated under a comprehensive monitoring program designed to sustainably manage the resource.</p>	<p>Action 5-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.</p> <p>Action 5-B) Convene an Oyster Fishery Advisory Board within FWC to review and make recommendations on management and enforcement of the oyster fishery statewide.</p>
<p>B6. Recommend policies and actions that retain and recycle shell or other suitable</p>	<p>Action 6-A) Develop agency rules and policies that require shell retention and/or obtain shell or other suitable material for habitat</p>

<p>material for habitat replenishment in the Apalachicola Bay System.</p>	<p>replenishment (through a fee or incentive program). Action 6-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 6-C) Establish and/or expand partnerships with local organizations, stakeholder groups, industry, and universities in shell recycling programs.</p>
<p>B7. Use decision-support tools to evaluate and develop a system of potential closed areas (e.g., spawning reefs) 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.</p>	<p>Action 7-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. Action 7-B) Use ecological quantitative modeling outputs to identify: the oyster population abundance that can support sustainable harvest; percentage of the total reef area that is sufficiently productive to support sustainable harvest; annual recruitment required to support sustainable harvest; and to determine the amount and frequency of habitat replacement to maintain productive oyster reefs.</p>
<p>B8. Work with FDACS and oyster aquaculture industry stakeholders 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</p>	<p>Action 8-A) Develop maps using FDACS data showing all proposed and existing 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. Maps should be updated as frequently as is feasible to assure their usefulness. Action 8-B) Evaluate and consider programs and policies that use farmed oysters for restoration on wild oyster reefs and to retain oysters and/or shells from aquaculture industry to be recycled on wild reefs.</p>
<p>B9. Assess the effectiveness of an oyster replenishment program for maintaining a sustainable wild oyster harvest in Apalachicola Bay. Specific areas would receive regular clutching and/or deployment of hatchery spat-on-shell and would be subject to the same fishery</p>	<p>Action 9-A) Conduct field studies of survival of planted spat-on-shell to harvestable size and time required to attain market size. Action 9-B) Develop and use fishery models to estimate the amount and frequency of cultch and/or spat-on-shell required to maintain the</p>

<p>management regulations as non-supplemented areas.</p>	<p>minimum threshold for sustainable harvest (i.e., 400 bags/acre).</p> <p>Action 9-C) Conduct cost-benefit analysis of deploying cultch and/or spat-on-shell in support of wild oyster harvest in Apalachicola Bay. This includes cost of cultch and spat-on-shell production, cost of deployment, survival of hatchery spat, and value of harvest and associated industry to ensure the economic viability of replenishing activities.</p> <p>Action 9-D) Monitor the stability of oyster populations using the oyster replenishment program approach to wild fishery harvest, to determine whether deploying cultch or spat-on-shell helps reduce natural fluctuations in oyster populations.</p>
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Goal C: A Fully Funded Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan Supported By Apalachicola Bay System Stakeholders Strategies To Ensure The Implementation, Monitoring, And Adaptability Of The Plan

Vision Theme C: The Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan is science-based, developed with engagement and support from the Apalachicola Bay System stakeholders, and is fully funded.

Goal C: The Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan is supported by the Apalachicola Bay System stakeholders and is fully funded.

Outcome: By 2030, the Apalachicola Bay System is a productive and sustainably managed ecosystem. A fully funded and well-executed science-based Ecosystem-Based Adaptive Management and Restoration Plan that incorporates the monitoring necessary for evaluation and adaptation that is developed and broadly supported by Apalachicola Bay System stakeholders with guidance from a permanent stakeholder advisory group.

Goal C Objectives

- C1) To establish a fully funded permanent, representative stakeholder process to monitor the long-term implementation of the Plan.
- C2) To identify funding sources and define mechanisms for full implementation of the Plan.

Table 4: Goal C — Prioritized Strategies for Implementation of the Plan

STRATEGIES (2)	ACTIONS (12)
<p>C1) <i>Partners for a Resilient Apalachicola Bay, which is the successor group to the CAB, will have an open and transparent process for the implementation of the Plan with many opportunities for stakeholder engagement and input in a variety of forms (e.g., workshops, online, public/government meetings) for generating awareness and support while incorporating any changes the <i>Partners for a Resilient Apalachicola Bay (PRAB)</i> deems appropriate and necessary to fulfill the Plan’s goals and objectives.</i></p>	<p>Action 1-A) The PRAB actively engages with state programs to encourage their adoption of long-term monitoring guidelines and metrics (see Goal A) for assessing water quality, oyster abundance, and demographics and to regularly review and update these guidelines and metrics to maintain a healthy and sustainable oyster harvest and Bay ecosystem.</p> <p>Action 1-B) The PRAB will monitor the Plan’s implementation and make recommendations for revisions required to adaptively respond to changing conditions.</p> <p>Action 1-C) The PRAB will encourage agencies to prioritize the Plan’s recommendations for investing more funding in the management and restoration of oyster resources.</p> <p>Action 1-D) The PRAB will support State legislators and state agencies in the development of funding strategies, and incentives for involving local oystermen, seafood dealers,</p>

	<p>restaurants, aquaculture operations, and private citizens in oyster reef restoration efforts that will increase the viability of oyster resources.</p> <p>Action 1-E) The PRAB facilitates bidirectional information flow between agencies implementing the restoration and management plans and the public, other government entities and NGOs.</p>
<p>C2) Create a comprehensive funding approach for the Apalachicola Bay System Ecosystem-Based Adaptive Restoration and Management Plan implementation including a comprehensive analysis for future grant funding for strategies that support sustainable monitoring deriving from the Plan. [Status: Initiated and Ongoing]</p>	<p>Action 2-A) Evaluate and seek funding sources for implementation of management and restoration strategies included in the Plan (e.g., state agencies, region-wide Gulf trustee implementation group for oil spill settlement funding, federal agencies).</p> <p>Action 2-B) Evaluate and seek funding for the engineering design, permitting and implementation of habitat restoration efforts based on oyster habitat suitability mapping and modeling and restoration and management targets in consultation with stakeholders.</p> <p>Action 2-C) Evaluate and seek funding sources to generate awareness, education, and support for a healthy oyster and ABS ecosystem.</p> <p>Action 2-D) Evaluate and seek long-term funding for a comprehensive monitoring program that is used across programs and projects with a dashboard on metrics and indicators to leverage resources, standardize the metrics and indicators measured, and to share data.</p> <p>Action 2-E) Develop and seek a funding source to provide cultch for habitat restoration on an ongoing basis.</p> <p>Action 2-F) Work across estuary programs to fund and leverage large scale monitoring for the Perdido to Suwanee region.</p> <p>Action 2-G) The PRAB should evaluate whether to initiate the development of an Apalachicola Bay Estuary Program (ABEP) to coordinate and lead in the implementation and monitoring of the Plan. The PRAB should explore whether it's a better model to be a part of the Environmental Protection Agency's (EPA) National Estuary Program or to model an ABEP after the EPA program, and assess alternative funding models such as those used by the other Florida Panhandle estuary programs.</p>

Goal D: An Engaged Stakeholder Community And Informed Public Strategies To Support Education, Outreach, And Community Support For The Plan

Vision Theme D: Stakeholders of the Apalachicola Bay System are committed to working together to disseminate relevant information and advocate for a sustainably managed oyster habitat and a healthy Bay ecosystem. In so doing, the group will facilitate innovative research, development and implementation of best management practices and serve as a hub for information exchange that supports new innovation, education and communication opportunities.

Goal D: A productive and well-managed Apalachicola Bay System is supported by an actively engaged and informed stakeholder community and public.

Outcome: By 2030, stakeholders, private and nonprofit civic leaders, and the public are informed of the importance of sustaining the health of the Apalachicola Bay System, and are engaged and working actively together along with elected and appointed leaders and managers to invest in and implement the Plan.

Goal D Objectives

D1) To coordinate community engagement efforts to increase public awareness of and support for a healthy and well-managed ABS ecosystem; and to ensure that businesses, industries, non-profits, community groups, individuals, and local governments are supportive and included in these efforts.

D2) To measure public and stakeholder understanding of the issues important to the health and restoration of the Bay and socio-economic indicators.

Table 5: Goal D — Prioritized Strategies for An Engaged Stakeholder Community and Informed Public

STRATEGIES (2)	ACTIONS (7)
<p>D1) Build, with the help of the PRAB, community support and stewardship by educating stakeholders on the importance of maintaining a healthy ABS ecosystem and oyster reefs and by engaging them in the Bay restoration through a variety of hands-on programs.</p>	<p>Action 1-A) The PRAB shall support development of a community outreach strategy intended to inform and educate stakeholders and the public about the research, the Plan, and focusing on a healthy ABS ecosystem. The audience will include local city, county, and state government officials, businesses and organizations, citizens of every age, and other interested stakeholder groups.</p> <p>Action 1-B) Work with local groups, agencies, businesses and other stakeholders to develop a successful shell-recycling program.</p> <p>Action 1-C) Work with local groups, agencies, businesses and other stakeholders to identify sources of shell, or other restoration material.</p> <p>Action 1-D) Develop a “Bay Stewards” program to honor, reward, and provide incentives for</p>

	businesses and individuals that demonstrate their stewardship of the resource.
D2) Support and participate in providing educational opportunities for students at all levels (primary & secondary school through college) to understand the value of their coastal ecosystems, importance of stewardship and the role oysters play in ecosystem health and fisheries.	<p>Action 2-A) Work with existing entities (e.g., WeatherStem, Scientist in Every Florida School program of the Florida Museum) to expose more K-12 students to the research being conducted to support ABS restoration and management.</p> <p>Action: 2-B) Provide training and financial support for new workforce entrants in the Franklin County Community through an aquaculture internship program.</p> <p>Action 2-C) Provide research opportunities for undergraduate and graduate students in science that supports the Plan's goals.</p>

Goal E: A Thriving Economy Connected To A Restored Apalachicola Bay System Strategies To Monitor, Assess, And Report On The Economic Viability Of The Plan

Vision Theme E: A restored Apalachicola Bay System sustains a vibrant commercial oyster fishery, a thriving aquaculture industry and recreational and tourism-related activities and development opportunities that underpin a strong local economy and resilient coastal community.

Goal E: The broader Apalachicola Bay Region is thriving economically as a result of a fully-restored Apalachicola Bay System.

Outcome: By 2030, the broader Apalachicola Bay Region is thriving economically as a result of a restored Apalachicola Bay System that reflects a unique coastal cultural heritage, based on a vibrant oyster fishery, while simultaneously providing new opportunities for sustainable and responsible development, business, recreation and tourism.

Goal E Objectives

- E1) To ensure that economic indicators of the commercial oyster fishery and associated industries in the ABS demonstrate increasing viability and growth.
- E2) To ensure that industries and businesses within the ABS are compatible with a healthy and well-managed ABS ecosystem.
- E3) To develop growth management policies, plans and regulations affecting the ABS that are compatible with a healthy and well-managed ABS ecosystem while maintaining a thriving economy and supporting cultural heritage.
- E4) To develop an oyster aquaculture industry that provides economic opportunities and is complementary to the wild harvest fishery.

Table 6: Goal E — Economic Strategies Outside ABSI Scope Prioritized Strategies

STRATEGIES (2)	ACTIONS (10)
<p>E1) Engage all stakeholders to support the regional economy linked to a restored and functionally robust ABS.</p>	<p>Action 1-A) Engage commercial fishermen in the restoration of the Bay and encourage future participation in restoration such as monitoring, cultching, and shell recycling.</p> <p>Action 1-B) Coordinate with the local business community and governing bodies (i.e., city and county commissions) to ensure that growth management plans, land use and development regulations meet strong standards that are compatible with and minimize the environmental impact of industry and business activities within the ABS and are conducive to a healthy ecosystem.</p> <p>Action 1-C) Coordinate with and encourage recreational businesses and activities that recognize the importance of and support a</p>

	<p>sustainable commercial oyster fishery and the importance of the seafood industry to the Region’s cultural heritage.</p> <p>Action 1-D) Work with existing partners (e.g., the Chamber of Commerce, Apalachee Regional Planning Council, and city and county staff) and initiatives such as the Regional Recreation Economy Alliance to leverage resources to support the local economy and monitor and report on the economic benefits of a restored Apalachicola Bay System (ABS). Include key economic indicators relevant to the commercial oyster fishery and associated industries in the region. Develop a dashboard that includes key economic indicators over time based on restoration efforts in the ABS.</p>
<p>E2) Develop economic information and tools necessary to support efforts connecting ABS restoration and management with local and regional economies.</p>	<p>Action 2-A) Recommend economic monitoring and enforcement programs to assure quality of data necessary for metrics that measure economic output from and regional impact of harvest on oyster reefs.</p> <p>Action 2-B) Support development of planning strategies tied to economic indicators that consider future conditions (climate, SLR, altered river flow) and their effects on the ABS.</p> <p>Action 2-C) Review land development regulations to provide flexibility while supporting and enhancing efforts to maintain and revitalize working waterfronts in Apalachicola and Eastpoint to ensure preservation of Franklin County’s cultural heritage and a viable seafood industry.</p> <p>Action 2-D) Work with oystermen and other community stakeholders to promote markets for post-recovery Apalachicola oysters products.</p> <p>Action 2-E) Develop complementary industries in wild oyster harvest and oyster aquaculture that provide new economic opportunities by building a network of experts that can help Franklin County citizens build successful programs through business training, identifying sources of funding for equipment, and developing products that will enhance and diversify local industries.</p> <p>Action 2-F) Develop new markets for selling oysters to areas within and outside of Florida in part by investing in location (Apalachicola Bay) branding.</p>

Performance Measures

The regular measurement of outcomes and results, which generates reliable data on the effectiveness, efficiency, and sustainability of programs and plans. The decision support tools will be used when available to forecast results that will help weigh the potential outcomes of different strategies.

Table 7: Performance Measures for Goals A-E.

GOAL A—A HEALTHY AND PRODUCTIVE BAY ECOSYSTEM	
OBJECTIVES	RECOMMENDED METRICS
<p>A1) To define measurable ecosystem health metrics (e.g. oyster population demographics, condition indices, reef associated community, water quality, nutrient levels, submerged aquatic vegetation, fish and wildlife populations) that can be used to quantify ecosystem services and determine the effects of change on ecosystem functions (e.g., oyster fishery harvest, habitat for other fishery species, filtration capacity) and societal benefit derived from ABS management and restoration efforts, with target and threshold levels identified.</p> <p>Goal for Objective A1: User-friendly informative decision support tools available to ABS resource managers.</p>	<ul style="list-style-type: none"> • Oyster population dynamics (recruitment, growth, mortality, shell budgets). • River flows under climate and management scenarios (River flow model). • Current speed and direction and particle trajectories (proxy for larval dispersal), under different river flow, tidal and wind-forced scenarios (hydrodynamic model). • Temperature, salinity, oxygen, pH, nutrients and organic carbon dynamics under different climate and management scenarios (combined river flow and hydrodynamic models). • Reef area and height (total area of patches of living and nonliving oyster shell or substrate with and without live oysters). • Area and distribution of suitable oyster habitat (from predictive habitat models) for current and future conditions.
<p>A2) To help establish a comprehensive monitoring plan to evaluate the health of the oysters and the ABS ecosystem and its measurable ecological functions and ecosystem services with clearly defined performance measures and strong coordination among the various entities conducting research, scientific monitoring, and restoration in the region.</p> <p>Goal for Objective A2: A monitoring plan approved by stakeholders and resource management.</p>	<ul style="list-style-type: none"> • Regularly updated maps of intertidal and subtidal reefs • Oyster recruitment rates • Density (#/m²) of live and dead oyster juveniles (<25mm), sub-adults (26-75 mm) and market size (> 76 mm) adults. • Oyster size-frequency distribution (using shell height) (mm) • Reproductive status • Condition index • Pest and predator prevalence

	<ul style="list-style-type: none"> • Disease prevalence • Environmental variables (temperature, salinity, oxygen, turbidity, pH, nutrients)
<p>A3) To use observations, monitoring, experiments and modeling to create decision support tools that can inform how a range of natural and human influenced factors will affect the ABS ecosystem.</p> <p>Goal for Objective A3: Management and restoration plan that increases ecological function of oyster reefs in the ABS.</p>	<ul style="list-style-type: none"> • Understanding of optimal restored reef, placement, dimensions and materials. • Identification of optimal locations for broodstock reefs (areas closed to harvest). • Increase density of legal oyster populations on both restored and non-restored reefs (#/m²).to at least 100 m³ (levels observed in 2000). • Statistically significant increase (over current conditions) in diversity and abundance of ecologically- and economically-important species (resident and transient). • Maintenance of sufficient live oysters and dead shell to sustain a healthy oyster reef ecosystem.
<p>A4) To use decision support tools to identify viable strategies for restoration and management of the ABS oyster communities and the function of the ABS ecosystem.</p> <p>Goal for Objective A4: Improved oyster reef ecosystem services for the ABS.</p>	<ul style="list-style-type: none"> • Change in the amount of shoreline habitat that is protected (Goal: increase in shoreline extent, elevation, marsh cover). • Change in the amount of sustainable wild oyster harvest that is supported by restored oyster populations. • Improved recreational and commercial fisheries of oyster-reef related species (stone crab, sheepshead, drum). • Improved water clarity in the vicinity of restored oyster reefs.
GOAL B—SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES	
<p>B1) Using strategies and actions identified in this document (the Plan), develop a separate science-based oyster recovery and adaptive management plan through a transparent and inclusive process involving both commercial and recreational industries and includes: broad stakeholder and community support; a long-term, comprehensive monitoring plan that will be is provided to, with the goal of implementation by state agencies and their contractors; a regulatory framework that allows for rapid modifications when needed to</p>	<ul style="list-style-type: none"> • Establish sustainable allowable catch in total biomass (kg), including harvest rate and shell budgets. • Incorporate commercial and recreational harvest in oyster stock assessment model for ABS. • Model different adaptive management approaches, to promote sustainability of the fishery, and long-term planning

<p>address changing environmental conditions; and enforceable regulations that contain penalties sufficient to deter violations and harm to the resource. This Plan must be constructed with the direct involvement of entities within the State of Florida (e.g., FWC, FDACS, State Legislature) in cooperation with other relevant agencies to enhance the likelihood of consideration for implementation.</p> <p>Goal for Objective B1: A stakeholder supported adaptive management plan for the ABS.</p>	<p>and investment by harvesters and dealers.</p> <ul style="list-style-type: none"> • Assign some existing reefs as broodstock reefs that are closed to harvest • FWC law enforcement increases presence during oyster open season, and develops appropriate penalties for regulation violations • FWC establishes a long-term state-wide oyster monitoring program
<p>B2) To evaluate oyster aquaculture best-management practices that allow for the unimpeded recovery of oyster’s reefs, the oyster fishery, and the ecological and societal health of the ABS ecosystem while providing economic opportunities to the aquaculture industry.</p> <p>Goal for Objective B1: Identify positive and negative interactions between oyster aquaculture and wild oyster restoration and fisheries.</p>	<ul style="list-style-type: none"> • FDACS, FWC or other entity supports studies to identify aquaculture practices that affect oyster restoration and fisheries, and other habitats within the ecosystem.
<p>GOAL C—A FULLY FUNDED AND SUPPORTED MANAGEMENT & RESTORATION PLAN</p>	
<p>C1) To establish a fully funded permanent, representative stakeholder process to monitor the long-term implementation of the Plan.</p> <p>Goal for Objective C1: Establish a stakeholder group to ensure community support for the management and restoration plans.</p>	<ul style="list-style-type: none"> • Creation of an ABSI CAB successor group to continue stakeholder engagement in the management and restoration process
<p>C2) To identify funding sources and define mechanisms for full implementation of the Plan.</p> <p>Goal for Objective C2: Obtain sufficient funding to implement restoration and management plans.</p>	<ul style="list-style-type: none"> • Form a small stakeholder group that will identify and obtain funding for large scale continued restoration of the ABS oyster reefs.
<p>GOAL D—AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC</p>	
<p>D1) To coordinate community engagement efforts to increase public awareness of and support for a healthy and well-managed ABS ecosystem; and to ensure that businesses, industries, non-profits, community groups, individuals, and local governments are supportive and included in these efforts.</p> <p>Goal for Objective D1: An engaged and informed community, including K-12 and adults in the local area and beyond.</p>	<ul style="list-style-type: none"> • Number of people with improved understanding of the ecosystem services provided by oysters • Number of businesses, schools, industries, non-profits, and local governments participating in outreach efforts. • Number of volunteers participating in oyster reef restoration efforts.

	<ul style="list-style-type: none"> • Number of internship program “graduates” that enter the oyster aquaculture workforce in the ABS or other estuary in Florida. • Number of K-12 students reached by ABSI.
<p>D2) To measure public and stakeholder understanding of the issues important to the health and restoration of the Bay and socio-economic indicators.</p> <p>Goal for Objective D2: Understand stakeholder commitment to a healthy ABS ecosystem.</p>	<ul style="list-style-type: none"> • Survey of stakeholders to assess level of understanding of the ecosystem services provided by oysters, and commitment to adopting measures that improve ABS health.
GOAL E—A THRIVING ECONOMY CONNECTED TO A RESTORED ABS	
<p>E1) To ensure that economic indicators of the commercial oyster fishery and associated industries in the ABS demonstrate increasing viability and growth.</p> <p>Goal for Objective E1: Increased viability and growth of oyster fishery and associated industries.</p>	<ul style="list-style-type: none"> • Monitor economic indicators of a successful wild oyster industry, and assess causes of positive and negative trends.
<p>E2) To ensure that industries and businesses within the ABS are compatible with a healthy and well-managed ABS ecosystem.</p> <p>Goal for Objective E2: Create a decision support tool to assess the effect of ABS industries on ecosystem health.</p>	<ul style="list-style-type: none"> • Monitor metrics associated with Goal A and with objective E1 (above) to determine whether they have positive, neutral or negative interactions
<p>E3) To develop growth management policies, plans and regulations affecting the ABS that are compatible with a healthy and well-managed ABS ecosystem while maintaining a thriving economy and supporting cultural heritage.</p> <p>Goal for Objective E3: A healthy, well-managed ABS and thriving working waterfront industries.</p>	<ul style="list-style-type: none"> • Assess effect of growth management plans on ABS ecosystem health and economic growth
<p>E4) To develop an oyster aquaculture industry that provides economic opportunities and is complementary to the wild harvest fishery.</p> <p>Goal for Objective E4: Establish complementary oyster aquaculture and wild oyster harvest industries.</p>	<ul style="list-style-type: none"> • Assess economic indicators associated with aquaculture and wild oyster harvest • Assess social and economic compatibility between the two industries using stakeholder survey tools.

Additional Prioritized Strategies

Several strategies were considered for the Plan that were not ranked of high enough priority to be included in Goals A-E or were considered tangential to those goals. These are included below (Table 8) for consideration by future planning groups.

Table 8: Additional Prioritized Strategies Outside ABSI Scope For Referral To Other Entities

STRATEGIES (4)	ACTIONS (0)
1) Provide training and seek financial support for new workforce entrants (particularly young entrants) interested in being employed in existing industries as well as developing industries in new fisheries, aquaculture, and restoration science.	
2) Develop surveys or other tools that can be used to measure and track changes in stakeholder and public understanding of the issues important to the health and restoration of the Bay.	
3) Support existing entities in building Gulf-wide mechanisms for communities interested in the restoration and revitalization of oyster fisheries to exchange best practices and lessons learned.	
4) Engage the public (students, residents and tourists) in learning about the history and the ecological and economic importance of the Apalachicola Bay region, including the natural resources, and lumber, cotton shipping, and fishing industries.	

Next Steps: Implementation and Follow-Through

This report will be widely distributed to all stakeholder groups including those involved in the actual management and restoration efforts. The *Partners for a Resilient Apalachicola Bay* (CAB Successor Group) will interface with these stakeholders and others. The Plan is intended to be adaptive. By this we mean that as chosen strategies and linked actions are implemented, monitoring and assessment of results will shape the trajectory of future actions. The Plan contains a broad spectrum of suggested strategies, linked actions and performance measures as potential options to be used by stakeholder groups to achieve management and restoration goals.

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Note: Report Appendices Not Included (Available with the Full Report)