APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)

https://marinelab.fsu.edu/absi/

ABSI COMMUNITY ADVISORY BOARD (CAB)

MEETING 1 OF PHASE V — WEDNESDAY, FEBRUARY 1, 2023 — 8:30AM

APALACHICOLA NATIONAL ESTUARINE RESEARCH RESERVE
108 ISLAND DRIVE (STATE ROAD 300) AT CAT POINT IN EASTPOINT, FLORIDA

ABSI COMMUNITY ADVISORY BOARD MEETING OBJECTIVES

- ✓ To Approve Regular Procedural Topics (Meeting Agenda and Summary Report)
- ✓ To Review Updated Workplan and Meeting Schedule
- ✓ To Receive Science and Data Collection, and Restoration Updates
- ✓ To Receive Reports from RFWG, Community Outreach, and CAB Successor Group
- ✓ To Review CAB Restoration and Management Plan Framework and ABSI Objectives
- ✓ To Review Fisheries Model Scenario Simulation Results and Acceptability Rate Scenarios as Needed
- ✓ To Identify and Agree on the Next Suite of Scenarios, New Scenarios, and Combinations for Modeling
- ✓ To Identify Next Steps: Information, Presentations, Assignments, Agenda Items for Next Meeting

ABSI COMMUNITY ADVISORY BOARD AGENDA

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

1)	**8:30am**	**WELCOME AND ROLL CALL**
2)	**8:35**	**SOCIAL SCIENCE SURVEY**
3)	**8:40**	**AGENDA REVIEW AND MEETING OBJECTIVES**
4)	**8:45**	**APPROVAL OF FACILITATOR'S CAB SUMMARY REPORT (November 30, 2022)**
5)	**8:50**	**REVIEW OF UPDATED PROJECT MEETING SCHEDULE AND WORKPLAN** *(Attachment 3)*
6)	**9:00**	**SCIENCE AND DATA COLLECTION, AND RESTORATION UPDATES** • *ABSI Science and Data Collection Update.* Sandra Brooke, FSUCML (25) • *FWC (NFWF Phase 2) Restoration Project Update.* Devin Resko, FWC (10)
7)	**9:35**	**WORKING GROUP AND SUBCOMMITTEE UPDATES** • *Successor Group Subcommittee Update.* Anita Grove and Shannon Hartsfield (Pending) • *Restoration Funding Working Group Update.* Joel Trexler (5) • *Community Outreach Subcommittee Update.* Chad Hanson (10)
8)	**9:50**	**REVIEW OF CAB'S RESTORATION AND MANAGEMENT PLAN FRAMEWORK AND ABSI OBJECTIVES** *(Attachment 4)*
~10:15am		***BREAK***
9)	**10:30**	**OVERVIEW, DISCUSSION, AND ACCEPTABILITY RATING OF THE RESULTS OF SCENARIOS (STRATEGIES) SIMULATED (MODELED) WITH THE FISHERIES MODEL** *(Attachment 5)*
~12:00pm		***LUNCH — ON CAMPUS***
	12:30	**OVERVIEW, DISCUSSION, AND ACCEPTABILITY RATING OF THE RESULTS OF SCENARIOS SIMULATED WITH THE FISHERIES MODEL — CONTINUED**

10)	1:10	**IDENTIFICATION OF SCENARIOS FOR NEXT ROUND OF MODELING INCLUDING: COMBINATIONS OF SCENARIOS, NEW SCENARIOS, AND ANY SCENARIOS TO BE REMOVED FROM FURTHER EVALUATION** *(Attachment 5)*
11)	~2:10pm	**PUBLIC COMMENT — THREE MINUTES PER PERSON**
12)	~2:25	**ACTION ITEMS AND AGENDA ITEMS FOR NEXT MEETING (April 12, 2023)** • Review of Action Items and Assignments from Meeting • Identify Agenda Items, Presentations, and Information Needs for Next Meeting • Complete Meeting Evaluation
~2:30pm		***ADJOURN***

PROJECT RESOURCES AND CONTACTS

PROJECT WEBPAGE: https://marinelab.fsu.edu/the-apalachicola-bay-system-initiative/

PROJECT EMAIL: fsucml-absi@fsu.edu

PROJECT FACILITATION: Jeff Blair of Facilitated Solutions, LLC.
Information at: http://facilitatedsolutions.org.

ABSI CAB ORGANIZATIONAL AND PROCEDURAL POLICES AND GUIDELINES
Located under the ABSI CAB Procedures and Reports Menu: https://marinelab.fsu.edu/absi/cab/

ABSI CAB RESTORATION AND MANAGEMENT PLAN FRAMEWORK DOCUMENT
Located under the ABSI CAB Framework Adopted 16 November 2021 Menu Tab:
https://marinelab.fsu.edu/absi/cab/

TABLE OF AGENDA PACKET ATTACHMENTS

ATTACHMENT 1
COMMUNITY ADVISORY BOARD MEMBERSHIP AND REPRESENTATION

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

COMMUNITY ADVISORY BOARD SUBCOMMITTEES AND WORKING GROUP	
* Community Outreach Subcommittee	Lead: Chad Hanson
# Restoration Funding Working Group	Lead: Joel Trexler
^ Successor Group Subcommittee	Co-Leads: Anita Grove and Shannon Hartsfield

PROJECT TEAM AND CAB FACILITATOR	
FLORIDA STATE UNIVERSITY	
Sandra Brooke	Marine Biologist
Ross Ellington	Professor Emeritus of Biological Science
Madelein Mahood*	Outreach and Education
Gary Ostrander	Former Vice-President for Research
Joel Trexler^#*	FSUCML Director
FACILITATED SOLUTIONS, LLC	
Jeff Blair	Community Advisory Board Facilitator

ATTACHMENT 2
CAB PARTICIPATION PROCEDURES AND GUIDING PRINCIPLES

CAB PARTICIPATION PROCEDURES

- ✓ Look to the Facilitator to be recognized.
- ✓ Please raise your hand and/or place your name card vertically to speak.
- ✓ Speak one person at a time. Please don't interrupt each other.
- ✓ Focus on issues, not personalities. *"Using insult instead of argument is the sign of a small mind."*
- ✓ Avoid stereotyping or personal attacks. *"Mud thrown is ground lost."*
- ✓ Speak only when recognized by the Facilitator.
- ✓ Facilitator will call on participants in turn.
- ✓ Facilitator may change the speaking order in order to promote discussion on a specific issue or, to balance participation and allow those who have not spoken on an issue an opportunity to do so before others on the list who have already spoken on the issue.
- ✓ Offer one idea per person without explanation.
- ✓ No comments, criticism, or discussion of other's ideas.
- ✓ Listen respectively to other's ideas and opinions.
- ✓ The CAB Process is an opportunity to explore possibilities. Offering or exploring an idea does not necessarily imply support for it.
- ✓ Listen to understand. Seek a shared understanding even if you don't agree.
- ✓ Be focused and concise—balance participation & minimize repetition. Share the airtime.
- ✓ To the extent possible, offer options to address other's concerns, as well as your own.
- ✓ Refrain from using electronic devices during the meetings; Keep electronic devices turned off or silent.

CAB GUIDING PRINCIPLES

FOUR PERSONAL GUIDING PRINCIPLES: Be impeccable with your word, don't take things personally, don't make assumptions, and always do your best.

OVERARCHING GUIDING PRINCIPLE: Seek first to understand, and then seek to be understood.

WE WILL BE SUCCESSFUL AND HAVE GOOD CONVERSATION WHEN:

- ✓ All voices are invited, respected and heard.
- ✓ All experiences are treated as valid.
- ✓ We listen to each other actively, attentively, and respectfully.
- ✓ We observe time frames.
- ✓ We seek common ground and action.
- ✓ There is full and active attendance.
- ✓ We make the time and space to connect with each other.
- ✓ We participate actively and share opinions in the conversation—engage fully in this process.

ATTACHMENT 3
ABSI CAB PROJECT MEETING SCHEDULE AND WORKPLAN

UPDATED AS OF THE 1 FEBRUARY 2023 CAB MEETING

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

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

PHASE II (2020) — SCOPING OF ISSUES, IDENTIFICATION OF PERFORMANCE MEASURES AND STRATEGIES

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

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

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

PHASE IV (2022) — EVALUATION OF DRAFT ADAPTIVE MANAGEMENT AND RESTORATION PLAN FRAMEWORK'S RESTORATION AND MANAGEMENT STRATEGIES, RESTORATION PROJECTS SELECTION AND IMPLEMENTATION, AND FUNDING PLANNING

Dec. 2021 – Dec. 2022 (6 CAB Meetings, 1 Oystermen's Workshops, and 1 Community Workshop) — ***Status Complete***

PHASE V (2023) — EVALUATION AND FINALIZATION OF RECOMMENDATIONS FOR INCLUSION IN THE *ABS ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION PLAN*, RESTORATION PROJECTS SELECTION AND IMPLEMENTATION, AND FUNDING PLANNING

Jan. 2023 – Dec. 2023 (6 CAB Meetings, 3 Community Workshops) — ***Status Initiated***

COMMUNITY ADVISORY BOARD (CAB). The CAB initiated Phase V in January of 2023 and is currently evaluating the best combination of strategies (scenarios) predicted to achieve restoration and management objectives for the Bay using decision support tools including predictive socio-economic and ecological models coupled with available and emerging data and research. The scenarios are being evaluated with the overarching goal of restoring oyster reef habitat to a level that can sustainably provide needed ecosystem services for the System, and concurrently provide for a sustainable and economically viable level of commercial oyster harvesting. During the course of the project the CAB will vet their recommendations with restoration and management agencies to gauge support and feasibility for implementation. The CAB will evaluate the priority and efficacy of scenarios and associated actions and identify specific recommended restoration projects and management approaches for inclusion in the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan). The CAB will vote to approve their package of consensus recommendations during their November 2023 meeting. ***Status: Initiated***

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. ***Status: Initiated***
2. **RESTORATION FUNDING WORKING GROUP (RFWG).** Initiated in late 2021 the Restoration Funding Working Group's role is to seek resources and political, governmental, and organizational support for the CAB's priority recommendations. ***Status: Initiated***

3. **CAB SUCCESSOR GROUP.** The CAB Successor Group will be ready to convene when the CAB completes their work on the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan. The Successor Group's role will be to organize a group of key stakeholders committed to working collaboratively for the long-term, once the CAB process is complete and to ensure that the Plan is implemented, monitored, and adaptively managed over time and has the support of the Community. The CAB Successor Group process will formally initiate January 2024. ***Status: Conducting Organizational and Planning Meetings. Formal Convening Pending CAB Approval of Recommendations for Plan on 29 November 2023.***

ABSI CAB PHASE V MEETINGS SCHEDULE AND WORKPLAN — 2023

Meeting 1. ANERR 8:30am	**Feb. 1, 2023** • Fisheries Model Simulation Results & Scenarios Refinements	Initiation of Phase V of ABSI. ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
Meeting 2. ANERR 8:30am	**April 12, 2023** • Fisheries Model Simulation Results & Scenarios Refinements	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
Community Workshop 1	**April 12, 2023** ANERR 6:00pm – 8:00pm	Community Input on ABSI Restoration Experiments, FWC Restoration Project, and Proposed Management Scenarios for Modeling.
Meeting 3. ANERR 8:30am	**May 31, 2023** • Fisheries Model Simulation Results & Scenarios Refinements	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Community Workshop input. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
Meeting 4. ANERR 8:30am	**July 26, 2023** • Fisheries model simulation results & scenarios refinements	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
Community Workshop 2	**July 26, 2023** ANERR 6:00pm – 8:00pm	Community Input on the CAB's recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan.
Meeting 5. ANERR 8:30am	**Sept. 27, 2023** • Fisheries Model Simulation Results	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Community

	& Scenarios Refinements	Workshop input. Review and discussion of Fisheries Model simulation results for revised priority Habitat Restoration (Goal A) and Fisheries Management (Goal B) scenarios. Agreement on next suite of scenarios for model simulations. Public comment.
Community Workshop 3	**October 24, 2023** ANERR 6:00pm – 8:00pm	Community Input on the CAB's recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan.
Meeting 6. ANERR 8:30am	**Nov. 29, 2023** • **Adopt Final CAB Recommendations for ABS Plan**	ABSI science and data collection and restoration project updates. Sub-committee reports and public engagement initiative update. Review and discussion of Community Workshop input. Finalize and adopt recommendations for strategies and actions (components) for inclusion in the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan) and submit to FSUCML. Public comment.

ATTACHMENT 4
AGENDA ITEMS BACKGROUND INFORMATION — 1 FEBRUARY 2023

AGENDA ITEM #8 — CAB PLAN FRAMEWORK AND ABSI OBJECTIVES

SECTION I
COMMUNITY ADVISORY BOARD ABSI FINAL DRAFT PLAN STRATEGIES

OVERARCHING APPROACHES

1. Use the following ABSI-approved name for developing the management and restoration plan: The Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan).

2. Include commercial fishermen in discussions of and to help work on restoration design and implementation (locations, size, total coverage, cultching, etc.), establishment of permanent closed areas, shell recycling, shelling, mentoring, and workforce entry development.

3. Incorporate scientifically-derived and coordinated long-term monitoring guidelines and metrics for assessing the overall health of the ABS system with a focus on oyster resources.

4. Use only the best available science (including information derived from scientists, agency personnel and stakeholders) for all components of ongoing research, modeling exercises, and development of the Plan, including relevant information on adaptation to climate change impacts.

5. Identify local partners to coordinate and collaborate with the lead entities on the implementation of strategies (stakeholders: e.g., watermen, citizen scientists, advocacy groups, NGOs, universities, counties and other local governments, etc.).

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

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 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 use observations, monitoring, experiments and modeling conducted through ABSI and related efforts to create decision support tools that can inform how a range of natural and human influenced factors will affect the ABS ecosystem.

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

A3) To use existing and new research, and decision support tools to identify viable strategies for restoration and management of the ABS oyster resources and the function of the ABS ecosystem.

A4) To define measurable ecosystem services that can be used to determine the level of change in ecological health (e.g., oyster fishery harvest, habitat for other fishery species, abundance and condition indices for oyster reef and population health) and societal benefit derived from Apalachicola Bay System management and restoration efforts, with target and threshold levels identified.

GOAL A PRIORITIZED STRATEGIES

PRIORITY 1 STRATEGIES

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

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

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

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

3) Determine area (acres or km^2) of oyster reefs that currently support live oysters as well as the area needed to ensure sufficient spat production that will support sustainability of oyster reefs and sustainability of a wild oyster fishery throughout the ABS.

- *Action 3-A.):* Map existing oyster reefs using multibeam sonar and backscatter, and ground-truth for accuracy.
- *Action 3-B.)*: Apply model that uses reproductive output, recruitment, natural mortality rates and fishery harvest to assess oyster population dynamics.

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

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

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

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

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

PRIORITY 2 STRATEGIES

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

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

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

- *Action 7-B.):* Integrate ecosystem services metrics into monitoring program.

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

PRIORITY 3 STRATEGIES

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

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

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

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 based on 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: productive, sustainably, and adaptively managed Apalachicola Bay System supports sustainable oyster resources.

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) To develop through a transparent and inclusive process a science-based ABS oyster recovery and adaptive management plan for both commercial and recreational industries that includes: broad stakeholder and community support; a long-term, comprehensive monitoring plan that will be carried out 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 its implementation.

B2) To make recommendations to FDACS for 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.

GOAL B RECOMMENDATION

Closing the Apalachicola Bay to Wild Oyster Harvest. At the March 11, 2020 ABSI CAB meeting, the CAB's FWC representative requested that the CAB recommend whether to close Apalachicola Bay to all wild harvest of oysters (commercial and recreational). The CAB discussed the issue and unanimously recommended to FWC that they immediately close Apalachicola Bay to all wild harvest of oysters. This recommendation was reviewed and accepted by FWC, and the closure of the Bay to recreational and commercial wild oyster harvest proactively went into effect on August 1, 2020 via Executive Order pending approval of final rules. The oyster fishery closed area has well-defined boundaries (set by FWC in consultation with FDACS) and contained within the Apalachicola Bay System as defined in FWC's Rule 68B-27, F.A.C.[1] At the December 16, 2020 meeting the FWC approved the final rules to temporarily suspend all wild oyster harvest and to prohibit on-the-water possession of wild oyster harvesting equipment (tongs) from Apalachicola Bay through December 31, 2025.

The CAB agreed that in subsequent meetings, it would make science-based recommendations for the criteria and performance metrics that should be met before reopening the Bay to wild oyster harvest. Under consideration are the following strategies related to closing the wild oyster fishery.

GOAL B PRIORITIZED STRATEGIES

PRIORITY 1 STRATEGIES

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

[1] FWC's Rule 68B-27.013, F.A.C. (as modified in the proposed draft rule language presented at the July 22, 2020, commission hearing): "Apalachicola Bay" or "Bay" means all waters within St. George Sound, East Bay in Franklin County, Apalachicola Bay, St. Vincent Sound in Franklin County, and Indian Lagoon in Gulf County, including canals, channels, rivers and creeks.

- *Action 1-G):* Clarify that it is an allowable practice for oystermen to weigh oyster bags while on the water to ensure the bags meet the weight limit regulations.
- *Action 1-H.):* Implement stock-based temporary wild harvest closures in conjunction with regular stock assessments of the oyster density.
- *Action 1-I.):* Evaluate and determine a metric used to manage oyster reef harvest at a sustainable threshold. Consider a graduated set of thresholds.
- *Action 1-J.):* Implement an annual stock assessment using fisheries dependent and independent data, with data collection methods and site selection done in collaboration with oystermen, for determining a sustainable level of wild oyster harvest for each season.

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

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

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

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

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

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

5. Work with FWC Law Enforcement to develop enforcement strategies and appropriate penalties sufficient to deter harvest or sale of undersized oysters as well as violations that harm wild or leased oyster reefs and other natural resources, and that will support restoration efforts in the ABS.
   - *Action 5-A.):* Develop strategies to increase FWC enforcement presence and number of checkpoints to provide a deterrent to illegal activities.
     - Provide law enforcement presence during peak harvesting periods, and on the water during harvest season hours.
   - *Action 5-B.):* Develop strategies to ensure consistent practices are used for enforcement of regulations regarding the harvestable and marketable size of oysters. (See Actions *5-F* and *5-G*)

- *Action 5-C.):* Revise statutes and/or rules as needed to require FWC to check harvested oysters for size-limit enforcement* before they are washed and processed. Once processed, enforcement of oyster size-limits should be limited to oysters under 2.75" because processing changes shell height.
  ** Sampling and other data collection activities shall not be impacted by this recommendation.*
- *Action 5-D.):* Evaluate and enhance, as needed, the regulations and enforcement practices to ensure dealers accurately identify the source of oysters after processing and packaging.
- *Action 5-E.):* Evaluate and revise, as needed, the statutory and/or regulatory requirements to ensure that FWC has authority to enforce oyster regulations at the dealers' location.
- *Action 5-F.):* Work with FWC and FDACS to implement recommended enforcement changes.
- *Action 5-G.):* Work with oystermen to evaluate current rules and regulations to ensure they are enforced consistently, fairly, and practically with an understanding of real-world on-the-water harvesting practices and constraints.
- *Action 5-H.):* Evaluate and seek authority to implement a tiered system of penalties for purposeful violators (increased fines and license suspensions ranging from increased length of suspension to the permanent loss of license) to keep purposeful violators out of the industry.
- *Action 5-I.):* Encourage community and industry support for consistent judicial imposition of penalties within the exiting penalties framework for oyster harvest violations, including imposing stricter penalties for habitual and willful violators.
- *Action 5-J.*): Prior to the opening of each harvest season FWC should conduct a joint workshop between FWC law enforcement and the oystermen to review the current rule and regulations, identify any changes, discuss enforcement approaches relative to harvest practices and constraints on the water, and to provide mutual two-way education, and enhance communication and collaboration between FWC and oystermen.
- *Action 5-K.):* Work together and with other stakeholders to seek funds to support the recommended increased law enforcement presence in the Bay.

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

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

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

7. Restore and create reef structures suitable in size, location, and substrate type for healthy and sustainable oyster settlement, production, and harvesting.
   - *Action 7-A.):* Include oystermen in discussions to evaluate cultching techniques and materials for growing oysters (e.g., historical non-traditional, trees), adding spat on shell or other substrates.

- *Action 7-B.*): Include oystermen in discussions on spatial configuration of reefs (height, width, contours, etc.), locations (existing reefs and hard bottom), use of larger rock to protect restored reefs from siltation and sedimentation from prevailing currents and storms.

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

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

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

PRIORITY 2 STRATEGIES

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

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

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

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

11. Work with FDACS to ensure that oyster aquaculture practices and locations in the Bay are compatible with the goals and strategies for restoration and management of the ecosystem and are compatible with wild fisheries and the important cultural role of a working waterfront and seafood industry.

- *Action 11-A.):* Develop maps using FDACs data showing all aquaculture activities in the ABS, superimposed on existing maps of essential fish habitat, fishing activities, seagrass beds, and natural existing hard bottom (reefs/bars) to identify potential conflicts.
- *Action 11-B.):* Utilize habitat and activity maps from *Action 5. A.* to identify potential new oyster restoration areas and areas that could be used as spawning reefs to enhance recruitment and productivity nearby harvested reefs.

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

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

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

ADDITIONAL STRATEGY APPROVED — 27 JULY 2022

13. Assess the effectiveness of a shell repletion program (put-and-take) fishery for maintaining a sustainable wild oyster harvest in Apalachicola Bay. Specific areas would receive regular cultching and/or deployment of hatchery spat-on-shell and would be subject to the same fishery management regulations as non-supplemented areas.

- ***Action 1-A.)*** Conduct field study of survival of planted spat-on-shell to harvestable size and time required to attain market size.
- ***Action I-B.)*** Use fishery models to estimate the amount and frequency of cultch and/or spat-on-shell required to maintain the minimum threshold for sustainable harvest (i.e., 400 bags/acre).
- ***Action I-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.
- ***Action I-D.)*** Monitor the stability of oyster populations using the put-and-take approach to wild fishery harvest, to determine whether deploying cultch or spat-on-shell helps reduce natural fluctuations in oyster populations.

Lead: FWC/FDACS	***Partners:*** Hatcheries (FSU, other), FSU, FDEP

GOAL C

A FULLY FUNDED ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION 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 Management and Restoration 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 Management and Restoration 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 is broadly supported by Apalachicola Bay System stakeholders with guidance from a permanent stakeholder advisory board.

GOAL C OBJECTIVES

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

GOAL C PRIORITIZED STRATEGIES

PRIORITY 1 STRATEGIES

CAB Proposed Strategies During the ABSI Process

1) The ABSI Team and the CAB will continue to have an open and transparent process for the development of the Plan with many opportunities for stakeholder engagement and input in a variety of forums (e.g., workshops, online, public/ government meetings) for generating awareness and support while incorporating any changes the CAB deems appropriate and necessary to fulfill the goals and objectives. *[Status: Initiated]*
   - *Action 1-A.)*: Continue CAB meetings and public workshops as outlined in the FCRC proposal for 2021.

2) A successor group to the CAB will be developed and in place by the time the Plan is completed. *[Status: Initiated]*
   - *Action 2-A.):* The successor group actively engages with state programs to encourage their adoption of ABSI's long-term monitoring guidelines and metrics 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 ecosystem.

- *Action 2-B.):* The successor group will monitor the Plan's implementation and make recommendations for revisions required to adaptively respond to changing conditions.
- *Action 2-C.):* The successor group encourages agencies to prioritize the Plan's recommendations for investing more funding in the management and restoration of oyster resources.
- *Action 2-D):* The successor group 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 Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan. The successor group should explore whether it's a better model to be a part of EPA's National Estuary Program or to model the ABEP after the EPA program with funding provided from other entities as was done with the St. Andrew and St. Joe Bays Estuary Program.

Lead: FSU	***Partners:*** CAB, CAB sub-committee, other stakeholders

3) During 2021, the ABSI Team will form a sub-committee within the CAB to evaluate the efficacy of forming a CAB successor group. The intent of a successor group would be to ensure continuity between the CAB members and the agencies responsible for oyster management. *[Status: Initiated]*
   - *Action 3-A.)*: The subcommittee will define a plausible scope of work for the successor group, including evaluating regulatory processes and engaging with and being accountable to decision-makers and the public for the actions laid out in the Plan and the implementation thereof.
   - *Action 3-B.):* The subcommittee will evaluate the best organizational structure for ensuring longevity of the successor group, including working under the auspices of a state agency, an estuary program, or private/public partnerships.

4) Create a comprehensive funding approach for the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan implementation including a comprehensive analysis for future grant funding for strategies, including support for sustainable monitoring deriving from the Plan. *[Status: Initiated]*
   - *Action 4-A.):* Evaluate and seek funding sources for implementation of management and restoration strategies included in the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (e.g., state agencies, region-wide Gulf trustee implementation group for NRDA funding.)
   - *Action 4-B.):* Evaluate and seek grant opportunities from recommendations included in the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan.
   - *Action 4-C.):* Allocate sufficient funding for habitat restoration based on oyster habitat suitability mapping and modeling and restoration and management targets (e.g., Develop funding source for cultch used in oyster reef restoration.)
   - *Action 4-D.):* Allocate sufficient funding for restoration of harvested reefs and aquaculture farms based on oyster habitat suitability mapping and modeling.
   - *Action 4-E.):* Evaluate and seek funding sources to generate awareness, education, and support for a healthy oyster and ABS ecosystem.
   - *Action 4-F.):* Develop 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.

- *Action 4-G.):* Work across estuary programs to fund and leverage large scale monitoring for the Panhandle Region – Perdido to Suwanee.
- *Action 4-H.*): Develop and seek a funding source to provide cultch for habitat restoration.

Lead: FSU-ABSI	***Partners:*** Restoration Partners Working Group; Successor Group

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-based 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 as well as 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, 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.

GOAL D DRAFT PRIORITIZED STRATEGIES

PRIORITY 1 STRATEGIES

1) Develop a Community Advisory Board (CAB) for the ABS Initiative that provides critical information and perspective to the ABSI leadership and whose members recognize the importance of their role as ambassadors for the initiative. *[Status: Initiated]*

PRIORITY 2 STRATEGIES

2) Build, with the help of the CAB, community support and stewardship by educating stakeholders on the importance of maintaining healthy oyster reefs and by engaging them in the Bay restoration through a variety of hands-on programs.
   - *Action 2-A.):* Form a sub-committee within the CAB that can spearhead an outreach and community engagement effort and develop a community outreach strategy intended to inform and educate stakeholders and the public about the research, the Plan developing through ABSI, and focusing on a healthy ABS ecosystem. The intended audience includes local city, county, and state government officials, businesses and organizations, citizens of every age, and other interested stakeholder groups.
   - *Action 2-B.):* Define what makes a successful shell recycling program, and work with local groups, businesses and other stakeholders to help initiate its development.
   - *Action 2-C.):* Develop a "Bay Stewards" program to honor, reward, and provide incentives for businesses and individuals that demonstrate their stewardship of the resource.

3) 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.
   Action 3-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 by ABSI.
   Action: 3-B.): Provide training and financial support for new workforce entrants in the Franklin County Community through an aquaculture internship program.
   Action 3-C.): Provide research opportunities for undergraduate and graduate students in science that supports the ABSI mission.

Lead: CAB outreach subcommittee	***Partners:*** FSU, CAB, CAB Successor Group, ABS stakeholders

SECTION II
STRATEGIES OUTSIDE THE SPECIFIC SCOPE OF ABSI AND TO BE REFERRED TO OTHER PROGRAMS OF ENTITIES

The strategies that are not a part of the Ecological (Goal A), Sustainable Management of Oyster Resources (Goal B), The Management and Restoration Plan (Goal C), and An Engaged Stakeholder Community and Informed Public (Goal D) components of the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan including: training, marketing, education, communication, economic development, and funding are being moved to this category. They will be included as recommendations in an appendix, and the CAB should identify a responsible entity to refer the recommendations to for their development, implementation, monitoring, and maintenance.

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.

GOAL E PRIORITIZED STRATEGIES

PRIORITY 1 STRATEGIES

1) Engage commercial fishermen in the restoration of the bay and encourage future participation in restoration such as monitoring, shell recycling, shelling, and relaying.
2) Recommend monitoring[2] and enforcement programs continue with appropriate metrics to measure output from and impact of harvest on oyster reefs.

[2] Ongoing fisheries-dependent and fisheries-independent monitoring by FWRI, coupled with ABSI complementary data based on request of watermen. Both entities are sharing data with one another which is critical for ABSI model development. (We remain unable to get FWRI data)

PRIORITY 2 STRATEGIES

3) 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.

4) Coordinate with and encourage recreational businesses and activities that recognize the importance of and support a sustainable commercial oyster fishery and the importance of the seafood industry to the Region's cultural heritage.
   - *Action 4-A):* Coordinate and work with initiatives such as the Regional Recreation Economy Alliance to leverage resources to support the local economy.

5) Work with existing partners (e.g., the Chamber of Commerce, Apalachee Regional Planning Council, and city and county staff) to monitor and report on the economic benefits of a restored ABS, including key economic indicators relevant to the commercial oyster fishery and associated industries in the region. This can be displayed as a dashboard that includes key economic indicators over time based on restoration efforts in the Apalachicola Bay System (ABS).

6) Support planning tied to economic indicators that consider future conditions (climate, SLR, reduced river flow) and their effects on the ABS.

7) 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.

8) Work with oystermen and other community stakeholders to promote post-recovery Apalachicola oysters.

9) 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.

PRIORITY 3 STRATEGIES

10) Develop new markets for selling oysters to areas within and outside of Florida in part by investing in location (Apalachicola Bay) branding.

Lead: ABSI CAB Successor Group	***Partners:*** Stakeholder groups, Chamber of Commerce, local government

ADDITIONAL PRIORITIZED STRATEGIES OUTSIDE OF ABSI SCOPE
STRATEGIES TO SUPPORT THE LONG-TERM VIABILITY OF THE PLAN
TO BE REFERRED TO OTHER PROGRAMS OR ENTITIES

PRIORITY 2 STRATEGIES

1) Work with State legislators and state agencies to develop funding strategies, and incentives for involving local watermen, seafood dealers, restaurants, aquaculture operations, and private citizens in oyster reef restoration efforts that will increase the viability of oyster resources.

- *Action 1-A.):* Identify source of shell, or other restoration material.

2) Provide training and financial support for new workforce entrants (particularly young entrants)–interested in being employed in existing industries as well as and developing industries in new fisheries, aquaculture, and restoration science.

3) 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.

4) Build Gulf-wide mechanism for communities interested in the restoration and revitalization of fisheries to exchange best practices and lessons learned. *[Status: this is developed through FWC]*

5) 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.

Lead: ABSI CAB Successor Group	***Partners:*** Stakeholder groups, Chamber of Commerce, local government

ATTACHMENT 5
AGENDA ITEMS BACKGROUND INFORMATION — 1 FEBRUARY 2023

AGENDA ITEM #9 — MODELED SCENARIOS

Current Suite of Scenarios for Evaluation with the Fisheries (Socioecological) Model:

Based on Ed Camp's recommendations regarding what is currently feasible to model, the CAB agreed to recommend the following scenarios for simulation by the Fisheries (Socioecological) Model:

- A combination of management strategies including but not limited to: active management, an open fishery, and a limited entry fishery. All of the scenarios would include summer closure.
- An open access fishery with shorter harvesting seasons.
- Stochasticity—adding randomness (events) to the model to compare the results with the previous simulation runs for the above scenarios.
- A change in mortality for different management scenarios (i.e., active management, an open fishery, and a limited entry fishery).
- Ongoing shelling and restoration (Oyster Repletion Program) of specific oyster reefs using shell as the cultch applied on top of existing restored reefs intended for sustainable harvesting.
- An initial oyster reef restoration sufficient to achieve the predicted threshold for sustainability (a successful restoration) using cultch that has been demonstrated to remain in place and not degrade in the near term, and then model various ongoing oyster shell repletion regimes ranging from yearly to every 3 years.

FUTURE SCENARIOS AND ASSUMPTIONS FOR MODELING

Near-Term Suite of Scenarios to Model:

- Restoration approaches using data from the restoration projects and the restoration experiments and pilot projects (specific locations, size, height/spatial configurations, type of cultch material, density of cultch, etc.).
- Adaptive Management Scenario: Expand the model out spatially to provide for grided areas to model simulations with some areas fished and other areas protected, and evaluate the impacts on habitat and oyster abundance for fished and protected areas. [Note: Ed would require FWC support to simulate this approach]

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

- Opening and closing specific oyster bars and potentially even parts of specific oyster bars based on the metrics for sustainability of the resource (e.g., oyster density).
- Different scenarios with the Bay wide-open and various areas of the Bay closed.
- Develop and maintain one area of the Bay (e.g., Cat Point) for high intensity commercial oyster harvesting, and the rest of the Bay will be set aside as protected areas (MPA/Sanctuaries) to provide ecosystem services such as water filtration and marine species habitat, and also to provide brood stock/spat source for the system.
- Updated periodic oyster population evaluations are being conducted and used as the metric for how much and when harvesting is allowed.

- Total Allowable Catch (TAC) as a component of a limited entry and/or minimum density active managed scenarios.
- Seasonal closures.
- Consider the size, spatial configuration, amount and location for oyster reef habitat restoration initiatives.

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

SCENARIOS APPROVED BY CAB FOR MODELING

- Limited Entry Fishery - Number of entrants would vary with harvest level and process developed in consultation with stakeholders.
- Bay-wide summer harvest closure (June-August).
- All legal and FDACS approved harvest areas would be open during harvest season.
- Monday-Friday harvest week with daily bag limits.
- Recreational harvest limit with same season and gear as commercial harvest.
- Establish/enforce 5% undersize oyster limit for harvesters and dealers.
- Implement stock-based temporary harvest closures, informed by regular stock assessments.
- Implement annual stock assessment in collaboration with fishers to establish sustainable level of harvest for the season.
- Establish permanent closed areas (broodstock reefs).
- Evaluate cost-effectiveness of an ongoing shelling and restoration (Oyster Repletion Program) of specific oyster reefs for harvesting.
- Work with FWC Law Enforcement to develop strategies and penalties for violation of regulations.

ATTACHMENT 6
CURRENT AND FUTURE SCENARIOS AND ASSUMPTIONS FOR MODELING

CURRENT MANAGEMENT SCENARIOS AND ASSUMPTIONS FOR MODELING

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

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

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

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

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

Modeled Simulations Include:

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

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

** The models still include shell budget information.*

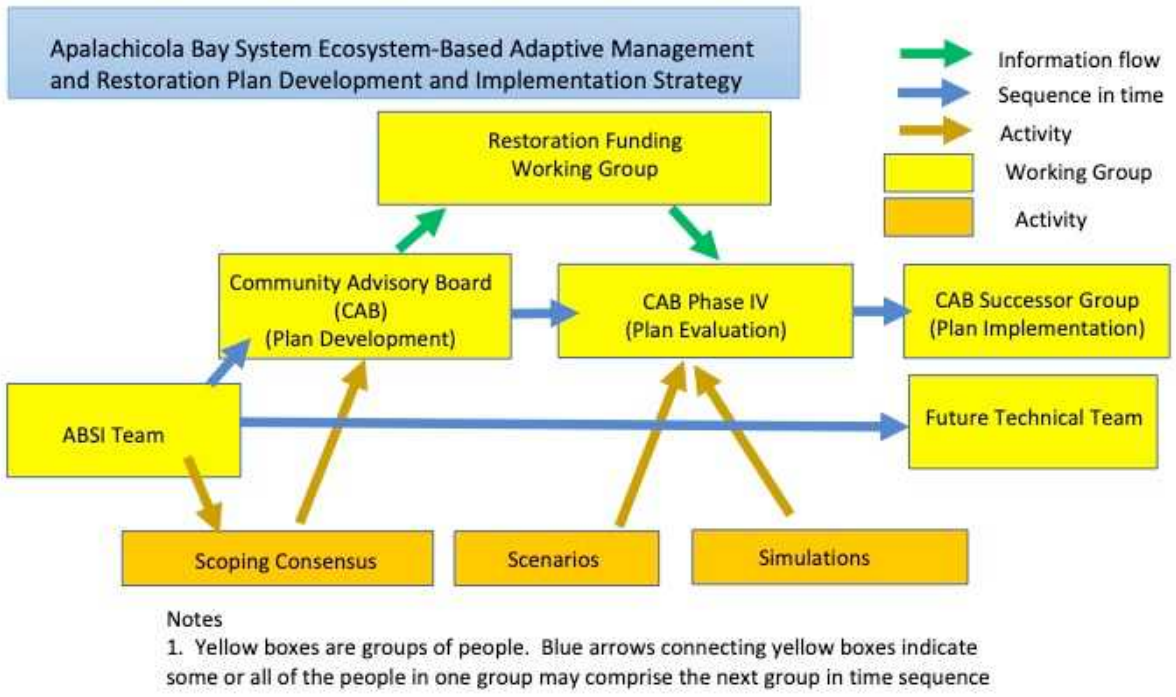
ASSUMPTIONS. The CAB agreed to the following assumptions for use in evaluating the scenarios:

1) Oystermen will harvest oysters (fish) whenever the weather and regulation permit.
2) $80,000 is the initial annual gross income level that oyster harvesters identified as requisite for earning a "good" living solely from oysters harvesting, and which would guarantee economic self-sufficiency*. Additional economic work to understand minimum income thresholds (annual and/or revenue per effort) will be empirically assessed in summer/fall 2022 as part of the economic surveys associated with Ed Camp's FWC oyster project.
3) A likely bag limit of 5 – 6 bags/day, and a selling price of $100/bushel of oysters.
4) Oyster harvest allowed 7-days/week during open times.
5) Oyster harvest allowed all months during open times and areas. Note: this is an initial assumption that can be altered or relaxed for future scenarios.
6) Use a range of 5% low to 30% high to account for illegal harvest, potentially related to changes in enforcement.
7) 200 bushels/acre metric as threshold for sustainable harvest/habitat.
8) The spatially implicit scenarios imply assuming the pre-closure amount of closed and thus open areas. However, there was some stakeholder support for considering an even more spatially limited fishery, at least initially.
9) Calculate the maximum number of participants the resource can sustain under different assumptions of income and bag limits. Initial scenario results will use income of $80,000 annual gross and 5 bag/person/day limit, but of course changing these variables will affect maximum number of participants (less income, lower bag limits will generally allow more participants).
10) Run the initial simulations of the scenarios two ways with the overarching assumption that: 1) oyster habitat restoration works and improves the oyster population abundance specifically and the Bay generally to a threshold sufficient to support some level of sustainable commercial oyster harvesting; and 2) restoration of the Bay and oyster reef habitat does not work as predicated and the health of the Bay is not sufficiently improved to support a sustainable oyster reef habitat together with commercial oyster harvesting.
11) Additional assumptions not explicitly addressed include:
    - Assuming constant pathology that is subsumed by past estimates of natural mortality of oysters. That is, we're not modeling changes in oyster disease right now.
    - Assuming natural mortality has not been dramatically altered by some unknown predator or environmental variable.
    - Latent effort (demand to harvest oysters) exists.

**Economic self-sufficiency is a sufficiency of economic resources to meet physical needs. It is the ability of individuals and families to maintain sufficient income to consistently meet their basic needs – including food, housing, utilities, health care, transportation, taxes, dependent care, and clothing – with no or minimal financial assistance or subsidies from private or public organizations.*

ATTACHMENT 7
PROJECT FLOWCHART, MISSION AND GOAL STATEMENT, & PROJECT SUMMARY

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

ABSI Mission Statement, Project Summary, and CAB Goal Statement

Apalachicola Bay System Initiative Mission Statement. The Apalachicola Bay System Initiative (ABSI) seeks to gain insight into the root causes of decline of the Bay's ecosystem and the deterioration of oyster reefs. Ultimately, the ABSI will develop a management and restoration plan for the oyster reefs and the health of the Bay.

Project Summary. In response to the rapidly declining health of the Apalachicola Bay System (ABS) and the collapse of the oyster fishery and reefs therein, Florida State University sought and was awarded a grant from Triumph Gulf Coast Inc. to undertake a series of scientific approaches intended to aid in the development of an ecosystem-based oyster management and restoration plan for the Apalachicola Bay System. The plan will be informed by science while involving representative stakeholders and the public in its creation, development and 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 that of other ecologically and economically important species. Because oyster populations are declining in estuaries across the Florida panhandle, ABSI project leads will work with scientific, non-profit and governmental entities working on similar issues throughout this region to develop a consistent oyster management framework.

The vitality of Apalachicola Bay is key to the socio-economic prosperity of Franklin County and the surrounding area. Specifically, as the bay's health has declined, so has the area's once-booming oyster industry, resulting in widespread job loss and increased economic insecurity for many Franklin County residents whose livelihoods are tied to the Bay.

Florida State University through its Coastal and Marine Laboratory is investigating what precipitated the dramatic decline of the Apalachicola Bay System and working with the ABSI Community Advisory Board (CAB) and Science Advisory Board determine a viable course of action for improving its condition.

Apalachicola Bay System Initiative Community Advisory Board Goal Statement. The overarching goal of the Apalachicola Bay System Initiative Community Advisory Board 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 Apalachicola Bay System, and to ensure there is a reliable mechanism and process for the monitoring, funding, and implementation of the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan.

A critical component of the management 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 Apalachicola Bay System.

The process is designed so that members can explore and evaluate oyster fishery practices and management options, and restoration policies in the Apalachicola Bay System. The Community Advisory Board's consensus recommendations, in the form of an Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan, will be directed to the Apalachicola Bay System Initiative Project Team, natural resource managers and environmental regulators, and other agencies/entities as appropriate.

ATTACHMENT 8
COMMUNITY ADVISORY BOARD CONSENSUS BUILDING PROCESS
(ADOPTED UNANIMOUSLY OCTOBER 30, 2019)

The Apalachicola Bay System Initiative (ABSI) Community Advisory Board (CAB) will seek consensus on its recommendations for options to be evaluated using the best available science and decision-support tools for management and restoration of the Apalachicola Bay System (ABS).

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 Community Advisory Board 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.

In instances where the Community Advisory Board finds that even 75% acceptance or support is not achievable, publication of recommendations will include documentation of the differences and the options that were considered for which there is more than 50% support from the Community Advisory Board. The report that will be a product of the Community Advisory Board process will clearly describe the level of agreement between Community Advisory Board members on each specific recommendation as well as on the suite of recommendations as a whole.

The Community Advisory Board will develop its recommendations using consensus-building techniques with the assistance of the facilitator. Techniques such as brainstorming, ranking and prioritizing approaches will be utilized. The Community Advisory Board's consensus process will be conducted as a neutrally facilitated consensus-building process. Community Advisory Board members, project staff, and the facilitator will be the only participants seated at the table. Only Community Advisory Board members may participate in discussions and vote on proposals and recommendations. The facilitator, or a Community Advisory Board member through the facilitator, may request specific clarification from a member of the public in order to assist the Community Advisory Board in understanding an issue. Observers/members of the public are welcome to speak during the public comment period provided at each meeting, and all comments submitted in writing will be included in the next meeting's facilitator's summary report.