

# APALACHICOLA BAY SYSTEM INITIATIVE

## COMMUNITY ADVISORY BOARD MEETING XIII

### 16 JUNE 2021 FACILITATOR'S SUMMARY REPORT (APPROVED 18 AUGUST 2021)

VIRTUAL MEETING VIA WEBINAR AND TELECONFERENCE



CONSENSUS CENTER



MEETINGS FACILITATED AND SUMMARIZED BY JEFF A. BLAIR

APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD  
JUNE 16, 2021 FACILITATOR’S MEETING SUMMARY REPORT

TABLE OF CONTENTS

TABLE OF CONTENTS ..... 1  
TABLE OF ATTACHMENTS ..... 2

I. MEETING SUMMARY OVERVIEW..... 3  
II. WELCOME AND INTRODUCTIONS ..... 4  
III. MEETING PARTICIPATION ..... 4  
IV. MEETING OBJECTIVES ..... 5  
V. SUMMARY REPORT APPROVAL..... 5  
VI. PROJECT WORKPLAN AND SCHEDULE ..... 5  
VII. PROJECT BRIEFINGS AND REQUESTED PRESENTATIONS ..... 6  
VIII. SUBCOMMITTEE UPDATES AND REPORTS .....10  
IX. COMMUNITY OUTREACH PLAN FEEDBACK.....10  
X. OYSTER FISHERY LAW ENFORCEMENT DISCUSSION .....11  
XI. REVISED STRATEGIES AND ACTIONS APPROVAL.....14  
XII. CAB ROLE IN ABS RESTORATION PROJECTS FEEDBACK DISCUSSION .....14  
XIII. PUBLIC COMMENT .....15  
XIV. NEXT MEETING OVERVIEW AND ISSUES .....16

*ATTACHMENTS* ..... 17 - 44

1. MEETING PARTICIPATION LIST ..... 17
2. MEETING AGENDA ..... 19
3. MEETING EVALUATION (ZOOM POLL) ..... 20
4. MEETING CHAT SUMMARY (ZOOM) ..... 21
5. CAB WORKPLAN, SCHEDULE, AND PROJECT FLOWCHART ..... 22
6. REVISED ABSI PLAN FRAMEWORK ..... 25
7. PERFORMANCE MEASURES AND ESTUARINE METRICS ..... 39



**APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD  
JUNE 16, 2021 FACILITATOR'S SUMMARY REPORT**



**OVERVIEW OF ABSI COMMUNITY ADVISORY BOARD'S KEY ACTIONS**

**WEDNESDAY, JUNE 16, 2021**

**I. MEETING SUMMARY AND OVERVIEW**

At the June 16, 2021 virtual meeting the Apalachicola Bay System Initiative (ABSI), Community Advisory Board (CAB): conducted a social science survey administered by the University of Florida; received an overview of the updated Project Workplan and schedule; received presentation on ABSI science and data collection, and ABSI pollution study; received reports and updates from the Restoration Funding Working Group, Community Outreach Subcommittee, and CAB Successor Group Subcommittee; and, discussed management alternatives and issues. Specific actions included: providing feedback and agreeing to the Community Outreach Subcommittee's Outreach Plan; reviewing and agreeing to proposed revisions to strategies and actions in the Draft Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan Framework (Goals, Vision Themes, Outcomes, Objectives, Overarching Approaches, Strategies, and Actions); reviewing and agreeing to proposed revisions to the Performance Measures, and Estuarine Metrics; and, discussing and agreeing to the ABSI CAB's role and the importance of providing feedback, coordinating, and communicating with all of the research and restoration projects in the Apalachicola Bay System.

## **II. WELCOME AND INTRODUCTIONS**

Jeff Blair, ABSI CAB Facilitator, opened the meeting at 8:31 AM and welcomed all participants.

### **SOCIAL SCIENCE SURVEY**

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

## **III. ABSI CAB MEETING PARTICIPATION**

The following CAB members participated in the Wednesday, June 16, 2021 virtual meeting conducted via webinar and teleconference:

Georgia Ackerman, Bert Boldt, Lee Edmiston, Frank Gidus, Anita Grove, Chad Hanson, Jenna Harper, Shannon Hartsfield, BJ Jamison, Erik Lovstrand, Roger Mathis, Mike O'Connell, Steve Rash, Portia Sapp, Chad Taylor, and Paul Thurman.

(16 of the 23 member participated—70%).

*Absent CAB Members:*

Chip Bailey, Tom Frazer, Chuck Marks, Alex Reed, Denita Sassor, John Solomon, and TJ Ward.

Jeff Blair welcomed two new members to the CAB, noting that Burt Boldt was replacing Ricky Jones, and BJ Jamison was replacing Jim Estes on the CAB.

### **PROJECT TEAM MEMBERS PARTICIPATING**

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

*(Attachment 1—Meeting Participation)*

### **MEETING FACILITATION**

Meetings are facilitated, and meeting reports drafted by Jeff Blair from the FCRC Consensus Center at Florida State University. Information at: <http://consensus.fsu.edu/>



### **PROJECT WEBPAGE**

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

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

#### **IV. AGENDA REVIEW AND APPROVAL**

The ABSI CAB voted unanimously to approve the agenda for the June 16, 2021 meeting as presented. Following are the key agenda items approved for consideration:

- ✓ To Approve Regular Procedural Topics (Meeting Agenda and, Summary Report)
- ✓ To Receive Project Briefings and Community Advisory Board Requested Presentations
- ✓ To Receive Updates from RFWG, Community Outreach, and CAB Successor Group
- ✓ To Provide Feedback on Community Outreach Plan
- ✓ To Evaluate CAB Law Enforcement Draft Recommendations with FWC Law Enforcement
- ✓ To Review and Approve Proposed Revisions to Draft Management and Restoration Plan Framework
- ✓ To Discuss CAB Role in Providing Feedback on ABS Restoration Projects
- ✓ To Discuss Management and Restoration Goals
- ✓ To Identify Needed Next Steps, Information and Presentations, and Agenda Items for Next Meeting

*Amendments to the Posted Agenda:*

None

*(Attachment 2—June 16, 2021 ABSI CAB Agenda)*

#### **V. APPROVAL OF THE APRIL 21, 2021 CAB MEETING FACILITATOR’S SUMMARY REPORTS**

The ABSI CAB voted unanimously to approve the Facilitator Summary Report for the April 21, 2021 CAB meeting 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. Jeff noted that the Project Team plans to conduct 2 additional oystermen workshops during 2021 and noted they are planned for July and October of 2021. Jeff reported that the next oystermen’s workshop is scheduled for July 14, 2021, and the next CAB meeting is scheduled for August 18, 2021.

- Jeff reminded the CAB that the ABSI process calls for the CAB to deliver their consensus recommendations for the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan) in the form of Goals, Objectives, Strategies, and Actions on November 17, 2021 and for this to complete Phase III of the project. The next phase (Phase IV) of the project will be initiated in early 2022 and during this Phase the CAB will use project decision support tools including modeling to evaluate the CAB’s recommendations relative to specific performance measures and expected outcomes for enhancing the health of the Apalachicola Bay System. In addition, the CAB will focus on transitioning to a Successor Group whose role will be to organize a group of key stakeholders committed to working collaboratively for the long-term, and once the CAB process is complete, to ensure that the Plan is implemented, monitored, and adaptively managed over time with the support of the Community. In addition during Phase IV, FSU will

convene a small Restoration Funding Working Group to seek resources and political and governmental support for the CAB's priority recommendations.

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

*(Attachment 5—Workplan, Schedule, and Project Flowchart)*

## **VII. PROJECT BRIEFINGS AND REQUESTED PRESENTATIONS**

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

Sandra Brooke, FSUCML Faculty and ABSI Principal Investigator, provided the CAB with a meeting update on ABSI science and data collection. The update is provided at all CAB meetings. Sandra reported:

The focus for the June 16, 2021 update is on FSU's ABSI restoration experiment.

#### **Reef Design**

- 30 x 30 x 1.5 ft = 50 cubic yards of material (higher relief); 2 cubic yards weighs over a ton!

#### **Material**

- Natural oyster shell – good for spat settlement, can be harvested with tongs.
- Small Lime-rock (2") creates mound, small spaces, many layers, can easily be harvested with tongs.
- Medium Lime-rock (6-8") – creates stable structure, medium spaces, few layers, good for habitat development, can be harvested once oysters develop.

#### **ABSI Hatchery**

- First successful spawn on May 7<sup>th</sup>.
- Larvae set on May 26<sup>th</sup>.
- Deployed on June 15<sup>th</sup> (20 days post-set).
- Spawned again on June 8<sup>th</sup> (3.5 million larvae).

#### **Deployment**

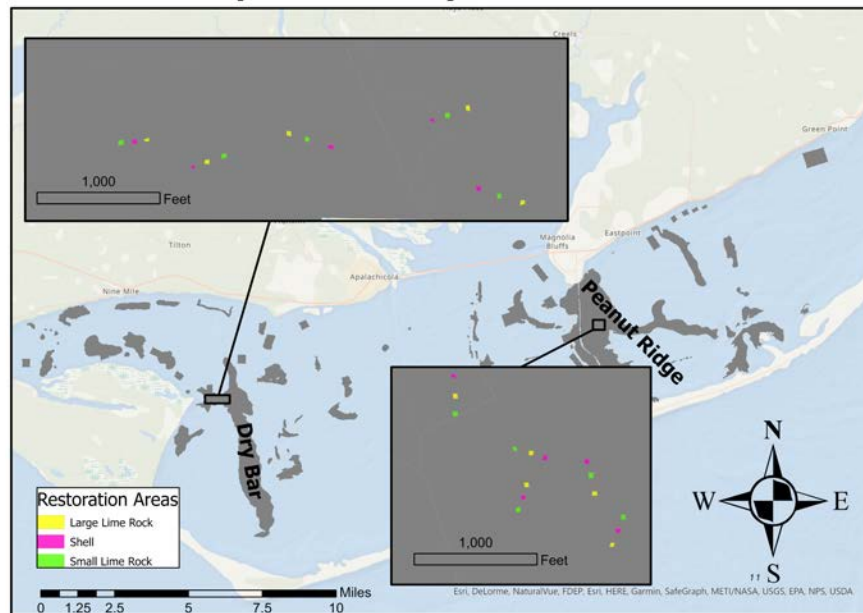
- 26 May – Peanut Ridge Shell.
- 27 May – Peanut Ridge Small Lime-rock.
- 3 June – Dry Bar Small Lime-rock
- 4 June – Dry Bar Shell.
- 9 June – Dry Bar Large Lime-rock.
- TBD – Peanut Ridge Large Lime-rock.

#### **Experimental Design**

- Five replicates in each area (3 treatments).
- Sites marked with bamboo poles.
- Spat on shell also deployed at sites; deployed 20 days post set; second successful spawn being ready for 2<sup>nd</sup> spat on shell deployment.



## ABSI Experimental Oyster Restoration Sites



### Spat Deployment

#### Quantitative Assessment of Spat Survival and Growth

- Vexar cages (14" x 36" x 4").
- Quantitative assessment of spat survival and growth using aquaculture (spat) cages (one per reef) with 150 spat on shell per cage (~ 50 shells).
- Control (one per reef): 50 clean shells per cage to account for wild recruitment.
- Monthly/quarterly (TBD): subsample cages and document survival and growth.
- Document predators.
- Monitor environmental conditions.
- Qualitative assessment of spat planting.
- Leftover spat on shell put in biodegradable mesh bags (50 shells/bag) placed near restoration sites.
- Quarterly monitoring for success (numbers, growth, predators and water quality parameters).

### Mapping

- Conducted by National Oceans and Applications Research Center (NOARC).
- Conducting a high resolution mapping of the restoration experiment (July 2021, and Summer 2022).
- Simultaneous high-resolution 3D bathymetry and SSS with 3" vertical resolution.
- May also map the Miles.

### Questions, Responses, and Comments:

- It was noted that ANERR is permitted to "house" oysters.
- It will be important to mark the restoration experiment sites and to provide signage at docks so boaters are aware of the locations. Guides won't disturb marked experimental plots, but signs at the docks would increase awareness.
- Need to get with Law Enforcement to inform them of the restoration experiment sites and seek their cooperation and assistance with protecting them.



The full presentation is posted to the Project webpage.

### ABSI POLLUTION STUDY BRIEFING

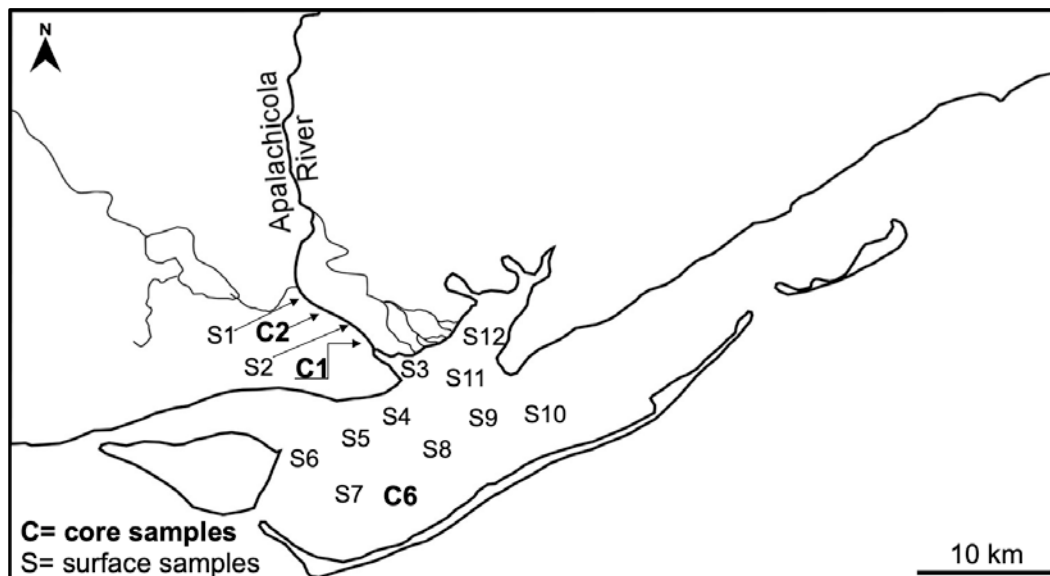
Adebayo Solanke, FAMU PhD candidate working under Dr. Michael Martínez-Colón, provided the CAB with a briefing on his ABSI pollution study. Adebayo reported:

#### Overview

- Estuaries are transitional environments between marine and freshwater systems.
- These aquatic zones receive 80%-90% of all waste released from numerous point and non-point sources as a result of overpopulation, industrialization, and farming among other activities.
- Unfortunately, estuaries function as “natural reservoirs” of heavy metals, pesticides, microplastics, etc.
- Apalachicola Bay, part of the National Estuarine Research Reserve system, is known for its high oyster yields and commerce.
- In 2020, a five-year moratorium was placed on wild oyster harvest to allow oyster population recovery.
- It is unclear what environmental stressors (e.g., salt-water intrusion, droughts, river runoff, nutrients, heavy metals, and pesticides) have contributed to the decline in oysters.

#### Purpose and Objectives

- Provide information to stakeholders on the levels of heavy metals and pesticides from temporal (sediment cores) and spatial (surface samples) perspectives.
- Establish historical (<100 years) reference conditions to help ANERR stakeholders assess pre-polluted and/or pre-management conditions.
- Unclear what natural and anthropogenic stressors have contributed to oyster decline.
- Assessment of sediment cores (past) and surface samples; will assess pre- and post.
- 12 surface and 3 core samples were collected.



*Sampled Sites*

### Parameters of Interest

- Grain size analysis + Total organic carbon (TOC).
- Heavy metals being analyzed for the project:

Pollutants	Oxygenation Indicators
Co (Cobalt)	Th (Thorium)
As (Arsenic)	U (Uranium)
Se (Selenium)	Mo (Molybdenum)
Pb (Lead)	Re (Rhenium)
Fe (Iron)	
Cu (Copper)	
Cd (Cadmium)	
Ni (Nickel)	
Zn (Zinc)	

- Organochlorine (OC) pesticides: aldrin, dieldrin, endosulfan, endrin, heptachlor, and methoxychlor.

### Progress Update

- There is still much work to be done, and the results are very preliminary and incomplete.

Sample	Sampling	Grain size	TOC	Heavy Metals	Pesticides	Radiometric Dating
Surface	Complete	Yet to start	Almost done		Yet to start	N/A
Core 6			Yet to start			Almost done
Core 2			Yet to start			
Core 1			Yet to start		N/A	

### Questions, Responses, and Comments:

- What is the rationale for the choice of pesticides? Also be aware that forest and peanut pesticides are not being analyzed in the survey and they are widely used in the Basin.
- It would be good to indicate if the levels observed are higher than background levels.
- Answer: one compartment is missing so it is not possible to gauge whether metal levels are high. However, we can provide this once results are complete.
- Do any of the metals measured have direct relevance/impact to oysters?
- Answer: No, this is a general survey of metals and not focused on oysters, but we might uncover some correlations.

## **VIII. SUBCOMMITTEE UPDATES AND REPORTS**

### **A. RESTORATION FUNDING WORKING GROUP**

Joel Trexler noted that in response to the confusion expressed by some CAB members, the Restoration Partners Working Group was renamed the Restoration Funding Working Group (RFGW) to better differentiate between the RFGW, the CAB, and the CAB Successor Group. Joel noted that RFGW would take their “marching orders” from the CAB during the ABSI and later from the CAB Successor Group regarding specific projects and research needs to seek funds for. The goal is for the RFGW to interact with funders and write proposals for funding. Joel noted that he is seeking volunteers to serve on the RFGW and that to date two CAB members have volunteered. Joel noted that members of the RFGW don’t have to be CAB members, and that some of the expertise required would need to come from outside current CAB membership.

The ABSI proposal contemplates a 15-year commitment from FSU, 10 years beyond the 5 years of funding provided by the TRIUMPH Board. Joel noted that the Restoration Funding Working Group (RFGW) will be a team of local, state, private, and NGO stakeholders focused on developing plans for long-term funding of the broader effort; the goal at the end of the 5-year ABSI period is to have a funding pipeline for restoration secured. Joel welcomed input from the CAB on the RFGW including proposed candidates for membership.

### **B. CAB SUCCESSOR GROUP SUBCOMMITTEE**

Anita Grove and Shannon Hartsfield reported that the Subcommittee is in a holding pattern, but they have discussed the type of members needed (stakeholder representation) and the structure and format for the Subcommittee.

### **C. COMMUNITY OUTREACH SUBCOMMITTEE**

Chad Hanson reported that the subcommittee has been active and they are working on a variety of initiatives. The Outreach initiative includes:

- Developed an Op-Ed for local media sources.
- Having a presence at the Carrabelle Riverfest.
- Holding a SciCafé series at the East Point Brewery.
- Working on dates to make presentations at the Apalachicola City Commission and the Franklin County Commission.
- Participating in the October FSUCML open house.
- Having an Op-Ed piece for the SGI newsletter.
- Customizing the Op-Ed piece wherein individual CAB members could put their personal “perspective” on the ABSI effort and distribute to Regional newspapers and other media sources.
- Developed a “rack” card for distribution.

## **IX. CAB FEEDBACK ON OUTREACH PLAN**

Chad Hanson indicated that the Community Outreach Subcommittee wanted the CAB’s feedback on the Subcommittee’s overall outreach plan generally, and the new Rack Card titled: *Pathway to Recovery: Apalachicola Bay System Initiative*, and the Op-Ed for newspapers specifically. Chad explained that CAB members could tweak the Op-Ed for the intended audiences and distribute it to their media contacts. In addition, Chad requested volunteers to distribute the Op-Ed to various media outlets including Regional

newspapers. It was suggested that the Op-Ed should include information regarding the Successor Group and the restoration implementation strategy beyond the ABSI project time horizon. The Facilitator asked CAB members for their feedback and whether they approved of the Subcommittee's approach and overall plan. The CAB members were unanimously supportive and appreciative of the Committee's work products and overall community outreach plan. Members thanked the Subcommittee for their excellent work, and acknowledged the importance of keeping the community informed and involved in the ABSI.

## **X. OYSTER FISHERY LAW ENFORCEMENT DISCUSSION**

The CAB engaged in an open discussion on their package of draft recommendations regarding FWC law enforcement strategies with FWC Captain Charlie Wood (CW). The Facilitator reviewed each of the proposed strategies and actions in turn, and Captain Wood provided feedback from law enforcement's perspective and responded and answered CAB members' comments and questions. Following is a summary of the issues discussed.

### **Law Enforcement Strategies and Actions:**

*Goal B, Strategy #12.) 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 12-A.): Develop strategies to increase FWC enforcement presence and number of checkpoints to provide a deterrent to illegal activities.***

- We are aware of the importance of "flying the FWC flag" to serve as a deterrent to illegal activity.
- We have 9 officers and 2 lieutenants working in Franklin County.
- We also have 2 uniformed investigators, and a plain-clothes officer.
- There are a total of 16 officers assigned to the area and they can be available when needed, and 11 officers are exclusive to the Bay.
- In addition, we have 35 officers across 6 counties, and can direct them when and where needed.
- What about water vs. land operations: A.) 3 officers/shift ~4 patrolling each day with one on the water and one on land.
- We prioritize patrols, and we know where to be when needed on water or land.
- Do you track hours on the water?
- Yes, our shellfish patrols have a set number and keep statistics.
- With the "old style" checkpoints we were monitoring for undersize oysters on the water.
- We did have more citations with the old style checkpoints, and it was a deterrent but expensive and time consuming.
- Best strategy to deter bringing in undersize oysters is to check on the water or when offloading at the dock.
- CW indicated that random checking of dealers is doable.
- There are a limited number of dealers to monitor now.
- Flying the flag does help keep people in check, and legal.
- FWC does not want to impede a dealer's business and foul them up.
- Presence is a deterrent, keeps oystermen from bringing in illegal size oysters.
- It was suggested to flood the area with law enforcement presence during opening of the oyster season.

***Action 12-B.): Develop strategies to ensure uniformity in the harvestable and marketable size of oysters.***

- FWC will enforce whatever the size limit is.
- 3” size is based on science, oysters are sequential hermaphrodites transitioning to females. The data supports that oysters die as they get older and have more eggs when they get older. Based on this data the 3” size represents a happy medium.
- Concern was expressed for harvesting spawning females relative to sustainability of the fishery.
- Paying for oysters by the pound does not encourage the harvesting of only legal size oysters.
- It would be better to be paid by the oyster similar to how it is done in aquaculture, to incentive harvesters bringing in only legal size oysters.

***Action 12-C.): Work with FWC and FDAC to implement enforcement changes.***

- We need oystermen reporting and policing each other, in consultation with LE.
- Concern with vendettas/pay backs for reporting illegal activity.
- Shellfish processing facilities is where enforcement overlaps. FDACS notifies FWC when there are size violations.
- FWC deals with harvesters, and don’t check dealers.
- A product that is illegal should be illegal all the way through the system. Harvesters/Processors/Dealers should all be held accountable.
- Dealers worried about losing customers if they strictly enforce purchasing only legal size oysters.
- With fewer dealers the regulations should be easier to enforce.
- Dealers want strict enforcement so no one buys undersize oysters. Otherwise it is unfair competition.

***Action 12-D.): 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.***

- FWC’s role is to evaluate current regulations and enforce them and catch violators.
- We have deterrents in the law already.
- Conversations with the judicial system are helpful regarding using penalties as deterrents.
- As an example, one judge doubles the fine when there are 50% undersize oysters. This is a good deterrent.

***Action 12-E.): 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.***

- Current regulations have a tiered system of penalties including fines and jail time.
- Oystermen expressed the concern that there have been repeat violators that receive fines, but with no real consequences to stop them from continuing to harvest undersize oysters.
- Holding their boat from use was a strong deterrent in the past.
- Need to better enforce the current penalty system. There is not a need for change to the laws.
- Suspension of licenses is a good deterrent; a judge could require them to surrender their license depending on the circumstances. CW will check regulations to see if this allowable.
- The current judge in Franklin Country will help with enforcement.

***Action 12-F.):*** 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.

- FWC is happy to do this. This is doable. We could do this twice/year - before the summer and winter seasons. We just need a venue to hold the workshops.
- ANERR is happy to help with and provide the venue, and we could tie the workshops with license renewal to encourage participation.
- FDACS is also happy to participate in the workshops.

***Action 12-G.):*** Work together and with other stakeholders to seek funds to support the recommended increased law enforcement presence in the Bay.

- FWC shifts our resources when and where they are needed.
- We have a pool of 16 officers to assist.
- Q: Is this typical? A: Depends on tasks they are assigned to.
- How many officers are used for protection of the resource, how many on the water on a daily basis? One/day?
- Yes, as an example yesterday we had 3 officers in 2 vessels, but it is highly variable.
- CW asked what amount of law enforcement presence is needed from stakeholders' perspectives?
- During boating season April – Labor Day, each officer does about 10 hours/week in boat and this is times 9 officers.
- Oystermen can only work certain days and times. There are not many now on the water so it should be easy to ensure a strong law enforcement presence at the right times.

#### **Management Strategies and Actions:**

***Goal B, Strategy #10.) Evaluate a suite of management approaches that in combination achieve the goal of maintaining a sustainable wild oyster harvest fishery as measured in relation to relevant performance metrics for determining success.***

***Action 10-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.

- FWC can enforce this management approach; there are no issues from our perspective.

***Action 10-B.):*** Implement a summer wild harvest fishery closure.

- FWC can enforce this management approach; there are no issues from our perspective.

***Action 10-E.):*** Provide daily harvest limits in conjunction with a five-day harvest week (M-F).

- FWC can enforce this management approach.
- There is an issue with what is a legal bag, 60# measured by dealer. FWC checks at boat or landing, and we are required to use certified scales. In addition, oystermen don't have scales on boat so it's hard for them to get the weights correct.
- Dealers worked with FWC on this.

- It would be helpful if oystermen were allowed to have scales on board to ensure the bags are 60#, but we have been told this is processing oysters and not allowed.
- Bag limits allow: 2 -5 gallon or 1-10 gallon bucket, or a 60# bag.
- CW agreed that weight is the best way to measure oysters instead of volume.
- CW indicated that he did not think that weighing on board is processing, and the dealers will still have to weigh the product when it is delivered.
- CW will check on this and get back with the oystermen.

***Action 10-I.): Implement a recreational wild oyster harvest limit of one 5-gallon bucket of oysters, and allow recreational harvest during the summer with the same one 5-gallon bucket limit.***

- FWC will enforce whatever the rules are. Whatever is determined by the science to be the best strategies and approaches are fine with law enforcement.
- Let the science drive whether to have or not to have a summer closure for recreational harvest.

## **XI. REVIEW AND APPROVAL OF REVISED STRATEGIES AND ACTIONS**

Jeff Blair led the CAB through a review of the proposed revisions to the Framework for the Draft Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Goals, Objectives, Strategies, Actions, and Performance Measures). The revisions are highlighted in the Strategies Evaluation Worksheet posted to the project webpage and distributed to CAB members prior to each meeting. After reviewing the proposed changes the CAB agreed with and approved the proposed package with several additional changes made during the meeting. In addition, the CAB reviewed, provided comments, and approved the proposed revisions to the Performance Measures and Estuarine Metrics.

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

- Will the SAB review the metrics and provide feedback? Will the metrics be reviewed and updated as the project progresses.
- Answer: yes the SAB have reviewed the metrics and will be asked to do so again, and the metrics will be revised throughout the project as needed.

The ABSI Plan Framework as revised and approved by the CAB is included as *Attachment 6* of this Report.

*(Attachment 4—Meeting Chat Summary)*

*(Attachment 6—Revised ABSI Plan Framework)*

## **XII. ABSI CAB ROLE IN PROVIDING FEEDBACK AND INTERACTING WITH ABS RESTORATION AND RESEARCH PROJECTS**

The Project Team provided guidance regarding the scope of ABSI, and the CAB discussed how they could best help with coordination, communication, and also in providing feedback on the various research and restoration projects planned or in the process of being implemented in the ABS. In addition, the CAB felt that the Plan, once complete, should be provided to researchers and funders so projects could be designed to fill existing gaps, and to leverage and work in coordination with existing



and planned research and restoration projects. Following are comments and recommendation provided by the CAB on the issue.

- FWC is represented on the CAB so they are aware of and part of the ABSI restoration planning.
- The CAB and ABSI can advise, but have no authority.
- A big issue is that there is no database of all existing and planned research and restoration projects.
- We need a transition plan for how the ABS Plan, once adopted, is subsequently implemented and to ensure that all relevant entities are aware of and coordinating with the ABS Plan for their research and restoration project planning.
- The ABSI Plan could be used as a guide (or paradigm) for other entities in developing their own efforts, to create synergies, and to ensure projects fill needs in the System.
- ABSI could be a forum for discussion on restoration projects.
- Need to reach out to the various entities conducting restoration in the ABS.
- Inform entities, organizations, and funding sources about the ABS Plan. The Plan should serve as a guide to help develop needed research and restoration projects.
- The critical time to let people know about the ABS Plan is during the planning phase, it is difficult to get out in front of this. PIs should know in advance before responding to and proposing projects. Funders should know as well.
- Consider making a part of the Successor Group's scope to educate and communicate regarding using the ABS Plan to drive projects for restoration.
- Tasks/Next Steps: Restoration Funding Working Group and CAB Successor Group could help distribute the ABS Plan.

### **FWC Restoration Project**

- FWC: will coordinate with CAB on restoration projects and working synergistically with the ABS Plan.
- FWC Restoration project update: cultch deployed next week over ~7 acres.
- Q: What is the spatial configuration? A: Don't currently have info.
- Q: What is the location of the restoration? A: Don't know.
- BJ will let SH know regarding location, and provide an update on the restoration project at the August CAB meeting.

### **XIII. PUBLIC COMMENT**

The facilitator invited members of the public to provide comments.

*Public Comments:*

- None were offered.

#### **XIV. NEXT MEETING OVERVIEW AND ISSUES**

The August 18, 2021 CAB meeting will focus on discussing restoration and management options, on revisions to the Plan Framework (Goals, Objectives, Strategies, Actions, and Metrics), and on prioritization of strategies for each of the Plan's Goal areas (A – E), and on improved law enforcement approaches. The August meeting will be conducted in-person with a virtual participation option.

##### **Proposed Agenda Items for the Next Meeting:**

- FWC restoration project update.
- FDACS water quality sampling and closure areas update.
- Prioritization of ABS Plan strategies exercise.
- Oyster Fisheries and Habitat Management Plan for the Pensacola Bay System overview and discussion.
- Modeling scenarios for potential restoration locations presentation and discussion.
- Predictive Habitat Model presentation and discussion.
- Update Worksheet/Draft Plan to incorporate the approved revisions.
- Update the Performance Measures and Estuarine Metrics to incorporate the approved revisions.

#### **ADJOURNMENT**

The Facilitator thanked CAB members, ABSI Project Team members, and the public for their participation, and adjourned the meeting at 12:00 PM on Wednesday, June 16, 2021.

**ATTACHMENT 1  
MEETING PARTICIPATION LIST**

<b>MEMBER*</b>	<b>AFFILIATION</b>
<b>Agriculture/ACF Stakeholders/Riparian Counties</b>	
<b>1. Chad Taylor</b>	Riparian Counties Stakeholder Group/ACFS/Agriculture
<b>Business/Real Estate/Economic Development/Tourism</b>	
2. Chuck Marks	Acentria Insurance
<b>3. Mike O'Connell</b>	SGI Civic Club/SGI 2025 Vision
4. John Solomon	Apalachicola Chamber of Commerce
<b>Environmental/Citizen</b>	
<b>5. Georgia Ackerman</b>	Apalachicola Riverkeeper
<b>6. Lee Edmiston</b>	Retired DEP/ANERR
<b>7. Chad Hanson</b>	Pew Charitable Trusts
<b>Local Government</b>	
<b>8. Bert Boldt</b>	Franklin County Commissioner
<b>9. Anita Grove</b>	Apalachicola City Commissioner
<b>Recreational Fishing</b>	
10. Chip Bailey	Peregrine Charters
<b>11. Frank Gidus</b>	CCA Florida
<b>Seafood Industry</b>	
<b>12. Shannon Hartsfield</b>	Franklin County Seafood Workers Association and Oysterman
<b>13. Roger Mathis</b>	Oysterman and R.D.'s Seafood
<b>14. Steve Rash</b>	Water Street Seafood
15. Denita Sassor	Outlaw Oyster Company, Aquaculture
16. TJ Ward	Buddy Ward & Sons Seafood
<b>State Government</b>	
<b>17. Jenna Harper</b>	ANERR/DEP
<b>18. BJ Jamison</b>	FWC Division of Marine Fisheries Management
19. Alex Reed	FDEP Office of Resilience & Coastal Protection
<b>20. Portia Sapp</b>	FDACS Division of Aquaculture
<b>21. Paul Thurman</b>	NFWFMD
<b>University/Researchers</b>	
22. Tom Frazer	UF/DEP Governor's Science Advisor
<b>23. Erik Lovstrand</b>	UF/IFAS/Florida Sea Grant Franklin County
<i>*The names of CAB members participating in the meeting are indicated in bold font.</i>	

PROJECT TEAM AND FACILITATORS	
FLORIDA STATE UNIVERSITY	
<b>Sandra Brooke</b>	Marine Biologist
<b>Ross Ellington</b>	Professor Emeritus of Biological Science
<b>Madelein Mahood</b>	Outreach and Education
<b>Joel Trexler</b>	FSUCML Director
FCRC CONSENSUS CENTER, FLORIDA STATE UNIVERSITY	
<b>Jeff Blair</b>	Community Advisory Board Facilitator
<i>The names of Project Team members participating in the meeting are indicated in bold font.</i>	

ALTERNATES FOR CAB MEMBERS	
<b>Ken Jones</b>	Chad Taylor (Riparian Counties Stakeholders Coalition)
<i>The names of CAB member's alternates participating in the meeting are indicated in bold font.</i>	

MEMBERS OF THE PUBLIC	
Josh Adams	Apalachee Regional Planning Council
Ed Camp	University of Florida (UF)
Michael Martinez-Colon	FAMU
Katie Davis	FDEP
Josh Gabel	U.S. Senator Marco Rubio's Office
Laura Geselbracht	TNC, ABSI SAB
Elizabeth Hughes	Representative Jason Shoaf's Office - Florida House of Representatives
Jessica Holley	Representative Jason Shoaf's Office - Florida House of Representatives
Carrie Jones	FDACS
Katie Konchar	FWC
David Reeves	National Fish Wildlife Foundation
Anthony Sogluizzo	Florida State University (FSU)
Adebayo Solanke	FAMU
Matt Swanson	U.S. Senator Marco Rubio Intern
Captain Charlie Wood	FWC Law Enforcement

**ATTACHMENT 2**  
**JUNE 16, 2021 MEETING AGENDA**

**ABSI COMMUNITY ADVISORY BOARD MEETING XIII OBJECTIVES**

- ✓ To Approve Regular Procedural Topics (Meeting Agenda and, Summary Report)
- ✓ To Receive Project Briefings and Community Advisory Board Requested Presentations
- ✓ To Receive Updates from RFWG, Community Outreach, and CAB Successor Group
- ✓ To Provide Feedback on Community Outreach Plan
- ✓ To Evaluate CAB Law Enforcement Draft Recommendations with FWC Law Enforcement
- ✓ To Review and Approve Proposed Revisions to Draft Management and Restoration Plan Framework
- ✓ To Discuss CAB Role in Providing Feedback on ABS Restoration Projects
- ✓ To Discuss Management and Restoration Goals
- ✓ To Identify Needed Next Steps, Information and Presentations, and Agenda Items for Next Meeting

**ABSI COMMUNITY ADVISORY BOARD MEETING XIII AGENDA—JUNE 16, 2021**

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

1.)	8:30 AM	<b>WELCOME, REVIEW OF VIRTUAL PARTICIPATION GUIDELINES, AND ROLL CALL</b>
2.)	8:35	<b>SOCIAL SCIENCE SURVEY</b>
3.)	8:40	<b>AGENDA REVIEW AND MEETING OBJECTIVES</b>
4.)	8:45	<b>APPROVAL OF FACILITATORS' SUMMARY REPORTS (APRIL 21, 2021)</b>
5.)	8:50	<b>REVIEW OF UPDATED PROJECT MEETING SCHEDULE AND WORK PLAN</b>
6.)	8:55	<b>PROJECT BRIEFINGS AND REQUESTED PRESENTATIONS</b> <ul style="list-style-type: none"> <li>• <i>ABSI Science and Data Collection Update.</i> Sandra Brooke, FSUCML (15)</li> <li>• <i>ABSI Pollution Study Briefing.</i> Adebayo Solanke, FAMU (20)</li> </ul>
7.)	9:30	<b>SUBCOMMITTEE AND WORKING GROUP UPDATES AND REPORTS</b> <ul style="list-style-type: none"> <li>• Restoration Funding Working Group Update. Joel Trexler</li> <li>• Community Outreach Subcommittee Status Update and Report. Chad Hanson</li> <li>• CAB Successor Group Subcommittee Status Update and Report. Anita/Shannon</li> </ul>
<b>~10:00</b>		<b>BREAK</b>
8.)	10:10	<b>CAB FEEDBACK ON COMMUNITY OUTREACH SUBCOMMITTEE'S DRAFT PLAN</b>
9.)	10:30	<b>FWC LAW ENFORCEMENT OF OYSTER FISHERY DISCUSSION</b> <ul style="list-style-type: none"> <li>• Discuss and evaluate draft CAB law enforcement recommendations with FWC law enforcement (Captain Charlie Wood, FWC)</li> </ul>
10.)	11:15	<b>REVIEW AND APPROVE PROPOSED REVISIONS TO DRAFT MANAGEMENT AND RESTORATION PLAN FRAMEWORK AND PERFORMANCE MEASURES</b>
11.)	11:40	<b>ABSI CAB ROLE IN PROVIDING FEEDBACK ON ABS RESTORATION PROJECTS</b>
		<b>PRIORITIZATION OF STRATEGIES BY GOAL AREAS (A – E), AS TIME PERMITS</b>
12.)	<b>~11:50</b>	<b>PUBLIC COMMENT</b>
13.)	11:55	<b>NEXT STEPS AND AGENDA ITEMS FOR THE NEXT MEETING</b> <ul style="list-style-type: none"> <li>• Review of action items and assignments</li> <li>• Oystermen's Workshop July 14, 2021</li> <li>• Identify agenda items and needed information and presentations for the August 18, 2021 CAB meeting (In-Person at ANERR)</li> <li>• Meeting evaluation</li> </ul>
<b>~12:00 PM</b>		<b>ADJOURN</b>

**ATTACHMENT 3**  
**MEETING EVALUATION RESULTS (ZOOM POLL)**

*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 12 CAB members.*

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

<i>Average Rating</i>	<i>5. Strongly Agree</i>	<i>4. Agree</i>	<i>3. Not Sure</i>	<i>2. Disagree</i>	<i>1. Strongly Disagree</i>
<b>4.6 of 5</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>

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

<i>Average Rating</i>	<i>5. Strongly Agree</i>	<i>4. Agree</i>	<i>3. Not Sure</i>	<i>2. Disagree</i>	<i>1. Strongly Disagree</i>
<b>4.6 of 5</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>

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

<i>Average Rating</i>	<i>5. Strongly Agree</i>	<i>4. Agree</i>	<i>3. Not Sure</i>	<i>2. Disagree</i>	<i>1. Strongly Disagree</i>
<b>4.7 of 5</b>	<b>8</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>

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

<i>Average Rating</i>	<i>5. Strongly Agree</i>	<i>4. Agree</i>	<i>3. Not Sure</i>	<i>2. Disagree</i>	<i>1. Strongly Disagree</i>
<b>4.7 of 5</b>	<b>8</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>

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

<i>Average Rating</i>	<i>5. Strongly Agree</i>	<i>4. Agree</i>	<i>3. Not Sure</i>	<i>2. Disagree</i>	<i>1. Strongly Disagree</i>
<b>4.7 of 5</b>	<b>8</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>

**6.) The facilitator accurately documented the Working Group Member input**

<i>Average Rating</i>	<i>5. Strongly Agree</i>	<i>4. Agree</i>	<i>3. Not Sure</i>	<i>2. Disagree</i>	<i>1. Strongly Disagree</i>
<b>4.8 of 5</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>

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

<i>Average Rating</i>	<i>5. Strongly Agree</i>	<i>4. Agree</i>	<i>3. Not Sure</i>	<i>2. Disagree</i>	<i>1. Strongly Disagree</i>
<b>4.5 of 5</b>	<b>6</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>

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

<i>Average Rating</i>	<i>5. Strongly Agree</i>	<i>4. Agree</i>	<i>3. Not Sure</i>	<i>2. Disagree</i>	<i>1. Strongly Disagree</i>
<b>4.8 of 5</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>

**9.) What do you think worked well using the virtual Zoom platform for the meeting?**

- Seems like everyone has figured out Zoom, so excellent meeting. You guys are doing a great job!
- Saved a lot of travel and can be used as a mix with in person as appropriate.

ATTACHMENT 4  
MEETING CHAT SUMMARY (ZOOM)

08:33:03 **Steve Rash:** I have no audio or video.  
08:33:20 **Maddie Mahood:** Got it, thanks Steve!  
08:40:43 **Maddie Mahood:** [https://ufl.qualtrics.com/jfe/form/SV\\_6utNUzOVowlLoLU](https://ufl.qualtrics.com/jfe/form/SV_6utNUzOVowlLoLU)  
09:14:22 **Georgia Ackerman:** Hey science folks, Pb is lead, right?  
09:14:35 **Joel Trexler:** yes  
09:14:38 **Martinez-Colon:** Yes ☺  
09:15:00 **Georgia Ackerman:** Thanks  
09:24:50 **Anita, Roger, Shannon, Jenna:** NOAA Mussel Watch  
09:36:54 **Anita, Roger, Shannon, Jenna:** Also Estuaries Day – October 1st  
09:37:23 **Maddie Mahood:** Yes, thanks Anita!  
09:38:15 **C. Chadwick Taylor:** Jackson County Times and the Floridian from Jackson County would be good and I'm glad to do that.  
09:40:00 **Maddie Mahood:** Great, thanks Chad! I've made note of that.  
09:45:27 **C. Chadwick Taylor:** rack card will be good at Tourist Development Council and at US Hwy 231 Visitor Center at State Line  
09:48:02 **Maddie Mahood:** Noted!  
11:43:21 **C. Chadwick Taylor:** Might be worth to ID and list others like the Feds, ACF Stakeholders, AG and forestry in a section, or like glossary.  
11:48:07 **Martinez-Colon:** Got to go. ☺  
11:48:23 **Martinez-Colon:** It is nice “seeing” you ☺  
11:48:49 **Maddie Mahood:** Thanks for joining us Michael! ☺  
11:49:20 **C. Chadwick Taylor:** St. Andrews and St. Joe group as well.  
  
11:52:08 **Maddie Mahood:** 1.What do you think worked well using the Zoom platform for the meeting? 2. How could the virtual format be improved for future meetings?  
11:54:40 **Georgia Ackerman:** Thanks all.  
11:56:02 **C. Chadwick Taylor:** Saved a lot of travel and can be used as a mix with in person as appropriate.

-----Open Ended Survey Question Responses Sent Directly to Maddie Mahood-----

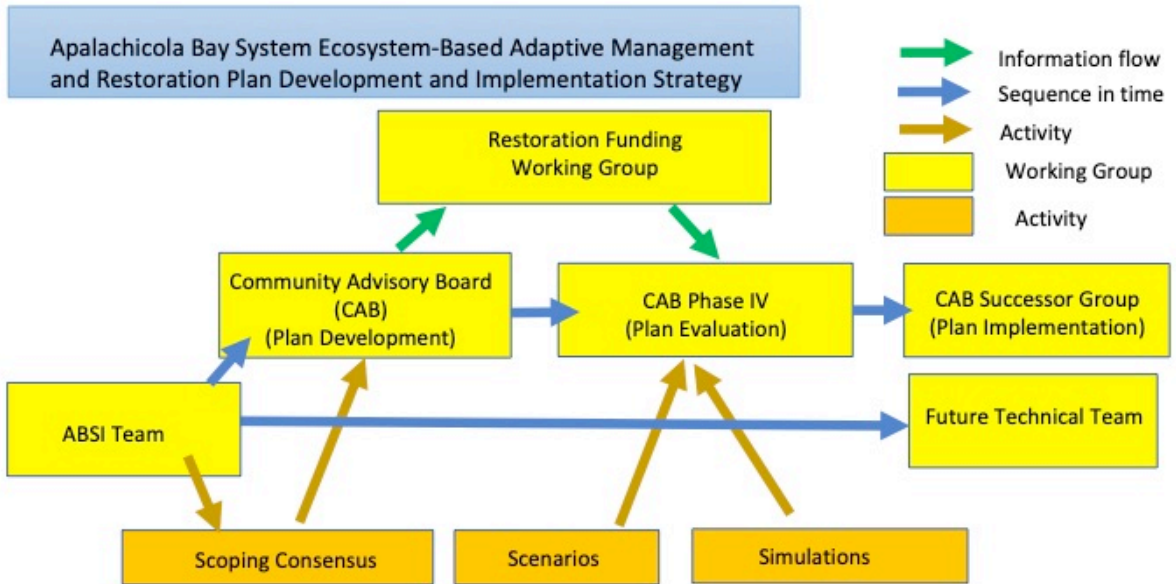
11:55:02 **Bj. Jamison:** Maddie that was me. I saw strongly and confused it. Meeting went well all around. Should be 5s. (*in reference to the “1’s” listed on the survey*)  
  
11:55:12 **Portia Sapp:** Seems like everyone has figured out zoom, so excellent meeting. You guys are doing a great job!



**ATTACHMENT 5**  
**WORKPLAN AND SCHEDULE**

<b>UPDATED AS OF THE JUNE 16, 2021 CAB MEETING</b>		
<b>PHASE I—STANDING UP AND ORGANIZATION OF THE ABSI CAB</b>		
<b>ABSI Assessment Process</b>	May- Aug. 2019  Report Sept. 2019	Assessment report based on interviews of over 60 stakeholders and agency personnel (May – August 2019) summarized key challenges and issues that should be addressed in the Apalachicola Bay System Initiative (ABSI) and by its Community Advisory Board (CAB); facilitators recommend members for the CAB.
<b>ABSI CAB Questionnaire</b>	Sept. 2019	Questionnaire report on the CAB members’ views on successful short and long-term outcomes and on critical ABSI challenges and issues.
<b>Meeting I.</b> Eastpointe FL	Oct. 30, 2019	Scoping and organizational meeting, review and refinement of overall project purpose, vision and goal framework. Presentation on the ABSI project’s four main components: research, management, community engagement, and oyster reef and bay restoration. Public comment.
<b>Meeting II.</b> Eastpointe FL	Dec. 18, 2019	Member-requested presentations on Apalachicola River Slough Restoration project, Oyster Fishery and Harvest Statistics, ABSI Research Update, and FWC Apalachicola Bay Oyster Restoration, Phase II. Review and refinement of vision themes and goal framework, and identification of key topical issues to inform the drafting of objectives. Public comment
<b>Meeting III.</b> Eastpointe FL	Jan. 8, 2020	Member-requested presentations on Oyster Ecology, Hydrologic modeling and Oyster Population Models. Review, refinement and adoption of five vision themes, goals, outcomes and objectives, and initial review of draft performance measures. Public comment
<b>PHASE II—SCOPING OF ABSI ISSUES, IDENTIFICATION OF PERFORMANCE MEASURES &amp; STRATEGIES</b>		
<b>Meeting IV.</b> Eastpointe FL	Mar. 11, 2020	Member-requested presentations on current status of Apalachicola Bay, FDACS Aquaculture Leasing Program, Oyster Reef Management in Apalachicola Bay, and the Chesapeake Bay Oyster Futures Consensus Process. Review of Apalachicola Bay System Ecosystem-Based Management and Restoration Plan goals, outcomes, and objectives. Identification of initial draft strategies and related performance measures. Public comment.
<b>Meeting V.</b> Virtual Meeting	May 22, 2020	Member-requested presentations on FWC Overview of Oyster Management, FWRI Oyster Monitoring and Restoration Effects in Apalachicola Bay, MK Ranch Hydrologic Restoration, and TNC Lake Wimico project. Identification and evaluation of preliminary strategies and performance measures to achieve each of the five goals and objectives. Public comment.
<b>CAB Strategies</b>	June 2020	CAB Worksheet to identify potential strategies for each of the five goals.
<b>Meeting VI.</b> Virtual Meeting	July 16, 2020	Member-requested presentations. Decision support tools update & demonstration. Review and evaluation of the preliminary strategies by CAB member for Plan Goal. Public Comment.
<b>Meeting VII.</b> Virtual Meeting	Sept. 9, 2020	Member-requested presentations. Identification, evaluation and refinement of objectives, strategies and performance measures for Goals A-E. Public Comment.
<b>Meeting VIII.</b> Virtual Meeting	Oct. 15, 2020	Member-requested presentations. Review of strategies and identification, and evaluation of actions steps to achieve strategies. Evaluation of Performance Measures and categories. Public Comment.
<b>Meeting IX.</b> Virtual Meeting	Nov. 12, 2020	Member-requested presentations. Agreement on Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan) framework. Public engagement on the Plan strategy discussion. Discussion of strategies and action steps to achieve Goals. Discussion of ecological and management goals. Public comment.
<b>Oystermen’s Workshop #1</b>	Dec. 2, 2020	Overview of Project Scope, Purpose, and Status, and Oystermen’s input on restoration experiment, suitable habitat for restoration, and management and restoration alternatives.

<b>PHASE III—BUILDING CONSENSUS ON CAB RECOMMENDATIONS FOR THE ABS ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION PLAN</b>		
<b>Meeting X.</b> Virtual Meeting	Jan. 13, 2021	Member-requested presentations. Sub-committee reports. Discussion of estuarine metrics and restoration goals. Public comment.
<b>Meeting XI.</b>	Feb. 24, 2021	Member-requested presentations. Sub-committee reports. Review and approval of revised Draft Plan Framework. Discussion of management goals. Public comment.
<b>Oystermen’s Workshop #2</b>	April 15, 2021	Oystermen’s review and comments on draft Management approaches and Plan Framework (Strategies and Actions for Goals and Objectives)
<b>Meeting XII.</b>	April 21, 2021	Member-requested presentations. Sub-committee reports. Discussion of estuarine metrics. Discussion and approval of revised Plan Framework and Performance Measures. Discussion of management approaches. Public comment.
<b>Meeting XIII.</b>	June 16, 2021	Member-requested presentations. Sub-committee reports. Community Outreach Plan approval. Discussion and agreement on revised Draft Plan Framework and inclusion of management approaches. Law enforcement discussion. Public comment.
<b>Oystermen’s Workshop #3</b>	<i>July 14, 2021</i>	ABSI restoration experiment update and feedback. FWC restoration project update and feedback. Management and Restoration Plan feedback.
<b>Meeting XIV.</b>	Aug. 18, 2021 ANERR	Continue review and consensus testing of Draft Plan and implementation strategies and actions, and agreement on Draft Plan. Prioritization of Strategies. Presentation on modeling scenarios for potential restoration locations. Presentation on Habitat Model. Public comment.
<b>Meeting XV.</b>	Oct. 20, 2021 ANERR	Agreement on recommendations for inclusion in the Plan. Public comment.
<b>Public Workshop and/or Oystermen’s Workshop #4</b>	<i>Tentatively October</i>	<i>Schedule &amp; format dependent on status of the COVID-19 pandemic.</i> Review and oystermen’s and/or public comments on Draft ABS Ecosystem-Based Adaptive Management Plan and implementation strategies.
<b>Meeting XVI.</b>	Nov. 17, 2021 ANERR	Complete Phase III of project. Final CAB approval of Management and Restoration recommendations for the Plan. Briefing on Phase IV of the ABSI CAB. Public Comment.
<b>PHASE IV—RESTORATION PROJECT SELECTIONS AND IMPLEMENTATION/FUNDING PLANNING</b>		
Tentatively January/February 2022		<ol style="list-style-type: none"> <li><b>CAB.</b> CAB continues with additional members as needed, and works on evaluating the best combination of strategies that will achieve management and restoration objectives for the Bay using decision support tools and available data, and prioritization of specific restoration projects.</li> <li><b>Restoration Funding Working Group (RFGW).</b> The Restoration Funding Working Group’s role is to seek funding to implement the CAB’s priority recommendations. The RFGW will be in place by January 2022.</li> <li><b>CAB Successor Group.</b> The CAB Successor Group is organized and 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, and once the CAB process is complete (June 2024), to ensure that the Plan is implemented, monitored, and adaptively managed over time and with the support of the Community.</li> </ol>



**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 6**  
**REVISED APPROVED ABSI PLAN FRAMEWORK**

**SECTION I**  
**COMMUNITY ADVISORY GROUP DRAFT ABSI STRATEGIES**

**OVERARCHING APPROACHES**

1. Use the following ABSI-approved name for the developing 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**

**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 DRAFT 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).

- Using seed is a better approach, moving has high mortality rate.

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

3) Develop criteria for restoring specific reefs or reef systems damaged by environmental conditions or natural disasters.

• *Action 3-A.):* Evaluate degree of damage and potential for recovery.

• *Action 3-B.):* Develop an approach for mitigating damage (e.g., physical repair, spat supplements, or some combination of both).

• *Action 3-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, CAB



- 4) Determine area (acres or km<sup>3</sup>) 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 4-A.):* Map existing oyster reefs using multibeam sonar and backscatter, and ground-truth for accuracy.

*Action 4-B.):* Apply model that uses reproductive output, recruitment, natural mortality rates and fishery harvest to assess oyster population dynamics.

<b>Lead:</b> FWC	<b>Partners:</b> FSU, UF
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- 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 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.):* Continue monitoring intertidal and begin monitoring sub-tidal habitats using same protocols as FWC. Data will be shared between FWC and ABSI.

*Action 5-C.):* 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-D.):* Collect long term in situ environmental data using ABSI instruments and integrate ANERR environmental and nutrient data as correlates with oyster metrics.

*Action 5-E.):* Generate health indicators for ABSI using monitoring data, and other ecological factors (e.g. oyster-associated communities and structural complexity).

<b>Lead:</b> FSU	<b>Partners:</b> FWC, ANERR
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- 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.

<b>Lead:</b> UF	<b>Partners:</b> FWC, FSU
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- 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.

<b>Lead:</b> FSU	<b>Partners:</b> UF, FWC, universities, government agencies
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- 8) Seagrass and other SAV, and wetland and riparian habitat should be restored concurrently to work synergistically with oyster habitat restoration to enhance restoration of the ABS.

<b>Lead:</b> Franklin Co.	<b>Partners:</b> DEP
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## 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 protection of the habitat and the fishery it supports is supported by science, stakeholder input, and industry experience, and is implemented in a manner that provides both fair and equitable access to and protection for 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. It is imperative that this Plan 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 oysters 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.<sup>1</sup> 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 DRAFT STRATEGIES**

1. Recommend specific criteria and/or conditions, with related performance measures for the reopening of Apalachicola Bay to limited wild oyster harvesting.
  - *Action 1-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 1-B.):* Work with FWC and FDACS to ensure that definitions of oyster population health are not only based on harvest metrics.

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

<b>Lead:</b> FWC	<b>Partners:</b> FSU, UF, NGOs, citizen scientists, watermen
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3. 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 3-A.):* Use a co-management advisory committee to assess and make a recommendation to the state.
  - *Action 3-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.

<b>Lead:</b> FWC	<b>Partners:</b> FDACS, FSU, UF, local governments
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4. 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 4-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.
5. Manage the commercial oyster industry and recreational oyster fishing to provide for sustainable spat production and spawning and the recovery of oyster populations.

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<sup>1</sup> 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 5-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 5-B.):* Develop strategies to limit oyster harvest to periods outside of peak spawning season.
- *Action 5-C.):* Evaluate existing allowable and minimally destructive alternative gear type options and harvest methods, including the use of experimental gear for wild oyster harvesting.

<b>Lead:</b> FWC	<b>Partners:</b> oystermen, FSU, UF, Sea Grant
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6. Restore and create reef structures suitable for sustained **and optimized** oyster settlement and production for harvesting.

- *Action 6-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 6-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.

<b>Lead:</b> FWC	<b>Partners:</b> FSU, UF, Sea Grant, watermen and aquaculture organizations, local county programs
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- *Action 6-C.):* Design and implement projects to achieve oyster fishery production targets.
- *Action 6-D.):* Design projects that include both fished and non-fished reefs.

<b>Lead:</b> FWC	<b>Partners:</b> FSU, UF, NOAA for funding
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7. Recommend policies and actions that retain and recycle shell for habitat replenishment in the ABS.

- *Action 7-A.):* Develop agency rules and policy that require shell retention and recycling for habitat replenishment through a fee or incentive program.
- *Action 7-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; Florida statute Chapter 157 (McClellan 1881).
- *Action 7-C.):* Establish partnerships with local organizations, stakeholder groups, industry, universities in shell recycling programs.

8. Investigate oyster shell and oyster relay programs to move both cultch and live oysters to more favorable habitat (relay programs are recommended only to be used for restoration experiments).

- *Action 8-A.):* Use model and mapping information on larval source areas and environmental conditions to inform the potential programs.
- *Action 8-B.):* Research similar relay programs in other areas for potential models and cautions.

<b>Lead:</b> FDACS/FWC	<b>Partners:</b> FSU, UF, Sea Grant, FDEP, FDOH, stakeholders (oystermen)
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9. 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 9-A.):* Use model outputs to identify the oyster population abundance that can support sustainable harvest.
- *Action 9-B.):* Use model outputs to identify percentage of productive reef area required to support sustainable harvest.
- *Action 9-C.):* Use model outputs to identify annual; recruitment required to support sustainable harvest.
- *Action 9-D.):* Use model outputs to determine amount and frequency of habitat replacement to maintain productive oyster reefs.

<b>Lead:</b> FSU/UF	<b>Partners:</b> FWC, stakeholders
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10. Evaluate a suite of management approaches that in combination achieve the goal of maintaining a sustainable wild oyster harvest fishery as measured in relation to relevant performance metrics for determining success.

- *Action 10-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.
- *Action 10-B.):* Implement a summer wild harvest fishery closure.
- *Action 10-C.):* Manage Harvest Areas to prevent the concentration of effort in specific locations.
- *Action 10-D.):* Implement stock-based temporary wild harvest closures.
- *Action 10-E.):* Provide daily harvest limits in conjunction with a five-day harvest week (M-F).
- *Action 10-F.):* Eliminate the 5% undersize oyster limit for dealers buying oysters.
- *Action 10-G.):* Evaluate and determine a metric used to manage oyster reef harvest at a sustainable threshold. Consider a graduated set of thresholds.
- *Action 10-H.):* Implement annual fisheries dependent and independent stock assessments, with data collection methods and site selection done in collaboration with oystermen, for determining a sustainable level of wild oyster harvest for each season.
- *Action 10-I.):* Implement a recreational wild oyster harvest limit of one 5-gallon bucket of oysters, and allow recreational harvest during the summer with the same one 5-gallon bucket limit.
- *Action 10-J.):* Allow oystermen to weigh oyster bags on the water in their boats to ensure the bags meet the bag weight limit regulations.

<b>Lead:</b> FSU/UF	<b>Partners:</b> FWC, stakeholders
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11. Work with FDACS to ensure that oyster aquaculture practices and locations in the Bay are compatible with the goals and strategies for restoration and management of the ecosystem and are compatible with a wild fisheries and the important cultural role of a working waterfront and seafood industry.

- *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.

<b>Lead:</b> FDACS	<b>Partners:</b> FSU, UF, FWC, oystermen
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12. 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 12-A.):* Develop strategies to increase FWC enforcement presence and number of checkpoints to provide a deterrent to illegal activities.
  - *Action 12-B.):* Develop strategies to ensure uniformity in the harvestable and marketable size of oysters.
  - *Action 12-C.):* Work with FWC and FDAC to implement enforcement changes.
  - *Action 12-D.):* 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 12-E.):* 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 12-F.):* 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 12-G.):* Work together and with other stakeholders to seek funds to support the recommended increased law enforcement presence in the Bay.

<b>Lead:</b> FWC/FDACS	<b>Partners:</b> FSU-CAB, oystermen, oyster dealers
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<p><b>GOAL C</b></p> <p><b>A FULLY FUNDED ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION PLAN SUPPORTED BY APALACHICOLA BAY SYSTEM STAKEHOLDERS</b></p>
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**VISION THEME C:** The Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan is science-based and 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 DRAFT 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.
  - *Action 1-A.):* Continue CAB meetings and public workshops as outlined in the FCRC proposal for 2021.
- 2) 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 2-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 2-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.
- 3) A successor group to the CAB will be developed and in place by the time the Plan is completed.
  - *Action 3-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 3-B.):* The successor group will monitor the Plan's implementation and make recommendations for revisions required to adaptively respond to changing conditions.
  - *Action 3-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 3-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

- 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.

- *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.

<b>Lead:</b> FSU-ABSI	<b>Partners:</b> Restoration Partners Working Group; Successor Group
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<p><b>GOAL D</b></p> <p><b>AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC</b></p>
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**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 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]
- 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 Ever Florida School \(Florida Museum\)](#)) 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.

<b>Lead:</b> CAB outreach subcommittee	<b>Partners:</b> FSU, CAB, other stakeholders
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## SECTION II STRATEGIES OUTSIDE THE SPECIFIC SCOPE OF ABSI AND TO BE REFERRED TO OTHER PROGRAMS OR 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**

**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 DRAFT STRATEGIES**

- 1) 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).

- 2) Recommend monitoring<sup>2</sup> and enforcement programs continue with appropriate metrics to measure output from and impact of harvest on oyster reefs.
- 3) Support planning tied to economic indicators that consider future conditions (climate, SLR, reduced river flow) and their effects on the ABS.
- 4) Work with oystermen and other community stakeholders to promote post-recovery Apalachicola oysters.
- 5) 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.
- 6) Develop new markets for selling oysters to areas within and outside of Florida in part by investing in location (Apalachicola Bay) branding.
- 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) 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.
- 9) Engage commercial fishermen in the restoration of the bay and encourage future participation in restoration such as monitoring, shell recycling, shelling, and relaying.
- 10) 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 10-A):* Coordinate and work with initiatives such as the Regional Recreation Economy Alliance to leverage resources to support the local economy.

<b>Lead:</b> ABSI CAB Successor Group	<b>Partners:</b> Stakeholder groups, Chamber of Commerce, local government
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**ADDITIONAL STRATEGIES OUTSIDE OF ABSI SCOPE  
TO BE REFERRED TO OTHER PROGRAMS OR ENTITIES**

- 1) 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.

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<sup>2</sup> 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)

- 2) Engage the general 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.
- 3) 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]
- 4) 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.
- 5) 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 5-A.*): Identify source of shell, or other restoration material.

<b>Lead:</b> ABSI CAB Successor Group	<b>Partners:</b> Stakeholder groups, Chamber of Commerce, local government
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**ATTACHMENT 7**  
**PERFORMANCE MEASURES AND ESTUARINE METRICS**

**SECTION V**  
**PERFORMANCE MEASURES**  
**METRICS ASSOCIATED WITH OBJECTIVES (TO MEASURED ANNUALLY)**  
**AND ESTUARINE METRICS**

**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.

<b>PERFORMANCE MEASURES</b>	
<b>GOAL A—A HEALTHY AND PRODUCTIVE BAY ECOSYSTEM</b>	
<b>OBJECTIVES</b>	<b>RECOMMENDED METRICS</b>
<p><b>A1)</b> 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.</p> <p><b>Goal for Objective A1: User-friendly informative decision support tools available to ABS resource managers.</b></p>	<ul style="list-style-type: none"> <li>• Oyster population dynamics (recruitment, growth, mortality, shell budgets).</li> <li>• River flows under climate and management scenarios (River flow model).</li> <li>• Current speed and direction and particle trajectories (proxy for larval dispersal), under different river flow, tidal and wind-forced scenarios (hydrodynamic model).</li> <li>• Temperature, salinity, oxygen, pH, nutrients and organic carbon dynamics under different climate and management scenarios (combined river flow and hydrodynamic models).</li> <li>• Reef area and height (total area of patches of living and nonliving oyster shell or substrate with and without live oysters).</li> <li>• Area and distribution of suitable oyster habitat (from predictive habitat models) for current and future conditions.</li> </ul>
<p><b>A2)</b> 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</p>	<ul style="list-style-type: none"> <li>• Regularly updated maps of intertidal and subtidal reefs</li> <li>• Oyster recruitment rates</li> </ul>

<p>various entities conducting research in the region.</p> <p><b>Goal for Objective A2: A monitoring plan approved by stakeholders and resource management.</b></p>	<ul style="list-style-type: none"> <li>• Density (<math>\#/m^2</math>) of live and dead oyster juveniles (<math>&lt;25mm</math>), sub-adults (26-75 mm) and market size (<math>&gt; 76</math> mm) adults.</li> <li>• Oyster size-frequency distribution (using shell height) (mm)</li> <li>• Reproductive status</li> <li>• Condition index</li> <li>• Pest and predator prevalence</li> <li>• Disease prevalence</li> <li>• Environmental variables (temperature, salinity, oxygen, turbidity, pH, nutrients)</li> </ul>
<p><b>A3)</b> 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.</p> <p><b>Goal for Objective A3: Management and restoration plan that increases ecological function of oyster reefs in the ABS.</b></p>	<ul style="list-style-type: none"> <li>• Understanding of optimal restored reef, placement, dimensions and materials.</li> <li>• Identification of optimal locations for broodstock reefs (areas closed to harvest).</li> <li>• Increase density of legal oyster populations on both restored and non-restored reefs (<math>\#/m^2</math>).to at least <math>100 m^3</math> (levels observed in 2000).</li> <li>• Statistically significant increase (over current conditions) in diversity and abundance of ecologically- and economically-important species (resident and transient).</li> <li>• Maintenance of sufficient live oysters and dead shell to sustain a healthy oyster reef ecosystem.</li> </ul>
<p><b>A4)</b> 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.</p> <p><b>Goal for Objective A4: Improved oyster reef ecosystem services for the ABS.</b></p>	<ul style="list-style-type: none"> <li>• Change in the amount of shoreline habitat that is protected (Goal: increase in shoreline extent, elevation, marsh cover).</li> <li>• Change in the amount of sustainable wild oyster harvest that is supported by restored oyster populations.</li> <li>• Improved recreational and commercial fisheries of oyster-reef related species (stone crab, sheepshead, drum).</li> <li>• Improved water clarity in the vicinity of restored oyster reefs.</li> </ul>
<p><b>GOAL B—SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES</b></p>	
<p><b>B1)</b> To develop through a transparent and inclusive process a science-based ABS oyster recovery and adaptive management plan for both commercial and recreational</p>	<ul style="list-style-type: none"> <li>• Establish sustainable allowable catch in total biomass (kg), including harvest rate</li> </ul>

<p>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. It is imperative that this Plan 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.</p> <p><b>Goal for Objective B1: A stakeholder supported adaptive management plan for the ABS.</b></p>	<p>and shell budgets.</p> <ul style="list-style-type: none"> <li>• Incorporate commercial and recreational harvest in oyster stock assessment model for ABS.</li> <li>• Model different adaptive management approaches, to promote sustainability of the fishery, and long-term planning and investment by harvesters and dealers.</li> <li>• Assign some existing reefs as broodstock reefs that are closed to harvest</li> <li>• FWC law enforcement increases presence during oyster open season, and develops appropriate penalties for regulation violations</li> <li>• FWC establishes a long-term state-wide oyster monitoring program</li> </ul>
<p><b>B2)</b> To make recommendations to FDACS for oyster aquaculture best management practices that allow for the unimpeded recovery of oyster reefs, the oyster fishery, and the ecological and societal health of the ABS ecosystem while providing economic opportunities to the aquaculture industry.</p> <p><b>Goal for Objective B1: Identify positive and negative interactions between oyster aquaculture and wild oyster restoration and fisheries.</b></p>	<ul style="list-style-type: none"> <li>• FDACS, FWC or other entity supports studies to identify aquaculture practices that affect oyster restoration and fisheries, and other habitats within the ecosystem.</li> </ul>
<p><b>GOAL C—A FULLY FUNDED AND SUPPORTED MANAGEMENT &amp; RESTORATION PLAN</b></p>	
<p><b>C1)</b> To establish a fully funded permanent, representative stakeholder process to monitor the long-term implementation of the Plan.</p> <p><b>Goal for Objective C1: Establish a stakeholder group to ensure community support for the management and restoration plans.</b></p>	<ul style="list-style-type: none"> <li>• Creation of an ABSI CAB successor group to continue stakeholder engagement in the management and restoration process</li> </ul>
<p><b>C2)</b> To support efforts to identify funding sources and define mechanisms for full implementation of the Plan.</p> <p><b>Goal for Objective C2: Obtain sufficient funding to implement restoration and management plans.</b></p>	<ul style="list-style-type: none"> <li>• Form a small stakeholder group that will identify and obtain funding for large scale continued restoration of the ABS oyster reefs.</li> </ul>
<p><b>GOAL D—AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC</b></p>	
<p><b>D1)</b> To coordinate community engagement efforts to increase public awareness of and support for a healthy and</p>	<ul style="list-style-type: none"> <li>• Number of people with improved understanding of the ecosystem services</li> </ul>

<p>well-managed ABS ecosystem; and to ensure that businesses, industries, non-profits, and local governments are supportive and included in these efforts.</p> <p><b>Goal for Objective D1: An engaged and informed community, including K-12 and adults in the local area and beyond.</b></p>	<p>provided by oysters</p> <ul style="list-style-type: none"> <li>• Number of businesses, schools, industries, non-profits, and local governments participating in outreach efforts.</li> <li>• Number of volunteers participating in oyster reef restoration efforts.</li> <li>• Number of internship program “graduates” that enter the oyster aquaculture workforce in the ABS or other estuary in Florida.</li> <li>• Number of K-12 students reached by ABSI.</li> </ul>
<p><b>D2)</b> To measure public and stakeholder understanding of the issues important to the health and restoration of the Bay and socio-economic indicators.</p> <p><b>Goal for Objective D2: Understand stakeholder commitment to a healthy ABS ecosystem.</b></p>	<ul style="list-style-type: none"> <li>• Survey of stakeholders to assess level of understanding of the ecosystem services provided by oysters, and commitment to adopting measures that improve ABS health.</li> </ul>
<p><b>GOAL E—A THRIVING ECONOMY CONNECTED TO A RESTORED ABS</b></p>	
<p><b>E1)</b> To ensure that economic indicators of the commercial oyster fishery and associated industries in the ABS demonstrate increasing viability and growth.</p> <p><b>Goal for Objective E1: Increased viability and growth of oyster fishery and associated industries.</b></p>	<ul style="list-style-type: none"> <li>• Monitor economic indicators of a successful wild oyster industry, and assess causes of positive and negative trends.</li> </ul>
<p><b>E2)</b> To ensure that industries and businesses within the ABS are compatible with a healthy and well-managed ABS ecosystem.</p> <p><b>Goal for Objective E2: Create a decision support tool to assess the effect of ABS industries on ecosystem health.</b></p>	<ul style="list-style-type: none"> <li>• Monitor metrics associated with Goal A and with objective E1 (above) to determine whether they have positive, neutral or negative interactions</li> </ul>
<p><b>E3)</b> 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><b>Goal for Objective E3: A healthy, well-managed ABS and thriving working waterfront industries.</b></p>	<ul style="list-style-type: none"> <li>• Assess effect of growth management plans on ABS ecosystem health and economic growth</li> </ul>
<p><b>E4)</b> To develop an oyster aquaculture industry that provides economic opportunities and is complementary to the wild harvest fishery.</p>	<ul style="list-style-type: none"> <li>• Assess economic indicators associated with aquaculture and wild oyster harvest</li> <li>• Assess social and economic compatibility between the two industries using</li> </ul>



Goal for Objective E4: Establish complementary oyster aquaculture and wild oyster harvest industries.	stakeholder survey tools.
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**ESTUARINE METRICS**

**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.

ESTUARINE METRICS	
CATEGORY	ASSOCIATED METRICS
<b>Environmental</b>	<p>For eastern oysters, the optimal range of salinities is 15-25 ppt and temperatures are 20-30°C. Use hydrodynamic models to estimate:</p> <ul style="list-style-type: none"> <li>• Spatial and temporal footprint of optimal salinity conditions under different flow regimes (and temperatures if possible).</li> <li>• Spatial and temporal footprint of unfavorable conditions (&lt; 10 ppt, &gt; 25 ppt) under different flow regimes.</li> <li>• Assess spatial and temporal footprint of potential oyster food sources (nutrients, chlorophyll, phytoplankton and particulate organic material).</li> <li>• Use <i>in situ</i> instruments to validate and parameterize models to increase accuracy.</li> <li>• Use ANERR data (current and historical) to hindcast environmental conditions (temp, salinity, oxygen, turbidity, pH, nutrients) relative to historical water flows.</li> <li>• Compare river flows (seasonal means and variances) and ‘footprint’ of optimal conditions, before and after the cessation of dredging the Apalachicola River for navigation purposes.</li> <li>• Model flows with theoretical no withdrawal scenario to look at just climate projections on flow.</li> </ul>
<b>Biological - Oysters</b>	<p>Measurable biological responses may be <i>immediate</i> (e.g. mortality in response to extreme conditions), <i>delayed</i> (e.g. high mortality from predation/disease in response to extended high salinities) or <i>sub-lethal</i> (e.g. reduced growth in response to long-term suboptimal conditions). The following variables can be measured during monthly monitoring and results interpreted in the context of observed or modeled optimal/sub-optimal environmental conditions.</p> <p>Biological metrics include:</p> <ul style="list-style-type: none"> <li>• Mortality (boxes) – juveniles, sub-adults, adults.</li> <li>• Recruitment - river outflow can change current regime and environmental conditions, which influence larval survival, and dispersal.</li> <li>• Condition index – decreases under sub-optimal conditions.</li> </ul>

	<ul style="list-style-type: none"> <li>• Disease (Dermo) prevalence – increases in high salinity warm conditions. Primarily affects adults.</li> <li>• Reproductive status – can be impacted under long-term suboptimal conditions.</li> </ul>
<b>Ecological - Oysters</b>	<ul style="list-style-type: none"> <li>• Oyster population dynamics – number of live, dead and boxes for juvenile, sub-adult and adult oysters can identify size-related mortality events.</li> <li>• Use past observations on reef distribution and predictive habitat models (for climate and management scenarios) to identify optimal locations for oyster restoration.</li> <li>• Compare current and historical reef height and footprint to identify target reef size for restoration.</li> </ul>
<b>Ecological - Other Species</b>	<ul style="list-style-type: none"> <li>• Predator abundance (high salinities facilitate predators such as oyster drills, crown conch, stone crabs).</li> <li>• Occurrence of pests (boring sponge, blister worms) and parasites (flatworms).</li> <li>• Use FWC Fisheries independent monitoring data to assess distribution of fishes (and managed invertebrate species) relative to river flow and modeled/observed environmental data.</li> </ul>