APALACHICOLA BAY SYSTEM INITIATIVE

COMMUNITY ADVISORY BOARD

OYSTERMEN'S WORKSHOP III
14 JULY 2021 FACILITATOR'S SUMMARY REPORT
(APPROVED 18 AUGUST 2021)

APALACHICOLA NATIONAL ESTUARINE RESEARCH RESERVE AND VIRTUAL VIA ZOOM

FCRC CONSENSUS CENTER

FLORIDA STATE UNIVERSITY 1851

FACILITATED AND SUMMARIZED BY JEFF A. BLAIR

Apalachicola Bay System Initiative Community Advisory Board

July 14, 2021 Oystermen's Workshop III
Facilitator's Workshop Summary Report

Table of Contents

APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD
JULY 14, 2021 OYSTERMEN'S WORKSHOP III FACILITATOR'S SUMMARY REPORT

OVERVIEW OF OYSTERMEN'S WORKSHOP III

WEDNESDAY, JULY 14, 2021

I. WORKSHOP SUMMARY AND OVERVIEW

At the July 14, 2021 Oystermen's Workshop the Apalachicola Bay System Initiative (ABSI) Community Advisory Board (CAB) conducted the third in a series of Oystermen's Workshops for the purpose of seeking their feedback on a variety of possible management approaches as well as ultimately on the draft Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan. The Workshop was conducted at the Apalachicola National Estuarine Research Reserve for invited oystermen, and virtually for all other participants.

During the Workshop the oystermen: were provided an overview of the Project Workplan and Schedule; received an update and provided feedback on ABSI restoration experiments; provided feedback and input on a suite of possible management approaches; and, discussed possible enforcement approaches with FWC Law Enforcement officers.

II. Welcome and Participation

Jeff Blair, ABSI CAB Facilitator, opened the Workshop at 2:00 PM and welcomed all participants.

III. Workshop Participation

The following Apalachicola Bay oystermen participated in the Wednesday, July 14, 2021 Workshop:

- Shannon Hartsfield
- Roger Mathis
- Coy Shiver
- Wayne Williams

FWC Law Enforcement Officers Participating

- Lt. Steven Cook
- Lt. Randy McDonald

Project Team Members Participating

Sandra Brooke, Madelein Mahood, and Joel Trexler.

(Attachment 1—Workshop Participation)

Workshop Facilitation

Meetings and workshops are facilitated and reported on by Jeff Blair from the FCRC Consensus Center at Florida State University. Information at: http://consensus.fsu.edu/

FCRC CONSENSUS CENTER

Project Webpage

Information on the Apalachicola Bay System Initiative project and the Community Advisory Board, including agenda packets, meeting reports, and related documents may be found at the ABSI CAB Webpage. Located at the following URL:
https://marinelab.fsu.edu/the-apalachicola-bay-system-initiative/

IV. Workshop Objectives

Jeff Blair reviewed the Workshop objectives as follows:

- To receive an update on the Project Workplan and Schedule;
- To provide update and receive oystermen's Feedback on ABSI Restoration Experiment;
- To receive oystermen's feedback on Management Alternatives;
- To receive oystermen's feedback on Law Enforcement Alternatives;
- To review next steps.

(Attachment 2—Workshop Agenda)

V. Review of Updated Project Workplan and Schedule

Jeff Blair provided the participants with a review of the updated Project Workplan and Schedule and answered participants' questions. Jeff noted that the CAB plans to conduct a public workshop during 2021. Jeff reported that public workshop will likely be in October of 2021, and the next CAB meeting is August 18, 2021.

- Jeff explained 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 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 and supported by the Community. 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 Community updated and share additional information as it becomes available.

(Attachment 3—Workplan and Schedule)

VI. Update and Feedback on ABSI Restoration Experiments

Sandra Brooke, FSUCML Faculty and ABSI Principal Investigator, provided the participants with an update on the FSU ABSI restoration experiment. Sandra reported:

ABSI Restoration Experiments

- The purpose of the experiments is to test different materials and designs for restoration efficacy.
- The ABSI Team will apply the results of restoration trials to developing a full-scale restoration plan for the ABSI region and make recommendations to FWC and others on the recommended materials and design for full-scale restoration initiatives.

Evaluation of Materials Options

- Granite – heavy, not easily moved, doesn't dissolve, and various sizes.
- Limestone rock – heavy, may degrade, various sizes, and same chemistry as shells.
- Fossilized shell – may crumble, releases sediment, may be moved, and degrades. Variable quality.
- Natural shell – very light, easily moved, may not be available, and may degrade.

Comparison of Natural Shell to the Limerock Used for Cultch

- Limerock is comprised of Calcium Carbonate ($CaCO_3$).
- Oyster shells are comprised of $CaCO_3$.
- Fossil shells are comprised of $CaCO_3$.
- Coral reefs are also comprised of $CaCO_3$.

- Limerock and oyster shells are comprised of the same material (Calcium Carbonate) and there is no issue or problem with using limerock as cultch for oyster reef restoration.
- There have been rumors that the material ABSI is deploying in the Bay is harmful. It is unclear why people think this, but it may be because there is confusion between Limerock and Quicklime (Calcium Oxide), which is highly caustic, looks similar to limerock and is commonly used in construction and other industries. The presentation emphasized that FSU is NOT using Quicklime in the ABSI restoration experiments.

Reef Heights – Restoration Project Design

- Most restoration experiments put a thin layer (1-3 inches) over a large area.
- This leaves the oysters vulnerable to burial, suffocation, and/or low oxygen.
- A higher reef gets the oysters out of the mud and into clean water.
- The lack of reef infrastructure in the Bay means that reef heights must be increased.

Methods

- 30 ft x 30 ft x 1.5 ft = 50 cubic yards of material.

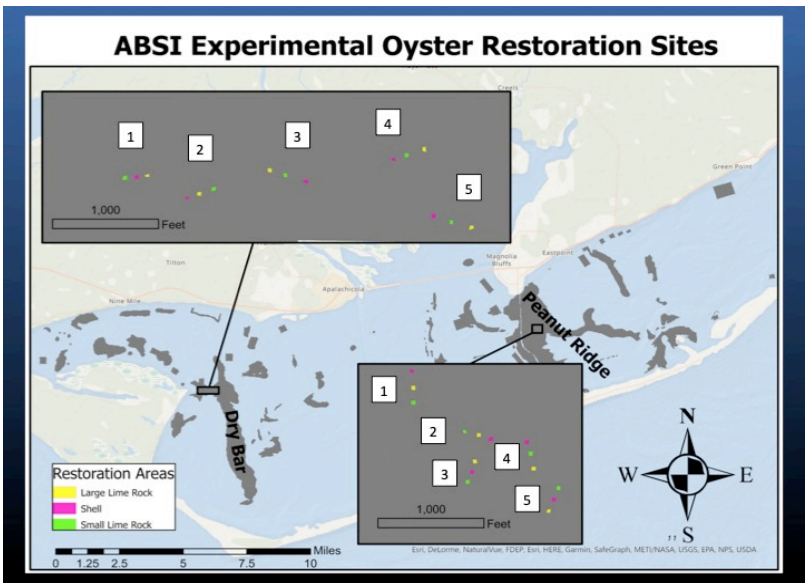
Materials

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

Deployment Schedule and Materials

- 26 May – Peanut Ridge Shell.
- 27 May – Peanut Ridge Small Limerock.
- 3 June – Dry Bar Small Limerock.
- 4 June – Dry Bar Shell.
- 9 and 29 June – Dry Bar Large* Limerock
- 24 June– Peanut Ridge Large* Limerock.
- There have been 6 deployments to date; 15 reefs in each of 2 sites.
- Spat on shell and alone deployed in cages.
- Spat deployment in bags placed directly on reefs.
- June 23, 2021 sampling showed that shells on both sites (Peanut Ridge, Dry Bar) have spat set.

*The size of the limerock used was 6-8", which is the medium limerock size as defined in the presentation. During the experiment deployment, the limerock sizes were designated Small and Large, hence the difference in the terminology in the bulleted lists above.



ABSI Hatchery Update

- First successful spawn May 7th.
- Deployed June 15th. (20 days post-set).
- Spawned again June 8th (3.5 million larvae).
- Deployed July 14th (22 days post set).

Spat Development

- Assess spat survival and growth.
- Vexar cages (14" x 36" x 4").
- Spat cages (one per reef): 150 spat on shell per cage (~ 50 shells).
- Bare shell (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.

Spat Deployment

- Qualitative assessment of spat planting.
- Place leftover spat on shell in biodegradable mesh bags (50 shells/bag).
- Place bags adjacent to restoration sites.
- Monitor quarterly for 'success'.

Reef Mapping

- The reefs are being mapped at high resolution by the National Oceans and Applications Research Center (NOARC)

Oystermen Questions, Comments, and Feedback

- Many places have had shell deployment with minimal spat set; some factor is preventing spat set in certain areas. We need to know the cause of these unsuccessful shell deployments.

- We don't need any additional permanently closed areas as there are areas already closed that are providing spat for the System.
- It is FWC that makes the management decisions.
- Shells in bags work.

VII. Oystermen's Feedback on Possible Management Approaches

The oystermen were led in a facilitated discussion on a suite of potential management approaches. The oystermen were asked to respond to each of the management approaches discussed from their observations, experience, and stakeholder perspectives. The oystermen were asked to give their opinion on a range of management approaches for creating a sustainable wild oyster fishery. Following are the management approaches discussed and the associated oystermen's perspectives.

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.

- This will be difficult to implement and have broad support from oystermen unless the details of the program are vetted with and supported by the Community and oystermen.
- If implemented, those who made their living from oystering should be given preference and allowed to continue in the fishery as in the past.
- Look at pre-2010 data (trip tickets) to use for historical landings and as the basis for determining who has been a full-time commercial fisherman.
- Identify those that were primarily employed as oystermen and ensure they can continue oystering.
- Knowledge of proper food handling practices is important in preventing illness and negative impacts for the Industry.
- Q: How does recreational fishery work in terms of control of take?
  A: FWC indicated there is no limit on number of recreational fishers, but their analysis suggests that the number is small and impact limited.
- I don't support this and have 1500 signatures opposed to limited entry.

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

- If closed in summer, open the entire bay in other times of the year (depending on water quality)

Action 10-C.): Manage Harvest Areas to prevent the concentration of effort in specific locations.

- This can be accomplished by combining the 9-month season and the 5-day work week, and allowing all of the legal and safe harvest areas to be open during the season.

Action 10-D.): Implement stock-based temporary wild harvest closures.

- Lines and zones within the Bay would be difficult to implement with different stock results for different bars.
- Removal of poles and markers or the different zones has occurred, making it more difficult to comply with, and enforce regulations.
- There are already closures based on water quality.

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

- The 4-day harvest week is not sufficient due to a variety of factors including weather conditions.
- A Monday through Friday harvest week allows for effective enforcement.
- We are already impacted by water quality related closures and weather conditions, so 5-days is needed.

Action 10-F.): Eliminate the 5% undersize oyster limit for dealers buying oysters.
Proposed revision to clarify initial intent:
Establish ~~Eliminate~~ the 5% undersize oyster limit for both harvesters and dealers ~~buying oysters~~.

- All standards applied to oystermen should equally applied to buyers.
- It would help if FWC could check for size at the buyer house before the oysters are processed, since the processing process can reduce the size of a legally harvested to an illegal size oyster after processing
- Oysters should be checked before washed and processed, and once processed there should not be any enforcement of size limits.
- Mechanical abrasion in the bags often reduces size to below 3".
- There needs to be a method to determine where oysters were harvested even after they are processed and packaged by the buyer.
- In Louisiana the oysterman are held accountable for compliance even after sold and processed by the dealer.
- Dealers are supposed to check the tags on the bags but most fail to do so.
- Dealers remove the tags when processing, and there is no real way to track the source after this point.

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.

- Support for the harvest limit by all, and most but not all felt the recreational sectors should same harvest season as the commercial fishery recommendation (Summer closure).
- Seasons should be the same for commercial and recreational oyster harvest (change above recommendation); when closed, it should be closed for all.
- FWC: having the same season makes it much easier from the standpoint of law enforcement.
- The recreational harvesters should hand harvest only.
- The season and gear (tongs) should be same for commercial and recreational with the 5-gallon limit for recreational harvest.

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.

- I have been warned that weighing was construed as "processing," and received a warning.
- There are issues with calibration of scales; could put the burden on enforcement.
- FWC: It is not clear that weighing oysters on board is against the current regulations.
- The recommendation is to "Allow" weighing oysters on the boat, and not to require it.

VIII. Oystermen's Discussion With FWC Law Enforcement Regarding Possible Enforcement Approaches

The oystermen were led in a facilitated discussion on a suite of potential FWC law enforcement approaches. Participants were asked to respond to each law enforcement approach from their observations, experience and stakeholder perspectives. The oystermen were asked to give their opinion on a range of law enforcement approaches for creating a sustainable wild oyster fishery. FWC law enforcement officers Lt. Steven Cook and Lt. Randy McDonald participated in the discussions and provided law enforcement's perspective regarding the effectiveness and enforceability of the proposed approaches. Following are the law enforcement approaches discussed and the associated oystermen's and law enforcement officer's perspectives.

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.

- Turnover of FWC personnel is high (cost of living, housing, and intangibles); typical cadre of enforcement officers in Franklin County is 7 officers out of the 9 authorized positions.
- Marine enforcement presence has decreased (observation).
- Demand for land-based presence of FWC has increased.
- Q: are there enough law enforcement positions?
  FWC answer: turnover reduces the number of officers for enforcement, so this is an issue.
- Development pressures and high percentage of State-owned land requires additional enforcement capability.
- Have some law enforcement working the Bay at all times.

Portia Sapp of FDACS, provided relevant rules in the Chat as follows:

The certified facility's tag shall contain legible, waterproof, indelible information arranged in the specific order as follows:
(a) The shellfish shipper, shucker-packer, repacker, depurator, or distributors name, address, processing facility certification number;
(b) The original shipper's certification number including the state abbreviation;
(c) The date of harvest;
(d) The identification of the harvest area, and for Florida harvest areas the four digit code or name of the harvest area found in paragraph (3)(e) above;

License Fees: Annual License Fee for Florida Residents
$100; May 17-June 30; Annual License Fee for Non-Residents $500; May 17-June 30

The oystermen were asked if there were additional recommendations they would like to make, or any current recommendations they prefer not be made. Following are the comments:

- Fines or penalties imposed in the past were not significant enough to change behavior; the current judge may improve the situation.

- Penalties must be consistent, but judges have discretion.
- Mandatory suspensions would help.
- Enforcement penalties are more severe in Wakulla County, and this is an effective deterrent.
- Penalties are in statute. There are sufficient penalties on the books, they just need to be enforced.
- The training of temporary personnel could be improved.
- Administrative suspensions are used, but not directly referenced in Statute.
- Apalachicola Bay licenses offered to those who took a class but were offered later at a 500% increase in price.
- Cedar Key region oystermen wanted limited access to "outsiders," but a statewide permit allows others to participate in the fishery.
- Entry to the fishery should not be limited by county as many oystermen live in adjacent counties; focus on individuals who are full-time harvesters and have historically worked in the Region.
- To identify who should be guaranteed entry with a limited entry fishery, offer the license to those who have a track record of oystering in the pre-2010 period.
- If the limited number of permits is not filled by "locals," not clear whether it should be opened up to other applicants.
- It is important to regulate the intensity of harvest by limiting the number of oystermen; avoid the scenario of over-exploitation when oysters are abundant by too many harvesters converging on the Bay, and then they leave and full-time oystermen have to scratch out a living for the rest of the season.
- I don't want part-timers who don't make their living from commercial fishing to be allowed to commercially harvest oysters.
- If licenses are transferable, there could create problems with selling and creating monopolies.
- A limited entry system does not imply that licenses are transferable except to family members.
- FWC: Enforcement on the water is hard; checking when coming in is easier, but the oystermen converge at the same time, so this requires additional officers to work effectively.
- There was general agreement that adequate laws are in place, but application of the law is linked to the actions of the judge and determines whether penalties deter illegal harvest.
- Is there any opportunity to shorten the current five-year Bay closure period?
- Yes, the rule provides a bag per acre metric for a certain percentage of the Bay for reopening.
- Additional surveying by oystermen tonging is needed. FWC and ABSI do surveying in different spots. We should be allowed to survey so we know what the status of the fishery is.
- ABSI will be doing more tonging surveys going forward.
- Data and information sharing on various restoration projects needs to be improved.
- The foundation of historic reefs has declined; much of the substrate has been lost.
- Avoid wobbly lines and cutting up reefs for closed areas.
- We need consistent enforcement of regulations and imposition of penalties for an effective deterrent to illegal harvesting
- There should be mandatory suspensions imposed for willful and habitual offenders.
- The fishery should be limited to those who have a commitment to and investment in the resource.
- Any limit entry system should use historic landings to avoid part-time harvesters.
- Support from industry and community so that law enforcement and the judiciary know the community supports this.
- Allow several (oyster) boats to survey the Bay during the closure.

- Data needs to be shared so we know what is going on in our Bay.

(Attachment 4—Oystermen's Input Incorporated Into Draft Plan To Date)

IX. NEXT STEPS

Jeff Blair noted that a public workshop is planned for October of 2021. The workshops will provide an opportunity for the public to provide feedback on a suite of possible restoration and management approaches that the CAB is evaluating, and on the draft Restoration and Management Plan. The workshop agenda and summary report will be posted to the project webpage as follows: https://marinelab.fsu.edu/absi/cab/.

The next CAB meeting is scheduled for August 18, 2021 and will focus on discussing restoration and management options, reviewing feedback from the Oystermen's Workshop, on any revisions to the Plan Framework (Goals, Objectives, Strategies, and Actions), and on prioritization of strategies for each of the Plan's Goal areas (A – E). The August meeting will be conducted in-person and provide for a virtual participation option via webinar.

ADJOURNMENT

The Facilitator thanked the oystermen, virtual participants, and ABSI Project Team members for their participation, and adjourned the Workshop at 4:40 PM on Wednesday, July 14, 2021.

ATTACHMENT 1
WORKSHOP PARTICIPATION LIST

OYSTERMEN PARTICIPATING IN WORKSHOP	
Shannon Hartsfield	Franklin County Seafood Workers Association, Oysterman, and CAB Member
Roger Mathis	Oysterman, R.D.'s Seafood, and CAB Member
Coy Shiver	Oysterman, and Captain Coy's Guide Fishing
Wayne Williams	Oysterman

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

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

MEMBERS OF THE PUBLIC	
Gina Alvarez	FWC
Katie Davis	FDACS
Josh Gabel	Senator Marco Rubio's Office
Laura Geselbracht	ABSI Science Advisory Board and TNC
Kennedy Hanson	ANERR
Anthony Sogluizzo	FSU

ATTACHMENT 2
JULY 14, 2021 WORKSHOP AGENDA

WORKSHOP OBJECTIVES		
✓ To Provide Update and Receive Oystermen's Feedback on ABSI Restoration Experiment ✓ To Receive Oystermen's Feedback on Potential Management Alternatives ✓ To Receive Oystermen's Feedback on Potential Law Enforcement Alternatives		
ABSI OYSTERMEN'S WORKSHOP—JULY 14, 2021		
All Agenda Times—Including Public Comment and Adjournment—Are Approximate and Subject to Change		
1.)	**2:00 PM**	**WELCOME AND REVIEW OF PARTICIPATION GUIDELINES**
2.)	**2:05**	**REVIEW OF WORKSHOP OBJECTIVES AND INTRODUCTIONS**
3.)	**2:10**	**REVIEW OF UPDATED PROJECT MEETING SCHEDULE AND WORK PLAN**
4.)		**UPDATE AND OYSTERMEN'S FEEDBACK ON ABSI RESTORATION EXPERIMENT**
5.)		**OYSTERMEN'S FEEDBACK ON POTENTIAL MANAGEMENT APPROACHES**
6.)		**OYSTERMEN'S AND FWC LAW ENFORCEMENT APPROACHES DISCUSSION** • Discussion on enforcement options with FWC Law Enforcement
7.)	**4:55**	**NEXT STEPS** • Public Workshop • ABSI CAB
~5:00 PM		*ADJOURN*

ATTACHMENT 3
WORKPLAN AND SCHEDULE

UPDATED AS OF THE JUNE 16, 2021 CAB MEETING		
PHASE I—STANDING UP AND ORGANIZATION OF THE ABSI CAB		
ABSI Assessment Process	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.
ABSI CAB Questionnaire	Sept. 2019	Questionnaire report on the CAB members' views on successful short and long-term outcomes and on critical ABSI challenges and issues.
Meeting I. 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.
Meeting II. 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
Meeting III. 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
PHASE II—SCOPING OF ABSI ISSUES, IDENTIFICATION OF PERFORMANCE MEASURES & STRATEGIES		
Meeting IV. 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.
Meeting V. 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.
CAB Strategies	June 2020	CAB Worksheet to identify potential strategies for each of the five goals.
Meeting VI. 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.
Meeting VII. Virtual Meeting	Sept. 9, 2020	Member-requested presentations. Identification, evaluation and refinement of objectives, strategies and performance measures for Goals A-E. Public Comment.
Meeting VIII. 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.
Meeting IX. 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.
Oystermen's Workshop #1	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.

PHASE III—BUILDING CONSENSUS ON CAB RECOMMENDATIONS FOR THE ABS ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION PLAN		
Meeting X. Virtual Meeting	Jan. 13, 2021	Member-requested presentations. Sub-committee reports. Discussion of estuarine metrics and restoration goals. Public comment.
Meeting XI.	Feb. 24, 2021	Member-requested presentations. Sub-committee reports. Review and approval of revised Draft Plan Framework. Discussion of management goals. Public comment.
Oystermen's Workshop #2	April 15, 2021	Oystermen's review and comments on draft Management approaches and Plan Framework (Strategies and Actions for Goals and Objectives)
Meeting XII.	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.
Meeting XIII.	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.
Oystermen's Workshop #3	***July 14, 2021***	ABSI restoration experiment update and feedback. FWC restoration project update and feedback. Management and Restoration Plan feedback.
Meeting XIV.	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.
Meeting XV.	Oct. 19, 2021 ANERR	Review and approve draft recommendations and performance measures for inclusion in the ABSI Plan. Workshop planning. Public comment.
Public Workshop	***October TBD***	Overview of ABSI and restoration experiments. Public review and comments on Draft ABS Ecosystem-Based Adaptive Management Plan.
Meeting XVI.	Nov. 16, 2021 ANERR	Complete Phase III of project. Review of public comments. Final CAB approval of Management and Restoration recommendations for the Plan. Briefing on Phase IV of the ABSI CAB. Public Comment.
PHASE IV—EVALUATION OF THE DRAFT ADAPTIVE MANAGEMENT AND RESTORATION PLAN, AND RESTORATION PROJECTS SELECTION, IMPLEMENTATION, AND FUNDING PLANNING		
Tentatively January/February 2022		1. **CAB.** 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. 2. **Restoration Funding Working Group (RFWG).** The Restoration Funding Working Group's role is to seek funding to implement the CAB's priority recommendations. The RFWG will be in place by January 2022. 3. **CAB Successor Group.** 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.

ATTACHMENT 4
ABSI STRATEGIES AND ACTIONS RESPONSIVE TO OYSTERMEN'S COMMENTS COMPILED PRIOR TO THE JULY 14, 2021 OYSTERMEN'S WORKSHOP

The following Strategies and Actions were reviewed during the June 14, 2021 Workshop. Revisions were made to the Strategies and Actions subsequent to the Workshop and are reflected in the August 18, 2021 Draft Plan Worksheet (https://marinelab.fsu.edu/absi/cab/).

OVERARCHING APPROACHES

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

GOAL A—A HEALTHY AND PRODUCTIVE BAY ECOSYSTEM

Strategy 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).

Strategy 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.

GOAL B—SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES

Strategy 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.

Strategy 4.) *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.

Strategy 5.) Manage the commercial oyster industry and recreational oyster fishing to provide for sustainable spat production and spawning and the recovery of oyster populations.

- *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.
- *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.

Strategy 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.
- *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.

Strategy 8.) Investigate oyster shell and oyster relay programs to move both cultch and live oysters to more favorable habitat.

- *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 as potential models and cautionary tales.

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.
- *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.

Strategy 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.

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.
- *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.

GOAL D—AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC

Strategy 2.) *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.

GOAL E—THRIVING ECONOMY CONNECTED TO A RESTORED ABS

Strategy 4.) Work with oystermen and other community stakeholders to promote post-recovery Apalachicola oysters.

Strategy 9.) Engage commercial fishermen in the restoration of the bay and encourage future participation in restoration such as monitoring, shell recycling, shelling, and relaying.

STRATEGIES TO REFER TO OTHER ENTITIES

Strategy 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.

Strategy 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.