APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)
ABSI COMMUNITY ADVISORY BOARD (CAB)

MEETING IV SUMMARY REPORT

MARCH 11, 2020
APALACHICOLA NATIONAL ESTUARINE RESEARCH RESERVE
EASTPOINT, FLORIDA

APPROVED BY THE COMMUNITY ADVISORY BOARD ON MAY 22, 2020

FCRC CONSENSUS CENTER

FACILITATED AND SUMMARIZED BY ROBERT JONES AND JEFF BLAIR

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APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)

ABSI COMMUNITY ADVISORY BOARD (CAB) MEETING IV EXECUTIVE SUMMARY

March 11, 2020

Jeff Blair, FSU FCRC Consensus Center and part of the FSU Facilitation Team, welcomed the members and the public to the 4th meeting of the Apalachicola Bay System Initiative's Community Advisory Board. He introduced his partner member of the ABSI Facilitation Team, Bob Jones, together with whom he is responsible for the design and facilitation of the Community Advisory Board meetings and the consensus process, and the FSU Team members present, Felicia Coleman and Sandra Brooke. Members of the Community Advisory Board introduced themselves and the facilitators reviewed and the members approved the Agenda, and approved without changes the Facilitator Summary for the January 8, 2020 Meeting III.

The CAB received briefings on:

- Current status of Apalachicola Bay, and conditions that oysters need to thrive (Sandra Brooke, FSI ABSI Team)
- FDACS Aquaculture Leasing Program (Portia Sapp, FDACS)
- Oyster Reef Management in Apalachicola Bay (Jonathan Brucker, FDEP)
- Maryland Oyster Futures Stakeholder Process Overview (Jeff Blair, FSU)

The vision themes developed by the CAB represent key topical issue areas that characterize the desirable future for the oyster reef ecosystem and the Apalachicola Bay. The focus of this meeting related to two of these themes: (Theme A) A Healthy and Productive Bay Ecosystem; and (Theme B) Sustainable Management of Oyster Resources.

At the previous two meetings, CAB members developed lists of key topical issues related to each of these themes.

THEME A – Members included: measuring ecosystem services; developing criteria for opening and closing the oyster fishery; spatial extent of oyster reefs; oyster population demographics; monitoring fishery output; water quality (including future projected conditions and water flows); socioeconomic objectives linked to ecosystem services; oyster habitat use by fish; drying of the Apalachicola Bay flood plain;; nutrient and chlorophyll levels (including septic systems impact on the Bay); define/ measure "healthy" in the ABSI goal; and address climate change. The CAB added the following issues: developing Gulf-wide landings data protocols to provide consistency; and defining the northern (how far upriver) and southern (how far offshore) boundaries for ABSI-related research in the Apalachicola Bay System.

THEME B. – Member issues added included: the historical context; improve the current ABS regulatory management system; Limited entry to the ABS; Criteria for opening and closing the oyster fishery for Apalachicola Bay; Recreational fishing component; Compliance, enforcement and penalties; Aquaculture; Research and monitoring long term on regulation; Funding mechanisms; Water quality monitoring; Stewardship Outreach and Education; Managing the shell stock; and Legislative action.

The CAB members suggested that the strategies under both Vision Themes A and B should aim for ensuring a sustainable oyster population. In addition they suggested:

- Identifying those aspects of an oyster population that should be monitored to adequately assess oyster health;
- Demonstrating impact OF WHAT? on environmental issues (habitat and species); and
- Defining the criteria that must occur to drive the opening or closing of the wild harvest oyster fishery *(Part of Goal B discussion below).*

The CAB members reviewed the related performance measures and added additional measures in the general categories of oyster reefs; oyster reef associated species; habitat; water flow and quality; and coastal resilience. The CAB discussed oyster abundance, adult oyster size metrics, intertidal oysters, ecosystem boundary issues, and function of sloughs connected to the river.

In January 2020, CAB member Jim Estes identified as an issue the lack of specific criteria that would guide the opening and closing of the wild-harvest oyster fisheries for Apalachicola Bay, which resulted in considerable discussion. The CAB voted unanimously to recommend that the FWC immediately close Apalachicola Bay to all wild harvest of oysters (commercial and recreational). The CAB agreed that in subsequent meetings they would make science-based recommendations for the criteria and performance metrics that would have to be met for reopening the Bay to wild oyster harvest. Estes indicated that at the next FWC Commission meeting schedule for May 13-14, 2020, he would present a proposal for closure of wild-harvest oyster fisheries (commercial and recreational). Based on precedence that it generally takes two meetings for the FWC Commission to complete the rule process, Estes estimated that the soonest the closure would take place would be in July 2020.

The CAB brainstormed initial strategies for addressing issues related to sustainable oyster resources, including: shell budget/recycling programs; limited entry; restored oyster reefs; protected oyster spawning areas; developing rotational harvest schedules; defining healthy oyster bars; acreage needed to sustain oyster resources; enforcement; surcharge on harvestable oysters; data collection and monitoring; sanctuary reefs; combinations of options; and adaptive management.

The CAB members reviewed the related performance measures for sustainable management of oyster resources and added some in the following general categories: harvest and sustainable allowable catch;; harvest from rotational areas; number of poaching violations and illegal harvest; shell budget model; harvest management plan; updated oyster fishery and aquaculture enforcement plan; and an oyster density measure. The CAB discussed harvest by total annual biomass, submerged leases on public bars, and enforcement cases heard in Franklin County Court

No members of the public wished to provide comments to the ABSI Community Advisory Board.
The facilitators then reviewed the agenda for the 5th meeting scheduled for May 22, 2020 at Apalachicola National Estuarine Research Reserve in Eastpoint, Florida to accommodate the FWC Commission meeting in early May. The plan is to continue to identify CAB strategies for the five sets of vision themes, goals and objectives. Members suggested updates and briefing presentations on: update on the FWC proposal to close Apalachicola Bay to wild oyster harvesting; updates on the ACF Basin water apportioning status, the Florida vs. Georgia ACF basin waters apportioning case and the Water Control Manual; the FWRI/FWC research conducted in ABS update (Melanie Parker); and the NFWF Lake Wimico Acquisition and Management Project Briefing.

The members completed meeting evaluation forms and adjourned at 2:10 pm.

APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)

ABSI COMMUNITY ADVISORY BOARD (CAB) MEETING IV SUMMARY

March 11, 2020

What follows is a more detailed summary with additional data from the presentations

I. INTRODUCTIONS AND ABSI PROJECT CONTEXT AND PROCEDURES

A. INTRODUCTION

Jeff Blair, FSU FCRC Consensus Center and part of the FSU Facilitation Team, welcomed the members and the public to the 4th meeting of the Apalachicola Bay System Initiative's Community Advisory Board. He introduced his partner member of the ABSI Facilitation Team, Bob Jones and the FSU ABSI Team members Felicia Coleman and Sandra Brooke. Members of the Community Advisory Board introduced themselves and the facilitators reviewed and the members approved the Agenda, and approved without changes the Facilitator Summary for the January 8, 2019 Meeting III. Jeff briefly reviewed the agreed upon participation principles and consensus procedures.

B. DEFINITIONS

The Community Advisory Board reviewed and adopted the following definition of the "Apalachicola Bay System" at the January 8 2020 Meeting III:

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

During the discussions of the goals, objectives and strategies, reference was made to this adopted definition regarding what defined the up-river boundary for the Apalachicola Bay System Initiative research. The definition includes consideration of riverine inputs and gulf-bay exchange. In fact, ABSI scientists indicated that some of their partners are conducting research in these areas that is pertinent but outside of the ABSI study area and purview. Some suggested that the potential boundary should be the northern extent of tidal influence up the river where salinity is consistently zero (approximately River mile 6). The FSU ABSI team agreed to offer an amendment to the definition for consideration in the May meeting that defines these boundaries.

II. ABSI PROJECT BRIEFINGS

The CAB heard presentations on the *status quo* conditions, the aquaculture regulation system and current and proposed sites, an overview of the history of the restoration and shelling efforts, and the stakeholder collaborative modeling process used for the Maryland Choptank Oyster Futures initiative.

A. TALK BY DR. SANDRA BROOKE, ABSI SCIENCE DIRECTOR - CURRENT STATUS OF APALACHICOLA BAY AND THE CONDITIONS THAT OYSTERS NEED TO THRIVE (view slides here: https://marinelab.fsu.edu/media/3959/cab-presentation-march-2020-sandra-brooke.pdf

Baseline data serves as the foundation of most research projects, making it possible to measure change. It can be either historical information available or currently obtained data gathered about a system that is used as a standard against which study results are compared. For ABSI, sources of baseline data include: historical habitat maps, monitoring data for environmental and hydrological conditions; distribution and abundance data for fishery and non-fishery species; oyster harvest data; results from re-shelling/restoration projects; and provision of ecosystem services.

Habitat maps exist for Apalachicola Bay for intertidal areas (Grizzle[1] et al 2008, FSUCML ABSI 2020) and subtidal areas (Twitchell et al, 2007) for West (St Vincent Sound), Central (Apalachicola Bay) and East (St. George) bays. There are questions about whether the historical natural bars still exist.

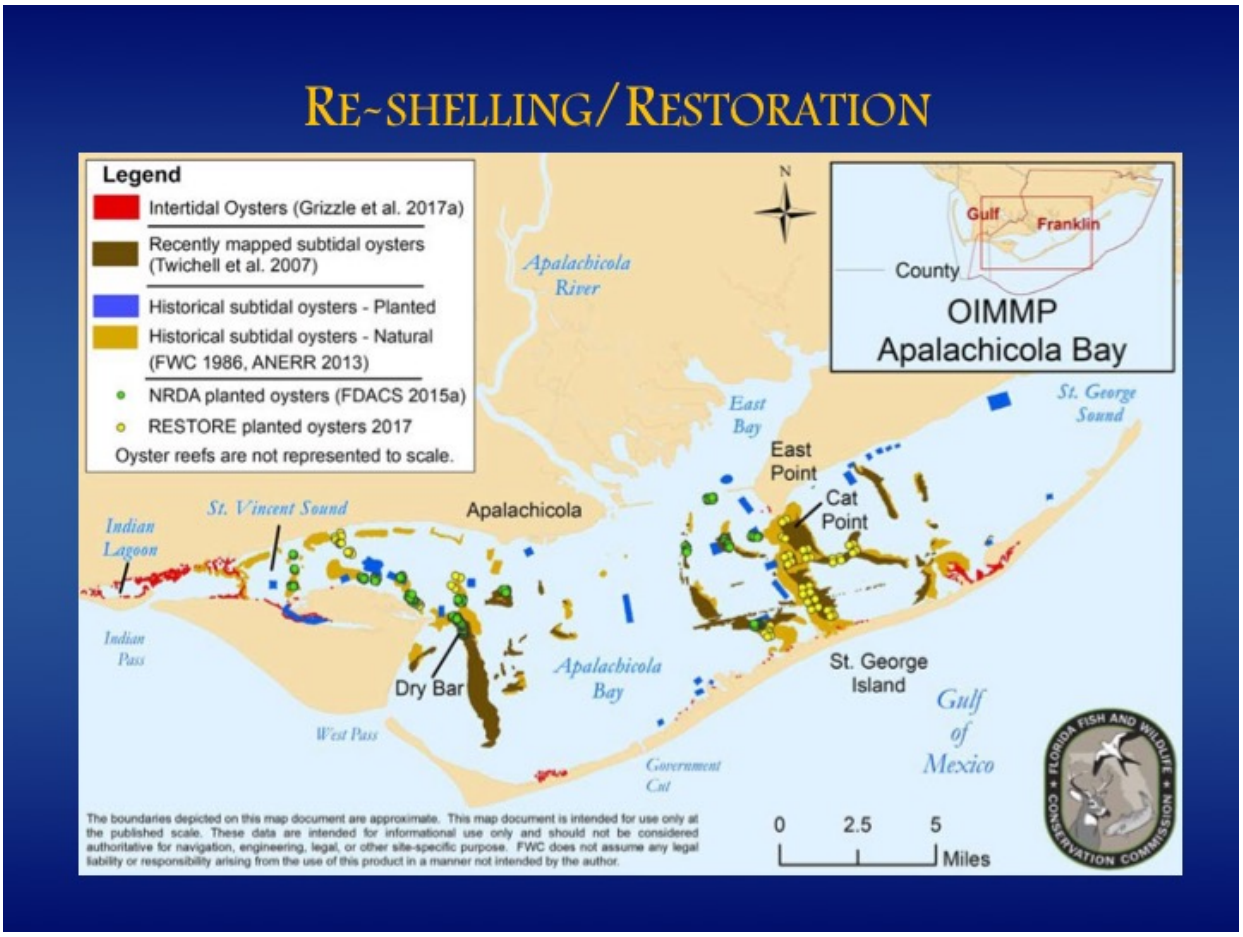
In terms of environmental conditions (e.g., temperature, salinity, currents, sea level), ABSI will develop a hydrodynamic model for the lower Apalachicola River, Apalachicola Bay, and surrounding coastal and inner shelf regions. ABSI will present the model to the CAB during one or more interactive sessions, and will develop simulations for past and future climate scenarios and alterative management strategies. The model will characterize the variability of hydrographic properties throughout the bay for the different scenarios. The simulation's domain will be expanded to encompass adjacent estuaries, and the resolution enhanced to simulate features as small as several meters. The model will be coupled with large-scale ocean circulation and tides at the seaward boundaries, and input from hydrological models at the rivers. ABSI will also perform numerical simulations of oyster larvae dispersal to quantify larval recruitment patterns, retention, and inter-estuarine exchange.

For intertidal oysters, Grizzle et al. (2018) found oyster densities of 34 oysters per m^2 in the West Bay, 429 per m^2 in the central part, and 993 per m^2 .in the eastern part. FWC surveys of 161 sampling stations on subtidal reefs in 2016 indicated that only 66 (41%) of the stations had oysters on them, the densities of which averaged ~17 oysters per m^2.

In terms of subtidal oyster distribution and recruitment, the data from three FWRI monitoring stations, show the location of potential oyster substrate. Maps in the slideshow show the distribution and recruitment from the Winter Bar, Summer Bar and Winter Bar East. The data on oyster harvest in terms of landings and catch per unit effort showed a step decline in harvest from 2010-2020 for Franklin County, Florida's West Coast (excluding Franklin County) and Florida's East Coast.

The map below depicts the shelling and restoration efforts conducted by FWC. In 2015, NRDA and Restore projects planted oysters with 24,850 yards of shell over 124 acres and sampled in three rounds: April-July 2017 (Round 1), December 2017-April 2018 (Round 2), and September-December 2019 (Round 3) In 2017 the total number of live oysters was 7,429 and dead oysters was 3,451. In 2017-18 the total number of live oysters was 8,898 and dead oysters was 1,631. In 2019 the total number of live oysters was 1,879 and dead oysters was 191. The number of live adult oysters (>75mm) in 2019 was 2.

[1] Dr. Ray Grizzle serves on the ABSI Scientific Advisory Board



Dr. Brooke highlighted and compared the fishery species data (FWC FIM Surveys) from Apalachicola with Cedar Key, Tampa Bay and Charlotte Harbor. The fishery species included silver perch, shrimp, and mullet. The non-fishery species included pinfish and gobies. There were no consistent patterns of decline across any of the estuaries for any species except mullet, which showed a sharp decline early in the data set, and continued at low levels until the present time. The other estuaries did not show this trend.

Research suggests that oyster decline in the Gulf of Mexico occurred because of a combination of pressures, including overharvesting, habitat loss, high salinities/reduced freshwater input, predation, disease, and climate change. Apalachicola Bay has experienced reduced freshwater flows for some time due to freshwater withdrawals for agricultural and for municipal use (e.g., Atlanta removes 2 billion liters/day), coupled with a severe drought in the US SE between 2007 and 2014.

Noteworthy predators of oysters in low to moderate salinity waters include cownose rays, blue crabs and sheepshead. At high salinity, the predators shift to the Atlantic oyster drill, oyster leeches, stone crabs, black drum, and boring sponges. The primary oyster disease of interest is Dermo, a single-celled protozoan that infects the oyster during their 1st and 2nd years, causing cell death, reduced reproductive potential, and increased mortality. High infestations can devastate oyster populations. These infestations increase rapidly at high temperatures (18^{o}C/65^{o}F) and salinities (>15 ppt), declining at relatively low temperatures (15^{o}C/59^{o}F) and salinity (<9 ppt).

Climate change contributes to increasing oyster mortality in several ways: (1) increasing temperatures increase the oyster's physiological stress, making them more vulnerable to Dermo; and (2) changes in rainfall patterns either bring abnormally strong storm events and low salinities, or droughts that bring high salinity and changes in nutrient dynamics. While changes in carbonate chemistry that occur when CO_2 is absorbed by the ocean can affect an oyster's ability to absorb calcium carbonate to build their shells (a problem prevalent in the NW Pacific that essentially bankrupted oyster growers), this problem is not apparent in this part of world that is built on karst limestone base.

This slides presents the various characteristics that oysters need to thrive.

What do oysters need to thrive?

Oyster habitat suitability varies with location in an estuary

Characteristic	Estuarine location			
	Head	Middle	Lower	Mouth
Salinity (ppt) Average Range	 10 0-15	 15 10-20	 25 10-30	 30 20-35
Spat settlement	Low	Moderate-heavy	Moderate	Low
Growth rate	Slow-rapid	Moderate-rapid	Rapid	Slow
Habitat suitability	Low	Maximum	Moderate	Low
Probability of flood	High	Low-moderate	Low	Negligible
Predator abundance	Low	Low-moderate	Moderate	High
Fouling organisms	Low	Moderate	Maximum	High
Annual mortality rate	High	Low-moderate	High	High
Production potential	Low	Moderate-high	Moderate	Negligible

The best way to help preserve oyster habitats and fisheries is through better understanding of how shifting conditions affect oyster biology and ecology; maintaining and restoring watersheds to support healthy estuaries; continuing restoration efforts for natural reefs; and removing local stressors to maintain ecosystem resilience.

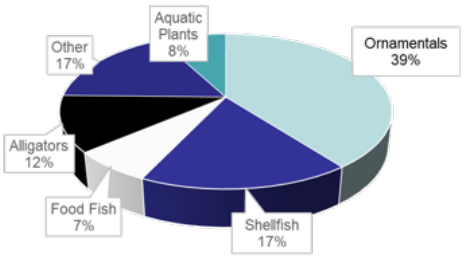
CAB Comments/Questions

- Difficult gear for checking stone crabs and blue crab populations leads to questionable trend data.
- What about finfish? *A: Can look at thru the data set to see if there is finfish data.*

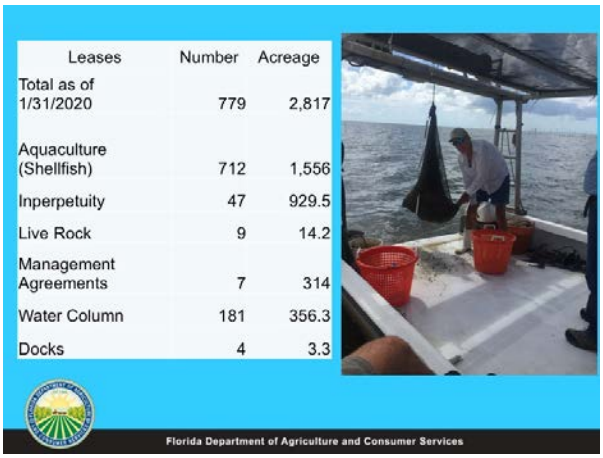
B. Talk by Portia Sapp. CAB member, Director FDACS Division of Aquaculture. FDACS Aquaculture Leasing Program

In 2018, Florida's Aquaculture Industry sales totaled $71.6 million with 1000 Aquaculture Certificates of Registration and 800 species in production. The Aquaculture Division has four programs: Aquaculture Certificate of Registration and Best Management Practices; Shellfish Harvesting Area Classification; Sovereignty Submerged Land Leasing; and Shellfish Processing Facility Certification. FWC, on the other

hand, sets season, size & bag limits for wild harvest (both commercial and recreational), enforces oyster regulations; and issues shellfish endorsements for commercial harvest.



Pictured below are the type (L) and location (R) of current aquaculture leases,



For Franklin County leases, preference will be given to the following:

- applicants that are Franklin County residents;
- applicants that have attended a pre-application meeting (which will be held in Franklin County to provide an overview of the aquaculture leasing process and requirements);
- applicants that have not previously held a 10-year renewable submerged land aquaculture lease; to applicants that have held a Saltwater Products License (SPL) for at least three of the last five years; and
- applicants that have held an Apalachicola Bay Oyster Harvesting License (ABOHL) for at least three of the last 10 years.

The Lease Agreement Terms and Conditions indicate that the lease cannot be assigned, transferred or subleased for five years; and the leaseholder's identification information shall be attached to all culturing structures. Lease Rental Fees for Bottom leases are $16.73/acre or fraction thereof, and for Water Column leases, they are $33.46/acre or fraction thereof. A surcharge of $10/acre is added. FDACS conducts annual audits of lease holders who have to demonstrate through amount of seed/stock purchased and harvested and copies of seed/stock receipts that they have at least 70,000 oysters/acre or 100,000 clams/acre.

FDACS's best management practices require that only native species can be stocked; lease holders are prohibited from stocking oysters from the Atlantic Coast on leases held in Florida Gulf Coast waters; an Official Certificate of Veterinary Inspection and diagnostic results must be sent to the Division prior to out-of-state shellfish entering Florida; oyster seed from out-of-state sources must use Florida

brood stock in genetic selection program. For out-of-state sources of triploid seeds (which are derived from a tetraploid male crossed with a diploid female oyster), it is a requirement to use brood stock from the Gulf of Mexico.

CAB Comments/Questions

- There was recent 4 mile aquaculture controversy for Franklin County. How does FDACS decide where? *A: Four areas were considered that had no conflict with existing users and they used local knowledge.*
- Is there a state preference for Triploids or diploids? What happens to spat? *A: No but FDACS provides BMPs for health and genetics and they don't tell lease holders what to grow.*
- If diploid oysters broadcast spawn, this may be contributing to the wild oysters in the Bay.
- Should there be a strategy for mortality/dead shell on leases to help with restoration efforts?
- What is the Timeline for when sites developed? *A: Depends on the # of applicants depends. There are 15 days to submit application fees and a public meeting to pick parcels. Starting this summer FDACS is conducting training programs including business planning training. And information on purchasing gear, give tools and resources they need.*

C. Talk by Jonathan Brucker, FDEP Central Panhandle Aquatic Preserves--Oyster Reef Management in Apalachicola Bay

This talk addressed the Florida Department of Environmental Protection's restoration efforts to restore existing oyster reef habitat that had been degraded, depleted, or reached its productive life span. The approach used was to place cultch material on existing oyster bars where natural reproduction occurs for the setting of native oyster larvae and oyster colonization. The ecological benefits of restoration include creating three-dimensional reef structure, stimulating spat setting, accelerating the recovery process, increasing natural productivity, sustaining oyster fisheries, and enhancing ecosystem community functions while potential economic benefits include increased harvesting, processing, and marketing fishery products, and commercial fisheries, thus providing local employment and income.

Historical cultch deposition.-- Shell additions to the bay were first recommended around 1885. The Florida Division of Agriculture planted the first known shell -- 15,000 barrels -- in 1913. Shell distribution increased substantially around 1925; and after 1949, a state-mandated shell distribution program required that harvested oyster shell be returned to public oyster beds. As of 1977, more than 4 million bushels of shell and rock had been deposited over 1,000 acres of bottom in Apalachicola Bay. Shell buy-back programs were implemented to pay dealers for collected shell; however, these programs relied on grants and did not have a permanent source of funding.

More recently, between 1999 and 2004, a total of 44,674 yds of processed shell were deposited in Apalachicola Bay. Between 2008 and 2012, an additional 44,556 yds of processed and fossilized shell were deposited. In 2014, deposition was 6,125 yds of fossilized shell. In 2015, a Cultch Density Study on deposition, mapping and monitoring, funded by the Natural Fish and Wildlife Foundation (NFWF), deposited 3,000 yds of fossilized shell at three experimental sites. In the same year, the Natural Resource Damage Assessment (NRDA) Oyster Cultch Recovery Project supported deposition, mapping and monitoring of a deposited 24,840 yds of fossilized shell on 16 debilitated oyster reefs. In 2017, Gulf Coast Ecosystem Restoration Council (GCERC or RESTORE) funded the deposit, mapping, and monitoring of 95,500 yd lime rock aggregate on 14 debilitated oyster reefs.

The **Florida Oyster Cultch Placement Project Year Two Monitoring Report** revealed that the " . . . total numbers of live and dead oysters observed significantly decreased between Round 2 and 3; overall live oyster density estimates sharply decreased on the east side of the bay, while the west side of the bay exhibited a slight increase in oyster density, although it remains below." *(See Figure 6 in the Report.)* The cultched reefs were not mapped prior to initial cultch deposition to record a baseline footprint of each reef area. It would have been ideal to compare initial cultched area versus the current reef area for a more accurate comparison of change in reef extent over time. Based on samples of cultch material collected throughout the course of sampling, it is anticipated that reef area will have declined from original clutched reef footprint on some reefs, specifically in 'The Miles' on the west side of the bay. Mapping planned for the reef area of all reefs in the spring and summer of 2020 will enable the estimation of reef area loss or gain.

Mr. Brucker offered the following are important take-home points:

- Adding cultch material should be considered an essential management action if the current shell budget is deficient.
- Replacing cultch material should not be exclusively expected to guarantee recovery of the fishery.
- If oyster spat recruitment remains low, even large amounts of cultch may not lead to rapid oyster reef recovery.
- All restoration actions, including shelling, should be as carefully managed, monitored, quantified, and tracked.
- Examine past and current restoration efforts to maximize potential future efforts.

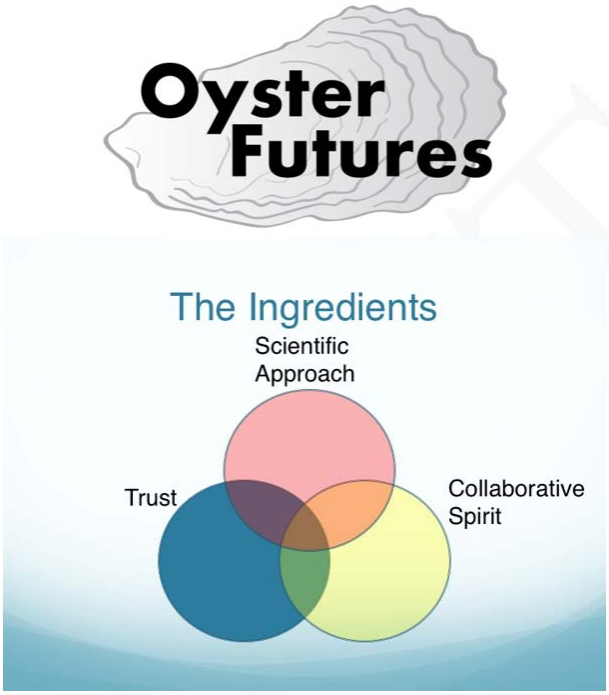
CAB Comments/Questions

- Is Apalachicola Bay a low spat or spat limited? *A Recent data showing a large decrease in spat with a drastic decline of live oysters in 2017-18. Hurricane Michael in fall 2018 was a contributing factor. Oysters in the Bay are not making it to adult size with the population struggling to make it beyond 25 mm. We don't know yet what is stopping their growth.*
- Table 4 demonstrates the collapse of a healthy reef (200 bags per acre) when only one reef produced only 4.8 bags per acre.

D. THE MARYLAND OYSTER FUTURES STAKEHOLDER CONSENSUS PROCESS

Jeff Blair and Bob Jones facilitated the Oyster Future's stakeholder consensus process between 2016 and 2018. The goal of Oyster Futures was to develop recommendations for oyster policies and management that met the needs of industry, citizen, and government stakeholders in the Choptank and Little Choptank Rivers of the Maryland Chesapeake Bay. It tested the *Consensus Solutions* process for developing fishing regulations and restoration policies in the Choptank and Little Choptank Rivers in the Maryland Chesapeake Bay through a facilitated process to promote consensus decision-making with modeling to forecast potential effects of decisions.

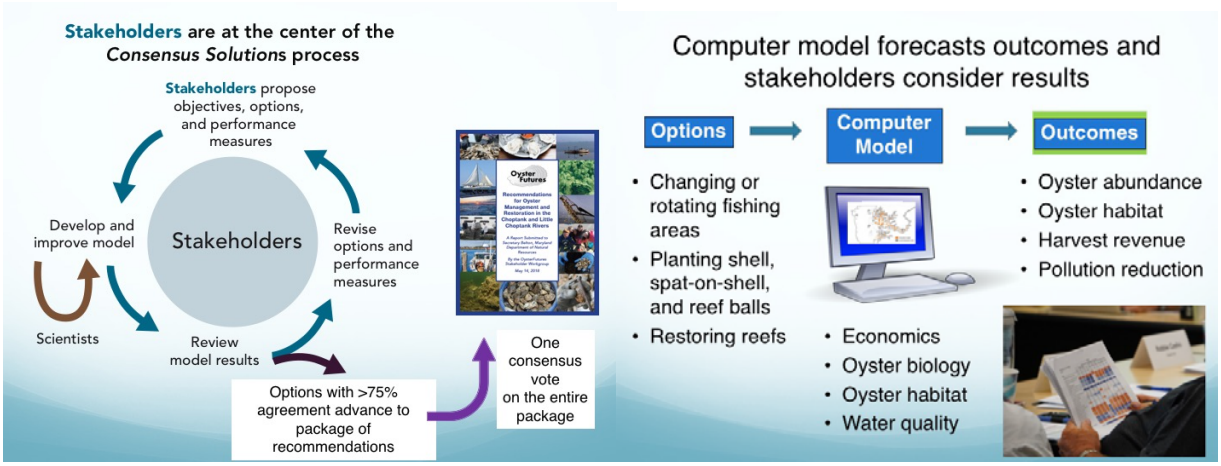
The Workgroup met for ten 2-day meetings on weekends between February 2016 and March 2018. Sixteen stakeholders were represented on the Workgroup: Waterman (6); Aquaculture (2); Seafood Buyers (1); Environmental Citizen Groups (3); Recreational Fishing Groups (1); State Agency−Maryland Department of Natural Resources (1); Oyster Recovery Partnership (1); and Federal Agency−NOAA (1)



Jeff laid out the Workgroup process steps as follows:

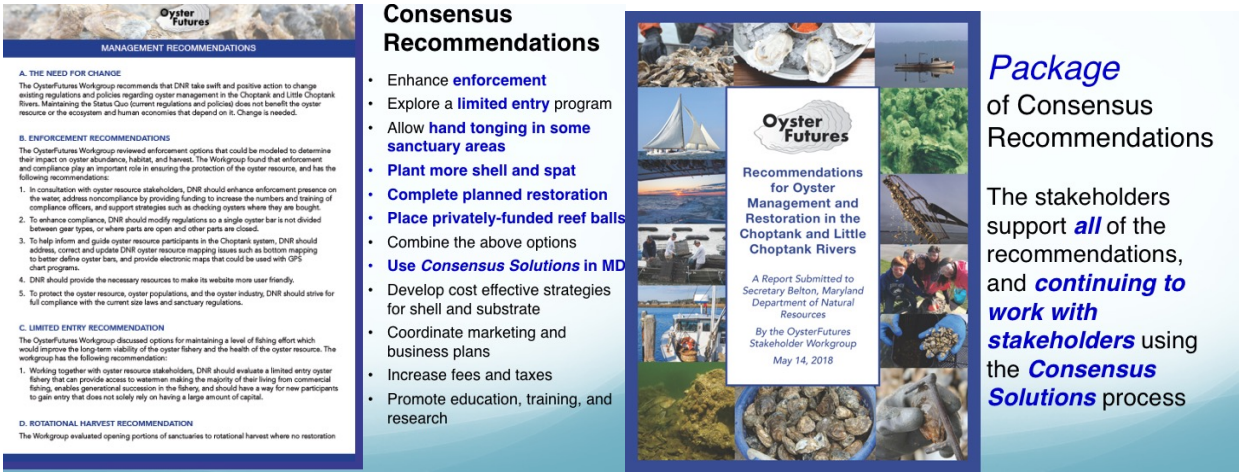
1. Workgroup members identified and agreed to key issues, and identified and acceptability rated a full suite of options for each key issue.
2. Workgroup members identified & agreed to performance measures.
3. ≥75% in favor threshold required for consensus recommendations for options and performance measures.
4. Iterative process allowing stakeholders the flexibility to make changes based on model simulation results.
5. Evaluating options in the context of trusted science, built trust and a desire to work collaboratively to meet the needs of all stakeholders.
6. Science presented in a sensible and understandable format, including data gaps, assumptions and uncertainty.
7. All options, ratings, and comments are compiled and available through the entire process.
8. No decision is final until the vote on the consensus package of recommendations during the final meeting.

The following images summarize the consensus solutions process and how it incorporated science and modeling to support their recommendations.



Stakeholder options that were evaluated included: Rotational harvest; Enforcement; Use of assessment of population in management; Limited entry; Habitat modification/restoration; Fees and taxes; Spatial; Gear type; Stocking; and Marketing and business practices. The stakeholders choose options that increased oyster abundance and harvest; options that increased revenue to fisherman and were cost effective; and options that increased nitrogen reduction and were cost effective.

Oyster Futures demonstrated that: win-win-win options exist even in a polarized environment; combining options led to best overall performance; and strong positive benefits were realized after 10 year commitment and after 20 years, harvest revenue could be twice that of annual public investments with an 8-fold return on public investment for pollution reduction.



Consensus is possible and the process is important as it can create or alleviate conflict. The *Consensus Solutions* process helped create well-thought-out regulations with broad stakeholder support for win-win-win solutions for the oyster, the industry, and the environment.

CAB Comments/Questions

- If oysters grow 3 times faster in Apalachicola than in the Chesapeake can we quicken the restoration of the Bay? *A: We need to distinguish between oyster growth and oyster reef growth. We don't currently know the answer. They may grow faster and die faster.*
- We need to communicate to the public what we are learning on the CAB. *A: To allow the public greater access, we are now recording the meetings starting with this one, and putting those recordings on the web. Also available on the web for all meetings are meeting agendas, summaries and presentations made by the ABSI Team, CAB members, and invited speakers. We will convene a public workshop in August 2020 to provide an update on CAB accomplishments and to seek input from attendees.*
- What was the engagement of the Oyster Futures workgroup in the implementation of the recommendations and the management plan? *A: The Workgroup disbanded after delivering the report to the Secretary of the Maryland Department of Natural Resources. Many of members (?) continue to be engaged in the implementation. The Maryland Legislature passed a law to create the first oyster stock assessment for the Chesapeake Bay and mandated the use of the consensus solutions process.*

III. VISION THEMES, GOALS, OUTCOMES AND OBJECTIVES FOR THE APALACHICOLA BAY SYSTEM

The following draft "Vision of Success" themes were drawn from the CAB Questionnaire responses and reviewed and rated by the Community Advisory Board at the October 30 and December 18 meetings. The language for vision themes, goals and outcomes were drafted by the facilitators based on the input received at December 18, 2019 CAB Meeting Summary. CAB member Tom Frazer

agreed at the December 18 CAB meeting to provide suggested edits to the Vision Themes, Goals and Outcomes based on the CAB Discussion which were reviewed and finalized at the January 8, 2020 ABSI CAB meeting III. The five theme headlines were adopted by the CAB at that meeting included:

A. A Healthy and Productive Bay Ecosystem
B. Sustainable Management of Oyster Resources
C. A Thriving Economy Connected to a Restored Apalachicola Bay System
D. An Engaged Stakeholder Community and Informed Public
E. An Ecosystem-Based Management and Restoration Plan that is Science-Based, Fully Funded and Supported by Apalachicola Bay System Stakeholders

A. A Healthy and Productive Bay Ecosystem

The Vision Theme Goal, Outcome and Objectives for a Healthy and Productive Bay Ecosystem are in Appendix #7.

1. Key Topical Issues

At the December 18, 2019 and the January 8, 2020 meetings, members brainstormed a list of key topical issues including: measuring ecosystem services; criteria for opening and closing the oyster fishery; spatial extent of oyster reefs; oyster population demographics; monitoring fishery output; water quality; future projected conditions and water flows; socioeconomic objectives linked to ecosystem services; oyster habitat use by fish; drying of the Apalachicola Bay flood plain; septic systems impact on the Bay; Nutrients and chlorophyll; define/measure "healthy" in the ABSI goal; and address climate change.

The CAB added the following issues:

- Gulf-wide landings data reporting consistency; and
- Define the boundary for ABSI in the river.

2. Initial Draft Strategies

The CAB members suggested that the strategies under A and B should aim for a sustainable oyster population. In addition they suggested:

- Identifying what monitoring data is needed on the health of the oysters;
- Demonstrating impact on environmental issues (habitat and species); and
- Criteria for opening and closing the wild harvest oyster fishery *(Part of Goal B discussion below).*

3. Related Draft Performance Measures to Evaluate Strategies

The CAB members reviewed the related performance measures in the following general categories. The ones that were added by the CAB are <u>underlined</u> below:

Oyster reefs

- <u>Reef height, where "reef" means live & dead shell, as well as restored material like rock (inches or meters)</u>
- <u>Reef area, reef defined as above (acres or km^2)</u>
- <u>Shell density ($\#/m^2$)</u>

- Live density (#/m^2)
- Amount of exposed shell on each reef [*need to discuss/define/clarify*]
- "New boxes" fresh dead shells (better substrate for spat to settle).
- Area of reef structure (suitable for settlement, fish production, shoreline protection)
- Habitat quality – area suitable for settlement and changes over time
- Change in oyster habitat/year (area, volume, height)
- Oyster reef height
- Oyster reef shell density
- Soft sediment community structure
- Sanctuaries
- Closed areas

Oysters

- Abundance of oysters in the population across all habitat types (sub-tidal and inter-tidal)
- Density of oysters (number per m^2)
- Size/age of oysters by location/region (different reefs, fished vs. closed areas, inter-tidal vs. sub-tidal)
- Small/market ratio across habitats and locations
- Biomass of oysters across all habitat types (sub-tidal and inter-tidal)
- Amount of brood stock (spawning stock biomass) across all habitat types
- Spat production
- Incidence of oyster diseases, parasites and predators across different habitat type and locations
- Oyster recruitment spatial patterns—recruitment defined as the survival beyond a density-dependent mortality stage—roughly to 30-40mm long.

Oyster Reef Associated Species

- Diversity and biomass of reef-associated species
- Abundance of fishery species (e.g., blue crabs, stone crabs, finfish)

Habitat

- Salt marsh, mangrove, and/or seagrass indices
- Area of seagrass in the bay

Water Flow and Quality

- Volume of water filtered/day
- Days to filter estuary volume
- Changes in water clarity (visibility) over time
- Levels of pollutants (PCB, Heavy metals etc.)
- Sedimentation rates
- Salinity regimes across the ABSI region under different climate and management scenarios.
- Organic carbon dynamics (food availability) under different climate and management scenarios.
- Changes in nutrient (nitrogen) loads over time
- Relative proportion of nitrogen removed compared to nitrogen input
- Number of sloughs connected to the Apalachicola River (depending on flow levels).

Coastal resilience

- Coastal vulnerability indices
- Shoreline erosion protection

CAB Comments/Questions on the Performance Measures

- Abundance of oysters is key thing measure and secondary issues are sedimentation rates, changes of nutrients, pollutants and runoff.
- 5 inch oysters? We should revise this to 3 or 3 ½ inches. 3 inches is the harvest size.
- Is 3 inches too low? If 4 inches is achievable, that would makes sense. Indication of fishery. Sustainable use of the bay. This sounds more like B.
- "Greater than 3 inches"- historic data. Something to compare to.
- When are oyster mature? Become adults or grow to market size? 80-90% of oysters mature. 3 inches in 39 weeks.
- "Biomass of oysters across all habitat types (sub-tidal and inter-tidal)?" Different for same size oyster depending on season. Soft tissue, shell. Whole or shucked meat. Need to define this up front. Think about what this means.
- Intertidal oysters- elongated not marketable but good for ecosystem services
- Ecosystem= boundary issue. River system. E.g. restoring sloughs upstream. 5 sloughs pilot
- Metric= # of sloughs connected to river depending on flows.
- Does pilot lead to more sloughs.
- FWC landings in pounds of oyster meat. 6 lbs. of oyster meat per bushel. Pounds or shell conversion.
- There is a Gulf wide conversation on promoting consistent landings data.
- The oyster resources includes the river but not how far up we go.

B. SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES

The Vision Theme, Goal, Outcome, and Objectives for Sustainable Management of Oyster Resources are included in Appendix #7.

1. Key Topical Issues

At the December 18, 2019 and the January 8, 2020 meetings, members brainstormed a list of key topical issues including: the historical context; improve the current ABS regulatory management system; Limited entry to the ABS; Criteria for opening and closing the oyster fishery for Apalachicola Bay; Recreational fishing component; Compliance, enforcement and penalties; Aquaculture; Research and monitoring long term on regulation; Funding mechanisms; Water quality monitoring; Stewardship Outreach and Education; Managing the shell stock; and Legislative action.

2. Closing Apalachicola Bay to all wild harvesting of oysters (commercial and recreational)

In January 2020 the CAB identified as an issue the criteria for opening and closing the oyster fishery for Apalachicola Bay. At the request of CAB member Jim Estes, members discussed the views on closing and reopening the oyster harvest. The CAB voted unanimously to recommend that the FWC immediately close Apalachicola Bay to all wild harvesting of oysters (commercial and recreational).

a. Closing the Oyster Harvest in the Bay

CAB Comments/Questions

- It will be easy to close the harvest, but more complicated to reopen.
- We need to tell the public under what conditions it should be reopened.
- Based on the staggering #s we saw today, there is surely a justification emergency closure by the FWC.
- Should the Bay be closed based on the data on collapse of the Bay?
- Clarify that we are not "Closing the Bay" but rather "closing the oyster fishery harvest.
- Close the bay for wild harvesting.
- Close both commercial and recreational oyster harvesting?
- Explain why we believe it should be closed to harvesting
- What is the public's confidence in the CAB's decision on the closing harvest?
- To close the oyster harvest and say we will come up with conditions for reopening will be a problem
- Healthy Bay the prime motive. Restore healthy oyster pop in AB vs. harvest. Bay need to be closed immediately. No oysters are currently in bay. The system is bleeding to death.
- Closing the Bay for oyster harvest commercially and recreationally is a no brainer. We shouldn't be taking oysters and shell material out of Bay.
- Important to close as this reduces the pressure put on the resource.
- The data/numbers we saw today was staggering. Surely there is justification for an emergency closure by FWC.
- Oyster closure- we wasting time if we don't do this now.
- Since 2012 talking about this. 8 years later. Move forward. Take the steps now to close.
- 98% of people agree to closure to oyster harvest. But fear of reopening is the key issue.
- Previous discussions on closing the harvest were focused on the fear about re-opening.
- Closing harvest in Franklin County is currently not as big or controversial an issue.
- Have to have enforcement funded for the closure.
- Need to define the closure area. Does the Apalachicola Bay System include Alligator Harbor?

b. Reopening Oyster Harvest in the Bay After Closure

CAB Comments/Questions

- Conditions for reopening should be developed through research projects.
- Lay out parameters for reopening the Bay.
- FWC knows of the work of the CAB and ABSI science team
- Wait for the process and don't answer the question of conditions for reopening until more is understood about the science and the ABSI system?
- Consider limited reopening in stages and add more harvest over time based on the science.
- We've been overharvesting the Bay for years and this is the 1st stressor within our control.
- FWC NFWF project- stakeholders outside this room. The ABSI process should continue as planned.
- Reopening with a strategy of adaptive management experiments.
- Do we continue to use the current metric for commercially healthy oyster population which is 400 bags/acre?

- We should pin-point productive areas and use those bars to determine what would be considered healthy vs. "bags per acre."
- Reopen based on the #/density of acres an oyster bar.
- What % of the Bay will need to be recovered before reopening for harvest?
- We need to get accurate acreage data and avoid disrupting recovery sites
- Avoid a derby of putting all boats in one or two recovered and reopened locations.
- When we reopen to oyster harvest we should identify a limited entry population.
- Who would participate in the oyster harvest upon reopening?
- Between 2000 and 2010, review who made living oystering?
- Consider how many tickets for illegal harvesting and exclude them.
- Do a lottery if harvesters number in the hundreds.
- Limit # of harvesters.
- Poachers and tickets for undersized oysters should lose their licenses
- It may take 10 years to get the Bay healthy enough to re-open it
- Consider what oyster density is needed to reopen.
- Re-opening the Bay for wild harvest should be limited, and in stages with adequate monitoring to ensure sustainability of the oyster resources.
- Ed Camp suggested we don't presently have the knowledge to make a density determination. Don't put a # for this until we do. We need science to provide data to make a determination. For example it will take 6-9 months to develop spatially explicit models. The earliest timeline for state approved stock assessment and management plan would be18 months assuming we have the data on hand.
- Need to build trust among stakeholders and public in the data (collected and projected)

c. Initial Closure Recommendation of the ABSI CAB

At the March 11, 2020 ABSI CAB meeting the CAB voted unanimously to recommend that the FWC immediately close Apalachicola Bay to all wild harvesting of oysters (commercial and recreational). The CAB agreed that in subsequent meetings they would make science-based recommendations for the criteria and performance metrics that would have to be met for reopening the Bay to wild oyster harvest.

Jim Estes indicated that at the next FWC Commission meeting on May 13-14 2020, he would present a proposal for closure of wild-harvest (both commercial and recreational) oyster fisheries. He indicated that because it generally takes two meetings to complete the rule process, that the soonest the closure could take place would be in July 2020.

3. Initial Draft Strategies

The CAB brainstormed the following initial strategies for addressing issues related to sustainable oyster resources:

Shell budget/recycling program

- Implement a shell-recycling/shell budget program.

Limited entry.

- Evaluate whether a limited entry wild oyster-harvesting fishery would be of value for the Bay. Look for successful examples in other fisheries

Rebuild oyster reefs.

- Rebuild oyster reef ecosystems using multiple approaches and investigating more options (i.e., adding substrate, spat-on-shell), adding spat).

Protect spawning areas.

- Provide closure areas to provide for brood stock and spawning.

Rotational harvest.

- Evaluate rotational and seasonal harvest strategies.

Healthy oyster bars.

- Determine the percentage of healthy oyster bars in the Bay needed for any reopening to wild harvesting.
- Define what constitutes a healthy oyster bar (e.g. 400 bags or oysters per acre).

Acreage needed to sustain oyster resources.

- Determine how many acres of healthy oyster bars are needed to ensure sustainability of the oyster resources (i.e., 6,000 – 8,000 acres).
- Important to close as this reduces the pressure put on the resource.
- Ensure that the System has sufficient spat production to produce healthy oyster bars.

Enforcement.

- Enhanced enforcement is critical to monitor the restoration and health of the Bay's oyster resources (i.e., checkpoints, ensuring culling is done over harvest areas).
- Enforcement check points
- Harvesters processing on the boat- enforcement to return shells to the reef bars where they got it them. Require culling over the harvest area

Surcharge on harvestable oysters

Data and Monitoring.

- Compile accurate science-based data for all decisions (management and restoration) and implement monitoring requirements.
- Identify the places/bars better to harvest than others in a wet year and in a dry year.
- What is the number of years you for which you need data? 5 to 10 years?
- Increase monitoring and data collection to support real time adaptive mgt.

Sanctuary reefs.

- Consider Sanctuary reefs and how many acres needed.

Combinations of options

- Combinations of options worked best based on Oyster Futures experience.

Adaptive management.

- Look at the US Supreme Court Special Master decision and how he dealt with the arguments and then shape an adaptive management strategy to address those issues.
- We need to learn something about the fishery through adaptive management actions taken to maximize and sustain oyster populations
- IOCC/FDA will impact management options

4. Related Draft Performance Measures to Evaluate Strategies/Options

The CAB members reviewed the related performance measures for sustainable oyster resources. The ones that were added by the CAB are <u>underlined</u> below:

- Total harvest in bags the oyster population can support
- Sustainable allowable catch in annual total biomass (kg) removed, under different management regimes.
- How close to a complete fishery (fraction harvested of allowable catch)
- Harvest (annual total biomass) by fishery type (recreational/commercial)
- Number of full-time harvesters that the fishery can support [need to define full-time]
- Harvest (annual total biomass) by size category
- Harvest (annual total biomass) by location
- Harvest (annual total biomass) by gear type
- Timing of harvest during the fishing season
- Catch per unit effort (catch per trip)
- Number of poaching violations and amount of captured illegal harvest (including illegal sale)
- Amount of harvest from rotation areas
- Fraction of total oyster population that is being harvested
- Shell budget model. How many oysters removed through harvest activities without a net loss of oysters?
- Creation of a harvest management plan that is ecologically sustainable and acceptable to stakeholders and includes plans for actions in case of unpredictable but inevitable environmental disturbances.
- An updated oyster fishery and aquaculture enforcement plan that is approved by fishers, farmers, distributors (fish houses), FWC Law Enforcement, and local judicial system.
- Number of large oysters (>3") by location/region (different reefs, fished vs. closed areas, inter-tidal vs. sub-tidal).
- We not only need a density measure, but harvest as well. We need an end of season metric.
- Shell budget model. How many oysters removed through harvest activities without a net loss of oysters?
- Creation of a harvest management plan that is ecologically sustainable and acceptable to stakeholders and includes plans for actions in case of unpredictable but inevitable environmental disturbances.
- An updated oyster fishery and aquaculture enforcement plan that is approved by fishers, farmers, and distributors (fish houses), as well as FWC Law Enforcement.

CAB Comments 3-11 on Sustainable Management of Oyster Resources Performance Measures

- Harvest (annual total biomass) by size category? This will be a difficult metric as there is no data for that. Is this a practical metric?
- Wild reefs, with submerged leases on public bars? Has it been considered in Florida? Louisiana will use this approach in part.
- In perpetuity leases- now only number 50 statewide. No authority to issue at FDACS, maybe FWC?
- Enforcement cases are heard before a local Franklin County judge. As the enforcement actions and laws will be heard and interpreted in the County court, we should seek to brief them on the management plan and the importance of enforcement.

IV. PUBLIC COMMENT AND NEXT STEPS

No members of the public wished to provide comments to the ABSI Community Advisory Board

The facilitators then reviewed the agenda for the 5th meeting scheduled for May 22, 2020 at Apalachicola National Estuarine Research Reserve in Eastpoint, Florida to accommodate the FWC Commission meeting in early May.

The facilitators then reviewed the agenda for the 5th meeting scheduled for Friday, May 23, 2020 scheduled to take place at the Apalachicola National Estuarine Research Reserve in Eastpoint, Florida. The plan is to continue to identify CAB strategies for the five sets of vision themes, goals and objectives.

Members suggested updates and briefing presentations on: update on the FWC proposal to close Apalachicola Bay to wild oyster harvesting; updates on the ACF Basin water apportioning status, the Florida vs. Georgia ACF basin waters apportioning case and the Water Control Manual; the FWRI/FWC research conducted in ABS update (Melanie Parker); and the NFWF Lake Wimico Acquisition and Management Project Briefing.

The members completed meeting evaluation forms and adjourned at 2:10 pm.

APPENDICES

APPENDIX #1 COMMUNITY ADVISORY BOARD AGENDA MARCH 11, 2020

ABSI COMMUNITY ADVISORY BOARD (CAB) MEETING #3
WEDNESDAY, MARCH 11,, 2020
APALACHICOLA NATIONAL ESTUARINE RESEARCH RESERVE, EASTPOINT, FLORIDA

ABSI COMMUNITY ADVISORY BOARD MEETING IV OBJECTIVES

✓ To Approve Regular Procedural Topics (Meeting IV Agenda and Meeting III Summary Report)
Receive Project Briefings and Community Advisory Board Requested Presentations
Identify Preliminary Draft Options/Strategies to Achieve Goals and Information Needs
Identify and Discuss Draft Performance Measures
Identify Next Steps and Information Needed, and Agenda Items for Next Meeting

ABSI COMMUNITY ADVISORY BOARD MEETING IV AGENDA—MARCH 11, 2020

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

1.)	**8:30 AM**	**WELCOME AND INTRODUCTIONS**
2.)	**8:40**	**AGENDA REVIEW AND MEETING OBJECTIVES**
3.)	**8:45**	**APPROVAL OF FACILITATORS' SUMMARY REPORT (JANUARY 8, 2020)**
4.)	**8:50**	**PROJECT BRIEFINGS** • Status Quo Conditions and Data Describing the ABS, and Conditions for a Healthy Oyster Fishery & Reef Ecosystem (Sandra Brooke 25 min.) **COMMUNITY ADVISORY BOARD REQUESTED PRESENTATIONS** V. Aquaculture Industry Regulatory Framework and Overview (Portia Sapp 15 min.) VI. Briefing on ABS Restoration Efforts since 1980s – (Jon Brucker 15 min.) VII. Oyster Futures Stakeholder Process Overview (Jeff Blair/Bob Jones 15 min.)
~10:15		*BREAK*
5.)	**10:30**	**A.) A HEALTHY AND PRODUCTIVE BAY ECOSYSTEM** • Consider Any Member Proposed Revisions to Vision, Goal, Outcome, Objectives • Review and Refinement of Key Issues • Identification of Initial Draft Options/Strategies to Achieve Goal • Consideration of Relevant Performance Measures • Identification of Information Needs
12:00 PM		*LUNCH—ON SITE*
6.)	**12:30**	**B.) SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES** • Consider Any Member Proposed Revisions to Vision, Goal, Outcome, Objectives • Review and Refinement of Key Issues • Identification of Initial Draft Options/Strategies to Achieve Goal • Consideration of Relevant Performance Measures • Identification of Information Needs
8.)	**2:00**	**IDENTIFICATION AND DISCUSSION OF DRAFT PERFORMANCE MEASURES**
9.)	**~2:30**	**PUBLIC COMMENT**
10.)	**2:45**	**NEXT STEPS AND AGENDA ITEMS FOR THE NEXT MEETING** • Review of the CAB Schedule of Meetings • Review of action items and assignments • Identify agenda items and any needed information for the April CAB meeting • Meeting evaluation
~3:00 PM		*ADJOURN*

APPENDIX #2 CAB MEMBERS & FLORIDA STATE UNIVERSITY TEAM PARTICIPANT LIST

Bold= Participating CAB Member and Team Member

MEMBER	AFFILIATION
Agriculture/ACF Stakeholders/Riparian Counties	
1. Chad Taylor	**Riparian Counties Stakeholder Group/ACF Stakeholders/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. Smokey Parrish	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**
13. Cary Williams	Apalachicola Oyster Company, Aquaculture
14. Vance Millender	**Millender & Sons Seafood**
15. Steve Rash	**Water Street Seafood**
16. TJ Ward	Buddy Ward & Sons Seafood
State Government	
17. Jim Estes/Mike Norberg	**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
FSU PROJECT TEAM AND FACILITATORS	
NAME	**AFFILIATION**
Sandra Brooke	**Marine Biologist**
Felicia Coleman	**Marine Biologist**
Madelein Mahood	**Public Outreach Specialist**
Jeff Blair	**Community Advisory Board Facilitator, FCRC Consensus Center FSU**
Robert Jones	**Community Advisory Board Facilitator, FCRC Consensus Center FSU**

MEMBERS OF THE PUBLIC	
Ed Camp, University of Florida	Scott Borsum, University of Florida
Joshua Gabel, Sen Marco Rubio	Alexis Howard TCC Wakulla Environmental Institute
Carrie Jones, FDACS	Steve Leitman, FSU
Chad Palmer, University of Florida	Albert Wynn, TCC Wakulla Environmental Institute

APPENDIX #3 CAB MEETING IV MARCH 11, 2020 EVALUATION SUMMARY

CAB Members used a 10 point rating scale where a 0 meant "Totally Disagree" and a 10 meant "Totally Agree." The evaluation summary reflects average rating scores and comments from 14 CAB evaluation forms submitted.

1. PLEASE ASSESS THE OVERALL MEETING.

9.7 The agenda packet was very useful.
9.3 The objectives for the meeting were stated at the outset.
8.6 Overall, the objectives of the meeting were fully achieved.

2. DO YOU AGREE THAT EACH OF THE FOLLOWING MEETING OBJECTIVES WAS ACHIEVED?

9.8 Status Quo, and Healthy Oyster Fishery and Reef Ecosystem Presentation.
9.7 Aquaculture Industry Regulatory Framework and Overview Presentation.
8.8 Briefing on ABS Restoration Efforts since 1980s Presentation.
8.9 Oyster Futures Stakeholder Process Overview Presentation.
9.4 Review and Approval of Any Revisions to the Vision Themes, Goals, and Outcomes.
9.2 Review and Discussion of Draft Strategies/Options to Achieve Goals.
8.9 Review and Discussion of Draft Performance Measures Used to Evaluate Strategies
9.4 Next Steps, Schedule and Assignments Discussion.

3. PLEASE TELL US HOW WELL THE FACILITATOR HELPED THE PARTICIPANTS ENGAGE IN THE MEETING.

9.6 The members followed the direction of the Facilitator.
10.0 The Facilitator made sure the concerns of all members were heard.
10.0 The Facilitator helped us arrange our time well.
9.7 Participant input was documented accurately in Facilitator's January 2020 Report and during the meeting

4. PLEASE TELL US YOUR LEVEL OF SATISFACTION WITH THE MEETING?

9.5 Overall, I am very satisfied with the meeting.
9.7 I was very satisfied with the services provided by the Facilitator.
9.5 I am satisfied with the outcome of the meeting.

5. PLEASE TELL US HOW WELL THE NEXT STEPS WERE COMMUNICATED?

9.2 I know what the next steps following this meeting will be.
9.3 I know who is responsible for the next steps.

6. WHAT DID YOU LIKE BEST ABOUT THE MEETING?

- Good discussion. Lots of different perspectives
- Discussion about closing the Bay
- The first 3 presentations
- Immediate strategy to close the bay to oyster harvesting
- Flexibility in topic discussion and good engagement

- Fluidity. Ability to adapt to emerging discussion points
- Good job up grading IT to respond to concerns for public to hear our discussion
- Overview of Chesapeake Bay process was helpful!

7. HOW COULD THE MEETING HAVE BEEN IMPROVED?

- Have everyone use the microphones
- Focus on oyster reef restoration

APPENDIX #4 PROJECT SCHEDULE & WORKPLAN

Meetings Dates are Subject to Change

ABSI CAB DRAFT MEETING SCHEDULE AND WORKPLAN		
STANDING UP AND ORGANIZATION OF THE ABSI CAB		
Meeting I.	Oct. 30, 2019	Scoping and organizational meeting, review and refinement of overall project purpose, vision and goal framework.
Meeting. II	Dec. 18, 2019 Wed.	Introduction to decision-support tools and member requested presentations. Review and refinement of vision themes and goal framework.
Meeting III.	Jan. 8, 2020	Member requested presentations. Review and refinement of vision themes and goal framework continued
SCOPING OF ABSI ISSUES, IDENTIFICATION OF PERFORMANCE MEASURES & OPTIONS		
Meeting IV.	Mar. 11, 2020	Identification of decision-support tools options, review of performance measures and identification of policy issues, review of Oyster Ecosystem-Based Fisheries Management Plan outline.
Meeting V.	~~May 6, 2020~~ May 22, 2020	Review of decision-support tools scenarios and consensus rating of options and policy Issues. Review and agreement on draft Oyster Ecosystem-Based Fisheries Management Plan. Public Workshop Draft.
Meeting VI.	July 8, 2020	Review and agreement on draft Oyster Ecosystem-Based Fisheries Management Plan. Public Workshop Draft.
Public Workshop 1	August 2020	Review of Vision, Goal Framework, Plan outline, issues & options.
BUILDING CONSENSUS ON ABS OYSTER ECOSYSTEM-BASED FISHERIES MANAGEMENT PLAN		
Meeting VII.	Sept. 9, 2020	Review of public comments on Draft Plan, review of decision-support tools scenario results and consensus rating of options, draft performance measures, and identification of policy issues.
Meeting VIII.	Nov. 4, 2020	Review of Draft Plan, recommendations on policy issues, decision-support tools scenario results, and consensus rating of options.
FINALIZING CONSENSUS ON ABS OYSTER ECOSYSTEM-BASED FISHERIES MANAGEMENT PLAN		
Meeting IX.	Jan. 13, 2021	Review and consensus testing of Draft Plan and recommendations on policy issues.
Meeting X.	TBD	Review and consensus testing of Draft Plan and implementation guidance and agreement on Workshop Draft Plan.
Public Workshop 2	TBD	Review of GPBS Oyster Ecosystem-Based Fisheries Management Draft Plan and Implementation Guidance.
Meeting XI.	TBD	Review of public comment, refinement and consensus on the GPBS Oyster Ecosystem-Based Fisheries Management Plan, and Implementation Guidance.
Additional Meetings Schedule	*TBD*	

Appendix #5 ABSI CAB Terms and Definitions *(as of March 2020)*

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

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

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

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

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

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

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

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

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

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

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

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

Appendix #6 ABSI CAB Mission & CAB Goal Statements *(as of March 2020)*

APALACHICOLA BAY SYSTEM INITIATIVE MISSION

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

COMMUNITY ADVISORY BOARD GOAL STATEMENT (ADOPTED AS REVISED JANUARY 8, 2020)

The overarching goal of the Apalachicola Bay System Initiative (ABSI) Community Advisory Board (CAB) is to develop a package of consensus recommendations informed by the best available science, data, and stakeholders' experiences for the management and restoration of the Apalachicola Bay System (ABS), and to ensure there is a reliable mechanism and process for the monitoring, funding, and implementation of the Apalachicola Bay System Ecosystem-Based Management and Restoration Plan.

A primary focus is on oyster reef restoration with full consideration of factors affecting the biology, ecology and sustainable management of the resource. Restoration related actions, as indicated above, should be informed by the best available science and shared stakeholder values that, in turn, result in an economically viable, healthy, and sustainable Apalachicola Bay System.

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

Appendix #7 ABSI CAB Vision Themes, Goals, Outcomes & Objectives *(as of March 2020)*

APALACHICOLA BAY SYSTEM INITIATIVE VISION, GOALS, OUTCOMES AND OBJECTIVES

A.) A Healthy and Productive Bay Ecosystem

Vision Theme: 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: 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.

Objectives:

A1) Restoration and management plans for the ABS consider changes in management and future environmental conditions, such as freshwater flow (e.g., quantity, timing, hydrodynamics), water quality including temperature and salinity, sea level rise, and habitat change.

A2) Ecosystem services and ecological health indicators derived from Apalachicola Bay System recovery are defined and measurable, with identified target and threshold levels.

A3) Measurements of oyster reef and population conditions are defined and quantifiable, with target and threshold levels identified.

A4) Impacts and activities from activities and future climate scenarios affecting the health and restoration of the ABS ecosystem are considered and addressed to minimize negative effects to the ABS ecosystem. *(Moved-Previously Objective E5)*

A5) Policies and programs are established and implemented that provide the means to return a significant portion of the harvested oyster shell back to the ABS for substrate needed for larval recruitment to enhance population productivity.*(moved from B4)*

A6) Observations, experiments and modeling efforts conducted through ABSI and related efforts will identify viable strategies for restoration.

B.) Sustainable Management of Oyster Resources

Vision Theme: A restored Apalachicola Bay System has resulted in a sustainably managed wild harvested oyster fishery while also providing opportunity ~~also~~ for other economically viable and complementary industries, including aquaculture. This is accomplished by working collaboratively with stakeholders to create, monitor and fund a plan that ensures that protection of the fishery and habitat, is implemented in a manner that is supported by science, data, and field and industry experience and observation, and provides fair and equitable access to the resource.

Goal: A 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.

Objectives:

B1) A comprehensive monitoring plan for oyster resources is established, implemented, ~~and~~ evaluated for the ABS with strong coordination among the various entities conducting work in the Bay.
B2) By year four (2022), a science-based oyster management plan is developed with strong stakeholder and community support and implemented by the State of Florida (e.g., FWC, FDACS, State Legislature, etc.) for the ABS that considers, at a minimum: rotational harvest, open and closed areas (both permanent and seasonal), harvesting methods, limited entry, surcharge fees, the recreational fishery component, shell recycling, and a shell budget.
B3) Regulations for oyster management are well-enforced with sufficient penalties that deter violations and harm to the resource.
B4) The oyster aquaculture industry is regulated using best management practices that enable economic opportunities while preventing negative effects to the ABS ecosystem and its users.

C.) A Thriving Economy Connected to a Restored Apalachicola Bay System

Vision Theme: 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: 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.
Objectives:
C1) Economic indicators of the commercial oyster fishery and associated industries in the ABS demonstrate increasing viability and growth over the course of the ABSI project by *year X*.
C2) Industries, and businesses within the ABS are supportive and compatible with a healthy and well-managed ABS ecosystem.
C3) Growth management policies, plans and regulations affecting the ABS are compatible with a healthy and well-managed ABS ecosystem while maintaining a thriving economy and supporting cultural heritage.
C4) The oyster aquaculture industry provides economic opportunities and is complementary to the wild harvest fishery.

D.) An Engaged Stakeholder Community and Informed Public
Vision Theme D: Stakeholders of the Apalachicola Bay System are committed to working together beyond the Apalachicola Bay System Initiative 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 development, education and communication opportunities.
Goal: A productive and well-managed Apalachicola Bay System is supported by an actively engaged stakeholder community and informed 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 engaged and working actively together along with elected and appointed leaders and managers to invest in and implement the plan.
Objectives:

D1) A coordinated outreach and education plan is established and implemented to increase public awareness and support for a healthy and well-managed ABS ecosystem.
D2) Businesses, industries, non-profits, and local governments are supportive and included in outreach and education efforts to generate and increase public awareness and support for a healthy and well-managed ABS ecosystem.
D3) During the Project and following funding resources are identified and utilized to generate awareness, education, and support for a healthy oyster and ABS ecosystem.
D4) Public understanding of the issues important to health and restoration of the Bay are improved and increasing as measured by public and stakeholder surveys, and socio-economic

E.) An Ecosystem-Based Management and Restoration Plan that is Science-Based, Fully Funded and Supported by Apalachicola Bay System Stakeholders

Vision Theme: The Apalachicola Bay System Ecosystem-Based Management and Restoration Plan is science-based and developed with engagement and support from the Apalachicola Bay System stakeholders, including the State of Florida, and fully funded and informed by the best available science and other relevant socio-economic information**.**

Goal: The Apalachicola Bay System Ecosystem-Based Management and Restoration Plan is informed by the best available science, supported by the Apalachicola Bay System stakeholders, and implementation 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 Management and Restoration Plan that incorporates the monitoring necessary for evaluation and adaptation is ~~unanimously~~ broadly supported by Apalachicola Bay System stakeholders with guidance ~~oversight~~t from a permanent stakeholder advisory board.

Objectives:

E1) The ABSI Community Advisory Board approves a stakeholder driven and science-informed Ecosystem-Based Management and Restoration Plan for the Apalachicola Bay System with broad community support by 2022 that is implemented.
E2) The ABS Management and Restoration Plan has clearly defined performance measures used to monitor the health of the oyster resource and ABS ecosystem, including indicators of social and economic welfare of the area's coastal and surrounding communities.
E3) State of Florida accepts, approves and adopts and implements the ABS Management and Restoration Plan.
E4) Agencies and other entities responsible for implementing the ABS Management and Restoration Plan work in close coordination.
E5) Funding sources and mechanisms are identified and utilized for full implementation of the ABS Management and Restoration Plan.
E6) A fully funded permanent, representative stakeholder process is established to monitor the long-term implementation of the ABS Management and Restoration Plan.