

APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)
**ABSI COMMUNITY ADVISORY BOARD (CAB)
MEETING VIII SUMMARY REPORT**

OCTOBER 15, 2020
VIRTUAL ZOOM MEETING

Unanimously Adopted without Changes at the November 12, 2020 CAB Meeting



FACILITATED AND SUMMARIZED BY ROBERT JONES AND JEFF BLAIR



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APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)
ABSI COMMUNITY ADVISORY BOARD (CAB)
Zoom Meeting VIII Executive Summary
October 15, 2020

Jeff Blair, FSU FCRC Consensus Center and part of the FSU Facilitation Team, welcomed the members to the 8th meeting of the Apalachicola Bay System Initiative's Community Advisory Board. He introduced the online virtual meeting guidelines and his partner member of the ABSI Facilitation Team, Bob Jones, and the FSU ABSI Team members, Felicia Coleman and Sandra Brooke. Appendix 1 includes Members of the Community Advisory Board in attendance. The facilitators reviewed the objectives and agenda which the members approved. Members also approved the Facilitator Summary for the September 9, 2020 CAB Meeting VII without changes. The CAB reviewed and updated the Project Meeting Schedule and Work plan.

The CAB heard three presentations. Jim Estes, FWC, provided an overview of the oyster segment of the FWC Commission Meeting held in July 2020 FWC staff presented a proposal to temporarily suspend all harvest of wild oysters from Apalachicola Bay and prohibit on-the-water possession of wild oyster harvesting equipment through Dec. 31, 2025, in order to support restoration efforts and recovery of the Bay's oyster population. The FWC Staff recommended that the Commission approve the proposed draft rules they provided and also recommended that the Commission proactively implement these conservation measures by Executive Order, effective Aug. 1, 2020. Estes also noted that the final rule for this closure expected to occur at the FWC Commission meeting in October 2020 was delayed until early 2021 to give FWC time to evaluate Gulf County's request to clarify whether the order affected Indian Pass Lagoon located in Gulf County.

Bill Pine, University of Florida and a member of the ABSI Science Advisory Board, discussed the significant learning opportunities available by evaluating the effect of changing freshwater discharges in Apalachicola Bay on the oyster fishery. In particular, he noted that the collapse in the fall 2012 followed multiple years (2005-2012) of below-average discharge whereas increased river discharge over the past few years (2013-2020) does not appear to have promoted recovery of oyster populations.

Steve Leitman, ABSI/FSU researcher, discussed his freshwater flow model and his willingness to conduct modeling webinars for the CAB (one already having occurred with strong support). He addressed the following attributes of his model: (1) why the STELLA model is important to the ABSI project and the kinds of questions it can address; (2) the capacity of the reservoir system in the ACF basin to manage flow entering the Apalachicola River at Jim Woodruff Dam; and (3) how water supply and demand management approaches are defined through the model. He suggested that ABSI develop metrics similar to that used by the USFWS in their Biologic Opinion which both explains what the metric is, the source of logic behind the metric including research citations and a graphical display of how different management, consumptive demands and climate scenarios effect the metric.

Ed Camp, University of Florida modeler for FWC NFWF project, also held a modeling webinar for the CAB on September 8, 2020, with at least 10 CAB members in attendance. He, too, offered to continue the webinars in the coming months if helpful. In addition, Camp had the CAB members

complete a short survey that evaluates how their attitudes toward science and the consensus process change over time.

The CAB continued its iterative process to develop objectives and strategies, subject to future refinements. During the meeting the CAB reviewed the strategies and actions language and discussed and agreed upon refinements set forth in the detailed summary and in *Appendix #5* The outline of the Goal framework below highlights the number of objectives, strategies and actions:

SECTION I. COMMUNITY ADVISORY GROUP STRATEGIES & ACTIONS

A. GOAL A. HEALTHY AND PRODUCTIVE BAY ECOSYSTEM

GOAL A. OBJECTIVES (4)

GOAL A PRELIMINARY STRATEGIES (5) AND ACTIONS (13)

B. GOAL B. HEALTHY AND PRODUCTIVE BAY ECOSYSTEM

CAB Recommendation:

GOAL B OBJECTIVES (4)

GOAL B PRELIMINARY STRATEGIES (5) AND ACTIONS (13)

C. GOAL C. A FULLY FUNDED AND SCIENCE-INFORMED ECOSYSTEM-BASED MANAGEMENT AND RESTORATION PLAN SUPPORTED BY APALACHICOLA BAY SYSTEM STAKEHOLDERS

GOAL C OBJECTIVES (2)

GOAL C. PRELIMINARY STRATEGIES (5)

CAB Proposed Strategies (1) During the ABSI Process:

CAB Proposed Strategies (4) Subsequent to the ABSI Process:

D. GOAL D: AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC

GOAL D OBJECTIVES (2)

GOAL D PRELIMINARY STRATEGIES (3) AND ACTIONS (3)

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

E. A THRIVING ECONOMY CONNECTED TO A RESTORED APALACHICOLA BAY SYSTEM

GOAL E. OBJECTIVES (4)

GOAL E PRELIMINARY STRATEGIES (9)

ADDITIONAL STRATEGIES (5) OUTSIDE THE ABSI SCOPE REFERRED TO OTHERS

Performance metrics for each Section Goal were reviewed and refined by CAB members. (*see Appendix #6*)

No members of the public wished to provide comments to the ABSI Community Advisory Board. The facilitators then reviewed the agenda for the 9th meeting scheduled for November 12, 2020. The plan is to continue to identify, refine and prioritize CAB strategies and actions for the goals and objectives. Members suggested a possible briefing presentation on the ABSI and FWC project schedules and timelines over the coming years. The ABSI and FWC projects are separate, but they are leveraging data from each other, engaging the CAB. The ABSI restoration work doesn't need to wait for the FWC clutching restoration project.

The meeting concluded with an evaluation and adjourned at 12:30 pm.

APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)
ABSI COMMUNITY ADVISORY BOARD (CAB)
MEETING VIII DETAILED SUMMARY
October 15, 2020

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

I. INTRODUCTIONS AND AGENDA AND SUMMARY REVIEW

A. INTRODUCTION

Jeff Blair, FSU FCRC Consensus Center and part of the FSU Facilitation Team, welcomed the members to the 8th meeting of the Apalachicola Bay System Initiative’s Community Advisory Board. He introduced the online virtual meeting guidelines and his partner member of the ABSI Facilitation Team, Bob Jones, and the FSU ABSI Team members, Felicia Coleman and Sandra Brooke. Appendix 1 includes Members of the Community Advisory Board in attendance. The facilitators reviewed the objectives and agenda (Appendix 2) and the members approved. Members also approved the Facilitator Summary for the September 9, 2020 CAB Meeting VII without changes. The CAB reviewed the Project Meeting Schedule and Workplan (Appendix X).

II. ABSI PROJECT BRIEFINGS AND UPDATES

The CAB heard three presentations: an update on the FWC Apalachicola Bay Wild Oyster Harvesting Closure; a presentation by Bill Pine, UF, on “Contrasts in Apalachicola River Discharge Create Opportunities for Learning,” and Steve Leitman, FSU on “Freshwater Inflow modeling under the ABSI project.”

A. Apalachicola Bay Wild Oyster Harvesting Closure Update

Jim Estes, FWC, provided an update on the FWC rule proceeding on a FWC staff proposal to close Apalachicola Bay to wild oyster harvesting. He noted at the July 2020 Commission meeting, staff provided a presentation with a proposal to temporarily suspend all harvest of wild oysters from the Bay and prohibiting on-the-water possession of wild oyster harvesting equipment through Dec. 31, 2025, in order to support restoration efforts and recovery of the Bay’s oyster population. The FWC Staff recommended the Commission approve the proposed draft rules to support restoration by conserving existing oyster shell and adult oysters in the Bay. Staff also recommended the Commission proactively implement these conservation measures by Executive Order, effective Aug. 1, 2020.

Prior to the FWC Commission meeting in October 2020, Gulf County sought clarification of whether the order affected Indian Pass Lagoon located in Gulf County. The Commission decided to reschedule the possible adoption of the draft rule at its October 7 meeting and instructed staff to review the status of Indian Pass Lagoon and report back to the Commission at its meeting in early 2021.

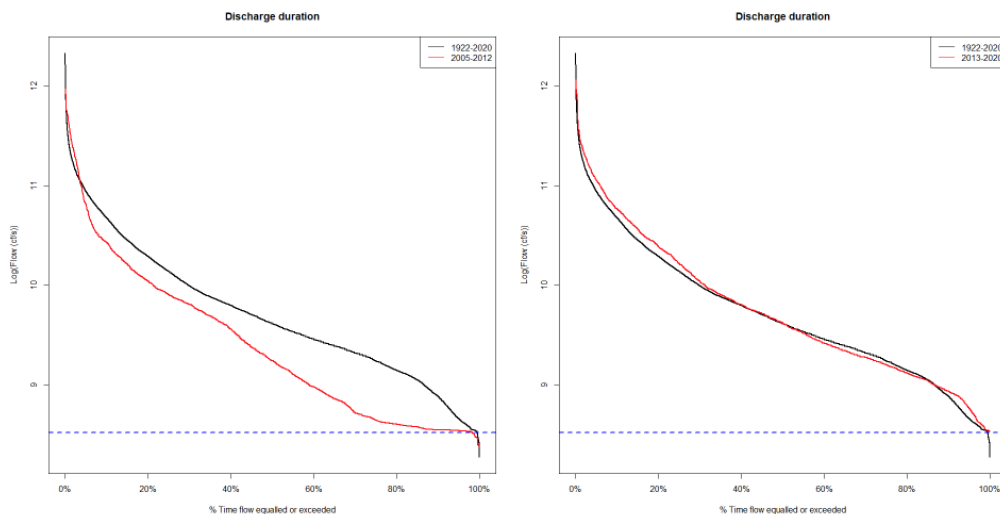
CAB Comments and Questions

- When does the Executive Order expire? *A: In December 2020. It was issued by the Executive Director and will have to be extended pending the FWC rule adoption*
- How will you respond to Gulf County on the Indian Pass Lagoon? *A: We will do sampling in the lagoon as we don't have enough data to determine impacts on commercial or recreational harvest of oysters. Sandra Brooke ABSI mentioned they have been monitoring in Indian Pass Lagoon since Spring 2019 and offered to share data with FWC*
- The CAB “blamed” in the community for suspension of oyster harvesting. *A: There is no responsibility of the CAB or FSU for the proposed FWC action. The FWC sought the CAB's input.*
- Is this on hold indefinitely? What is the status of harvest? *A: The executive order is in effect until December 2020 including Indian Pass Lagoon and will be renewed until rule in effect.*
- Will this delay the timeline for the FWC cluching? *A: No.*
- There has been discussion of the economic impacts of the closure and anxiety regarding the timeline for reopening the fishery. I don't question the FWC decision based on the science. *A: Not many fishermen were active before the closure. We are sorry for those who were still harvesting that got hurt. But the decline of the fishery prompted the regulatory action.*

B. Contrasts in Apalachicola River Discharge Create Opportunities for Learning

Dr Bill Pine, University of Florida Professor, Department of Wildlife and Ecology and Conservation, and a member of the ABSI Science Advisory Board, presented on the impact of different discharges in Apalachicola Bay. He noted the collapse of the Apalachicola oyster fishery in the fall 2012. This had followed multiple years of below average Apalachicola River discharge between 2005-2012. There was also much discussion as to whether increased river discharge would promote recovery of oyster populations

The oyster fishery landings and trips in 2012 were among the highest observed since mandatory reporting began in 1986. In the Fall of 2012 the community reported declines in oyster abundance with the observed decline in oyster landings, trips and CPUE in 2013. However, 2013-2020 Apalachicola River discharge has been higher than observed in the period of 2005-2012. How have oyster populations responded to higher river discharge during this period of time?



Trends in oyster fishery data suggest declines in landings, trips, and CPUE (catch per trip) since 2012. However, since 2013, Apalachicola River discharge has often been higher than observed during the 2005-2012 period.

Bill suggested this was an opportunity for learning and posed a series of questions:

- Do fisheries independent data from agency monitoring efforts show similar or different patterns for oysters? For all sizes of oysters? For specific size classes of oysters? Is the same pattern found over all of Apalachicola Bay?
- Why has river discharge been higher 2013-2020 than 2005-2012? Is it explained by precipitation, reservoir operations and/or water withdrawals?
- Is this contrast greater (magnitude of water) and for longer time than could be done experimentally through dam releases?
Did Apalachicola Bay system respond in ways that were expected, or unexpected? What were those expected changes? Where are they written down?
- Can any change be detected from available data collected by agency cooperators?
- Or are monitoring programs not adequate?

More importantly, Bill suggested the 2005-2012 period compared with the 2013-2020 period presents a critical learning opportunity to better understand role of river discharge in influencing Apalachicola Bay. It is likely it could not be planned as an experiment so an opportunity for learning that must be taken when available.

CAB Members Questions and Comments

- Do the monthly water flows indicate whether there are low months during spawning and spat settlement? *A: I haven't looked at water flow trends in spat and recruitment.*
- Appreciated your coming to the CAB. Since your absence do you come back today with the same questions? *A: The system and my research were challenged by litigation and the Governor's Office In 2013 I predicted the stock will continue to decline. This has appeared to have panned out. Transparent in my work. Focused on develop a better understanding of the system.*
- Water flow is normal and the coon bars are coming back. In 2014 we shut business down. In 2019 there are more little oysters than recent years. *A: Bill hasn't looked at data since 2014. Plan for drought and handling the climate change scenarios.*
- Goose island has come back and there is a lot of life in the Bay.
- For the 2005-12 time, all Southeast rivers showed the same flow. Should show if precipitation? *A: Get AB precipitation – drought management and index program. Most of rivers regulated in G of M. Comparisons smaller river basin systems may not tell us much. AB so much larger a river system. We don't have oyster data and periods of record for those smaller systems.*
- Were there changes in reservoir operations in the 2 periods? *A: Need to work on this.*
- After 3 years of drought, Auburn University leading a science effort. If question from the CAB- plug in. Jennifer provides data. Task them with specific questions. Dave Zerdom FL climate guy in FL. *A: We have tasked Steve Leitman to look influence of climate vs management on fresh water flows. Ray Grizzle will present in a future CAB meeting on his mapping work.*

C. Freshwater Inflow modeling under the ABSI project

Steve Leitman, ABSI/FSU researcher, presented on the freshwater flow modeling through the ABSI project. He mentioned that he had conducted a modeling webinar and indicated there was a recording on the ABSI website. The webinar explained: why the freshwater inflow modeling work being is being done as part of the ABSI project; the capacity of the reservoir system in the ACF basin to manage flow entering the Apalachicola River at Jim Woodruff Dam; the freshwater inflow model being used, why this model was selected and what questions can be addressed through this model; how will better and worse water supply and demand management approaches be defined through the freshwater inflow modeling; and soliciting questions CAB members would like to see addressed regarding freshwater inflow. He expressed willingness to do more modeling webinars if this is helpful to the CAB.

He suggested that many have mistaken assumptions about the Apalachicola-Chattahoochee-Flint Rivers watershed and freshwater inflows to the Apalachicola estuary, and noted there are differences between the Flint and Chattahoochee watersheds.



Through use of the ACF STELLA model, Steve has the capacity to change consumptive demands, reservoir management and climate and then determine how any changes to any of them will affect flow entering the Apalachicola River from Alabama and Georgia. As he noted in a previous presentation to the CAB, the ACF STELLA model has been shown to produce similar results to the Corps of Engineers' HEC ResSim model when the same approach to managing the federal

reservoirs and the same level of consumptive demands are used in both models with historical climate. Some examples of questions which can be addressed through the STELLA model include:

- What would happen if agricultural demands in the Flint basin doubled? If they were cut in half?
- What would happen if Metro Atlanta's demands doubled or were cut in half?
- What would happen to freshwater inflow to the estuary if there were a three-year drought? A four-year drought?
- What would happen to the storage reservoirs if the minimum flow entering Florida was increased from 5,000 cfs to 6,000 cfs? From 5,000 cfs to 7,000 cfs?
- What are the limits of the reservoir system to provide summer freshets during a drought?

He offered one example with regard to defining acceptable is the "metrics" used by the U.S. Fish and Wildlife Service (USFWS) in preparing the Biological Opinion for the Water Control Manual for managing the Federal reservoirs in the ACF basin. He illustrated with a metric *Freshwater Mussel Hydro-ecological Metric 10- Pulsed Floodplain Inundation during Summer-Fall*. The USFWS, focus was on protecting Federally listed species, specifically the gulf sturgeon and several species of mussels. He suggested a similar outline for the ABSI CAB to that used by the USFWS in their Biologic Opinion which both explains what the metric is, the source of logic behind the metric including research citations and a graphical display of how different management, consumptive demands and climate scenarios effect the metric. The selection of the metrics would be coordinated with the CAB.

The development of metrics for the Apalachicola estuary will depend upon the work being done by both Dr. Morey on the estuarine circulation and Dr. Camp's ecological modeling. Steve encouraged all members of the CAB to submit any questions they would like to see addressed in the model regarding freshwater inflow to the Apalachicola estuary.

CAB Comments/Questions

- We are different now than we ever been in the basin. What is our chance in making it happen? E.g. economic development is a key issue for the ACF. Can we engineer the bay to control for salt vs fresh water. *A: We have a better opportunity based on the ABSI team makeup. ACF Compact never defined metrics well. The best was not that good. Stella is calibrated to Corps. approach but doesn't answer why the basin is being managed for particular outcomes. We need to make a problem smaller.*
- The importance of the floodplain is reflected in the model tying productivity of bay oysters and spat with nutrients coming down to the Bay. *A: We have reviewed this and the correlations are proven between the nutrients and oysters and spat. Relationship is there and is not surprising.*
- You could management of estuaries to increase flooding in floodplains to expand the time it is inundated during spawning season. *A: You need to talk about what you will learn and what will you monitor. Monitoring programs need to be improved.*
- Is the flood plain-nutrient connection strong enough to tie to metrics? What is needed for the health of Bay in terms of floodplain management? *A: Relationship of the volume of flow and the acreage of inundation. Should we use pre-dam flows? River dug itself down over time since 1950s in a large amount. We shouldn't use/rely on what happened historically.*
 - *Modelers need environmental data to highlight contrasts in the system*

D. ABSI CAB Survey

Ed Camp, University of Florida modeler for the FWC NFWF project, noted he had invited CAB members to a modeling webinar on September 8, 2020 and it was attended by over 10 CAB members. He offered to continue the webinars in the coming months if helpful. He asked the CAB members to complete a short survey on attitudes toward science and the consensus process.

III. ABSI COMMUNITY ADVISORY BOARD FRAMEWORK FOR REVIEW

The ABSI CAB “Vision of Success” themes were drawn from the September 2019 CAB Questionnaire responses and reviewed and rated by the Community Advisory Board at the October and December 2019 CAB meetings. The language for vision themes was reviewed and finalized by the CAB at the January 2020 meeting. The facilitator reviewed the overall organization that was revised by the ABSI Team following the July and September 2020 ABSI meeting.

The facilitator noted the goal framework will be reviewed and discussed at subsequent ABSI CAB meetings where they will be refined with a focus on developing priority strategies and related actions. He also noted the underlined strategies are being offered by the ABSI Project Team (scientists and facilitators) based on the September 2020 meeting’s work for consideration and discussion by the CAB at this meeting.

IV. REVIEW OF SECTIONS- OBJECTIVES, STRATEGIES & ACTIONS

The Vision Theme, Goal, Outcomes and Objectives for Goal A are included in Appendix #5. The yellow highlights represent suggested additions or deletions agreed at this CAB meeting.

OVERARCHING APPROACHES

- 1) Incorporate scientifically-derived and coordinated long-term monitoring guidelines and metrics for assessing the overall health of the ABS system with a focus on oyster resources. ~~water quality, oyster abundance, and demographics that will be implemented by FWC and regularly reviewed by the CAB or successor group to maintain healthy and sustainable oyster and other resources.~~
[Moved from Goal B and revised]
- 2) Use only the best available science (including information derived from agency personnel and stakeholders) for all components of ongoing research and modeling exercises associated with ABSI.
[Removed from specific strategies as an overarching approach]

CAB Comments/Questions

- Thumbs up. OK with changes.

A. GOAL A. HEALTHY AND PRODUCTIVE BAY ECOSYSTEM

The Vision Theme, Goal, Outcomes for Goal A are included in Appendix #5.

GOAL A. OBJECTIVES

A1) To use observations, monitoring, experiments and modeling conducted through ABSI and related efforts to create decision support tools that can inform how **a range of natural and human factors** ~~anthropogenic factors~~ disease, predation, human activities and future climate scenarios will affect the ABS ecosystem.

CAB Comments/Questions

- Substitute “human activities” for “anthropogenic factors”
- Thumbs up. OK with changes.

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

CAB Comments/Questions

- Thumbs up. OK with changes.

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

CAB Comments/Questions

- Thumbs up. OK with changes.

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

CAB Comments/Questions

- Thumbs up. OK with changes.

~~A5) To enhance stakeholder and public interest in and understanding of the science conducted to support restoration efforts designed to improve the health of oyster resources and the overall health of the Bay ecosystem; and to encourage their participation in the development of the management and restoration plans for the Bay.~~

[Moved to Goal D]

CAB Comments/Questions

- Thumbs up. OK with changes.

GOAL A. PRELIMINARY STRATEGIES AND ACTIONS

1) Increase productivity of the Apalachicola Bay oyster ecosystem by restoring, enhancing, and/or developing new reef structures (~~some of which would be maintained as non harvest protection areas~~) based on experimental evidence for the most suitable substrate (e.g., **limestone**, granite,

spat-on-shell, artificial structures) and on habitat suitability analyses ~~using the best available scientific information coupled with the knowledge and experience of managers and stakeholders~~

[Actions proposed by Project Team]

- a. Action 1. A.): Conduct restoration experiments to test efficacy of different materials, configurations, placement and seeding with hatchery spat.
- b. Action 2. A.): Set aside some reef structures to be maintained as non-harvest protection areas.

CAB Comments/Questions

- Thumbs up. OK with changes.

- 2) Develop criteria for management for the longer term **restoring** ~~sustaining~~ specific reefs or reef systems damaged by environmental conditions or natural disasters. ~~that includes~~

[Actions proposed by Project Team]

- a. Action 2. A.): Evaluate degree of damage and potential for recovery.
- b. Action 2. B.): Develop an approach for mitigating damage (e.g., physical repair, spat supplements, or some combination of both).
- c. Action 2. C.): Determine periodicity of spat addition (e.g., annually or longer) with a specific timeline for continuing the approach. ~~(e.g., 3 years or longer)~~ This approach is not intended to create a put-and-take fishery.

[Strategy was revised and Actions extracted from the original strategy]

CAB Comments/Questions

- “restoring”? vs management for the longer term? Covers both bases *A: We have a section on implementation.*
- Thumbs up. OK with changes.

- 3) Determine area (acres or km²) of healthy oyster reefs that currently exists as well as the area needed to ensure sufficient spat production that will support sustainability of oyster reefs and sustainability of a limited entry fishery throughout the ABS.

[Actions proposed by Project Team]

- a. Action 3. A.): Map and ground truth existing oyster reefs using multibeam sonar and backscatter with oystermen and stakeholders.
- b. Action 3. B.): Apply model ~~(Ed Camp, UF)~~ that uses reproductive output, recruitment, natural mortality rates and fishery harvest to assess oyster population dynamics.

CAB Comments/Questions

- “Ground truthing” with stakeholders should be simultaneous with mapping.
- What is healthy oyster reef? *A We have a definition. “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.”*
- Thumbs up. OK with changes.

- 4) 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. ~~to understand the root causes of oyster decline~~

[Actions proposed by Project Team]

- a. *Action 4. A:* Continue to monitor intertidal 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
- b. *Action 4. B:* Continue to monitor spat settlement around intertidal habitats using same protocols as FWC. Data will be shared between FWC and ABSI.
- c. *Action 4. 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 shell/oysters, live vs. dead and presence of juveniles, together with environmental data.
- d. *Action 4. D:* Collect long term in situ environmental data using ABSI instruments and integrate ANERR environmental and nutrient data as correlates with oyster metrics.

CAB Comments/Questions

- Intertidal only to monitor spat? *A: FSU data is intertidal. FWC is sub-tidal. Monitor spate in both sub tidal and intertidal.*
- 4C- Do we need more specificity regarding data collected?
- 4C- Are these spot checks connected to FWC protocols in 4A.
- Thumbs up. OK with changes.

- 5) Develop ecosystem models that forecast future environmental conditions and oyster population status. These should include the effects of climate change, such as increasing sea level and ocean acidification, salinity gradients, water temperatures, storm intensity and rainfall events, and the availability of freshwater.

[Actions proposed by Project Team]

- a. *Action 5. A.:* Collect data needed by the models, and follow up with testing the models to refine accuracy of output
- b. *Action 5. B.:* **Coordinate** ABSI should and communicate with appropriate state and federal agencies, pertinent out of state user groups, and other initiatives working on both geographically-constrained and basin-wide water-flow alterations and management strategies that contribute positively to the health of the ABS. ~~based on the best available science and data~~

CAB Comments/Questions

- Thumbs up. OK with changes.

- ~~6) Form a sub-committee within the CAB that can spearhead an outreach and community engagement effort intended to inform and educate stakeholders and the public about the research, restoration plan, and management plan developing through ABSI and focusing on a healthy ABS ecosystem. The intended audience includes local city, county, and state government officials, businesses and organizations, citizens of every age, and other interested stakeholder groups.~~

[Moved to Goal D]

CAB Comments/Questions

- Thumbs up. OK with changes.

B. GOAL B. SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES

The Vision Theme, Goal, Outcomes for Goal A are included in Appendix #5.

GOAL B OBJECTIVES

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

~~B2) To investigate the feasibility of developing oyster shell recycling programs that can return a significant portion of harvested oyster shell to the ABS to restore substrate for recruitment of spat and to enhance oyster population growth.~~

[Captured in Goal D]

CAB Comments/Questions

- Thumbs up. OK with changes.

B2) B3) To make recommendations to FDACS for oyster aquaculture best management practices that allow for the unimpeded recovery of oysters reefs, the oyster fishery, and the ecological and societal health of the ABS ecosystem while providing economic opportunities to the aquaculture industry.

GOAL B RECOMMENDATION

Closing the Apalachicola Bay to Wild Oyster Harvest. At the March 11, 2020 ABSI CAB meeting the FWC requested that the CAB evaluate whether to close Apalachicola Bay to all wild harvest of oysters (commercial and recreational). The CAB evaluated the issue and unanimously recommended to FWC the CAB voted that they immediately close Apalachicola Bay to all wild harvest of oysters (commercial and recreational). This recommendation was reviewed and accepted by FWC and the Final Rule will be addressed at the October 2020 Commission meeting. The closure to recreational and commercial harvest went into effect on August 1, 2020. The oyster fishery closed area has well-defined boundaries (set by FWC in consultation with FDACS and contained within the Apalachicola Bay System as defined in FWC’s Rule 68B-27, F.A.C.¹

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

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

CAB Comments/Questions

- JE: “evaluate”- what their opinion- CAB recommends/ discussed
- CH: AB define? Indian Lagoon? Foot note
- Thumbs up. OK with changes.

GOAL B PRELIMINARY STRATEGIES AND ACTIONS

1. Recommend specific criteria and/or conditions identified with related performance measures for the reopening of Apalachicola Bay to limited wild oyster harvesting.
2. Use ~~the best available scientific data and~~ decision-support tools to develop a system of closed areas that are well defined in terms of size, location, and longevity and include rotational and seasonal harvest areas, as well as long-term closed areas in strategic locations to provide habitat for year-round protection for brood stock and enhanced spawning opportunities.
~~Supplement shelling of oyster reefs, through a recycling program combined with State legislation that provides staff, funding strategies, and incentives for involving local watermen, seafood dealers, restaurants, aquaculture operations, and private citizens in an effort to increase the viability of the oyster resource.~~

[This is captured in Goal C and Goal E]

CAB Comments/Questions

- Policy on recycling shells? Is there a management role? *A: Language elsewhere.*
 - Thumbs up. OK with changes.
3. Define performance criteria (e.g. shell budget that will maintain sufficient habitat) for an oyster population that can sustain a pre-determined level of wild oyster harvest, with a stipulated number of harvesters (limited entry), and protocols to ensure sustainability.
 4. 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 harvest fishery and the important cultural role of a working waterfront and seafood industry.
 5. Propose to FWC and FDACS 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.

CAB Comments/Questions

- Thumbs up. OK with changes.

C. GOAL C. A FULLY FUNDED AND SCIENCE-INFORMED ECOSYSTEM-BASED MANAGEMENT AND RESTORATION PLAN SUPPORTED BY APALACHICOLA BAY SYSTEM STAKEHOLDERS

VISION THEME C: 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, **and is** fully funded. ~~and informed by the best available science and other relevant socio-economic information~~

CAB Comments/Questions

- Thumbs up. OK with changes.

GOAL C: 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 is fully funded.

CAB Comments/Questions

- Thumbs up. OK with changes.

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 broadly supported by Apalachicola Bay System stakeholders with guidance from a permanent stakeholder advisory board.

GOAL C OBJECTIVES

Ensure there are strategies for all of the objectives of Goal C.

C1) To establish a fully funded permanent, representative stakeholder process to monitor the long-term implementation of the ABS **restoration and management plans.** ~~Management and Restoration Plan~~

CAB Comments/Questions

- JH: Come up with plan name and stick with it. B1, be consistent
- CH: define that in overarching approaches and refer to ABS plan thereafter
- CT: recovery vs. restoration? Comment. A: Triumph-
- Thumbs up. OK with changes.

C2) To support efforts to identify funding sources and define mechanisms for full implementation of the ABS **restoration and management plans.** ~~Management and Restoration Plan~~

CAB Comments/Questions

- Thumbs up. OK with changes.

GOAL C. PRELIMINARY STRATEGIES AND ACTIONS

CAB Proposed Strategies During the ABSI Process:

1) The ABSI Team and the CAB will continue to have an open and transparent process for the development of the ABS **restoration and management plans.** ~~Management and Restoration Plan~~ with many opportunities for stakeholder engagement and input in a variety of forums (e.g., workshops, online, public/ government meetings) for generating awareness and support while

incorporating any changes the CAB deems appropriate and necessary to fulfill the goals and objectives.

CAB Comments/Questions

- Thumbs up. OK with changes.

CAB Proposed Strategies Subsequent to the ABSI Process:

- 2) After the Plan is completed, the CAB should evaluate transitioning to a successor group (with stakeholder composition similar to the ABSI CAB) in collaboration with the state as a partner in overseeing the Bay Management Plan. The successor group will define its scope of work including evaluating regulatory processes and engaging with and being accountable to decision-makers and the public for the actions laid out in the management plan and the implementation thereof. The successor group will also evaluate the best organizational structure for ensuring longevity including working under the auspices of a state agency, an estuary program, private/public partnerships, etc. *[Clean version of proposed revised Strategy #2]*

After the Plan is completed, the CAB should ~~evaluate transitioning transition~~ to a successor group nonprofit 501c3 Task Force (with ~~stakeholder membership~~ composition similar to the ABSI CAB) in collaboration with the state ~~that is recognized by~~ as a partner in overseeing the Bay Management Plan. The successor group Task Force ~~will define its scope of work including evaluating explore~~ regulatory processes and ~~will~~ engaging with and being accountable to decision-makers and the public for the actions laid out in the management plan and the implementation thereof. The successor group will evaluate the best organizational structure for ensuring longevity including working under the auspices of a state agency, an estuary program, private/public partnerships, etc. ~~It also can seek the necessary funding from whatever sources it needs (e.g., private, state, federal, estuary program) to build the capacity of the organization to ensure its longevity and potentially to hire a Director.~~

CAB Comments/Questions

- Thumbs up. OK with changes.

- 3) The successor group Task Force should encourage state programs as appropriate ~~FWC and other~~ to adopt ABSI's scientifically-derived coordinated long-term monitoring guidelines and metrics for assessing water quality, oyster abundance, and demographics and to regularly review and update these guidelines and metrics to maintain a healthy and sustainable oyster harvest and ecosystem with input from the successor group Task Force (e.g., private, public, NGO, partnerships, etc.).

CAB Comments/Questions

- Thumbs up. OK with changes.

- 4) The successor group Task Force should encourage agencies to prioritize CAB recommendations for investing more funding in the management and restoration of oyster resources.

CAB Comments/Questions

- Thumbs up. OK with changes.

D. GOAL D: AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC

[The Project Team revised this Goal to be consistent with the ABSI scope, moved from Section II to Section I, and re-lettered accordingly]

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 innovation, education and communication opportunities.

GOAL D OBJECTIVES

D1) To ~~expand~~ coordinate **community engagement** ~~outreach and education~~ efforts originally initiated through ABSI to increase public awareness of and support for a healthy and well-managed ABS ecosystem; and to ensure that businesses, industries, non-profits, and local governments are supportive and included in these efforts.

CAB Comments/Questions

- Thumbs up. OK with changes.

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

GOAL D PRELIMINARY STRATEGIES AND ACTIONS

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

CAB Comments/Questions

- Thumbs up. OK with changes.

2. Build, with the help of the CAB, community **support and** stewardship by educating stakeholders on the importance of maintaining healthy oyster reefs and by engaging them in the Bay restoration through a variety of hands-on programs. ~~such as shell recycling, shelling, and relaying initiatives~~

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

[Strategies revised to be actions proposed by Project Team]

CAB Comments/Questions

- CH: 2 other stakeholders- and ~~organizations, citizens of every age, and other interested stakeholder groups.~~

- What is ABSI and the next stage in terms of public outreach? A:both
 - Thumbs up. OK with changes. CH:
3. Support **and participate in providing educational opportunities for students at all levels (primary & secondary school through college) in fisheries ecology and management, with particular emphasis on the** role oysters play in ecosystem health and fisheries. ~~resources and ecology for aquaculture and commercial fishing, education programs for primary & secondary school students along with help from community college~~
[Revised by the Project Team]

CAB Comments/Questions

- Thumbs up. OK with changes.

~~The Task Force ABSI should coordinate and communicate with appropriate agencies (e.g., USACE, USFWS, NOAA, NFWMD, FWC, FDACS), pertinent out of state user groups, and other initiatives working on both geographically constrained and basin wide water flow alterations and management strategies that contribute positively to the health of the ABS based on the best available science and data.~~

[Moved to Goal A]

The following are captured in other Goal areas or are already taking place:

- A. Collaboration
- B. Existing Programs.
- C. Education.
- D. Community Advisory Board Process.
- E. Develop Programs.
- F. Lessons Learned.
- G. School Education.

CAB Comments/Questions

- Thumbs up. OK with reorg and changes.

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

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

E. A THRIVING ECONOMY CONNECTED TO A RESTORED APALACHICOLA BAY SYSTEM

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

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

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

GOAL E. OBJECTIVES

E1) To ensure that economic indicators of the commercial oyster fishery and associated industries in the ABS demonstrate increasing viability and growth.

E2) To ensure that industries and businesses within the ABS are compatible with a healthy and well-managed ABS ecosystem.

E3) To develop growth management policies, plans and regulations affecting the ABS that are compatible with a healthy and well-managed ABS ecosystem while maintaining a thriving economy and supporting cultural heritage.

E4) To develop an oyster aquaculture industry that provides economic opportunities and is complementary to the wild harvest fishery.

GOAL E. PRELIMINARY STRATEGIES AND ACTIONS

CAB Proposed Strategies:

1. Work with existing partners (e.g., the Chamber of Commerce, Apalachee Regional Planning Council, and city and county staff) to monitor and report on the economic benefits of a restored ABS, including key economic indicators relevant to the commercial oyster fishery and associated industries in the region. This can be displayed as a dashboard that includes key economic indicators over time based on restoration efforts in the Apalachicola Bay System (ABS).
2. Recommend monitoring² and enforcement programs continue with appropriate metrics to measure output from and impact of harvest on oyster reefs.
3. Support planning tied to economic indicators that consider future conditions (climate, SLR, reduced river flow) and their effects on the ABS.
4. Work with oystermen and other community stakeholders to promote post-recovery Apalachicola oysters.
5. Develop complementary industries in wild oyster harvest and oyster aquaculture that provide new economic opportunities by building a network of experts that can help Franklin County citizens build successful programs through business training, identifying sources of funding for equipment, and developing products that will enhance and diversify local industries.
6. Develop new markets for selling oysters to areas within and outside of Florida in part by investing in location (Apalachicola Bay) branding.
7. Review land development regulations to provide flexibility while supporting and enhancing efforts to maintain and revitalize working waterfronts in Apalachicola and Eastpoint to ensure preservation of Franklin County's cultural heritage and a viable seafood industry.

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

8. Coordinate with the local business community and governing bodies (i.e., city and county commissions) to ensure that growth management plans, land use and development regulations meet strong standards that are compatible with and minimize the environmental impact of industry and business activities within the ABS and are conducive to a healthy ecosystem.
9. Engage commercial fishermen in the restoration of the bay and encourage future participation in restoration such as shell recycling, shelling, and relaying.

CAB Comments/Questions

- Thumbs up. OK with changes.

ADDITIONAL STRATEGIES OUTSIDE OF THE ABSI SCOPE TO BE REFERRED TO OTHER PROGRAMS OR ENTITIES

- 1) Develop surveys or other tools that can be used to measure and track changes in stakeholder and public understanding of the issues important to the health and restoration of the Bay.
- 2) Engage the general public (students, residents and tourists) in learning about the history and the ecological and economic importance of the Apalachicola Bay region, including the natural resources, and lumber, cotton shipping, and fishing industries.
- 3) Build Gulf-wide mechanism for communities interested in the restoration and revitalization of fisheries to exchange best practices and lessons learned. (Developed through FWC)
- 4) Provide training and financial support for new workforce entrants (particularly young entrants) interested in being employed in existing industries as well as and developing industries in new fisheries, aquaculture, and restoration science.
 - a. Action 4. A.): develop an aquaculture internship program through ABSI that provides job training for young adults (18-25) in the Franklin County Community.
- 5) ~~Develop shell recycling program combined~~ Work ~~with State legislators and state agencies ion that provides staff to develop~~ funding strategies, and incentives for involving local watermen, seafood dealers, restaurants, aquaculture operations, and private citizens in oyster reef restoration ~~an~~ efforts to that will increase the viability of ~~the~~ oyster resources.
 - a. Action 5. A.): Identify source of shell or other material

CAB Comments/Questions

- #4 Training is a part of ABSI with internships available. Franklin Promise is helping with the Hatchery.
- Action 5 A- Add “or other material to make it apply to oyster reef restoration
- Add to 5: Work with state legislators and state agencies
- #1- Relates to Goal D action item- carry on with public surveys.
- The subcommittee discussions have pointed out there are COVID related constraints on surveys.
- We are nearing the time to get feedback from the community as we draft strategies and actions
- In terms of shell and live oysters, a well managed oyster population is the best strategy.
- Thumbs up. OK with changes.

SECTION III STRATEGIES RATED AS NOT ACHIEVING CONSENSUS

None to date.

SECTION IV PERFORMANCE MEASURES

The facilitator reviewed with the CAB Draft Performance Measures to Evaluate Strategies/Options for each goal area. Performance measures are the decision-support tools forecast results that CAB members will use for weighing the potential outcomes of different strategies. The performance measures identified at the September meeting are found in *Appendix #6* and featured in yellow

The CAB members expressed satisfaction with the revised structure of the sections. Several expressed frustration with the impact of COVID 19 and the need for little steps vs. big steps and the time spent on working to develop the plan. Some members may only be reading the strategies in the meeting. Some would like to finalize the plan as soon as possible and begin implementing. The ABSI Team indicated that modeling will drive the schedule for completing the plan. Both Ed Camp and Steve Leitman have offered to conduct webinars regarding their models. The facilitator suggested that we will have more open discussion in the coming meetings.

V. 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 8th meeting scheduled for October 15, 2020. The plan is to continue to identify and refine CAB strategies and actions for the goals and objectives. Members suggested a possible briefing presentation on the ABSI and FWC project schedules and timelines over the coming years. The ABSI and FWC projects are separate, but they are leveraging data from each other, engaging the CAB. The ABSI restoration work doesn't need to wait for the FWC clutching restoration project.

APPENDICES

APPENDIX #1

MEETING PARTICIPANT LIST

Bold= Participating CAB Member and Team Member; *Italics = unable to attend*

ABSI COMMUNITY ADVISORY BOARD MEMBERS	
NAME	AFFILIATION
Agriculture/ACF Stakeholders/Riparian Counties	
1. Chad Taylor	Riparian Counties Stakeholder Group/ACF Stakeholders/Agric.
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	
<i>10. Chip Bailey</i>	<i>Peregrine Charters</i>
<i>11. Frank Gidus</i>	<i>CCA Florida</i>
Seafood Industry	
12. Shannon Hartsfield	Franklin County Seafood Workers Association
<i>13. Vance Millender</i>	<i>Millender & Sons Seafood</i>
14. Roger Mathis	Oysterman and R.D.'s Seafood
15. Steve Rash	Water Street Seafood
<i>16. Denita Sassor</i>	<i>Outlaw Oyster Company, Aquaculture</i>
<i>17. TJ Ward</i>	<i>Buddy Ward & Sons Seafood</i>
State Government	
18. Jim Estes	FWC Division of Marine Fisheries Management
19. Jenna Harper	ANERR/DEP
<i>20. Alex Reed</i>	<i>FDEP Office of Resilience & Coastal Protection</i>
21. Portia Sapp	FDACS Division of Aquaculture
22. Paul Thurman	NWF Water Management District
University/Researchers	
<i>23. Tom Frazer</i>	<i>USF/DEP Governor's Science Advisor</i>
24. 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
FSU ABSI PARTNERS	
Ed Camp	University of Florida, Assistant Professor
Steve Leitman	Florida State University
MEMBERS OF THE PUBLIC	
Ken Jones, Rhumblin Consultants	Anne Birch, The Nature Conservancy

**APPENDIX #2
COMMUNITY ADVISORY BOARD AGENDA, OCTOBER 15, 2020**

**APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)
ABSI COMMUNITY ADVISORY BOARD (CAB)
MEETING VIII
THURSDAY, OCTOBER 15, 2020
VIRTUAL MEETING VIA ZOOM WEBINAR**

ABSI COMMUNITY ADVISORY BOARD MEETING VIII OBJECTIVES		
✓		To Approve Regular Procedural Topics (Meeting VIII Agenda and Meeting VII Summary Report)
✓		To Receive Project Briefings and Community Advisory Board Requested Presentations
✓		To Review and Evaluate Strategies, Actions, and Performance Measures
✓		To Identify Needed Next Steps, Information and Presentations, and Agenda Items for Next Meeting
ABSI COMMUNITY ADVISORY BOARD MEETING VIII AGENDA—OCTOBER 15, 2020		
1.)	8:30 AM	WELCOME, REVIEW OF VIRTUAL MEETING PARTICIPATION GUIDELINES, AND ROLL CALL
2.)	8:35	AGENDA REVIEW AND MEETING OBJECTIVES
3.)	8:40	APPROVAL OF FACILITATORS' SUMMARY REPORT (SEPTEMBER 9, 2020)
4.)	8:45	REVIEW OF PROJECT MEETING SCHEDULE AND WORKPLAN
5.)	8:50	PROJECT BRIEFINGS AND REQUESTED PRESENTATIONS <ul style="list-style-type: none"> • <i>FWC Update on Apalachicola Bay Closure.</i> Jim Estes • <i>Overview of Apalachicola Bay Mapping Project.</i> Ray Grizzle • <i>Water Shed Model Update.</i> Steve Leitman
	<i>~9:45</i>	BREAK
6.)	10:00	A.) A HEALTHY AND PRODUCTIVE BAY ECOSYSTEM <ul style="list-style-type: none"> • Evaluation of Strategies and Actions to Achieve Goal A
7.)		B.) SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES <ul style="list-style-type: none"> • Evaluation of Strategies and Actions to Achieve Goal B
8.)		C.) A FULLY FUNDED AND SCIENCE-INFORMED ECOSYSTEM-BASED MANAGEMENT AND RESTORATION PLAN SUPPORTED BY APALACHICOLA BAY SYSTEM STAKEHOLDERS <ul style="list-style-type: none"> • Evaluation of Strategies and Actions to Achieve Goal C
9.)		D.) A THRIVING ECONOMY CONNECTED TO A RESTORED ABS <ul style="list-style-type: none"> • Evaluation of Strategies and Actions to Achieve Goal D
10.)		E.) AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC <ul style="list-style-type: none"> • Evaluation of Strategies and Actions to Achieve Goal E
11.)		EVALUATION OF PERFORMANCE MEASURES <ul style="list-style-type: none"> • Review Performance Measure categories • Review Performance Measures identified for specific strategies
12.)	<i>~12:15</i>	PUBLIC COMMENT
13.)	12:25	NEXT STEPS AND AGENDA ITEMS FOR THE NEXT MEETING <ul style="list-style-type: none"> • Review of the CAB schedule of meetings • Review of action items and assignments • Identify agenda items and needed information and presentations for the November 12, 2020 CAB meeting • Meeting evaluation
	<i>~12:30 PM</i>	ADJOURN

APPENDIX #3

CAB MEETING VII, OCTOBER 15, 2020 ZOOM MEETING EVALUATION & CHAT SUMMARY

CAB Members used a 5-point polling scale where a 1 meant “Strongly Disagree” and a 5 meant “Strongly Agree.” The evaluation summary reflects average rating scores and comments from 14 CAB members

1. The meeting objectives were clearly communicated at the beginning

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

2. The meeting objectives were met.

<i>Average Rating</i>	<i>5.Strongly Agree</i>	<i>4.Agree</i>	<i>3.Not Sure</i>	<i>2.Disagree</i>	<i>1.Strongly Disagree</i>
4.3 of 5	6	8	0	1	0

3. The presentations were effective and informative.

<i>Average Rating</i>	<i>5.Strongly Agree</i>	<i>4.Agree</i>	<i>3.Not Sure</i>	<i>2.Disagree</i>	<i>1.Strongly Disagree</i>
4.9 of 5	13	2	0	0	0

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

<i>Average Rating</i>	<i>5.Strongly Agree</i>	<i>4.Agree</i>	<i>3.Not Sure</i>	<i>2.Disagree</i>	<i>1.Strongly Disagree</i>
4.2 of 5	6	7	1	1	0

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

<i>Average Rating</i>	<i>5.Strongly Agree</i>	<i>4.Agree</i>	<i>3.Not Sure</i>	<i>2.Disagree</i>	<i>1.Strongly Disagree</i>
4.4 of 5	6	9	0	0	0

6. The facilitators accurately documented the Working Group Member input

<i>Average Rating</i>	<i>5.Strongly Agree</i>	<i>4.Agree</i>	<i>3.Not Sure</i>	<i>2.Disagree</i>	<i>1.Strongly Disagree</i>
4.7 of 5	11	3	1	0	0

7. The meeting was the appropriate length of time.

<i>Average Rating</i>	<i>5.Strongly Agree</i>	<i>4.Agree</i>	<i>3.Not Sure</i>	<i>2.Disagree</i>	<i>1.Strongly Disagree</i>
4.1 of 5	4	9	1	1	0

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

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

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

- Overall a great meeting and we appreciate all your hard work!

10. How could the virtual meeting format be improved for future meetings?

- Is there a way to add open comments to future surveys? Meaning not a number choice, but open feedback? A: I've looked into that. On Zoom I don't think that's available yet...but I'll double check
- I agree this platform makes discussion challenging so are there ways we can encourage more active discussion? Maybe using the chat function more?
- We used a program Mural and we could add notes may be worth checking out. Allowed more discussion and interaction.

Other Comments (Zoom Chat)

- Ed Camp Survey Link: https://ufl.qualtrics.com/jfe/form/SV_57Nvxp3uxCfY3ul
- Georgia Ackerman (she/her/hers): This is the free monthly webinar that Bill and I were referring to. <https://aaes.auburn.edu/wrc/extension-outreach/droughtwebinar/>
- C. Chadwick Taylor: ACFS which I represent here, in our Apalachicola Sub-basin Caucus has five members on the ABSI and is a lead organization in the NOAA NIDAS DEWS Drought project and could bring someone here to explain that project that Bill just talked about?
- Bill Pine: I would assess how channel incision below JWLD has altered river discharge - floodplain inundation relationships documented by Helen Light.
- Georgia Ackerman (she/her/hers): On The floodplain been drying up.
- <https://pubs.usgs.gov/sir/2008/5062/> . There is also info on ARk website related to Helen Light's USGS work.
- Bill Pine: Leslie Sturmer and Sue Colson are running a similar "certification and training program" for high school students in Cedar Key
- Bill Pine: See section 7.3.1
- Bill Pine:
- https://www.chesapeakebay.net/channel_files/18195/cb_oystermasterplan_march2012_low-res.pdf
- Bill Pine: Thank you for the invitation to participate.

APPENDIX #4
ABSI CAB PROJECT SCHEDULE & WORKPLAN
Meetings Dates are Subject to Change

UPDATED AS OF SEPTEMBER 2020		
PHASE I—STANDING UP AND ORGANIZATION OF THE ABSI CAB		
ABSI Assessment Process	September 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	September, 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 Via Webinar and Teleconference	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 Via Webinar and	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 Via Webinar and	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. <u>15</u> , 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. Evaluation and refinement of strategies and performance measures, and identification of possible action steps to achieve Goals A, B, and E, and identification of responsible entities for Goals C and D. Public Comment.
Meeting X. Virtual Meeting	Dec. 9, 2020	Review and agreement on draft Apalachicola Bay System Ecosystem-Based Management and Restoration Plan framework and outline (Vision Themes, Goals, Outcomes, Objectives, and range of possible strategies for evaluation by the CAB). Review and refine draft strategies and actions and approve Public Workshop Draft Plan Framework. Public Comment.
Public Workshop 1	<i>TBD</i>	Review and public comments on Vision, Goal Framework, Plan outline, and range of possible strategies for evaluation by CAB. <i>Depending on status of the COVID-19 pandemic</i>
PHASE III—BUILDING CONSENSUS ON DRAFT ABS ECOSYSTEM-BASED MANAGEMENT AND RESTORATION PLAN STRATEGIES AND RECOMMENDATIONS—TO BE EVALUATED USING DECISION-SUPPORT TOOLS RELATIVE TO PERFORMANCE MEASURE GOALS IN PHASE IV		
Meeting XI.	Jan. 13, 2021	Review of public comments on Draft Plan Framework and Goals, review of decision-support tools scenario results and consensus rating of strategies and actions, and review of related draft performance measures. Public Comment.
Meeting XII.	Feb. <u>24</u> , 2021	Review of scenarios and consensus rating of strategies and actions using decision-support tools relative to goals and objectives. Public Comment.
Meeting XIII.	April <u>21</u> , 2021	Review of scenarios and consensus rating of draft strategies and actions using decision-support tools relative to goals and objectives. Public Comment.
Meeting XIV.	June <u>16</u> , 2021	Review of scenarios and consensus rating of draft strategies and actions using decision-support tools relative to goals and objectives. Public Comment.
Meeting XV.	August <u>18</u> , 2021	Continue review and consensus testing of Draft ABS Ecosystem-Based Management and Implementation strategies and actions and agreement on Workshop Draft for public comment. Public Comment.

Public Workshop 2	<i>TBD</i>	Review and public comments on Revised Draft ABS Ecosystem-Based Management Plan and Implementation Plan Strategies.
Meeting XVI.	October <u>20</u> , 2021	Review of public comment, agreement on the ABS Draft Ecosystem-Based Management and Restoration Plan strategies and actions. Public Comment.
Meeting XVII.	November <u>17</u> , 2021	Complete Phase III of project- Management Plan delivered
PHASE IV—PLAN IMPLEMENTATION		
	TBD	Restoration Component

APPENDIX #5
ABSI CAB VISION THEMES, GOALS, OUTCOMES (AS OF OCTOBER 15 2020)

Below is a “Clean” version of the Objectives, Strategies and Actions agreed to during the October 15 CAB meeting

SECTION I COMMUNITY ADVISORY GROUP DRAFT ABSI RECOMMENDATIONS

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.

GOAL A. OBJECTIVES

- A1) To use observations, monitoring, experiments and modeling conducted through ABSI and related efforts to create decision support tools that can inform how a range of natural and human factors will affect the ABS ecosystem.
- A2) To help establish a comprehensive monitoring plan to evaluate the health of the ABS oyster resource and its measurable ecosystem services with clearly defined performance measures and strong coordination among the various entities conducting research in the region.
- A3) To use existing and new research, and decision support tools to identify viable strategies for restoration and management of the ABS oyster resources and the function of the ABS ecosystem.
- A4) To define measurable ecosystem services that can be used to determine the level of change in ecological health (e.g. oyster fishery harvest, habitat for other fishery species, abundance and condition indices for oyster reef and population health) and societal benefit derived from Apalachicola Bay System management and restoration efforts, with target and threshold levels identified.

GOAL A PRELIMINARY STRATEGIES AND ACTIONS

- 1) Increase productivity of the Apalachicola Bay oyster ecosystem by restoring, enhancing, and/or developing new reef structures based on experimental evidence for the most suitable substrate (e.g., limestone, granite, spat-on-shell, artificial structures) and on habitat suitability analyses.
Action A: Conduct restoration experiments to test efficacy of different materials, configurations, placement and seeding with hatchery spat.
Action B: Set aside some reef structures to be maintained as non-harvest protection areas.
- 2) Develop criteria for management for the longer term specific reefs or reef systems damaged by environmental conditions or natural disasters.
Action A: Evaluate degree of damage and potential for recovery.

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

Action C: Determine periodicity of spat addition (e.g., annually or longer) with a specific timeline for continuing the approach. This approach is not intended to create a put-and-take fishery.

- 3) Determine area (acres or km²) of healthy oyster reefs that currently exists as well as the area needed to ensure sufficient spat production that will support sustainability of oyster reefs and sustainability of a limited entry fishery throughout the ABS.

Action A: Map and ground truth existing oyster reefs using multibeam sonar and backscatter with oystermen and stakeholders.

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

- 4) 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 A: Continue to monitor intertidal 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 B: Continue to monitor spat settlement around intertidal habitats using same protocols as FWC. Data will be shared between FWC and ABSI.

Action 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 shell/oysters, live vs. dead and presence of juveniles, together with environmental data.

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

- 5) Develop ecosystem models that forecast future environmental conditions and oyster population status. These should include the effects of climate change, such as increasing sea level and ocean acidification, salinity gradients, water temperatures, storm intensity and rainfall events, and the

Action A: Collect data needed by the models, and follow up with testing the models to refine accuracy of output

Action B: Coordinate with appropriate state and federal agencies, pertinent out of state user groups, and other initiatives working on both geographically-constrained and basin-wide water-flow alterations and management strategies that contribute positively to the health of the ABS.

B.) 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.

CAB Recommendation:

Closing the Apalachicola Bay to Wild Oyster Harvest. At the March 11, 2020 ABSI CAB meeting the FWC requested that the CAB evaluate whether to close Apalachicola Bay to all wild harvest of oysters (commercial and recreational). The CAB evaluated the issue and unanimously recommended to FWC that they immediately close Apalachicola Bay to all wild harvest of oysters (commercial and recreational). This recommendation was reviewed and accepted by FWC and the Final Rule will be addressed at the October 2020 Commission meeting. The closure to recreational and commercial harvest went into effect on August 1, 2020. The oyster fishery closed area has well-defined boundaries (set by FWC in consultation with FDACS and contained within the Apalachicola Bay System as defined in FWC’s Rule 68B-27, F.A.C.³

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

GOAL B OBJECTIVES

- B1) To use observations, monitoring, experiments and modeling conducted through ABSI and related efforts to create decision support tools that can inform how a range of natural and human factors will affect the ABS ecosystem.
- B2) To help establish a comprehensive monitoring plan to evaluate the health of the ABS oyster resource and its measurable ecosystem services with clearly defined performance measures and strong coordination among the various entities conducting research in the region
- B3) To use existing and new research, and decision support tools to identify viable strategies for restoration and management of the ABS oyster resources and the function of the ABS ecosystem.
- B4) To define measurable ecosystem services that can be used to determine the level of change in ecological health (e.g. oyster fishery harvest, habitat for other fishery species, abundance and condition indices for oyster reef and population health) and societal benefit derived from Apalachicola Bay System management and restoration efforts, with target and threshold levels identified.

GOAL B PRELIMINARY STRATEGIES AND ACTIONS

- 1) Increase productivity of the Apalachicola Bay oyster ecosystem by restoring, enhancing, and/or developing new reef structures based on experimental evidence for the most suitable substrate (e.g., limestone, granite, spat-on-shell, artificial structures) and on habitat suitability analyses.
Action A: Conduct restoration experiments to test efficacy of different materials, configurations, placement and seeding with hatchery spat.
Action B: Set aside some reef structures to be maintained as non-harvest protection areas.

³ FWC’s Rule 68B-27.013, F.A.C. (as modified in the proposed draft rule language presented at the July 22, 2020, commission hearing): “Apalachicola Bay” or “Bay” means all waters within St. George Sound, East Bay in Franklin County, Apalachicola Bay, St. Vincent Sound in Franklin County, and Indian Lagoon in Gulf County, including canals, channels, rivers and creeks.

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

- 3) Determine area (acres or km²) of healthy oyster reefs that currently exists as well as the area needed to ensure sufficient spat production that will support sustainability of oyster reefs and sustainability of a limited entry fishery throughout the ABS.
 - Action A:* Map and ground truth existing oyster reefs using multibeam sonar and backscatter with oystermen and stakeholders.
 - Action B:* Apply model that uses reproductive output, recruitment, natural mortality rates and fishery harvest to assess oyster population dynamics.

- 4) 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 A:* Continue to monitor intertidal 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 B:* Continue to monitor spat settlement around intertidal habitats using same protocols as FWC. Data will be shared between FWC and ABSI.
 - Action C:* Conduct ‘spot-checks’ at a large number (TBD) of different locations in the Bay to supplement the more intensive monitoring data. Document the volume of the shell/oysters, live vs. dead and presence of juveniles, together with environmental data.
 - Action D:* Collect long term in situ environmental data using ABSI instruments and integrate ANERR environmental and nutrient data as correlates with oyster metrics.

- 5) Develop ecosystem models that forecast future environmental conditions and oyster population status. These should include the effects of climate change, such as increasing sea level and ocean acidification, salinity gradients, water temperatures, storm intensity and rainfall events, and the availability of freshwater.
 - Action A:* Collect data needed by the models, and follow up with testing the models to refine accuracy of output
 - Action B:* Coordinate with appropriate state and federal agencies, pertinent out of state user groups, and other initiatives working on both geographically constrained and basin-wide water-flow alterations and management strategies that contribute positively to the health of the ABS.

C) 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~~ from a permanent stakeholder advisory board.

GOAL C OBJECTIVES

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

GOAL C. PRELIMINARY STRATEGIES

CAB Proposed Strategies and Actions During the ABSI Process:

- 1) The ABSI Team and the CAB will continue to have an open and transparent process for the development of the ABS restoration and management plans with many opportunities for stakeholder engagement and input in a variety of forums (e.g., workshops, online, public/government meetings) for generating awareness and support while incorporating any changes the CAB deems appropriate and necessary to fulfill the goals and objectives.

CAB Proposed Strategies Subsequent to the ABSI Process:

- 2) After the Plan is completed, the CAB should evaluate transitioning to a successor group (with stakeholder composition similar to the ABSI CAB) in collaboration with the state as a partner in overseeing the Bay Management Plan. The successor group will define its scope of work including evaluating regulatory processes and engaging with and being accountable to decision-makers and the public for the actions laid out in the management plan and the implementation thereof. The successor group will also evaluate the best organizational structure for ensuring longevity including working under the auspices of a state agency, an estuary program, private/public partnerships, etc.
- 3) After the Plan is completed, the CAB should evaluate transitioning to a successor group (with stakeholder composition similar to the ABSI CAB) in collaboration with the state as a partner in overseeing the Bay Management Plan. The successor group will define its scope of work including evaluating ~~explore~~ regulatory processes and ~~will~~ engaging with and being accountable to decision-makers and the public for the actions laid out in the management plan and the implementation thereof. The successor group will evaluate the best organizational structure for ensuring longevity including working under the auspices of a state agency, an estuary program, private/public partnerships, etc.
- 4) The successor group should encourage state programs as appropriate ~~er~~ to adopt ABSI's scientifically-derived coordinated long-term monitoring guidelines and metrics for assessing water quality, oyster abundance, and demographics and to regularly review and update these guidelines and metrics to maintain a healthy and sustainable oyster harvest and ecosystem with input from the successor group ~~e~~ (e.g., private, public, NGO, partnerships, etc.).
- 5) The successor group should encourage agencies to prioritize CAB recommendations for investing more funding in the management and restoration of oyster resources.

D.) An Engaged Stakeholder Community and Informed Public

Vision Theme E: 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 innovation, education and communication opportunities.

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

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

GOAL D OBJECTIVES

- D1) To coordinate community engagement efforts to increase public awareness of and support for a healthy and well-managed ABS ecosystem; and to ensure that businesses, industries, non-profits, and local governments are supportive and included in these efforts.
- D2) To measure public and stakeholder understanding of the issues important to the health and restoration of the Bay and socio-economic indicators.

GOAL D PRELIMINARY STRATEGIES AND ACTIONS

- 1) Develop a Community Advisory Board (CAB) for the ABS Initiative that provides critical information and perspective to the ABSI leadership and whose members recognize the importance of their role as ambassadors for the initiative.
- 2) Build, with the help of the CAB, community support and stewardship by educating stakeholders on the importance of maintaining healthy oyster reefs and by engaging them in the Bay restoration through a variety of hands-on programs.
Action A: Form a sub-committee within the CAB that can spearhead an outreach and community engagement effort intended to inform and educate stakeholders and the public about the research, restoration plan, and management plan developing through ABSI and focusing on a healthy ABS ecosystem. The intended audience includes local city, county, and state government officials, businesses and organizations, citizens of every age, and other interested stakeholder groups.
Action B: Define what makes a successful shell recycling program, and work with local groups to help initiate its development.
Action C: Develop a “Bay Stewards” program to honor, reward, and provide incentives for businesses and individuals that demonstrate their stewardship of the resource.
- 3) Support and participate in providing educational opportunities for students at all levels (primary & secondary school through college) in fisheries ecology and management, with particular emphasis on the role oysters play in ecosystem health and fisheries.

SECTION II GOAL AREAS OUTSIDE THE SPECIFIC SCOPE OF ABSI AND TO BE REFERRED TO OTHER PROGRAMS OR ENTITIES

E.) 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.

E. A THRIVING ECONOMY CONNECTED TO A RESTORED APALACHICOLA BAY SYSTEM

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

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

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

GOAL E. OBJECTIVES

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

GOAL E PRELIMINARY STRATEGIES AND ACTIONS

- 1) Work with existing partners (e.g., the Chamber of Commerce, Apalachee Regional Planning Council, and city and county staff) to monitor and report on the economic benefits of a restored ABS, including key economic indicators relevant to the commercial oyster fishery and associated industries in the region. This can be displayed as a dashboard that includes key economic indicators over time based on restoration efforts in the Apalachicola Bay System (ABS).
- 2) Recommend monitoring⁴ and enforcement programs continue with appropriate metrics to measure output from and impact of harvest on oyster reefs.

⁴ Ongoing fisheries-dependent and fisheries-independent monitoring by FWRI, coupled with ABSI complementary data based on request of watermen. Both entities are sharing data with one another which is critical for ABSI model development. (We remain unable to get FWRI data.)

- 3) Support planning tied to economic indicators that consider future conditions (climate, SLR, reduced river flow) and their effects on the ABS.
- 4) Work with oystermen and other community stakeholders to promote post-recovery Apalachicola oysters.
- 5) Develop complementary industries in wild oyster harvest and oyster aquaculture that provide new economic opportunities by building a network of experts that can help Franklin County citizens build successful programs through business training, identifying sources of funding for equipment, and developing products that will enhance and diversify local industries.
- 6) Develop new markets for selling oysters to areas within and outside of Florida in part by investing in location (Apalachicola Bay) branding.
- 7) Review land development regulations to provide flexibility while supporting and enhancing efforts to maintain and revitalize working waterfronts in Apalachicola and Eastpoint to ensure preservation of Franklin County's cultural heritage and a viable seafood industry.
- 8) Coordinate with the local business community and governing bodies (i.e., city and county commissions) to ensure that growth management plans, land use and development regulations meet strong standards that are compatible with and minimize the environmental impact of industry and business activities within the ABS and are conducive to a healthy ecosystem.
- 9) Engage commercial fishermen in the restoration of the bay and encourage future participation in restoration such as shell recycling, shelling, and relaying.

APPENDIX #6
PERFORMANCE MEASURES (OCTOBER 2020)

The performance measures identified at the September meeting are featured in yellow.

A.) A HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM

Related Draft Performance Measures to Evaluate Strategies/Options

- A. Development of a forecasting model for salinity, temperature, nutrients (including nitrogen) and organic carbon dynamics under different climate and management scenarios.
- B. Reef height (feet or meters), where "reef" means live and dead shell, as well as other restoration material.
- C. Reef habitat measured in terms of height (feet or meters) and area (acres or km²), where "reef" is defined as structural material suitable for oyster recruitment (e.g., live shell, dead shell, and/or restoration materials).
- D. Reef area, reef defined as above (acres or km²)
- E. Density of live oysters, new boxes and dead shell (#/m²)
- F. Density of live oysters, including density of recruits and spawning adults (#/m²).
- G. Oyster population demographics (size/frequency)
- H. Biomass of live oysters (calculated from demographic data)
- I. Amount of brood stock (abundance and biomass of mature adults)
- J. Spat settlement patterns (spatial and temporal)
- K. Oyster recruitment patterns, where recruitment is defined as survival beyond a density-dependent mortality stage (~1.4"/35mm).
- L. Incidence of oyster diseases, parasites and predators
- M. Assess and manage for sustainable natural mortality rates (e.g., due to predation, parasites, disease).
- N. Diversity and abundance/biomass of reef-associated species
- O. Community diversity and population abundance/biomass of reef-associated taxa, including (commercially or recreationally) fished populations like blue crabs, stone crabs, mullet, redfish, etc.
- P. Soft sediment community structure and associated fisheries species.
- Q. Levels of pollutants (PCB, Heavy metals etc.) in water, sediment and animal tissue
- R. Sedimentation rates
- S. Salinity regimes across the ABSI region under different climate and management scenarios.
- T. Organic carbon dynamics (food availability) under different climate and management scenarios.
- U. Water filtration rates (volume/day) and days to filter estuary volume
- V. Water clarity (visibility) – changes over time
- W. Area of seagrass in the ABS region
- X. Nutrient dynamics of the ABS region
- Y. Relative proportion of nitrogen removed compared to nitrogen input
- Z. Assess changes in coastal vulnerability indices (e.g., indices of shoreline erosion, which are related to changes in saltmarsh, mangrove, seagrass habitat, but also vulnerability to storms).
- AA. Assess changes in shoreline erosion protection
- BB. Assess changes in salt marsh, mangrove, and/or seagrass indices.
- CC. Number of sloughs connected to the Apalachicola River (depending on flow levels).
- DD. Timing and extent of floodplain inundation.

CAB Comments

- Add “timing and extent of floodplain inundation”

B.) SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES

Related Draft Performance Measures to Evaluate Strategies/Options

- A. Total harvest in bags the oyster population can support
- B. Sustainable allowable catch in annual total biomass (kg) removed, under different management regimes.
- C. How close to a complete fishery (fraction harvested of allowable catch)
- D. Harvest (annual total biomass) by fishery type (recreational/commercial)
- E. Develop models for predicting sustainable allowable catch in annual total biomass (kg) removed, under different management regimes. This would include calculating harvest rate and accounting for shell budgets.
- F. Number of full-time harvesters that the fishery can support under most environmental conditions. [need to define full-time]
- G. Harvest (annual total biomass) by size category, location and gear type
- H. Timing of harvest during the fishing season [need to define]
- I. Catch per unit effort (catch per trip)
- J. Number of poaching violations and amount of captured illegal harvest (including illegal sale).
- K. Amount of harvest from rotation areas
- L. Fraction of total oyster population that is being harvested
- M. How many oysters can be harvested without a net loss of oysters.
- N. 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.
- O. An updated oyster fishery and aquaculture enforcement plan that is approved by fishers, farmers, distributors (fish houses), FWC Law Enforcement, and local judicial system.
- P. Number of large oysters (>3”) by location (different reefs, fished vs. closed areas, intertidal vs. subtidal).
- Q. Number of sanctuaries [moved from Goal A]
- R. Number of closed areas [moved from Goal A]
- S. Inclusion of oyster areas closed to fishing.

C.) THE ECOSYSTEM-BASED MANAGEMENT AND RESTORATION PLAN

This is covered by the Objectives for Goal E. and the performance measures in Goals A - D that collectively make up the Apalachicola Bay System Management and Restoration Plan.

D.) A THRIVING ECONOMY CONNECTED TO A RESTORED APALACHICOLA BAY SYSTEM

Related Draft Performance Measures to Evaluate Strategies/Options

- A. Value of harvest that meets an economic minimum for sustainability of watermen.
- B. Cost/value per bags
- C. Number of fishermen participating in the fishery
- D. Revenue per harvester (and perhaps its distribution)
- E. Travel time costs, and distance travelled
- F. Cost of management measures (e.g., restoration efforts)
- G. Revenue raised in fees/bag taxes

- H. Social benefits (value of ecosystem services)
- I. Value of harvest per day (bags per day)
- J. Performance metric for economic sustainability of the community
- K. Total economic investment versus economic benefit
- L. Socio-economic benefits – Improved/enhanced recreational fishing on oyster reefs including restored reefs.
- M. Total market activity (revenue) associated with commercial sale of oysters (including aquaculture, wild harvest, and any partial-ownership methods that fall in between the two).
- N. Total (amount or proportion) of jobs in Franklin County (should this include surrounding counties too?) associated with working waterfront (i.e., fishing, aquaculture, and tourism).

E.) AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC

Related Draft Performance Measures to Evaluate Strategies/Options

- A. Creation of a harvest management plan that is ecologically sustainable and acceptable to stakeholders and includes an adaptive plan of actions to rapidly respond to unpredictable but inevitable environmental disturbances.
- B. An updated oyster fishery and aquaculture enforcement plan that is approved by fishers, farmers, distributors (fish houses), FWC Law Enforcement, and local judicial system.

APPENDIX #6
ABSI CAB TERMS AND DEFINITIONS (AS OF JULY 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.

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

OUTCOMES: 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*).

OBJECTIVES: 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.