

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

**NOVEMBER 12, 2020  
VIRTUAL ZOOM MEETING**

*Unanimously Adopted without Changes at the January 13, 2021 CAB Meeting*



**FACILITATED AND SUMMARIZED BY ROBERT JONES AND JEFF BLAIR**



**ABSI COMMUNITY ADVISORY BOARD (CAB)**  
**MEETING IX SUMMARY REPORT**  
 NOVEMBER 12, 2020

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**APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)**  
**ABSI COMMUNITY ADVISORY BOARD (CAB) ZOOM MEETING IX**  
**EXECUTIVE SUMMARY**  
**November 12, 2020**

Jeff Blair, FSU FCRC Consensus Center and part of the FSU Facilitation Team, welcomed the members to the 9<sup>th</sup> meeting of the Apalachicola Bay System Initiative's Community Advisory Board. He introduced the online virtual meeting guidelines and Bob Jones, ABSI Facilitation Team, and the FSU ABSI Team members, Sandra Brooke, Felicia Coleman and Maddie. The facilitators reviewed the objectives and agenda which the members approved. Members also approved the Facilitator Summary for the October 20, 2020 CAB Meeting VIII without changes. The CAB reviewed the Project Meeting Schedule and Workplan and noted a CAB Oysterman Workshop scheduled for December 2, 2020. Ed Camp explained the purpose of the online social science survey and CAB members completed the survey.

Sandra Brooke, ABSI project lead, provided an update on the ABSI science efforts. She noted that hatchery became operational in September 2020 and ABSI hired a hatchery technician. The first major spawn is planned for spring 2021. The next task for watershed modeling is to develop estuarine metrics to help gauge the importance of different flow regimes to the oyster populations. Dr. Morey's group has created a high-resolution grid within the ABSI area of interest which will allow fine-scale predictions of flow and larval dispersal under different river flow scenarios.

Sandra described the approach to data collection for inter-tidal oyster populations that includes Indian Lagoon, East Cove, Carabelle, and Alligator Harbor. For Sub-tidal oyster populations, they will conduct surveys using tongs and they will count spat, adults, and market, boxes, and measure live oysters. In terms of the results so far, it appears East Cove better for settling spat and Cat Point best for oyster growth. ABSI is conducting an analysis of fish communities using FWC FIM data to determine whether there have been changes in fish community over time, and if so, what drives those changes. The Community structure varies among years, but drivers are unclear as there were no clear relationships among environmental variables and sampling years. River flow (high/med/low) did have a significant, but weak, relationship with the otter trawl data. There is strong seasonality in community structure for all gear types that is likely related to temperature. Additional environmental variables associated with community structure include salinity, depth, and water clarity using river flow rate as a continuous variable to better understand influence of flow on patterns of community structure.

She noted other ongoing projects including: Using high resolution drone imagery for rapid assessment of intertidal oysters; assessing genetic population structure within and outside of the ABSI region; developing a predictive habitat model for oysters in the ABSI region; examining isotopic values of oysters, fishes, plankton and sediments to compare with previous study in 1992-94; assimilate data on environmental conditions and nutrients (ANERR); continue to monitor oyster populations (intertidal and subtidal); and assess past restoration efforts: what was planted, how much, where, when and by whom; identifying and filling in sub-tidal mapping gaps; and developing a restoration experiment in collaboration with FWC. CAB comments covered: predictability of the model; sub tidal mapping relying on 2005 study; seagrass as an metric; Sikes Cut and modeling; salinity gradient and stratification;

Felicia Coleman and Jim Estes presented on the shared components of the ABSI and FWC NFWF projects. Felicia described the early collaboration at the beginning of ABSI that adjusted schedules and suggested the use of the CAB for a sounding board for both projects and collaborated on the science such as sampling being undertaken by both projects. Jim Estes underscored the importance for the success both projects of collaboration. They both agreed that additional science is needed to guide restoration. Jim Estes provided an update on the proposed closure to commercial and recreational oyster harvest in Apalachicola Bay indicating he was hopeful of getting a final Commission decision on the proposed closure, which is up to 5 years duration.

The facilitator noted that the ABSI goal framework was drawn from CAB vision themes in the early CAB meetings. The facilitator engaged in a discussion of public engagement strategies, and a discussion of Goals A and B overall goals.

The Public Engagement Subcommittee explored different components of getting out publicly what the CAB has done after 1 year of work. The CAB discussion covered: improving our outreach and education efforts; keep it simple, focused and ongoing; periodic updates; tell stories that connect and explain; explain the situation, the investment in science and action and the returns on the investment; get on the County and City Commissions agenda for updates; create a communication plan and provides updates at each CAB meeting.

*From your observations, experience and stakeholder perspective what are the key ecosystem services that should be established in the ABS for a healthy and productive Bay ecosystem?*

The CAB has a facilitated discussion on Goal A on key ecosystem services that covered: the impact of the USACE authorized water control plan; basin stakeholders; future river flow and impacts on oysters; oyster spat and recruitment; cultch materials; where are best reefs for recruitment; spatial extent of live oyster reefs; cultch material and oysters; monitoring oyster productivity; reef productivity; recruitment and productivity of reefs; and other fisheries.

*From your observations, experience and stakeholder perspective what key sustainable harvest and aquaculture goals would you like to see established in the ABS?*

The CAB has a facilitated discussion on Goal B that covered: lawsuit impacts; funding for replanting cultch; agree on metrics for opening and closing; enforcement; limited entry oyster fishery; recreational oyster fishery; wild caught oyster harvesting vs aquaculture? aquaculture industry struggling? limited entry and aquaculture; and impact of aquaculture diploid oysters on wild oysters

For the overarching approaches and for the 4 CAB goals The Vision Theme, Goal, Outcomes and Objectives and Strategies agreed to at the November 12 meeting. for Goal A are included in Appendix #5. The strategies text is based on review of the October CAB meeting results and suggestions by the ABSI Team that were reviewed and agreed by the CAB at the November meeting.

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 for the Plan 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) ACTIONS (5)

CAB Draft 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 DRAFT 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 DRAFT STRATEGIES (9)

ADDITIONAL DRAFT 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 facilitator noted the Oystermen Workshop scheduled for December 2, 2020 in the afternoon. CAB members are encouraged to listen in, especially state agencies, but the workshop is primarily for hearing from the oystermen.

He then reviewed the agenda for the 10<sup>th</sup> meeting scheduled for January 13, 2020. The plan is to initially to prioritize the CAB strategies and actions for the Plan's goals and objectives. Members suggested briefing updating presentations on the modeling tools, ABSI research efforts and the FWC proposed closure of Apalachicola Bay to commercial and recreation harvesting oysters.

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

**APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)**  
**ABSI COMMUNITY ADVISORY BOARD (CAB)**  
**MEETING IX DETAILED SUMMARY**  
**November 12, 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 8<sup>th</sup> 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).

**B. SOCIAL SCIENCE SURVEY**

Ed Camp explained the purpose of the online social science survey that he was conducting starting in October 2020 at the beginning of each meeting.

**II. ABSI PROJECT BRIEFINGS AND UPDATES**

**A. ABSI SCIENCE UPDATE**

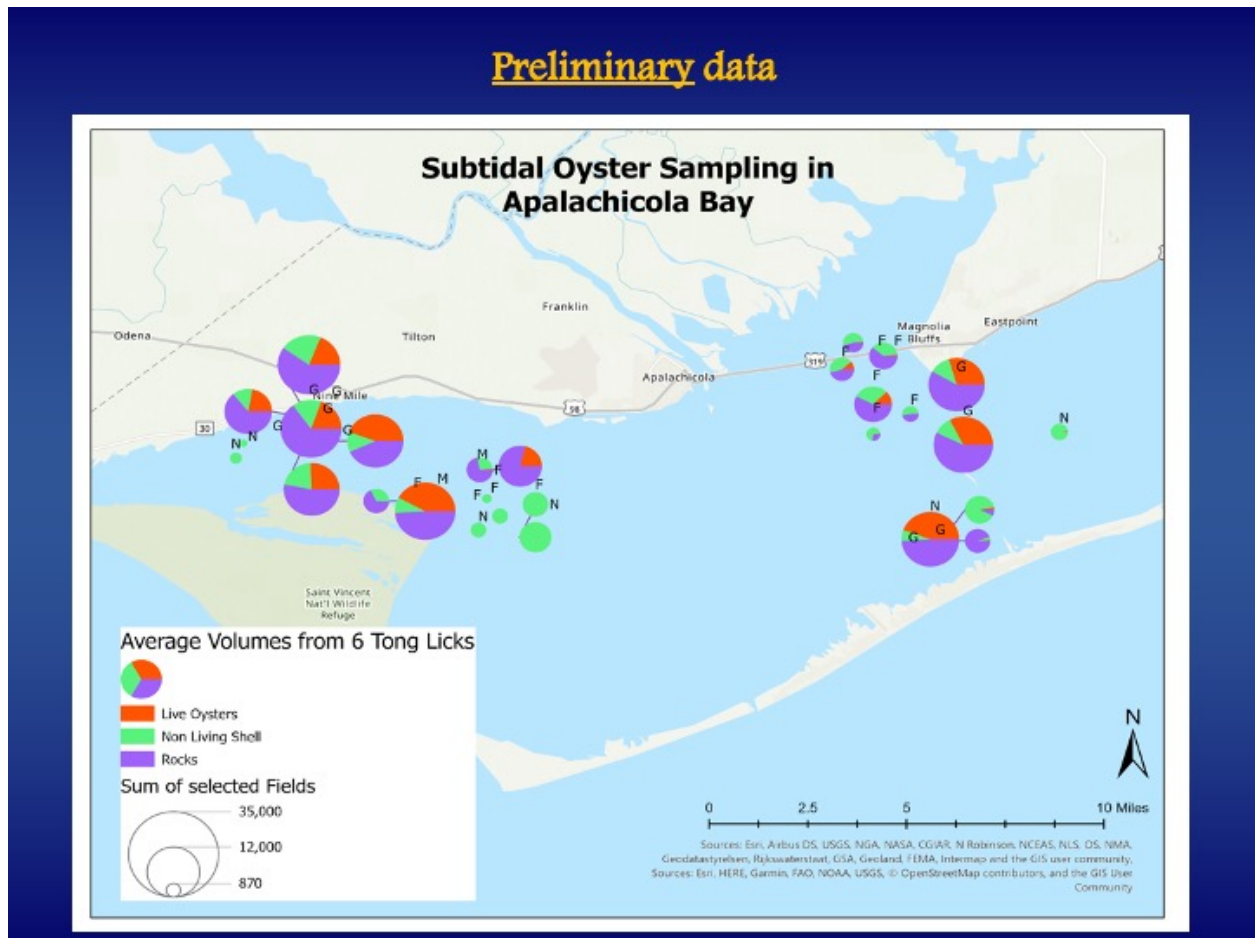
Sandra Brooke, ABSI project lead, provided an update on the ABSI science efforts. She noted that hatchery was opened in September 2020 and ABSI hired Shannon Kirk as a hatchery technician. Their first spawn was attempted October 6-12, however the males spawned, but the females did not cooperate. The first major spawn is planned for spring 2021.

The next task for watershed modeling is to develop estuarine metrics. Dr. Morey's group has created a high-resolution grid within the ABSI area of interest (model domain=2.5 million nodes and 4.5 million triangles), which will allow fine-scale predictions of flow and larval dispersal. This model will be used to examine distribution of estuarine metrics, such as salinity at Dry Bar and Cat Point, under different river flow scenarios.

Sandra described the approach to data collection for Inter-tidal oyster populations (Five x 0.25 m<sup>2</sup> quadrats per site) that includes Indian Lagoon, East Cove, Carabelle, Alligator Harbor. For Sub-tidal oyster populations they will conduct surveys using tongs (building on Andy Kane's work) including 6 samples per site including rock, dead shell, and live oysters. They will count spat, adults, and market, boxes, and measure live oysters (<25, 25-76, >76).

In terms of the results so far, it appears East Cove better for settling spat and Cat Point best for oyster growth. The Community structure varies among years, but drivers are unclear as there were no clear relationships among environmental variables and sampling years. River flow (high/med/low) did have a significant, but weak, relationship with the otter trawl data.

There is strong seasonality in community structure for all gear types that is likely related to temperature. Additional environmental variables associated with community structure include salinity, depth, and water clarity. Sandra indicated that current analyses are focused on using river flow rate as a continuous variable (rather than categories), to better understand influence of flow on patterns of community structure through the 18-year time series



Other ongoing projects include:

- Using high resolution drone imagery for rapid assessment of intertidal oysters (working with Duke University);
- Assessing genetic population structure within and outside of the ABSI region;
- Developing a predictive habitat model for oysters in the ABSI region;
- Examining isotopic values of oysters, fishes, plankton and sediments to compare with previous study in 1992-94 (Chanton and Lewis 2002);

- Assimilating data on Environmental conditions and nutrients (ANERR); Oyster populations (intertidal and subtidal); and restoration efforts: what was planted, how much, where, when and by whom;
- Filling in sub-tidal mapping gaps (Ray Grizzle has sonar on boats for bottom mapping; and
- Developing a restoration experiment in collaboration with FWC

#### *CAB Comments and Questions*

- Does the salinity model at the two areas have data to validate the predictive model? *A: Yes 2012 data used ANERR instruments and will update these and validate with field data.*
- Will sub-tidal mapping be done? *A: Yes. Subtidal mapping was done by Twitchell (2005) but things may have changed since then. Ray Grizzle will target the commercial reefs and will not be using overlapping surveys. Mapping in the shallows is slow and expensive.*
- How is salinity measured in the water column for the model and is sea grass area/health a potential metric?
- Salinity gradient in bay and water column? *A: 2012 study looked at stratification. Deployed instruments and field spot checks will also be used*
- Should we use seagrass as a metric? *A: There have been historical patterns of seagrass in Apalachicola Bay. We can use as a metric in some places. Look at turbidity and where seagrasses are-response metric. Seagrasses wont necessarily come back when Bay is clean,*
- In ACF issues, Sikes Cut is an outsized perceived issue. What about historical bars and changes due to issues like Sikes Cut, dredging, bridges, etc. in our work? *A Sikes Cut is potentially influencing salinity but not reef height. We can model the closure of Sikes Cut to determine much a difference it will make.*

#### **B. ABSI-NFWF SHARED COMPONENTS AND RESTORATION SCHEDULE.**

Felicia Coleman and Jim Estes presented information on the shared components of the ABSI and FWC NFWF projects. Felicia described the early collaboration at the beginning of ABSI that adjusted schedules of each project to align timelines more closely. The CAB could be a sounding board for both projects, and collaborated on the science such as sampling being undertaken by both projects. Jim Estes underscored the importance for the success both projects of collaboration.

Jim Estes provided an update on the proposed closure to commercial and recreational oyster harvest in Apalachicola Bay indicating he was hopeful of addressing the Gulf County concerns related to recreational harvest in Indian Lagoon and getting a final Commission decision on the proposed up to 5 year closure.

They both agreed that additional science is needed to guide restoration.

#### *CAB Comments*

- Can the CAB be helpful in getting the contract with UF approved? *A: It is being resolved and was delayed due to a UF FWC master multi-project contract that had expired and needed to be renewed.*



### III. ABSI COMMUNITY ADVISORY BOARD FRAMEWORK FOR REVIEW

The facilitator noted that the ABSI goal framework was drawn from CAB vision themes in the early CAB meetings. In October, the CAB agreed conceptually on the goal framework for refining strategies and action 2020.

#### A. PUBLIC ENGAGEMENT STRATEGY ON THE ABS PLAN DISCUSSION

The Public Engagement Subcommittee explored different components of getting out publicly what the CAB has done after 1 year of work. It recognized there is confusion on the role of the CAB and ABSI project. We need to be clearer on how we have worked together and are committed to recovery of the Bay. The communication has been influenced and limited by COVID 19. In addition to having public comments at meetings and CAB documents posted for public review, we suggested a newsletter format following each meeting be posted and circulated. CAB members should be communicating with the groups they represent.

The discussion covered: improving our outreach and education efforts; keep it simple, focused and ongoing; periodic updates; tell stories that connect and explain; explain the situation, the investment in science and action and the returns on the investment; get on the the County and City Commissions agenda for updates; create a communication plan and provides updates at each CAB meeting;

#### *CAB Discussion Comments*

- Being able to share the details upon request is important. Yes, there are those that want to wade into the weeds.
- There is a disconnect on where we are going and how other project parts are coming together.
- We should have been releasing information all along. Keep getting out there. Lot to understand. Smaller comprehensive way.
- Keep it simple to understand. Close the Bay or doing nothing about the decline in oysters. Hard to explain what is happening, step by step. Makes sense to ordinary people.
- Got all this investment in the Bay's recovery, and the perception is that nothing is happening.
- We should not be communicating in the weeds of the Plan. We should let the public have faith in the representatives around table to carry through on our commitments.
- Oyster radio and newspaper
- We need to share periodic updates. People are expecting to hear and respond to actionable things. We don't need the details on science but a story of how science will be doing something good to help the community and the oysters.
- Sentinel reefs- barges putting shell on bottom
- Demonstrate how the CAB is working together collaboratively. How models are helping to
- Why stitching together.
- We: have been remiss in communicating with community. The Subcommittee will be meeting soon.
- Every CAB meeting we should review progress on a communication plan. Utilize Oyster Radio, the Apalachicola Times, Facebook, etc.
- This is an important message, but who it is going to?

- Meetings with county and cities help get us the message out. Get it on local government agendas. They are like the general public in helping to educate about the project.

## **B. HEALTHY ECOSYSTEM AND SUSTAINABLE HARVEST AND AQUACULTURE DISCUSSION OF GOALS**

The CAB should decide the priority of the service(s) they want from oysters (water quality, habitat for other fisheries, etc.). These priorities could then help to inform habitat and fishery (wild and aquaculture) restoration targets to help meet the service goal(s) and the management regime/policies needed to ensure sustainability of the resource and a healthy System.

### **Goal A. Outcome—A Healthy and Productive Bay Ecosystem:**

*From your observations, experience and stakeholder perspective what are the key ecosystem services that should be established in the ABS for a healthy and productive Bay ecosystem?*

The CAB has a facilitated discussion on Goal A that covered: the impact of the USACE authorized water control plan; future river flow and impacts on oysters; oyster spat and recruitment; where are best reefs for recruitment; spatial extent of live oyster reefs; cultch material and oysters; monitoring oyster productivity and other fisheries.

#### *CAB Discussion Comments*

- **USACE Water control plan.** Worries of how ABSI and CAB addresses the impact of Army Corp of Engineer's authorized purposes and their water control plan,
- Can we change authorized purposes in the water control plan.
- ABSI and CAB will recognize the impacts of the USACE efforts and plan.
- **Basin stakeholders.** Basin as stakeholders in AB basin. E.g. Gulf County. Liberty Co honey production
- ABSI and the ACF stakeholders working together is essential. The facilitators will be working with the ACF Stakeholder organization to help facilitate their strategic plan.
- **How much water do we want for the Bay?** Before deal with authorities, we need to decide how much water we want for the Bay
- In terms of the future and how much flow is needed, for the last 8 years Cat Point has provided oysters.
- Rebuild the east end of the Bay. Manage it right and sustain itself. We need to be managing what we rebuild. We would be miles ahead if we did that 8 years ago.
- We have experienced 30 years of declining flow.
- **Cultch materials.** In 2013 the program to put material back in bay with oysterman. Grew oysters. Focus on Cat Point and close to river.
- Rock material was placed in 2017. Not getting much on the 2<sup>nd</sup> cycle. Rock sustaining better. It is material that will be there over time.
- Oysters are growing on trees. Looking good.
- **Manage for the longer term.** Manage areas not to deplete and take the long view for restoration.
- **Ecosystem services.** Need a working definition of ecosystem services. *A: CAB definition provides for how system benefits humans. Pp24*

- Spatial extent of live oyster reefs needed.
- Filtration, nutrient sequestration and off loading
- **Fisheries.** Include other Fisheries e.g. red fish
- **Reef productivity.** Productivity of reefs and commercial output.
- We need to monitor the health of ABS.
- **Recruitment and productivity of oysters-** where and how much- spat levels, and where it is.

### **Goal B. Outcome- Sustainable Harvest and Aquaculture:**

*From your observations, experience and stakeholder perspective what key sustainable harvest and aquaculture goals would you like to see established in the ABS?*

The CAB has a facilitated discussion on Goal B that covered: Funding for replanting cultch; agree on metrics for opening and closing; Enforcement; Limited entry oyster fishery; recreational oyster fishery; wild caught oyster harvesting vs aquaculture? Aquaculture industry struggling? limited entry and aquaculture; and impact of aquaculture diploid oysters on wild oysters

#### *CAB Discussion Comments*

- When oysters have issues, you can quickly tell.
- The lawsuit affected communication on the health of oysters in the Bay.
- **Funding for replanting cultch.** 2013 oysterman planting. Every month for 2 years until funding ran out.
- There is funding to rebuild the Bay and create a sustainable harvest for wild oysters, not funding for oystermen.
- Oystermen have had to make a living another way.
- **Agree on metrics for opening and closing.** We need a more rapid assessment for when to reopen the Bay.
- Open and close- need clarity
- Metric- assess rapidly and ongoing so we know when the fishery is degraded.
- We need agreed upon metrics opening and closing the bay.
- **Enforcement.** Marine patrol on the waters. Don't see enforcement on water. Marine patrol every week on the water. Game wardens. Stay in the woods.
- Enforcement has changed a lot- gotten smaller. See less on water. Cycle 1 day a month.
- Good and bad oysterman.
- Focus on the landings- if he wouldn't buy there wouldn't be a problem. Need to focus on this. Wouldn't have all that "trash catching." If you can't sell, you won't catch,
- Many seafood dealers won't buy undersized oysters.
- **Limited entry oyster fishery.** State needs to step in and create a limited entry fishery- like crabbers.
- Do away with summertime harvesting when oysters spawn?
- **Recreational oyster fishery.** Gulf County wanted recreational caught oysters allowed and requested that FWC separate out Indian River Pass but not in Apalachicola Bay.
- **Wild caught oyster harvesting vs aquaculture?** There have been differences in the community on this question.

- The State isn't giving up on managing wild harvest in favor of aquaculture. We can coexist. Address discontent and underlying issues with oyster dealers and oyster men.
- The plan basis is to retain historic sustainable wild harvest component.
- There isn't direct competition. each industry supplement each other, move. Don't site leases where wild harvest. Give a bigger chance
- Keep in mind the separate duties of the agencies regarding wild oysters and aquaculture.
- Important to house responsibility in one agency. FDACS mission is aquaculture. Won't have impact on wild resources and other recreational uses.
- FDACS has a state advisory group. It regulates a different market.
- **Aquaculture industry struggling.** The aquaculture industry is struggling. The % of death rate may be as high as 60%. Some are choosing diploids vs triploids now. Success is making \$18,000 at end of the year.
- Some have leases with nothing on it in Apalachicola
- If looking for more places, don't see the need for it. The Coop in Wakulla County has shut down. Industry not doing well
- **Limited entry and aquaculture.** Limiting harvest (e.g. doing away with summertime harvesting when oysters spawn) will help the aquaculture industry co-exist with wild harvest.
- Supply/demand is at work when there are less oysters, the price go up. If there are 100 boats in bay, the price goes down for both wild and aquaculture oysters.
- **Impact of aquaculture diploid oysters on wild oysters.** To what extent does aquaculture using diploids impact wild oysters in terms of recruitment and enhancing the wild reefs.
- Leases not in areas oyster reefs have been. Using diploids can be incorporate into the model to test.
- FDACE allows both diploid and triploid oysters in aquaculture.
- Not doing so well in Alligator Harbor where they use triploids.

#### IV. REVIEW OF SECTIONS- OBJECTIVES, STRATEGIES & ACTIONS

*For the overarching approaches and for the 4 CAB goals The Vision Theme, Goal, Outcomes and Objectives and Strategies agreed to at the November 12 meeting, for Goal A are included in Appendix #5. The yellow highlights represent suggested additions or deletions based on the CAB review of the October meetings results and suggestions by the ABSI that were reviewed and agreed by the CAB at the November meeting.*

### SECTION I: COMMUNITY ADVISORY GROUP DRAFT ABSI STRATEGIES

#### OVERARCHING APPROACHES

- 1) Use the following ABSI-approved name for the developing management and restoration plan: the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan).
- 2) 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.

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

*CAB Comments*

- OK thumbs up with the strategy changes suggested by the ABSI Team.

## **GOAL A: A HEALTHY AND PRODUCTIVE BAY ECOSYSTEM**

### **DRAFT STRATEGIES AND ACTIONS**

- 1) Use experimental evidence and habitat suitability analyses to determine the most suitable substrate (e.g., limestone, granite, spat-on-shell, artificial structures) for restoring, enhancing, and/or developing new reef structures that will increase productivity in the Apalachicola Bay oyster ecosystem. *[Clean version of proposed revision]*

~~Increase productivity of the Apalachicola Bay oyster ecosystem by restoring, enhancing, and/or developing new reef structures based on Use experimental evidence for the most suitable substrate (e.g., limestone, granite, spat-on-shell, artificial structures) and on habitat suitability analyses to determine the most suitable substrate (e.g., limestone, granite, spat-on-shell, artificial structures) for Increase productivity of the Apalachicola Bay oyster ecosystem by restoring, enhancing, and/or developing new reef structures that will increase productivity in the Apalachicola Bay oyster ecosystem. based on~~ *[Strategy 1 in strike-underline format]*

- *Action 1. A.):* Conduct restoration experiments to test efficacy of different materials, configurations, placement and seeding with hatchery spat.
  - ~~*Action 2. A.):* Set aside some reef structures to be maintained as non-harvest protection areas.~~ *[Action 2. A. is covered in Goal B]*
- 2) Develop criteria for restoring specific reefs or reef systems damaged by environmental conditions or natural disasters.
    - *Action 2. A.):* Evaluate degree of damage and potential for recovery.
    - *Action 2. B.):* Develop an approach for mitigating damage (e.g., physical repair, spat supplements, or some combination of both).
    - *Action 2. 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 km<sup>2</sup>) 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 3. A.):* Map existing oyster reefs using multibeam sonar and backscatter, **and ground-truth for accuracy**.
    - *Action 3. B.):* Apply model (Ed Camp, UF) 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. *[Health is covered in Action 4.E.]*
- *Action 4. A.):* Continue to monitor intertidal and sub-tidal reefs monthly and bi-annually using same protocols as FWC sub-tidal monitoring. Adjust to add metrics as needed. Data will be shared between FWC and ABSI.
  - *Action 4. B.):* Continue to monitor spat settlement around intertidal and sub-tidal habitats using same protocols as FWC. Data will be shared between FWC and ABSI.
  - *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 rock/shell/oysters, number of spat, medium and market sized live oysters and boxes ~~live vs. dead and presence of juveniles~~ together with environmental data.
  - *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.
  - *Action 4. E.):* Generate health indicators for ABSI using monitoring data, and other ecological factors (e.g. oyster-associated communities and structural complexity).

*(\*Ecosystem Health: Ecosystem health is a complex interaction of human and ecological factors, which has yet to be defined for ABSI.)*

- 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.~~ *[This is covered in Overarching Approach #3.]*
- *Action 5. A.):* Collect data needed by the models and follow up with testing the models to refine accuracy of output.
  - *Action 5. 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.
- 6) Assess existing ecosystem services metrics used for other oyster studies and develop a list of ABSI specific metrics to assess change over time.
- *Action 6. A.):* Conduct literature review and work with Florida Oyster Recovery Science (FORS) working group to identify measurable indicators of changes in ecosystem services
  - *Action 6. B.):* Integrate ecosystem services metrics into monitoring program.

*CAB Comments*

- OK thumbs up with the strategy changes suggested by the ABSI Team.

**GOAL B: SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES**

**DRAFT 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.

- Action 1. A.): Use ABSI health metrics to develop criteria for opening wild oyster harvest. *[This is covered in Goal A, Strategy 6]*
  - Action 1. B.): Work with FWC & FDACS to ensure that definitions of oyster population health are not only based on harvest metrics.
2. Use 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.
- *Action 2 A*): Engage local stakeholders in determining total coverage (how much to protect), placement (where to protect), and size (how large) of all proposed types of closed areas using gridded maps as well as distributions of selected fishery and ecologically important species.
3. Recommend in the Plan, management policies that require shell retention and recycling and habitat replenishment in the ABS (as part of FWC’s regulatory framework.)
- Action 3. A.): Obtain legislative support for statutes that support or require shell recycling and oyster habitat replenishment and provide support for partnerships. (e.g., Texas House Bill 51 (2017); North Carolina General Statute §130A-309.10 (2010); Maryland House Bill 184; Florida statute Chapter 157 (McClellan 1881).

*CAB Comments and Questions*

- Delete in Strategy 3 (as part of FWC’s regulatory framework.)
- Statutes in aid of constitution and FWC will shop with their attorneys.
- Delete current action B and replace with: “Develop agency rules and policy that require shell retention and recycling for habitat replenishment through a fee or incentive program.”
- Recommend an action directed to the Legislature to support partnerships.
- Add “Action C : Establish partnerships with local organizations, stakeholder groups, industry, universities in shell recycling programs
- Historically was a robust plan with FDACS funded at 300K per year. Handed over to FWC several years ago. The statute is still on the books. Revise program in some form?  
OYSTER AND CLAM SHELLS PROPERTY OF DEPARTMENT—  
(a) Except for oysters used directly in the half-shell trade, 50 percent of all shells from oysters and clams shucked commercially in the state shall be and remain the property of the department when such shells are needed and required for rehabilitation projects and planting operations, in cooperation with the Fish and Wildlife Conservation Commission, when sufficient resources and facilities exist for handling and planting such shell, and when the collection and handling of such shell is practicable and useful, except that bona fide holders of leases and grants may retain 75 percent of such shell as they produce for aquacultural purposes. Storage, transportation, and planting of shells so retained by lessees and grantees shall be carried out under the conditions of the lease agreement or with the written approval of the department and shall be subject to such reasonable time limits as the department may fix. In the event of an accumulation of an excess of ..
- Processors can hold the shells- if the state can collect material. Crew used to collect material, shell. This was handed over to FWC at this point.
- Shell is not doing as well as the rocks. Cultch- broader term

- OK thumbs up with the suggested strategy changes by CAB members.
4. 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.
    - *Action 4. A.*): Use ecosystem modeling outputs to identify the oyster population abundance that can support sustainable harvest.
    - *Action 4. B.*): Use ecosystem modeling outputs to identify percentage of productive reef area required to support sustainable harvest.
    - *Action 4. C.*): Use ecosystem modeling outputs to identify annual; recruitment required to support sustainable harvest.
    - *Action 4. D.*): Use ecosystem modeling outputs to determine amount and frequency of habitat replacement to maintain productive oyster reefs.

*CAB Comments and Questions*

- Should we include other analyses or other decision support tools? A: We can broaden this, e.g. “all available scientific data.”
  - Is there a specific ecosystem modeling specific definition? A :No. Need to do this or broaden the term.
  - Suggest “ecological quantitative modeling and other decision support tools”. A: We can change actions to reflect this.
  - OK thumbs up with the strategy changes suggested by the CAB and ABSI Team.
5. 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 fisheries fishery and the important cultural role of a working waterfront and seafood industry.
    - *Action 5. A.*): Develop maps using FDACs data showing all aquaculture activities in the ABS, superimposed on existing maps of essential fish habitat and fishing activities to identify potential conflicts.
    - *Action 5. B.*): Utilize habitat and activity maps from *Action 5. A.* to identify potential new oyster restoration areas.

*CAB Comments and Questions*

- OK thumbs up with the strategy changes suggested by the ABSI Team.
6. Work with FWC Law Enforcement to develop 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.
    - *Action 6. A.*): Develop strategies to increase FWC enforcement presence and number of checkpoints.
    - *Action 6. B.*): Develop strategies to ensure uniformity in the harvestable and marketable size of oysters.
    - *Action 6. C.*): Develop strategies to Limit oyster harvest to periods outside of peak spawning season.



- **Action 6. D.):** Develop standards for a limited entry fishery.
- **Action 7. D.):** Propose strategies to FWC and FDACs for implementation.

*CAB Comments and Questions*

- OK thumbs up with the strategy changes suggested by the ABSI Team.

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

**VISION THEME C:** The Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan is science-based and developed with engagement and support from the Apalachicola Bay System stakeholders, and is fully funded.

*CAB Comments and Questions*

- OK thumbs up with the strategy changes suggested by the ABSI Team.

**DRAFT STRATEGIES**

**CAB Proposed Strategies During the ABSI Process**

- 1) The ABSI Team and the CAB will continue to have an open and transparent process for the development of the Plan with many opportunities for stakeholder engagement and input in a variety of forums (e.g., workshops, online, public/ government meetings) for generating awareness and support while incorporating any changes the CAB deems appropriate and necessary to fulfill the goals and objectives.
  - **Action 1. A.):** Continue CAB meetings and public workshops as outlined in the FCRC proposal for 2021.
- 2) **Prior to completion of the Plan, the ABSI Team will form a sub-committee within the CAB to evaluate the efficacy of forming a CAB successor group. The intent of a successor group would be to ensure continuity between the CAB members and the agencies responsible for oyster management.**
  - **Action 2. A.):** The subcommittee will define a plausible scope of work for the successor group, including evaluating regulatory processes and engaging with and being accountable to decision-makers and the public for the actions laid out in the Plan and the implementation thereof.
  - **Action 2. B.):** The subcommittee will evaluate the best organizational structure for ensuring longevity of the successor group, including working under the auspices of a state agency, an estuary program, or private/public partnerships.

~~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 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 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.

*[The above strategy is now covered in Strategy 2 and occurs during the CAB process]*

#### *CAB Comments and Questions*

- OK thumbs up with the strategy changes suggested by the ABSI Team.

#### 3.) A successor group will be formally developed by the time the Plan is completed.

- Action 5. A.): The successor group actively engages with state programs to encourage their adoption of ABSI's long-term monitoring guidelines and metrics for assessing water quality, oyster abundance, and demographics and to regularly review and update these guidelines and metrics to maintain a healthy and sustainable oyster harvest and ecosystem.
- Action 5. B.): The successor group encourages agencies to prioritize the Plan's recommendations for investing more funding in the management and restoration of oyster resources.

*[The above 2 actions were previously strategies and are now under a single strategy #3]*

#### *CAB Comments and Questions*

- Change the strategy to "... will be formally developed and in place by the time the Plan is completed."
- Should the CAB form a Subcommittee to develop this strategy?
- CAB members expressed an interest in serving on a committee to develop recommendations on a successor group? Including Anita Grover, Shannon Hartsfield, Chad Hanson, Chad Taylor, Ricky Jones, Georgia Ackerman, Roger, Mathis.
- We need a state agency, County Commissioner (Ricky Jones?) and a Seafood dealer representative, GA.
- State govt will be involved but local people know-who needs to be represented on the group.
- Who will be responsible for getting the group started CT get the group started? It will be key to success of the CAB. Anita Grove and Shannon Hartsfield are willing to serve as- co chairs. The ABSI Team will help organize
- OK thumbs up with the strategy changes suggested by the ABSI Team.

## **GOAL D: AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC**

### **DRAFT 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. [Status: initiated]
- 2) Build, with the help of the CAB, community support and stewardship by educating stakeholders on the importance of maintaining healthy oyster reefs and by engaging them in the Bay restoration through a variety of hands-on programs.

*Action 2. A.):* Form a sub-committee within the CAB that can spearhead an outreach and community engagement effort **and develop a community outreach strategy** intended to inform and educate stakeholders and the public about the research, the Plan developing through ABSI, and focusing on a healthy ABS ecosystem. The intended audience includes local city, county, and state government officials, businesses and organizations, citizens of every age, and other interested stakeholder groups.

*Action 2. B.):* Define what makes a successful shell recycling program, and work with local groups, businesses and other stakeholders to help initiate its development.

*Action 2. C.):* Develop a “Bay Stewards” program to honor, reward, and provide incentives for businesses and individuals that demonstrate their stewardship of the resource.

#### *CAB Comments and Questions*

- OK thumbs up with the strategy changes suggested by the ABSI Team.
- 3) Support and participate in providing educational opportunities for students at all levels (primary & secondary school through college) ~~in fisheries ecology and management~~ to understand the value of their coastal ecosystems, importance of stewardship and ~~with particular emphasis on~~ the role oysters play in ecosystem health and fisheries.

**Action 3. A.):** Work with existing entities (e.g., [WeatherStem](#), [Scientist in Ever Florida School \(Florida Museum\)](#)) to expose more K-12 students to the research being conducted by ABSI.

**Action: 3. B.):** Provide training and financial support for new workforce entrants in the Franklin County Community through an aquaculture internship program.

**Action 3. C.):** Provide research opportunities for undergraduate and graduate students in science that supports the ABSI mission.

#### *CAB Comments and Questions*

- OK thumbs up with the strategy changes suggested by the ABSI Team.

## **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.*

### **A THRIVING ECONOMY CONNECTED TO A RESTORED APALACHICOLA BAY SYSTEM**

#### **DRAFT 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 monitoring<sup>1</sup> and enforcement programs continue with appropriate metrics to measure output from and impact of harvest on oyster reefs.
3. Support planning tied to economic indicators that consider future conditions (climate, SLR, reduced river flow) and their effects on the ABS.
4. Work with oystermen and other community stakeholders to promote post-recovery Apalachicola oysters.
5. Develop complementary industries in wild oyster harvest and oyster aquaculture that provide new economic opportunities by building a network of experts that can help Franklin County citizens build successful programs through business training, identifying sources of funding for equipment, and developing products that will enhance and diversify local industries.
6. Develop new markets for selling oysters to areas within and outside of Florida in part by investing in location (Apalachicola Bay) branding.
7. Review land development regulations to provide flexibility while supporting and enhancing efforts to maintain and revitalize working waterfronts in Apalachicola and Eastpoint to ensure preservation of Franklin County's cultural heritage and a viable seafood industry.
8. Coordinate with the local business community and governing bodies (i.e., city and county commissions) to ensure that growth management plans, land use and development regulations meet strong standards that are compatible with and minimize the environmental impact of industry and business activities within the ABS and are conducive to a healthy ecosystem.
9. Engage **commercial fishermen** in the restoration of the bay and encourage future participation in restoration such as shell recycling, shelling, and relaying.

#### *CAB Comments and Questions*

- OK thumbs up with the strategy changes suggested by the ABSI Team.

#### **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.
  - *Action: 4. A.):* develop an aquaculture internship program through ABSI that provides job training for young adults (18-25) in the Franklin County Community.

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<sup>1</sup> Ongoing fisheries-dependent and fisheries-independent monitoring by FWRI, coupled with ABSI complementary data based on request of watermen. Both entities are sharing data with one another which is critical for ABSI model development. (We remain unable to get FWRI data.)

- 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 and Questions*

- #1- Relates to Goal D action item- carry out with public surveys.
- The ABSI Public Engagement 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
- #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
- In terms of shell and live oysters, “a well managed oyster population” is the best strategy.
- OK thumbs up with the strategy changes suggested by the ABSI Team.

## **V. 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 over the previous meetings are found in *Appendix #6* and featured in yellow

## **VI. PUBLIC COMMENT AND NEXT STEPS**

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

The facilitator noted the Oystermen Workshop scheduled for December 2, 2020 in the afternoon. CAB members are encouraged to listen in, especially state agencies, but the workshop is primarily for hearing from the oystermen. He then reviewed the agenda for the 10<sup>th</sup> meeting scheduled for January 13, 2020. The plan is to initially to prioritize the CAB strategies and actions for the Plan’s goals and objectives. Members suggested briefing updating presentations on the modeling tools, ABSI research efforts and the FWC proposed closure of Apalachicola Bay to commercial and recreation harvesting oysters. The meeting adjourned at 12:15 pm.

## APPENDICES

### APPENDIX #1

#### MEETING PARTICIPANT LIST

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

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

<b>PROJECT TEAM AND FACILITATORS</b>	
<b>FLORIDA STATE UNIVERSITY</b>	
Sandra Brooke	Marine Biologist
Felicia Coleman	Marine Biologist
Madelein Mahood	Outreach and Education
<i>Gary Ostrander</i>	<i>Vice-President for Research</i>
<b>FCRC CONSENSUS CENTER, FLORIDA STATE UNIVERSITY</b>	
Jeff Blair	Community Advisory Board Facilitator

<b>Robert Jones</b>	<b>Community Advisory Board Facilitator</b>
<b>MEMBERS OF THE PUBLIC</b>	
<b>Scott Borsum</b>	<b>Ed Camp, University of Florida</b>
<b>Ross Ellington, FSU</b>	<b>Ken Jones, Rhumblin Consultants, Alternate for Chad Taylor</b>
<b>Steve Leitman, FSU</b>	<b>Cole Scott</b>
<b>Joel Trexler, Director, FSU Coastal and Marine Lab</b>	

**APPENDIX #2**  
**COMMUNITY ADVISORY BOARD AGENDA, NOVEMBER 12, 2020**

APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)  
<https://marinelab.fsu.edu/absi/>  
**ABSI COMMUNITY ADVISORY BOARD (CAB)**  
**MEETING IX—THURSDAY, NOVEMBER 12, 2020**  
**VIRTUAL MEETING VIA ZOOM WEBINAR**  
**MEETING ID: 973 7057 3213**

**ABSI COMMUNITY ADVISORY BOARD MEETING VIII OBJECTIVES**

- IV. To Approve Regular Procedural Topics (Meeting IX Agenda and Meeting VIII Summary Report)
- ✓ To Receive Project Briefings and Community Advisory Board Requested Presentations
  - ✓ To Discuss Strategy for Public Engagement
  - ✓ To Discuss 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—NOVEMBER 12, 2020**

1.)	8:30 AM	<b>WELCOME, REVIEW OF VIRTUAL MEETING PARTICIPATION GUIDELINES, AND ROLL CALL</b>
2.)	8:35	<b>AGENDA REVIEW AND MEETING OBJECTIVES</b>
3.)	8:40	<b>APPROVAL OF FACILITATORS' SUMMARY REPORT (OCTOBER 15, 2020)</b>
4.)	8:45	<b>REVIEW OF PROJECT MEETING SCHEDULE AND WORKPLAN</b>
5.)	8:50	<b>PROJECT BRIEFINGS AND REQUESTED PRESENTATIONS</b> <ul style="list-style-type: none"> <li>• <i>ABSI Science Update and Model Development.</i> Sandra Brooke</li> <li>• <i>ABSI-NFWF Shared Components and Restoration Schedule.</i> Felicia Coleman and Jim Estes</li> <li>• <i>CAB Timelines and Schedules Correlation Overview.</i> Sandra Brooke and Felicia Coleman</li> </ul>
	~9:45	<b>BREAK</b>
6.)	10:00	<b>PUBLIC ENGAGEMENT STRATEGY ON THE ABS PLAN DISCUSSION</b>
7.)		<b>A.) A HEALTHY AND PRODUCTIVE BAY ECOSYSTEM</b> <ul style="list-style-type: none"> <li>• Discussion of Strategies and Actions to Achieve Goal A</li> </ul>
8.)		<b>B.) SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES</b> <ul style="list-style-type: none"> <li>• Discussion of Strategies and Actions to Achieve Goal B</li> </ul>
9.)		<b>C.) A FULLY FUNDED ECOSYSTEM-BASED ADAPTIVE MANAGEMENT AND RESTORATION PLAN SUPPORTED BY APALACHICOLA BAY SYSTEM STAKEHOLDERS</b> <ul style="list-style-type: none"> <li>• Discussion of Strategies and Actions to Achieve Goal C</li> </ul>
10.)		<b>D.) AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC</b> <ul style="list-style-type: none"> <li>• Discussion of Strategies and Actions to Achieve Goal D</li> </ul>
11.)		<b>E.) A THRIVING ECONOMY CONNECTED TO A RESTORED ABS</b> <ul style="list-style-type: none"> <li>• Discussion of Strategies and Actions to Achieve Goal E</li> </ul>
12.)		<b>EVALUATION OF PERFORMANCE MEASURES</b> <ul style="list-style-type: none"> <li>• Review and Agree on Performance Measures for Evaluating Strategies</li> </ul>
13.)	~12:15	<b>PUBLIC COMMENT</b>
14.)	12:25	<b>NEXT STEPS AND AGENDA ITEMS FOR THE NEXT MEETING</b> <ul style="list-style-type: none"> <li>• Review of the CAB schedule of meetings</li> <li>• Watermen's Workshop participation and process overview</li> <li>• Review of action items and assignments</li> <li>• Identify agenda items and needed information and presentations for the January 13, 2020 CAB meeting</li> <li>• Meeting evaluation</li> </ul>
	~12:30 PM	<b>ADJOURN</b>



**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*

**a. 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>
4.2 of 5	6	4	3	0	0

**b. 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>
4.2 of 5	3	9	1	0	0

**c. 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>
4.4 of 5	6	6	1	0	0

**d. 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	4	7	2	0	0

**e. 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>
4.3 of 5	4	9	0	0	0

**f. 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>
4.5 of 5	7	5	1	0	0

**g. 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>
3.5 of 5	3	7	3	0	0

**h. 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>
4.5 of 5	7	6	0	0	0

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

- Sandra’s presentation was great and well received via Zoom. I think the format worked well as everyone had the ability to be heard and comment.
- I think Zoom would be fine for the meeting.
- : I think the Zoom works well

## Other Comments (Zoom Chat)

- Chad Hanson: Is there a time set for that watermen workshop on Dec 2?
- Chad Hanson: Sandra - does that salinity model at the two areas have data to validate the model, or is that primarily predictive?
- Chadwick Taylor: How is salinity measured in the water column for the model and is sea grass area/health a potential metric?
- Chadwick Taylor: In ACF issues Sikes Cut is an outsized perception, among others, what about historical bars and changes due to issues like Sikes, dredging, bridges, etc. in our work?
- Georgia Ackerman, Apalachicola Riverkeeper: Yes, Felicia please share that paper
- Maddie Mahood: Please take a minute to complete this quick survey:  
[https://ufl.qualtrics.com/jfe/form/SV\\_dmTq9lgB0arP7al](https://ufl.qualtrics.com/jfe/form/SV_dmTq9lgB0arP7al) Completing this survey each meeting helps us track how the CAB works. Ed.
- Georgia Ackerman, Apalachicola Riverkeeper: Agree with Jim!
- Georgia Ackerman, Apalachicola Riverkeeper: Being able to share the details upon request is important. Yes, there are those that want to wade into the weeds.
- Mike O'Connell: Felicia...Would you contact me when you have your sub-committee meeting
- Steve Rash: I am here but must have mute and no video.
- Chad Hanson: add: develop agency rules and policy that require shell retention and recycling for habitat replenishment through a fee or incentive program add: establish partnerships with local organizations, stakeholder groups, industry, universities in shell recycling programs
- Chad Hanson: strategy: Recommend policies and actions that retain and recycle shell for habitat replenishment in the ABS (as part of FWC's regulatory framework)
- Portia Sapp: 597.010 (23) OYSTER AND CLAM SHELLS PROPERTY OF DEPARTMENT.— (a) Except for oysters used directly in the half-shell trade, 50 percent of all shells from oysters and clams shucked commercially in the state shall be and remain the property of the department when such shells are needed and required for rehabilitation projects and planting operations, in cooperation with the Fish and Wildlife Conservation Commission, when sufficient resources and facilities exist for handling and planting such shell, and when the collection and handling of such shell is practicable and useful, except that bona fide holders of leases and grants may retain 75 percent of such shell as they produce for aquacultural purposes. Storage, transportation, and planting of shells so retained by lessees and grantees shall be carried out under the conditions of the lease agreement or with the written approval of the department and shall be subject to such reasonable time limits as the department may fix. In the event of an accumulation of an excess
- Georgia Ackerman, Apalachicola Riverkeeper: Thank you for putting our definition back up.
- Steve Rash: I am here
- Ricky Jones: My battery is almost dead. If I drop off you will know what happened. Thanks.
- Anita Grove: Here is a link the Swift Survey 1897
- <https://archive.org/details/reportofsurveyof00swif/page/218/mode/2up>

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

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

<b>Meeting IX.</b> Virtual Meeting	Nov. 12, 2020	Member-requested presentations. Agreement on Apalachicola Bay System Ecosystem-Based Management and Restoration Plan (Plan) recommendation framework. Public engagement on the Plan strategy discussion. Discussion of strategies, action steps, and responsible entities to achieve Goals. Public Comment.
<b>Oystermen's Workshop #1</b>	Dec. 2, 2020	Review strategies and actions with watermen and watermen input. In person meeting for watermen, virtual for all others.
<b>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</b>		
<b>Meeting X.</b> Virtual Meeting	Jan. 13, 2021	Member-requested presentations. Discussion of strategies, action steps, and responsible entities to achieve Goals. Public Comment.
<b>Public Workshop</b>	<i>TBD</i>	<i>Schedule &amp; format dependent on status of the COVID-19 pandemic.</i> Review and public comments on Vision, Goal Framework, Plan outline, and range of possible strategies for evaluation by CAB.
<b>Meeting XI.</b>	Feb. 24, 2021	Review of any public input on Draft Plan Framework and Goals. Review of scenarios and consensus rating of strategies and actions using decision-support tools relative to goals and objectives. Public Comment.
<b>Meeting XII.</b>	April 21, 2021	Review of scenarios and consensus rating of draft strategies and actions using decision-support tools relative to goals and objectives. Public Comment.
<b>Oystermen's Workshop #2</b>		Review draft Plan with watermen and watermen input.
<b>Meeting XIII.</b>	June 16, 2021	Review of scenarios and consensus rating of draft strategies and actions using decision-support tools relative to goals and objectives. Public Comment.
<b>Meeting XIV.</b>	Aug. 18, 2021	Continue review and consensus testing of Draft Plan and implementation strategies and actions, and agreement on Draft Plan for public comment. Public Comment.
<b>Public Workshop 2</b>	<i>TBD</i>	<i>Schedule &amp; format dependent on status of the COVID-19 pandemic.</i> Review and public comments on Revised Draft ABS Ecosystem-Based Management Plan and implementation strategies.
<b>Meeting XV.</b>	Oct. 20, 2021	Review of public comment, agreement on the ABS Draft Ecosystem-Based Management and Restoration Plan strategies and actions. Public Comment.
<b>Meeting XVI.</b>	Nov. 17, 2021	Complete Phase III of project- Management Plan delivered.
<b>PHASE IV—PLAN IMPLEMENTATION</b>		
	<b>TBD</b>	Restoration Component

**APPENDIX #5**  
**ABSI CAB VISION THEMES, GOALS, OUTCOMES** (AS OF NOVEMBER 12,2020)

*Below is a "Clean" version of the Objectives, Strategies and Actions agreed to during the November 12 CAB meeting*

## **SECTION I COMMUNITY ADVISORY GROUP DRAFT ABSI RECOMMENDATIONS**

### **OVERARCHING APPROACHES**

- 1) Use the following ABSI-approved name for the developing management and restoration plan: the Apalachicola Bay System Ecosystem-Based Adaptive Management and Restoration Plan (Plan).
- 2) 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.
- 3) Use only the best available science (including information derived from scientists, agency personnel and stakeholders) for all components of ongoing research, modeling exercises, and development of the Plan, including relevant information on adaptation to climate change impacts.

### **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 DRAFT STRATEGIES AND ACTIONS**

- 1) Use experimental evidence and habitat suitability analyses to determine the most suitable substrate (e.g., limestone, granite, spat-on-shell, artificial structures) for restoring, enhancing,

and/or developing new reef structures that will increase productivity in the Apalachicola Bay oyster ecosystem.

- *Action 1. A.):* Conduct restoration experiments to test efficacy of different materials, configurations, placement and seeding with hatchery spat.
2. Develop criteria for restoring specific reefs or reef systems damaged by environmental conditions or natural disasters.
    - *Action 2. A.):* Evaluate degree of damage and potential for recovery.
    - *Action 2. B.):* Develop an approach for mitigating damage (e.g., physical repair, spat supplements, or some combination of both).
    - *Action 2. 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 km<sup>2</sup>) 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 3. A.):* Map existing oyster reefs using multibeam sonar and backscatter, and ground-truth for accuracy.
    - *Action 3. B.):* Apply model (Ed Camp, UF) 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 4. A.):* Continue to monitor intertidal and sub-tidal reefs monthly and bi-annually using same protocols as FWC sub-tidal monitoring. Adjust to add metrics as needed. Data will be shared between FWC and ABSI.
    - *Action 4. B.):* Continue to monitor spat settlement around intertidal and sub-tidal habitats using same protocols as FWC. Data will be shared between FWC and ABSI.
    - *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 rock/shell/oysters, number of spat, medium and market sized live oysters and boxes together with environmental data.
    - *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.
    - *Action 4. E.):* Generate health indicators for ABSI using monitoring data, and other ecological factors (e.g. oyster-associated communities and structural complexity).
  5. Develop ecosystem models that forecast future environmental conditions and oyster population status.
    - *Action 5. A.):* Collect data needed by the models and follow up with testing the models to refine accuracy of output.
    - *Action 5. 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.
  6. Assess existing ecosystem services metrics used for other oyster studies and develop a list of ABSI specific metrics to assess change over time.

- *Action 6. A.):* Conduct literature review and work with Florida Oyster Recovery Science (FORS) working group to identify measurable indicators of changes in ecosystem services
- *Action 6. B.):* Integrate ecosystem services metrics into monitoring program.

## **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.<sup>2</sup>

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.

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<sup>2</sup> FWC's Rule 68B-27.013, F.A.C. (as modified in the proposed draft rule language presented at the July 22, 2020, commission hearing): "Apalachicola Bay" or "Bay" means all waters within St. George Sound, East Bay in Franklin County, Apalachicola Bay, St. Vincent Sound in Franklin County, and Indian Lagoon in Gulf County, including canals, channels, rivers and creeks.

- 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 DRAFT STRATEGIES AND ACTIONS**

1. Recommend specific criteria and/or conditions, with related performance measures for the reopening of Apalachicola Bay to limited wild oyster harvesting.
  - *Action 1. A.):* Use ABSI health metrics to develop criteria for opening wild oyster harvest.
  - *Action 1. B.):* Work with FWC & FDACS to ensure that definitions of oyster population health are not only based on harvest metrics.
2. Use 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.
  - *Action 2 A):* Engage local stakeholders in determining total coverage (how much to protect), placement (where to protect), and size (how large) of all proposed types of closed areas using gridded maps as well as distributions of selected fishery and ecologically important species.
3. Recommend in the Plan, management policies that require shell retention and recycling and habitat replenishment in the ABS
  - *Action 3. A.):* Obtain legislative support for statutes that support or require shell recycling and oyster habitat replenishment and provide support for partnerships. (e.g., Texas House Bill 51 (2017); North Carolina General Statute §130A-309.10 (2010); Maryland House Bill 184; Florida statute Chapter 157 (McClellan 1881).
  - *CAB suggested an additional Action B (agency rules and policy for shell retention and recycling) and Action C (partnerships)*
4. Define performance criteria for an oyster population that can sustain a pre-determined level of wild oyster harvest, with a stipulated number of harvesters (limited entry), and protocols to ensure sustainability.
  - *Action 4. A.):* Use all available scientific data to identify the oyster population abundance that can support sustainable harvest.
  - *Action 4. B.):* Use all available scientific data to identify percentage of productive reef area required to support sustainable harvest.
  - *Action 4. C.):* Use all available scientific data to identify annual; recruitment required to support sustainable harvest.
  - *Action 4. D.):* Use all available scientific data to determine amount and frequency of habitat replacement to maintain productive oyster reefs.
5. Work with FDACS to ensure that oyster aquaculture practices and locations in the Bay are compatible with the goals and strategies for restoration and management of the ecosystem and are compatible with wild fisheries and the important cultural role of a working waterfront and seafood industry.
  - *Action 5. A.):* Develop maps using FDACS data showing all aquaculture activities in the ABS, superimposed on existing maps of essential fish habitat and fishing activities to identify potential conflicts.



- *Action 5. B.):* Utilize habitat and activity maps from *Action 5. A.* to identify potential new oyster restoration areas.
6. Work with FWC Law Enforcement to develop enforcement strategies and appropriate penalties sufficient to deter harvest or sale of undersized oysters as well as violations that harm wild or leased oyster reefs and other natural resources, and that will support restoration efforts in the ABS.
- *Action 6. A.):* Develop strategies to increase FWC enforcement presence and number of checkpoints.
  - *Action 6. B.):* Develop strategies to ensure uniformity in the harvestable and marketable size of oysters.
  - *Action 6. C.):* Develop strategies to Limit oyster harvest to periods outside of peak spawning season.
  - *Action 6. D.):* Develop standards for a limited entry fishery.
  - *Action 7. D.):* Propose strategies to FWC and FDACs for implementation.

### **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.
  - *Action 1. A.):* Continue CAB meetings and public workshops as outlined in the FCRC proposal for 2021.

### **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.
  - *Action 2. A.):* The subcommittee will define a plausible scope of work for the successor group, including evaluating regulatory processes and engaging with and being accountable to decision-makers and the public for the actions laid out in the Plan and the implementation thereof.
  - *Action 2. B.):* The subcommittee will evaluate the best organizational structure for ensuring longevity of the successor group, including working under the auspices of a state agency, an estuary program, or private/public partnerships.
- 3) 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.
  - *Action 3. A.):* The successor group actively engages with state programs to encourage their adoption of ABSI's long-term monitoring guidelines and metrics for assessing water quality, oyster abundance, and demographics and to regularly review and update these guidelines and metrics to maintain a healthy and sustainable oyster harvest and ecosystem.
  - *Action 3. B.):* The successor group encourages agencies to prioritize the Plan's 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. [*Status: initiated*]
- 2) Build, with the help of the CAB, community support and stewardship by educating stakeholders on the importance of maintaining healthy oyster reefs and by engaging them in the Bay restoration through a variety of hands-on programs.
  - *Action 2. A.):* Form a sub-committee within the CAB that can spearhead an outreach and community engagement effort and develop a community outreach strategy intended to inform and educate stakeholders and the public about the research, the Plan developing through ABSI, and focusing on a healthy ABS ecosystem. The intended audience includes local city, county, and state government officials, businesses and organizations, citizens of every age, and other interested stakeholder groups.
  - *Action 2. B.):* Define what makes a successful shell recycling program, and work with local groups, businesses and other stakeholders to help initiate its development.
  - *Action 2. C.):* Develop a “Bay Stewards” program to honor, reward, and provide incentives for businesses and individuals that demonstrate their stewardship of the resource.
- 3) Support and participate in providing educational opportunities for students at all levels (primary & secondary school through college) to understand the value of their coastal ecosystems, importance of stewardship and the role oysters play in ecosystem health and fisheries.
  - *Action 3. A.):* Work with existing entities (e.g., WeatherStem, Scientist in Ever Florida School (Florida Museum) to expose more K-12 students to the research being conducted by ABSI.
  - *Action: 3. B.):* Provide training and financial support for new workforce entrants in the Franklin County Community through an aquaculture internship program.
  - *Action 3. C.):* Provide research opportunities for undergraduate and graduate students in science that supports the ABSI mission.

## SECTION II GOAL AREAS 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 (Goal D) are being moved to this category.*

## 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.

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

### **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.

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<sup>3</sup> Ongoing fisheries-dependent and fisheries-independent monitoring by FWRI, coupled with ABSI complementary data based on request of watermen. Both entities are sharing data with one another which is critical for ABSI model development. (We remain unable to get FWRI data.)

- 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.
  - *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) Work with State legislators and state agencies to develop funding strategies, and incentives for involving local watermen, seafood dealers, restaurants, aquaculture operations, and private citizens in oyster reef restoration efforts that will increase the viability of oyster resources.
  - *Action 5. A.):* Identify source of shell or other material

**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 km<sup>2</sup>), 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 km<sup>2</sup>)
- E. Density of live oysters, new boxes and dead shell (#/m<sup>2</sup>)
- F. Density of live oysters, including density of recruits and spawning adults (#/m<sup>2</sup>).
- 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.