

APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD

STRATEGY EVALUATION AND ACCEPTABILITY RATING WORKSHEET JULY 16, 2020—MEETING VI



FACILITATED BY JEFF BLAIR AND ROBERT JONES



**APALACHICOLA BAY SYSTEM INITIATIVE COMMUNITY ADVISORY BOARD
KEY TOPICAL ISSUES—STRATEGIES ACCEPTABILITY RATING WORKSHEET**

ACCEPTABILITY RATING EXERCISE OVERVIEW

During the fourth and fifth meeting Apalachicola Bay System Initiative (ABSI), Community Advisory Board (CAB) members were asked to propose an initial suite of strategies for achieving the objectives of Goal B. During the upcoming July 16, 2020 meeting, CAB members will be asked to propose strategies for the remaining Goals. During subsequent meetings, CAB members will be asked to continue their review of existing proposed strategies, propose any additional strategies for CAB consideration, and then rate the strategies for acceptability. Each strategy should be rated on its own merit, independently, rather than in relation to the other strategies. Initially, constraints such as funding and statutory authority should not be a limiting factor regarding whether a strategy has merit. Following discussion and refinement of existing strategies, members may be asked to revisit proposed strategies if requested by either a CAB or project team member. Members should be prepared to offer specific refinements to address their reservations.

Once rated for acceptability, strategies with a 75% or greater number of 4s and 3s in proportion to 2s and 1s (\geq a 3.0 average rating) will be considered preliminary consensus recommendations for inclusion in the final package of recommendations for the Apalachicola Bay System Ecosystem-Based Management and Restoration Plan. A lead entity and key implementation steps should be identified for each consensus level strategy.

At any point during the process, any strategy may be re-evaluated and rated at the request of any CAB or project team member. The status of a rated strategy will not be final until the final CAB meeting, when a vote will be taken on the entire package of consensus ranked recommendations for inclusion in the Plan. The following scale will be utilized for the rating exercises:

ACCEPTABILITY RATING SCALE	4= <i>Acceptable,</i> <i>I agree</i>	3= <i>Acceptable,</i> <i>I agree with minor reservations</i>	2= <i>Not Acceptable,</i> <i>I don't agree unless major reservations addressed</i>	1= <i>Not Acceptable</i>
-----------------------------------	--	---	---	---------------------------------

Please be prepared to state your minor and major reservations when asked, and to offer proposed refinements to the strategy to address your concerns. If you are not able to offer refinements to make the strategy acceptable (4) or acceptable with minor reservations (3) you should rate the strategy with a 1 (not acceptable).

CRITERIA TO CONSIDER FOR PROPOSING, EVALUATING, AND ACCEPTABILITY RATING STRATEGIES		
EFFECTIVE STRATEGIES ARE SMARTS		
CRITERIA		EXPLANATION
S	SPECIFIC	It is detailed enough so that anyone reviewing the <i>Strategy</i> will know what is intended to be accomplished.
M	MEASURABLE	The end result can be identified in terms of quantity, quality, acceptable standards, etc. You know you have a measurable <i>Strategy</i> when it states in objective terms the end result or product.
A	ATTAINABLE	The <i>Strategy</i> is likely to be implemented, and there are resources available, or likely to become available for implementing the <i>Strategy</i> .
R	RELEVANT	The <i>Strategy</i> is relevant, and if implemented it is likely to be successful in achieving the relevant goals and objectives of the ABSI.
T	TIME-FRAMED	There are milestones with a specific date attached for completion.
S	SUPPORT	There is commitment and support from key stakeholders and regulators for implementation of the <i>Strategy</i> .

STRATEGIES WORKSHEET OVERVIEW

This Worksheet will be used to guide discussions at Apalachicola Bay System Initiative (ABSI) Community Advisory Board (CAB) meetings. **All strategies** that were proposed by CAB members at meetings were evaluated by the ABSI Project Team (scientists and facilitators) and put into the following **categories**:

- I. Goal A: A Healthy and Productive Bay Ecosystem
- II. Goal B: Sustainable Management of Oyster Resources
- III. Goal C: A Thriving Economy Connected to a Restored Apalachicola Bay System
- IV. Goal D: An Engaged Stakeholder Community and Informed Public
- V. Goal E: Science-Informed Ecosystem-Based Management and Restoration Plan Supported by Apalachicola Bay System Stakeholders
- VI. Strategies Rated as Not Achieving Consensus
- VII. Strategies That Can't Be Evaluated using decision-support tools or other commonly accepted methodologies and practices
- VIII. Performance Measures

These categories will be reviewed and discussed at subsequent ABSI CAB meetings where they will be refined and could be combined with other categories or split into new categories as appropriate. The underlined strategies are being offered for discussion purposes by the ABSI Project Team (scientists and facilitators).

APALACHICOLA BAY SYSTEM INITIATIVE PROJECT BOUNDARY



Worksheets Returned By:

1. Georgia Ackerman
2. Anita Grove
3. Chad Hanson
4. Jenna Harper
5. Shannon Hartsfield
6. Chuck Marks
7. Roger Mathis
8. Vance Millender

I. GOAL A A HEALTHY AND PRODUCTIVE BAY ECOSYSTEM

VISION THEME A: The Apalachicola Bay System, including its oyster reef resources, is sustainably managed. Water resources and affected habitats are afforded adequate protection to ensure that essential ecosystem functions are maintained and a full suite of economic opportunities are realized.

GOAL A: The Apalachicola Bay System is a healthy and productive ecosystem that supports a vibrant and sustainable oyster fishery and other economically viable activities.

OUTCOME: By 2030, the Apalachicola Bay System is a healthy, productive and sustainably managed ecosystem that supports a viable oyster fishery while providing a broad suite of ecosystem services that, in turn, afford additional opportunities for sustainable economic development.

GOAL A OBJECTIVES

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

A1) To develop restoration and management plans for the ABS that consider regulatory changes and future environmental conditions, such as freshwater flow (quantity, timing, hydrodynamics), water quality (e.g., salinity and temperature), sea level, and habitat change.

ABSI Project Team proposed alternative A1) To develop restoration and adaptive management plans for the ABS that allow rapid changes to the regulatory framework to address changes in environmental conditions (e.g., freshwater flow, water quality), and habitat quality.

A2) To consider impacts from human activities and future climate scenarios that affect the health and restoration of the ABS ecosystem and address ways to minimize negative effects on the ABS ecosystem.

A3) To define measurable ecosystem services and ecological health indicators derived from Apalachicola Bay System recovery, with target and threshold levels identified.

A4) To define and quantify measurements of oyster reef and population conditions, with target and threshold levels identified

A5) To use observations, experiments and modeling efforts conducted through ABSI and related efforts to create decision support tools that will be used to identify viable strategies for restoration.

A6) To establish and implement policies and programs that provide the means to return a significant portion of the harvested oyster shell back to the ABS for recruitment substrate to enhance settlement and population productivity. *ABSI Project Team comment: This is covered in Goal B.*

ABSI Team proposes to move this from strategies to objectives: A7) To restore habitat in the Apalachicola Bay System that includes targeted ~~desired~~* quality and quantity of oysters across subtidal and intertidal habitats throughout the ABS. *[Hanson]

GOAL A STRATEGIES

The ABSI Project Team combined a number of strategies to create a revised list of eight strategies as follows:

- 1) Increase productivity of the Apalachicola Bay oyster ecosystem by restoring, enhancing, and/or developing new reef structures (some of which would be maintained as conservation areas**) based on experimental evidence for the most suitable substrate (e.g., granite*, spat-on-shell, artificial structures) and on habitat suitability analyses using the best available scientific information coupled with the knowledge and experience of managers and stakeholders. *[Mathis], **[Hanson]
- 2) (Related to strategy 1) Use decision support tools to develop permanently closed areas in strategic locations (e.g., near fully-open harvestable reefs, rotational reefs or that include newly placed restoration structures) as conservation areas that can provide spat locally and protect ecosystem function. [Hanson, Coleman]
- 3) Develop criteria for sustaining specific reefs or reef systems damaged by environmental conditions or natural disasters that includes (1) degree of damage and potential for recovery; (2) approach for mitigating damage (e.g., physical repair, spat supplements, or some combination of both); (3) periodicity of spat addition (e.g., annually or longer); (4) specific timeline for continuing the approach (e.g., 3 years or longer). This approach is not intended to create a put-and-take fishery.
- 4) Base all management decisions and monitoring requirements on high-quality scientific data. [Moved from Goal B]
- 5) Determine area (acres or km²) of healthy oyster reefs needed to ensure sufficient spat production that will support sustainability of oyster reefs and sustainability of a limited entry fishery throughout the ABS.
- 6) Identify monitoring needs for assessing the health of oyster populations, and detecting changes in environmental conditions and habitat quality (for oysters and other reef-associated species) over time.
- 7) Ecosystem models that forecast future environmental conditions should include the effects of climate change such as increasing sea level and ocean acidification; altered freshwater and salinity gradients, water temperatures, storm intensity and rainfall events, as well as the availability of freshwater. [Hanson/Hartsfield]
- 8) Continue to monitor for oyster diseases.

II. GOAL B

SUSTAINABLE MANAGEMENT OF OYSTER RESOURCES

VISION THEME B: A restored Apalachicola Bay System has resulted in a sustainably managed wild harvest oyster fishery while also providing opportunities for other economically viable and complementary industries, including tourism and aquaculture. This is accomplished by working collaboratively with stakeholders to create, monitor and fund a plan that ensures that protection of ~~the fishery and the habitat and the fishery it supports~~ is supported by science, stakeholder input, and industry experience, and is implemented in a manner that provides both fair and equitable access to and protection for the resource. *Changes proposed by the ABSI Project Team*

GOAL B: productive, sustainably, and adaptively managed Apalachicola Bay System supports sustainable oyster resources.

OUTCOME: By 2030, an engaged and collaborative group of stakeholders will have contributed to and helped spearhead a fully funded science-driven plan to sustainably manage oyster resources in the Apalachicola Bay System.

GOAL B OBJECTIVES

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

B1) To establish, implement, and evaluate a comprehensive monitoring plan for oyster resources for the ABS with strong coordination among the various entities conducting research in the Bay.

B2) To develop by year four (2022) of ABSI a science-based oyster recovery and* management plan for both commercial and recreational industries that has broad stakeholder and community support and can be implemented by the State of Florida (e.g., FWC, FDACS, State Legislature) for the ABS that considers, at a minimum: rotational harvest, open and closed areas (both permanent and seasonal), harvesting methods, limited entry, surcharge fees, shell recycling, and a shell budget.
*[Hanson]

B3) To develop regulations for oyster management that are well-enforced with penalties sufficient to deter violations and harm to the resource.

B4) To regulate the oyster aquaculture industry using best management practices that enable economic opportunities while preventing negative effects to the ABS ecosystem and its users.

GOAL B RECOMMENDATION

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

GOAL B STRATEGIES

The ABSI Project Team revised language and combined a number of strategies to create a revised list of eight strategies as follows:

- 1) The proposed oyster fishery closure in Apalachicola Bay will have well-defined boundaries (set by FWC in consultation with FDACS and contained within the Apalachicola Bay System as defined in FWC's Rule 68B-27.013, F.A.C.¹, a well-defined and transparent rationale for why the closure is needed (prepared by the ABSI science team in consultation with the ABSI CAB for dissemination to the community)[Ackerman], and specific criteria and/or conditions identified with related performance measures required for the reopening of Apalachicola Bay to limited* wild oyster harvesting. *[Hanson].
- 2) Develop long-term closed areas in strategic locations* to provide habitat for year-round protection for brood stock and enhanced spawning opportunities, using the best available scientific data and decision-support tools. *[Hanson]
- 3) Focus on developing a shell budget for maintaining reef habitat that will sustain healthy oyster populations and develop strategies for increasing the funding for and reclamation of local (ABS) shells from local watermen, restaurants, aquaculture operations,* and private citizens to supplement shelling of oyster bars and increasing the viability of the oyster resource *[Hanson]
- 4) Define performance criteria for an oyster reef that can sustain an oyster harvest of x bags/acre (e.g., 400 bags/acre).
- 5) Evaluate harvest strategies that include rotational and seasonal harvest areas, including specific area sizes, locations, longevity, and rotational periodicity.
- 6) Evaluate harvest strategies that include a limited entry wild oyster harvest and develop a protocols* to ensure sustainability prior to any decision to increase entry. *[Hanson]
- 7) Work with FDACS to ensure that oyster aquaculture practices and locations in the Bay are compatible with the goals and strategies for restoration and management of the ecosystem and are compatible with a wild harvest fishery. [Hanson]
- 8) Propose enforcement strategies that will support restoration efforts in the ABS by reducing poaching (e.g., through increased FWC enforcement presence and increased number of checkpoints) and ensuring uniformity in the marketable size of oysters for fishers and buyers.

¹ FWC's Rule 68B-27.013, F.A.C., within the area including St. George Sound, East Bay, Apalachicola Bay, and St. Vincent Sound and their canals, channels, rivers and creeks; and Indian Lagoon and its canals, channels, rivers and creeks.

III. GOAL C

A THRIVING ECONOMY CONNECTED TO A RESTORED APALACHICOLA BAY SYSTEM

VISION THEME C: 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 C: The broader Apalachicola Bay Region is thriving economically as a result of a fully-restored Apalachicola Bay System.

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

GOAL C OBJECTIVES

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

C1) To ensure that economic indicators of the commercial oyster fishery and associated industries in the ABS demonstrate increasing viability and growth over the course of the ABSI project by *year X*.

C2) To ensure that industries and businesses within the ABS are compatible with a healthy and well-managed ABS ecosystem.

C3) To develop growth management policies, plans and regulations affecting the ABS that are compatible with a healthy and well-managed ABS ecosystem while maintaining a thriving economy and supporting cultural heritage.

C4) To develop an oyster aquaculture industry that provides economic opportunities and is complementary to the wild harvest fishery.

GOAL C STRATEGIES

CAB Proposed Strategies:

- 1) Monitor key economic indicators for changes over time based on restoration efforts to the Apalachicola Bay System (ABS).
- 2) Work with existing partners to monitor and report on the economic benefits to a restored ABS including the Chamber of Commerce, Apalachee Regional Planning Council, and city and county staff. [Ackerman]
- 3) Develop monitoring programs and metrics to measure output/impact of harvest for oyster bars. [Grove]

- 4) Identify and monitor key economic indicators relevant to the commercial oyster fishery and associated industries in the region. [Hanson]
- 5) Support planning that considers future conditions (climate, SLR, reduced river flow) and their effects on the ABS. [Harper]
- 6) Work with watermen in the community to develop an oyster aquaculture-brand for the ABS that emphasizes clean water and local connection. [Ackerman]
- 7) Promote farmed oysters as product from Apalachicola Bay, in addition to promotion of local wild-caught oysters. [Hanson]
- 8) Develop an oyster aquaculture industry that provides new economic opportunities and is complementary to the wild harvest fishery. Find resources to fund education, businesses assistance and capital to make the transition. [Grove]
- 9) Create a comprehensive aquaculture training program that assists harvesters in transitioning in to aquaculture helping to diversify their current harvest. Program needs to include businesses training and funding for equipment. [Grove]
- 10) Find funds to develop aquaculture program and training. Pursue funding to help oyster harvesters purchase aquaculture equipment. [Grove]
- 11) Build network of successful aquaculture experts that can help the CAB build a successful aquaculture program. (Sea Grant, IFAS, U of Alabama). [Grove]
- 12) Research new aquaculture products that can be produced in Apalachicola Bay to enhance and diversify aquaculture industry. [Grove]
- 13) Develop new markets for selling oysters to areas outside of Florida. [Grove]
- 14) Invest in branding of Apalachicola Bay and the Apalachicola Oyster. [Harper]
- 15) Support efforts to maintain and revitalize the working waterfronts in Apalachicola and Eastpoint. [Harper]
- 16) Coordinate with the local business community and government bodies (i.e., city/county commissions) to ensure environmental impact of industry and business within the ABS are minimized and conducive to a healthy ecosystem. [Hanson]
- 17) Maintain strong land use and development regulations that ensure future uses of Apalachicola Bay are not adversely impacted by development projects. [Grove/Harper]
- 18) Amend local growth management policy plans as necessary to ensure local planning and building regulations meet strong standards compatible with a healthy ABS ecosystem. [Hanson]

IV. GOAL D

AN ENGAGED STAKEHOLDER COMMUNITY AND INFORMED PUBLIC

VISION THEME D: Stakeholders of the Apalachicola Bay System are committed to working together beyond the Apalachicola Bay System Initiative to disseminate relevant information and advocate for a sustainably managed oyster-based ecosystem. In so doing, the group will facilitate innovative research, development and implementation of best management practices and serve as a hub for information exchange as well as new innovation development*, education and communication opportunities. *[Grove]

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

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

GOAL D OBJECTIVES

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

D1) To establish and implement a coordinated outreach and education plan that increases public awareness and support for a healthy and well-managed ABS ecosystem.

D2) To ensure that businesses, industries, non-profits, and local governments are supportive and included in outreach and education efforts to generate and increase public awareness and support for a healthy and well-managed ABS ecosystem.

D3) To identify and pursue funding resources during and following the ABSI project that will help generate awareness, education, and support for a healthy oyster and ABS ecosystem.

D4) To improve and enhance public understanding of the issues important to health and restoration of the Bay as measured by public and stakeholder surveys and socio-economic indicators.

GOAL D STRATEGIES

CAB Proposed Strategies:

- 1) Form an outreach and education sub-committee from the CAB that can spearhead development of educational materials and an outreach plan. [Hanson]
- 2) Establish a CAB funding subcommittee that can identify and pursue potential funding mechanisms (e.g., surcharge fees, incentives) and resources to help with education and outreach efforts including ways to measure understanding. [Hanson]

- 3) Develop the structure the CAB needs to help it evolve in to a nonprofit 501c3 entity with representation from the local leadership, industry, harvesters, state agencies that is recognized by the state as the main entity overseeing the Bay Management Plan. [Grove]
- 4) Pursue funding to build the capacity of the organization and to ensure its longevity. Consider hiring a director to help sustain the CAB. [Grove]
- 5) Develop shell recycling program. Find funding to provide staffing to recycle shell and to provide incentives for shucking houses/restaurants to recycle shell (i.e., North Carolina). [Grove/Marks]
- 6) Engage fishermen in the restoration of the bay and encourage future participation in restoration such as shell recycling, shelling, and relaying. [Harper]
- 7) Build a program to educate harvesters on the importance of managing public oyster beds. [Grove]
- 8) Work with FWC to develop and implement program to protect wild and leased oyster bars. [Grove]
- 9) Honor and reward businesses (and individuals) that demonstrate stewardship and sustainable use of the ABS's resources ("Bay Stewards"). [Harper/Grove]
- 10) Decide key messaging for outreach & education plan. Related, identifying target audiences—who are we trying to reach. [Ackerman]
- 11) Coordinated media plan on key topics needed. [Ackerman]
- 12) Collateral ("marketing materials) published via print and electronic distribution. [Ackerman]
- 13) Develop educational material that includes the vision and goals of the ABSI project that can be communicated with local businesses, organizations, and citizens. [Hanson]
- 14) Develop an outreach plan to distribute and communicate project goals and objectives for a healthy ABS ecosystem and economy. [Hanson]
- 15) Support (education, training, financial) the development of alternative fisheries, aquaculture, and restoration science. [Harper]
- 16) Partner on new and existing grant opportunities. [Ackerman]
- 17) Identify education programs that would be beneficial to the industry, especially young entrants. [Ackerman]
- 18) Educate Franklin County youth on the history of the region, the fisheries and the value of the ABS. [Harper]
- 19) Continue and expand efforts to educate the public (residents and tourists) about the history of the region, the fisheries and the value of ABS. [Harper]

- 20) Plan how to get updates to community leaders and elected officials. [Ackerman]
- 21) Develop stakeholder and public surveys that can measure change in understanding of the issues important to the health and restoration of the Bay. [Hanson]
- 22) Lessons learned/learning from other places – build a community of practice (i.e., Gulf-wide) for communities interested in the restoration and revitalization of fisheries. Review best practices and outcomes and adapt successful techniques from other places/regions. [Harper]

Consider Strategies such as the following:

- A. **Collaboration.** Establish and communicate support* a long-term shared vision of success for oyster resources among stakeholders that can be sustained, implemented and strengthened into the future. *[Grove]
- B. **Existing Programs.** Collaborate with existing programs.
- C. **Education.** Support education in fisheries science and management.
- D. **Working Group Process.** The ABSI CAB itself represents an educational initiative and a forum for communication among stakeholders.
- E. **Develop Programs.** Identify and implement* education programs that would be beneficial to the industry, especially young entrants. [Grove]
- F. **Lessons Learned.** Look at lessons learned from other areas and fisheries in terms of how they addressed and solve issues around oyster resource management and education, such as Puget Sound, Virginia, Delaware, Maryland, Apalachicola, Gulf States, scallop and clam fisheries etc. Review best practices and outcomes and adapt successful techniques from other places/regions.
- G. **School Education.** Support the role of oyster resources and ecology for aquaculture and commercial fishing, education programs for primary & secondary school students along with help from community college.
- H. **Prioritize CAB Recommendations.** Prioritize CAB recommendations to invest more funding in the management of oyster resources.

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

VISION THEME E: The Apalachicola Bay System Ecosystem-Based Management and Restoration Plan is science-based and developed with engagement and support from the Apalachicola Bay System stakeholders and fully funded and informed by the best available science and other relevant socio-economic information.

GOAL E: The Apalachicola Bay System Ecosystem-Based Management and Restoration Plan is informed by the best available science, supported by the Apalachicola Bay System stakeholders, and is fully funded.

OUTCOME: By 2030, the Apalachicola Bay System is a productive and sustainably managed ecosystem. A fully funded and well-executed science-based Ecosystem-Based Management and Restoration Plan that incorporates the monitoring necessary for evaluation and adaptation is broadly supported by Apalachicola Bay System stakeholders with guidance from a permanent stakeholder advisory board.

GOAL E OBJECTIVES

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

E1) To ensure that the ABSI Community Advisory Board approves a stakeholder driven and science-informed Ecosystem-Based Management and Restoration Plan for the Apalachicola Bay System with broad community support by 2022 that is implemented.

E2) To ensure that the ABS Management and Restoration Plan has clearly defined performance measures used to monitor the health of the oyster resource and ABS ecosystem, including indicators of social and economic welfare of the area's coastal and surrounding communities.

E3) To encourage the State of Florida to accept, approve, adopt, and implement the ABS Management and Restoration Plan.

E4) To encourage agencies and other entities responsible for implementing the ABS Management and Restoration Plan to work in close coordination.

E5) To identify funding sources and define mechanisms for full implementation of the ABS Management and Restoration Plan.

E6) To establish a fully funded permanent, representative stakeholder process to monitor the long-term implementation of the ABS Management and Restoration Plan.

GOAL E STRATEGIES

CAB Proposed Strategies:

- 1) The draft ABS Management and Restoration Plan is presented to the public 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. [Hanson]
- 2) Continue to have an open and transparent process for the development of the Plan with many opportunities for stakeholder engagement and input. [Harper]
- 3) A subset of CAB members will form a subcommittee to explore regulatory processes and will engage and coordinate with the appropriate government agencies and officials to implement the ABS Plan. [Hanson]
- 4) The ABS Plan will incorporate scientific derived performance criteria, such as water quality, oyster abundance and demographics, socio-economic, that will be monitored and used to adaptively manage the oysters and ABS in general. [Hanson]
- 5) Develop water quality strategies as common ground that can address pollution impacts on the oyster resource. [Grove]
- 6) A coordinated long-term monitoring and research plan will be fully funded and implemented to maintain healthy and sustainable oyster and other resources in the ABS. [Hanson]
- 7) Need to have regular reviews of management plan that is accepted and have a plan for maintaining the committee via organizational documents- bylaws, etc. [Grove]
- 8) After the Plan is completed, the Advisory Board should transition to a Task Force that is accountable to decision-makers and the public for the actions laid out in the management plan. [Harper]
- 9) The Plan should be reviewed and modified regularly to ensure progress toward goals (adaptive management). [Harper]
- 10) Develop performance measures for gauging the health of the resource and the health of the economy. [Grove]
- 11) Work with the state agencies to ensure they will accept, approve, adopt, and implement the Plan. [Ackerman]
- 12) Regular updates on the progress of the Plan should be provided to decision-makers and the public. [Harper]

VI. STRATEGIES RATED AS NOT ACHIEVING CONSENSUS

VII. STRATEGIES THAT CAN'T BE EVALUATED USING DECISION SUPPORT TOOLS

VIII. PERFORMANCE MEASURES

A.) A HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM

Related Draft Performance Measures to Evaluate Strategies/Options

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

- Y. Relative proportion of nitrogen removed compared to nitrogen input
- Z. Assess changes in coastal vulnerability indices (e.g., indices of shoreline erosion, which are related to changes in saltmarsh, mangrove, seagrass habitat, but also vulnerability to storms).
- AA. Assess changes in shoreline erosion protection
- BB. Assess changes in salt marsh, mangrove, and/or seagrass indices.
- CC. Number of sloughs connected to the Apalachicola River (depending on flow levels).

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.) 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).

D.) 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.

E.) The Ecosystem-Based Management and Restoration Plan

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