

**APALACHICOLA BAY SYSTEM INITIATIVE
FLORIDA STATE UNIVERSITY**

STAKEHOLDER ASSESSMENT REPORT



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TABLE OF CONTENTS

<i>TABLE OF CONTENTS</i>	<i>1</i>
I. CONTEXT FOR ABSI	2
<i>A. CONTEXT AND HISTORY</i>	<i>2</i>
<i>B. APALACHICOLA BAY SYSTEM INITIATIVE</i>	<i>3</i>
<i>C. ABSI COMMUNITY ADVISORY BOARD</i>	<i>3</i>
II. STAKEHOLDER ASSESSMENT- CHALLENGES, RESEARCH GAPS AND STRATEGIES	4
<i>A. INTRODUCTION</i>	<i>4</i>
<i>B. KEY ABSI CHALLENGES AND ISSUES IDENTIFIED IN THE ASSESSMENT</i>	<i>5</i>
1. <i>Introduction</i>	<i>5</i>
2. <i>Key Challenges and Issues</i>	<i>5</i>
<i>C. STAKEHOLDER IDENTIFICATION OF ABSI SCIENCE AND DATA GAPS</i>	<i>9</i>
1. <i>Introduction</i>	<i>9</i>
2. <i>Key Science and Data Gaps</i>	<i>9</i>
<i>D. POTENTIAL STRATEGIES AND OPTIONS TO ADDRESS KEY ABSI CHALLENGES AND ISSUES IDENTIFIED IN THE ASSESSMENT</i>	<i>11</i>
1. <i>Introduction</i>	<i>11</i>
2. <i>Key Potential Strategies and Options</i>	<i>11</i>
III. ASSESSMENT FINDINGS	13
<i>A. ABSI FINDINGS</i>	<i>13</i>
IV. COMMUNITY ADVISORY BOARD RECOMMENDATIONS	15
<i>A. INTRODUCTION</i>	<i>15</i>
<i>B. RECOMMENDATIONS</i>	<i>16</i>
<i>C. COMMUNITY ADVISORY BOARD MEMBERS</i>	<i>16</i>
V. NEXT STEPS	17
 ATTACHMENTS	
1. <i>STAKEHOLDER ASSESSMENT INTERVIEW PARTICIPANTS</i>	<i>18</i>
2. <i>ABOUT THE FCRC CONSENSUS CENTER</i>	<i>20</i>

FLORIDA STATE UNIVERSITY STAKEHOLDER ASSESSMENT REPORT

I. CONTEXT FOR APALACHICOLA BAY SYSTEM INITIATIVE (ABSI)

A. CONTEXT AND HISTORY

The Apalachicola watershed is a biologically rich and economically important habitat that is one of the most diverse and productive estuarine systems in the Northern Hemisphere. The Apalachicola Bay has historically supplied 90% of the oysters for the state of Florida and 10% of the oysters for the entire United States. In addition to being economically important, oysters serve as valuable ecosystem engineers through modifying flow, filtering water, and enhancing diversity by providing three-dimensional habitat for hundreds of species. The quantity and quality of freshwater that supplies the system is critical to the social, economic, recreational, educational, and environmental health of the tristate (Alabama, Georgia, and Florida) region generally, and to the state of Florida and the Apalachicola Bay specifically. In addition, water quality and quantity are equally important to the rare, endemic, threatened, and endangered plant and animal species that reside within the Apalachicola River basin. The estuarine waters of the System provide critical foraging and nursery habitat for diverse fish and invertebrate assemblages that are both ecologically and economically important. In addition, the health, productivity and sustainability of the Apalachicola River, the Floodplain, the Bay, and the Gulf are critical to the Region's economy and cultural heritage.

Oysters form an important component of the Apalachicola Bay System and other salty or brackish waters along all U.S. coasts, clustering on older shells, rocks, piers, or any other hard, submerged surface. Larval oysters swim through the water column for the first few days of their lives before settling on hard substrate. They are attracted to particular sites based on light, temperature, salinity, texture and other chemical cues, and remain on those sites for the rest of their lives. Once a larva attaches to the substrate, or cultch, it is called a spat and will begin growing into an adult oyster.

As they grow, settled oysters fuse together, forming rock-like reefs that provide nursery habitat and refuge from predators for other marine organisms, including recreational and commercially important species of fish and invertebrates. They also provide a suite of ecosystem services that benefit human populations as well as their own environment. Oyster reefs protect coasts from ocean acidity and serve as natural breakwaters buffering waves, reducing erosion and creating calmer waters that support the growth of coastal marshes and seagrass beds. Oysters are also extremely effective filter feeders, improving their surrounding water quality and clarity, and further enhancing the health of the waters within which they reside. They filter plankton, nitrogen, and other pollutants from as much as 50 gallons of water per day, providing an enormous benefit to coastal waters that are increasingly impacted by runoff and pollution.

Stakeholders interviewed during the Apalachicola Bay System Initiative (ABSI) assessment identified a range of issues and concerns related to the disappearance of oyster reefs, and declining fisheries, and the overall declining health of the Apalachicola Bay System (ABS) based on their personal observations and experiences, as well as research conducted in the ABS over the years. Problems they identified include reduced water flow from the Apalachicola-Chattahoochee-Flint (ACF) River Basin; increased salinity and salinity fluctuations, predation and disease; nutrient loading from non-point sources including septic, sewage, and stormwater systems; inadequate fishery management,

regulations, and monitoring leading to over-fishing, loss of habitat and cultch; spat limitation, the use of dispersants during the Deepwater Horizon oil spill disaster, hurricanes and other natural disasters, and changing economic drivers corresponding with changes in land use. Most stakeholders report that they noticed a major decline in the health of the ABS beginning in 2012.

B. APALACHICOLA BAY SYSTEM INITIATIVE

In response to the rapidly declining health of the Apalachicola Bay System and the collapse of the oyster fishery and reefs therein, Florida State University sought and was awarded a grant from Triumph Gulf Coast Inc. to undertake a series of scientific approaches intended to aid in the development of an ecosystem-based oyster management and restoration plan for the Apalachicola Bay System. The plan will be informed by science while involving representative stakeholders and the public in its creation, development and implementation by state and federal management agencies. Developing such a plan will help the state agencies responsible for marine resources improve the overall health and the rich biological diversity of the bay, including that of other ecologically and economically important species. Because oyster populations are declining in estuaries across the Florida panhandle, ABSI project leads will work with scientific, non-profit and governmental entities working on similar issues throughout this region to develop a consistent oyster management framework.

The vitality of Apalachicola Bay is key to the socio-economic prosperity of Franklin County and the surrounding area. Specifically, as the bay's health has declined, so has the area's once-booming oyster industry, resulting in widespread job loss and increased economic insecurity for many Franklin County residents whose livelihoods are tied to the Bay.

Florida State University is uniquely positioned through its Coastal and Marine Laboratory to investigate what precipitated the dramatic decline of the Apalachicola Bay System, and to determine a course of action for improving its condition.

C. ABSI COMMUNITY ADVISORY BOARD

A key component of the ABSI project is to involve stakeholders in a meaningful consensus building process for development and implementation of an ecosystem-based oyster management and restoration plan. ABSI will convene a Community Advisory Board (CAB) consisting of representative members of the stakeholder groups in the Apalachicola Bay System, who will provide input into the initiative. The CAB composition, determined at the outset of this multiyear project, is informed by an independent assessment made through meetings, interviews, and review of documentation with local government, natural resource management and economic development agencies, and stakeholders representing a variety of perspectives, including local businesses and conservation organizations, and those involved in or supporting fishing and aquaculture activities.

The CAB will provide input to the ABSI Executive Committee and Research Team on planning and executing research, management and restoration project objectives. The CAB will be a vital communication link (disseminating information and soliciting feedback) between the ABSI and a broader stakeholder community and the public.

The FCRC Consensus Center at Florida State University was retained by Florida State University to serve as neutral third party facilitators, and to conduct the Assessment, recommend stakeholders to serve on the CAB, design a fair and transparent consensus-building process, facilitate and report on CAB meetings, and to deliver the CAB's consensus recommendations to FSU and other agencies as appropriate.

II. STAKEHOLDER ASSESSMENT – CHALLENGES, ISSUES, GAPS & STRATEGIES

A. INTRODUCTION

The over 60 stakeholder and agency interviews and meetings identified a range of key challenges and issues during the assessment interviews that they believe should be addressed in the Initiative and by the Community Advisory Board (CAB). The interviewers asked the following open-ended questions:

1. From your perspective, what are the most challenging issues impacting fisheries, and habitat in the ABS specifically, and the health of the Apalachicola Bay System generally?
2. What in your view is the single most important issue that ABSI should address as it develops a science based management plan for the Bay?
3. Do you have any specific suggestions or options you would want the CAB to consider for enhancing oyster landings, habitat, ecosystem outcomes, and social benefits for a healthy Apalachicola Bay System?
4. What are the science gaps that stakeholders and managers will need to bridge to improve the management of oysters and oyster reefs, and other marine life in the Apalachicola Bay?

Many of the fishery and habitat issues, and water and land interface challenges identified are interrelated. The challenges and issues below are listed in order of frequency mentioned in the interviews, and not in priority order.

The Community Advisory Board that will be convened by Florida State University will need to understand the range of issues, and agree on the short, mid, and longer-term priorities for actions informed by science that can restore the health of the System and the oyster reefs.

B. KEY CHALLENGES AND ISSUES

1. Introduction

The over 60 stakeholder and agency interviews and meetings identified a range of key challenges and issues during the assessment interviews that they believe should be addressed in the initiative and by the Community Advisory Board. According to the stakeholders interviewed there are a myriad of factors impacting the System that will need to be evaluated based on good science and data including reduced water flow from the Apalachicola-Chattahoochee-Flint (ACF) River Basin; increased salinity and salinity fluctuations, predation and disease; nutrient loading from non-point sources including septic, sewage, and stormwater systems; inadequate fishery management, regulations, and monitoring leading to over-fishing, loss of habitat and cultch; spat limitation, the use of dispersants during the Deepwater Horizon oil spill disaster, hurricanes and other natural disasters, and changing economic drivers corresponding with changes in land use, and the lack of systematic monitoring and responding to environmental changes in the System.

2. Key ABSI Challenges and Issues

The following ABSI key challenges and issues are listed in order of frequency mentioned and not in terms of priority.

KEY ISSUES THE ABSI COMMUNITY ADVISORY BOARD SHOULD ADDRESS	
<i>Listed In order of frequency from the interview responses</i>	
1.	Oyster reefs: suitable locations, heights, substrate, and salinity (66)
2.	Water quantity and timing: fresh water flow, quantity, timing, salinity balance, predation and drought (39)
3.	Lack of a holistic, sustainable Apalachicola Bay management plan informed by science (38) Overharvesting, and considering managing a limited effort oyster fishery (38)
4.	The emergence of aquaculture, and its relationship to wild harvesting in the ABS (34)
5.	Oysters and Bay in decline: after the perfect storm (29)
6.	Sustainability as a community: culture, economy, education, and retraining (27)
7.	Land use, development, and tourism impacts on the fishery and Bay System (24)
8.	ABSI process and consensus (21)
9.	Impacts of silviculture (after Hurricane Michael) and upstream agriculture (15)
10.	Enforcement of regulations (14)
11.	Larvae/spat/spawning (13) Water wars (ACF) (13)
12.	Hurricane Michael and resiliency in the ABS (12)
13.	Politics and managing the ABS (11)
14.	Bob Sykes Cut (10)
15.	Water quality in the ABS (8) Deep Water Horizon Spill (8)
16.	ABSI: the get something done project (7)
17.	Shift in Community Perspectives on the health of Apalachicola Bay (6)
18.	Climate change and ABSI (5) Dredging and flushing (5)
19.	Ecosystem benefits of oysters (4)

Decline of the oyster reef system. All those interviewed acknowledged the decline in the oyster reef system, and the fisheries dependent on these reefs, with the last 8 years witnessing a collapse of the System. Some believe that the Bay has crossed a threshold. “We are in a death spiral with Eastpoint oyster houses closing,” one remarked. Another suggested, “We are past the perfect storm with a mixed bag contributing to the decline including reduced river flow, drought, increase in salinity, disease, and predation.” Research on this decline suggests multiple causes such as lack of fresh water and the resulting salinity fluctuations, lack of nutrients from the river system, sedimentation, deterioration of reef systems and suitable substrate, overharvesting, climate patterns such as drought and rising sea level, among others. A few believe the Bay was adversely affected by the use of dispersants, while others note there were no dispersants applied in the Bay, and that there is quick dispersant dissipation.

Dependence on a healthy Bay system. Many suggested making the connection clearer that recreational fishing, diving, and tourism are dependent on a healthy Apalachicola Bay System generally, and restoration of oyster reef systems and clean water specifically.

Focus on reef habitat. Nearly all stakeholders suggested that efforts should be directed towards restoring and creating new oyster reef habitat and substrate; however, location, height, density, etc. should be supported by sound science and research. Recent efforts have demonstrated that getting the substrate right is a complex endeavor and will require more sophisticated habitat suitability models. Science is emerging that can provide habitat suitability findings to inform management decisions on suitable locations, heights and density, and materials based on substrate, salinity and fresh water, predation, and sedimentation.

Among other issues identified are securing the funding to restore and manage the Apalachicola Bay reef system, and building on some of the previous work in creating an active oyster shell recycling system. Many believe the recent shelling efforts were not successful in providing new oyster habitat, and were not sufficiently informed by science in terms of practices, material, locations, and training for those participating in the shelling initiatives.

Lack of fresh water. Lack of fresh water, based on drought and management, produced cascading impacts on oyster reefs and the broader ecological habitat, and adverse social and economic impacts changing the face of the community. Stakeholders generally agreed that the hydrological connections need to be restored in the System, and the oyster reefs need the right flows at the right times to thrive. Stakeholders agree that mapping the current network of oyster reefs should help to identify where oysters are growing now. Lack of freshwater flow may shrink the areas where the oysters are able to grow, and historical reef systems may not necessarily be the best locations.

Status quo is failing. Many agree that a return to historic wild oyster harvest levels is unlikely, at least in the short-term. Most stakeholders agreed that the status quo is failing, if not failed, and part of this is a disjointed regulatory framework, and a lack of a holistic, and sustainable Apalachicola Bay management plan informed by science. One stakeholder remarked, “While oysters are the “canary” indicator species, we need to get away from oyster fishery thinking, and instead think of the Bay ecosystem holistically with management accounting for all fisheries.”

Agreeing on management objectives. There are presently no agreed upon defined management objectives for the system, and stakeholders have not had an organized systematic opportunity to reach consensus on how to balance potentially conflicting objectives. Many agreed that sustainable fishery management changes are needed. Long time oystermen and women interviewed appeared more supportive of targeted regulatory actions.

Oysters and resiliency. A new development in the community is the appreciation among stakeholders of the role of oyster reefs in the system for retaining resiliency in the habitat, and the need for adaptive management strategies following the Deep Water Horizon explosion and spill, the ACF water wars, the dramatic decline in oyster bars, and Hurricane Michael more recently.

Silviculture and agricultural impacts on the Bay. The post Hurricane Michael era will involve a changing silviculture industry landscape, potentially shifting from timber to range lands, and with potential impacts to upstream forest flood plain, hydrology and water quality issues, as well as new pressures for development. A number of stakeholders noted the importance of considering impacts of upstream silviculture and agriculture in the System. Some noted that agriculture in Florida has made progress in using best management practices for precision center pivot irrigation.

Emergence of aquaculture. Many stakeholders remarked on the changing views toward, and emergence of aquaculture and its relationship to wild harvesting in the ABS. There was acknowledgement that aquaculture can help take the pressure off the Bay in terms of wild harvesting, and contribute to providing the time needed for the restoration of habitat to produce spat in the system. Aquaculture is presently only emerging as an enterprise and nascent presence, and has significant capital barriers to entry. However, several noted tensions and concerns with aquaculture potentially interfering with access to other fisheries such as red fish and reef fish, and more generally concerns about privatizing the Bay System. Others expressed concerns that aquaculture could detract from wild harvesting by using potential reef habitat. Some believed the relatively high capital costs of entry could be mitigated by providing employment opportunities to those in the oyster and seafood industry.

Limiting entry. There was a surprising openness among many stakeholders to evaluating a limited entry management system for wild harvesting, and for closing the Bay or portions of the Bay for a period of time to allow recovery. However, many believe that acceptance of restrictive regulations, and significant penalties for violators will need the broad support of the fishing industry, the community, judges and elected leaders in Franklin County. Many traditional oystermen believe overharvesting of the wild fishery will continue to be a problem even in a limited entry fishery, as one stakeholder noted, “If the ABS is brought back, we will need to deal with overharvesting.”

Community and economic sustainability. There is real concern regarding the sustainability of Franklin County as an oyster community (“the oyster capital of Florida”) in terms of culture, generational issues, the economy, education, and retraining. Historically the economic backbone of the ABS has been seafood. However tourism in recent years has provided substantial revenue and economic opportunities.

Many believe there is a perception that oysters are for harvesting and extraction and, “the Bay will fix itself,” has meant there has been less attention paid to protecting and conserving the oyster habitat, and to its contribution to resiliency and water quality. There is a cultural challenge and

impediment with the current collapse of oysters in the System, and the need for more restrictive resource management to reverse the decline. However, based on the stakeholder interviews, there is a perceptible shift in opinion with “oystering” increasingly viewed as an economy of last resort with low capital entry requirements, and few business and industry regulations. Several noted that retraining and education opportunities should, wherever possible, take advantage of and retain the Community’s cultural heritage of working on the water and in the Bay.

Many stakeholders pointed out that there are three legs to the current economy in the ABS: the tourist trade, the housing trade (low density), and seafood production. If there wasn’t a functioning seafood industry, there would be pressure to alter land use patterns for the area increasingly dominated by tourism. One stakeholder remarked, “If we lose the fishery-based industry and economy, there is no incentive to not go the touristy route for development in the future.” Conservative development policies (low density, high quality, strict building codes, wetland protections, etc.) in Franklin County have been designed to protect the seafood industry and as a consequence the Bay, but may be subject to pressures to change in the near future. In Franklin County 85% of the land is in public ownership, currently with an orientation towards conservation in the ABS.

Growth and development. Stakeholders generally believe that the growth and development impacts to date, such as stormwater runoff and wastewater seepage, have not adversely affected the Apalachicola Bay system’s overall water quality. However additional future growth may require that measures be taken to protect water quality in the Bay system. Several pointed out that other bays and oyster reefs around the world have declined as a result of increasing development.

Actions needed, but informed by science. Stakeholders share the desire to promote and catalyze actions on the ground, and ensure there is funding to advance and implement the resulting plan. Many stakeholders stated they are frustrated with the lack of actions to restore the health of the Bay system, and some feel that, “the Bay has been studied to death.” However, there is general stakeholder support that the management and restoration options and actions will need to be evaluated, debated and agreed upon based on the best available science and data.

Consensus on a vision of success based on science, and an action plan. Many stakeholders were skeptical about a process designed to achieve consensus, one remarked, “We’ve been down the consensus building road before and we didn’t get there.” However, all were supportive of creating a forum that is informed by science (“Give me the facts, and let’s find solutions,”) and “where all voices are engaged in work that produces actions to support and improve the health of the Bay.” Several noted it will be important to build trust among stakeholders, and to learn together what is known and what uncertainties exist, and to have a shared definition of the problems facing the System. The process will be designed to reach consensus on what success looks like, and the goals, objectives and actions that can positively impact the condition of the Bay and its oyster reef systems, and to the metrics that will measure when success has been achieved. As one stakeholder noted, “We are in such a hole that this needs to work if we are going to have the Bay recover.”

C. STAKEHOLDER IDENTIFICATION OF ABSI SCIENCE AND DATA GAPS

1. Introduction

Stakeholders were asked to identify any science gaps that stakeholders and managers will need to bridge to improve the management of oysters and oyster reefs, and other marine life in the Apalachicola Bay.

2. ABSI Science and Data Gaps

The following ABSI science and data gaps identified by stakeholders are listed in order of frequency mentioned and not in terms of priority.

MOST FREQUENTLY MENTIONED ABSI SCIENCE AND DATA GAPS	
<i>Listed In order of frequency from the interview responses</i>	
1.	Access to and coordination of monitoring and scientific data ¹ (24)
2.	Research on rebuilding substrates for reefs (20)
3.	Oyster bar mapping and surveying (9) Water quality research and monitoring (9)
4.	Habitat suitability analysis (8)
5.	Restoration to sustainable conditions and science (7) Research on larval transport and spat survival (7)
6.	Flow and adaptability of oysters (6) Modeling and quantitative tools to analyze management strategies (6) Thresholds for sustainable rates of harvest (6)
7.	Fishery independent and dependent data (5)
8.	Causes of the ABS resource collapse post 2012 (3) Climate and rising water levels in managing the ABS (3)
9.	Research on climate and rising water levels in managing the ABS (2) Stock assessment (2) Research on predators (2)
10.	Shrinking bio-diversity (1) Economics of the fishery (1) Characterizations of ABS marshes and seagrass (1) Why are juvenile oysters dying (1) Historic ecological productivity of the ABS (1) Understanding connections with oysters in the broader Gulf Region (1) Impact of groundwater withdrawals outside of the ABS (1)

Management plans in the ABSI. Some suggested it will be important to understand the assumptions, uncertainties, and data sets used to support different management plans in the System. Other areas where there may be data gaps include historic oyster reef systems, substrate status and location, changing salinity levels, a hydro-dynamic model of the system, causes for the decline of the System, and the ecosystem services provided by restoring the oyster reefs.

¹ ABSI data will be publicly available through a web interface.

Access to science. Access to and coordination of monitoring and scientific data was mentioned most often in terms of science and data gaps. Many stakeholders pointed to problems with transparency in the sharing of monitoring and scientific data that has been collected by government agencies. Some attributed this to the ongoing ACF lawsuit. One stakeholder remarked, “We really don’t know what the fishery looks like.”

Insufficient monitoring data. The critical importance of monitoring, and data to map and provide the information for spatial planning that can inform habitat suitability models for oyster reefs in the ABS was noted by many of those interviewed. Some believe that current monitoring and data (e.g. fishery population surveys) is not sufficient to support management changes, and that real time monitoring on flow, water quality, and other conditions in the Bay should be a priority action emerging from this plan. Others pointed to a need for a comprehensive updated survey of natural and restored reefs and more intensive monitoring of individual bars².

Coordination of data. Many of those interviewed suggested there was considerable data being collected, however there was little effort to target and coordinate the data needed to assess the health of the Bay System. Many suggested that coordination of data is the issue and that there is plenty of collection, but less sharing and analyzing. Some noted that the Apalachicola Riverkeeper organization has played a constructive role in brokering and coordinating access to accurate information for the public.

Research on rebuilding reefs. Many stakeholders pointed to the importance of supporting research on rebuilding substrates for reefs and agreed that the apparent loss of shell and substrate, and bottom changes were a key concern and consideration in restoring the health of the Bay. Some of the research questions posed related to what is known about the timing (before or after the spat season), where we currently have shell, the proper cultch material, where to place, the density and height of reefs, and the impact of sedimentation were raised in the interviews.

Oyster bar mapping. All stakeholders supported improving the oyster bar mapping and surveying to help inform the goals, objectives and the implementation of the management plan. Some suggested ABSI should address the current limitations of survey technology and equipment. Many indicated that a habitat suitability analysis is critical for any restoration recommendations.

Restoration research. Restoration research is needed to support adaptive management of the System. One stakeholder indicated the urgency remarking, “We need a blitzkrieg of restoration research done on the Bay.”

Establish thresholds for sustainable harvest. Stakeholders wanted to know how from year to year science could inform management decisions on the thresholds for a sustainable harvest.

Research on larval transport and spat survival. Many agreed that a key to a healthy Bay System generally, and oyster reefs specifically, is a better understanding of larval transport and spat survival.

² While this is being done, the data are not made available.

Research on upstream impacts on the Bay. Stakeholders noted there are many hydrological relationships that have been altered by changes in the upstream floodplains due to Hurricane Michael.

Research on oysters and fresh water flow. Stakeholders posed some research questions such as: What fresh water flow is needed for stable salinity and a healthy bay? Is it possible to improve oyster tolerance to salinity fluctuations or changes? Can oysters survive in the status quo fresh water flows? Has existing data on flow, and river discharge been analyzed to address uncertainties?

Modeling and quantitative tools to analyze management strategies. It will be important to develop and use modeling tools to analyze alternative management strategies. Important questions for modeling capabilities include whether: we will have a hydrologic model of the system; are there salinity models that can provide management guidance to effectively restore sustainable oyster reefs; what economic analysis is available, or needs to be developed to understand the fishery and its place in the local economy; are we able to model oyster population dynamics and larval transport; do we have the information needed to determine the spatial composition of reef restoration; and, do we need to, or have the capability to model ecosystem services such as nitrogen and seston reduction.

Research on the ABS collapse. Several asked if there is research that can identify the source, or sources, contributing to the collapse of the System post 2012.

Research on climate and rising sea levels. Is there research and modeling on climate changes, drought, and rising sea levels that can help to inform the management of the ABS?

D. POTENTIAL ABSI STRATEGIES TO ADDRESS KEY CHALLENGES

1. Introduction

Many of those interviewed underscored the importance of creating an inclusive stakeholder table, and suggested adopting an adaptive management approach which sets out a vision, establishes performance measures, recommends management and restoration strategies, and monitors actions and projects, and uses the results as the basis for learning and adapting management and restoration strategies.

2. Strategies to Address Challenges Identified by Stakeholders

The following ABSI strategies to address challenges identified by stakeholders are listed in order of frequency mentioned and not in terms of priority.

STRATEGIES THE ABSI COMMUNITY ADVISORY BOARD SHOULD CONSIDER	
<i>Listed In order of frequency from the interview responses not in priority order</i>	
1.	Consider limiting entry, establishing oyster reserves or sanctuaries, or closing the Bay in order to recover (36)
2.	Process: engagement, citizen science (19)
3.	Aquaculture as a part of a sustainable ABS (18)

4. Focus on reef architecture (15)
5. Strengthen enforcement and compliance (10)
6. ABSI should focus on ecosystem services (8)
7. Plan for existing fresh water supply (7) Drought and climate vs. storage (7) Restoration and fishery goals (7) Seed hatchery (7)
8. Dredging on the River (6) Provide opportunities for other fishing (6)
9. Set restoration targets based on science (5) Funding for restoration projects (5) Training and employment for seafood industry participants (5) Water circulation in the Bay (5)
10. Development and oyster recovery (4) Do an interstate water compact (4) Economic impacts of closure (4)
11. Use market to educate on undersize oysters (3) Sikes Cut (3) St. George's Island Waste Water (3) Manage for climate change and sea level rise (3) Manage harvesting (3) Need more beneficial nutrients, and less pollutants (3) Managing predator population (3) Eliminating septic systems (3)
12. Shelling program (2) Engagement with oyster industry (2) Living shorelines (2) Address hypoxia by adding additional substrate (2)
13. Adopt a mixed use, multi-function approach (1) What does success look like (1) Map what's out there (1) Spawning stock (1) Dredging (1) Nutrient input not a major issue (1) Use the ANNER monitoring data (1) Best mitigation practices (1) Promote land acquisition and easements for conservation (1)

Time is right for the ABSI. Those stakeholders interviewed agreed that the timing is ripe for the Apalachicola Bay System Initiative. Some suggested the time is right for reviewing and enhancing fisheries regulation and management efforts, and to advance and incentivize best development practices.

Ecosystem functions approach. Many interviewed suggested that ABSI should focus more broadly on ecosystem functions and services (fin fish, shell fish, filtering, resilience, etc.) and not just the oyster fishery. However, a healthy oyster reef system will mean a healthy Bay system since oysters function as an indicator species for the health of the System.

Consider limiting entry. A surprising result of the interviews is that the most frequent strategy mentioned by stakeholders is the need to limit entry for wild harvesting of the Apalachicola Bay oyster fishery, in order to allow the oyster reefs to recover. Additional strategies suggested included rotational harvest, and/or establishing a sanctuary. Several pointed out that globally there is no oyster fishery with open access that is in a healthy state. Three quarters of those interviewed supported consideration of closing the Bay or portions of the Bay to wild harvesting of oysters for a period of time, investing in producing spat through a hatchery, and in enforcement of the closures, and mount an aggressive program for rebuilding the reefs and bringing the System back to health.

Several noted that such a closure would have an impact on the local economy, but that the oyster reef system was currently contributing little to that economy. Others pointed out that there would need to be an investment in strengthening enforcement and compliance to deal with poachers and illegal harvest. It was also noted that there is precedent for the Bay's closure for a year following Hurricane Kate in 1985.

Aquaculture and ABSI. There were many stakeholders who said that aquaculture should be a part of managing the recovery of the Bay, and to a sustainable ABS. To address entry and capital costs for those having worked wild harvesting, several suggested funding training and education programs, and providing grants and low interest loan programs.

Focus on rebuilding oyster reef habitat. Many stakeholders urged an early focus on rebuilding and restoring oyster reef architecture and habitat structure.

Community and stakeholder engagement. Many noted the importance of engaging early with the community and vetting the strategies and options the Community Advisory Board may develop. There are likely to be changes in fishing practices that will need public engagement and education. Several noted the importance of citizen scientists, including engaging a cadre of commercial oysterman to get involved on the boats with the scientists.

III. STAKEHOLDER ASSESSMENT PRELIMINARY FINDINGS

Following a review and analysis of the interviews and meeting results, the FCRC Consensus Center at Florida State University offers the following preliminary findings:

Finding 1: The Florida State University has committed resources, expertise and staffing to convene stakeholders and agencies to develop through a collaborative process, consensus on a science-based management and restoration plan to restore the health of the Apalachicola Bay System.

Finding 2: Stakeholders agree that the health of the Apalachicola Bay System is declining, and the habitat and fisheries need urgent attention. Stakeholders believe that water quality should be enhanced, and habitat restoration efforts are needed to provide sufficient quantity and appropriately located and spatially appropriate substrate, cultch, shell, spat, and spat-on-shell to restore the oyster reef bars to a level and spatial configuration sufficient to support a healthy fishery.

Finding 3: While some stakeholders suggested an interstate compact was needed to solve the transboundary water flow issues affecting the ABSI, there was agreement that the development of the management and restoration plan should proceed and assume the current water flow delivery schedule. Stakeholders agreed that work on improving the health of the ABSI should not wait on an agreed upon solution to the lawsuits in the short-term regarding Apalachicola-Chattahoochee-Flint (ACF) River water flows. In addition, some suggested that managing saltwater inflow could be necessary to respond to reduced water flows.

Finding 4: Stakeholders expressed concern that action on the water was needed now, and not five or ten years down the road. The Bay has been protected by Franklin County as the key economic driver for the Region, and with the declining health of the Bay and its ability to serve as that driver, pressures are mounting to make land use decisions based on the needs of the tourism industry, currently operating as the primary economic driver for the Region.

Finding 5: According to the stakeholders interviewed there are a myriad of factors impacting the System that will need to be evaluated based on good science and data including reduced water flow from the Apalachicola-Chattahoochee-Flint (ACF) River Basin, increased salinity and salinity fluctuations, predation and disease, nutrient loading from non-point sources including septic, sewage, and stormwater systems, fishery management and regulations, overharvesting and over-fishing, habitat modification, loss of substrate and cultch, spat limitations resulting from loss of historic oyster reef systems, resource extraction in the System, the Deepwater Horizon oil spill disaster and use of dispersants, changes in water flow, hurricanes and natural disasters, changing economic drivers with corresponding land use changes, and lack of systematic monitoring and responding to environmental changes in the System.

Finding 6: There is strong stakeholder support for, and interest in participating in the effort to develop a science-based management and restoration plan to restore the health of the Apalachicola Bay System. The only caveat is that all want to promote, and catalyze actions on the ground, and ensure there is funding to advance and implement the resulting plan. Many stakeholders feel that, “the Bay has been studied to death.”

Finding 7: Stakeholders view the ABSI as timely and positive, offering potential connections with estuary programs being developed across the Florida Panhandle including in the Perdido, Pensacola, and Blackwater Bay Estuary, Apalachicola Bay, St. Andrews and St Joseph Bays, Choctawhatchee Bay, and in the Suwannee Sound. In addition, connections could be made with the current project to develop a Florida Oceans and Coasts strategic plan supported by the Legislature and FDEP and convened by the Florida Ocean Alliance.

Finding 8: Stakeholders agree that it is important to communicate, coordinate and share data and science as appropriate with other planned and ongoing management and restoration efforts. The project’s objectives should provide synergy for the other efforts, with the cumulative results working to enhance the health of the Apalachicola Bay System, and discussions should be organized to develop support for the multiple efforts. In addition, existing studies and data should be compiled, organized, and used for informing the project, and data gaps filled as needed.

Finding 9: Water is truly the lifeblood of the coastal and bay ecosystems and economies for Franklin County, and their citizens and visitors have embraced a lifestyle that relies on a healthy estuary that can support recreation, fishing, tourism, ecotourism, and emerging green industries.

Finding 10: The key fishery and habitat management agencies at the state and federal levels have expressed an interest and willingness to support and/or participate in the initiative.

Finding 11: There is stakeholder, and agency support for testing an ecosystem-based management and restoration approach in this Initiative. The Oyster fishery has collapsed in the Apalachicola Bay System and throughout Florida, and fishermen, waterman and other stakeholders are open to discussing alternative management options.

Finding 12: It is important to involve and engage the oystermen, commercial fisheries, and recreational fishing groups in the CAB due to their on-the-water experience and knowledge, and because they have historically not been effectively involved in discussions regarding the health of the System, and how effectively to restore it.

Finding 13: Many stakeholders expressed the need to provide opportunities for public participation and engagement, education, and ultimately to build support for the changes that will be needed to restore and sustain the health of the ABS, to keep the results an adaptive and living plan, and to fund the actions and projects needed to achieve the Community's vision for a healthy Apalachicola Bay System.

IV. COMMUNITY ADVISORY BOARD RECOMMENDATIONS

A. COMMUNITY ADVISORY BOARD

The Community Advisory Board will be convened by Florida State University and will review what is known about the System, identify information and data gaps, create a vision of success for the system, identify the issues, challenges and opportunities, identify and agree to a set of performance measures, agree on the short, mid, and longer term priorities for actions informed by science for the creation of a science-based management and restoration plan for the Apalachicola Bay System that can restore the oyster reefs specifically, and health of the System generally.

In each interview and meeting, the participants were asked whether there are any additional stakeholder groups or perspectives needed for an effective Community Advisory Board to build consensus on a science-based management and restoration plan for the Apalachicola Bay System that can restore the oyster reefs and health of the System. They were also asked who in their view would be an acceptable, and credible representative for their stakeholder sector's interests, including the interviewee, and who might be willing and able to participate on the ABSI CAB.

As a result of the interviews the following stakeholder perspectives are represented on the CAB to be appointed by Florida State University as convener:

- State Government (DEP, DACS, FWC, NFWFMD)
- Local Government (City of Apalachicola, Franklin County)
- University/Research
- Environmental/Citizen
- Business/Economic/Development/Tourism
- Seafood Industry
- Recreational fishing

B. COMMUNITY ADVISORY BOARD RECOMMENDATIONS

Below are recommendations for convening the Community Advisory Board.

Recommendation 1: Convene a Community Advisory Board consisting of representatives from key stakeholder interests including state government, local government, university and research representatives, environmental and citizen groups, business and economic development, tourism, real estate, and development, recreational fishing, and seafood industry interests, to build consensus on a science-based management and restoration plan for the Apalachicola Bay System.

Recommendation 2: Respond to the concerns that “the Bay has been studied to death, and “this better not be another research project,” by addressing the concerns raised by most stakeholders that projects on the water are needed immediately. Evaluate, based on science and data, whether there are short-term actions that could be deployed on the water.

Recommendation 3: Organize the structure for the management and restoration plan to include short-term (1-2 years), mid-term (3-6 years), and long-term (7-10 years plus) recommendations.

Recommendation 4: The Community Advisory Board should first agree to organizational, procedural, and decision-making guidelines, followed by a common vision of success for the ABSI, and subsequently performance measures to evaluate options and strategies against, before discussing options and potential solutions.

Recommendation 5: Communicate, coordinate and share science and data as appropriate with other restoration and management initiatives in the System, and in the Panhandle Region of Florida.

Recommendations 6: Ensure there is regular communication between FSU and local government representatives, including elected officials, regarding the status and direction of the Initiative.

C. RECOMMENDATIONS FOR COMMUNITY ADVISORY BOARD MEMBERS

Stakeholders representing state government, local government, university/researchers, environmental/citizen groups, business/real estate/economic development/tourism, seafood industry, recreational fishing, and agricultural and ACF stakeholders were invited to serve on the Community Advisory Board. Following are the appointed ABSI Community Advisory Board members:

MEMBER	AFFILIATION
Agriculture/ACF Stakeholders/Riparian Counties	
1. Chad Taylor	Riparian Counties Stakeholder Group/ACF Stakeholders/Agriculture
Business/Real Estate/Economic Development/Tourism	
2. Chuck Marks	Insurance/Business
3. Mike O’Connell	SGI Civic Club/SGI 2025 Vision
4. John Solomon	Apalachicola Chamber of Commerce
Environmental/Citizen	
5. Georgia Ackerman	Apalachicola Riverkeeper
6. Lee Edmiston	Retired DEP/ANERR

7. Chad Hanson	Pew Charitable Trusts
Local Government	
8. Anita Grove	Apalachicola City Commissioner
9. Smokey Parrish	Franklin County Commissioner
Recreational Fishing	
10. Chip Bailey	Charter Captain/In-Shore-Bay
11. Frank Gidus	CCA Florida
Seafood Industry	
12. Shannon Hartsfield	Seafood Industry/Waterman
13. Kevin Landry	Apalachicola Oyster Company, Aquaculture
14. Vance Millender	Millender & Sons Seafood
15. Steve Rash	Water Street Seafood, Retail Seafood
16. TJ Ward	Commercial/Retail Seafood/Fishing
State Government	
17. Jim Estes	FWC Division of Marine Fisheries Management, Deputy Director
18. Jenna Harper	ANERR/DEP, Reserve Manager
19. Becky Prado	FDEP Office of Resilience & Coastal Protection
20. Portia Sapp	FDACS Division of Aquaculture, Director
21. Paul Thurman	NWFWMD, Environmental Scientist
University/Researchers	
22. Tom Frazer	UF/DEP Governor's Science Advisor
23. Erik Lovstrand	UF/IFAS/Florida Sea Grant Franklin County

V. NEXT STEPS

Florida State University will convene the ABSI Community Advisory Board (CAB) starting in October 2019 for facilitated meetings spanning the next five years. The facilitators will design and conduct a pre-meeting questionnaire of the CAB members to prepare for the organizational meeting.

ATTACHMENT 1

ABS I INTERVIEWS CONDUCTED		
NAME	AFFILIATION	INTERVIEW DATE
1. Ed Camp	UF	May 30 by phone
2. Matt Chase	NOAA	May 30 w/Leslie by phone
3. Leslie Craig	NOAA	May 30 w/Matt by phone
4. Kristal Walsh	FWC	May 31 by phone
5. Gareth Leonard	FWC	May 31 by phone
6. Mike Norberg	FWC	June 3 by phone
7. Christian Wagley	Healthy Gulf	June 3 by phone
8. Portia Sapp	FDACS	June 3 by phone
9. Charlie Culpepper	FDACS	June 3 by phone
10. Lee Edmiston	Retired FDEP/ANEER	June 4 in Apalachicola
11. Cary Williams	Aquaculture	June 4 in Apalachicola
12. Tommy Ward	Retail Seafood	June 4 in Apalachicola
13. Anita Grove	City Commissioner	June 4 in Apalachicola
14. Robin Vroegop	Citizen Activists	June 4 w/Mike in Apalachicola
15. Mike Vroegop	Citizen Activists	June 4 w/Robin in Apalachicola
16. Steve Rash	Retail Seafood	June 4 in Apalachicola
17. Georgia Ackerman	Apalachicola Riverkeeper	June 5 w/Dan in Apalachicola
18. Dan Tonsmeire	Apalachicola Riverkeeper	June 5 w/Georgia in Apalachicola
19. Shannon Hartsfield	SMART	June 5 in Apalachicola
20. Lynn Martina	Seafood Restaurant	June 5 in Apalachicola
21. Bobby Morris	HVAC seafood industry	June 5 in Apalachicola
22. Chuck Marks	Insurance/Business	June 5 in Apalachicola
23. Shaun Donahoe	Real Estate/Business	June 5 in Apalachicola
24. Rick Watson	SGI/Tax Collector/Realtor	June 5 in Apalachicola
25. Don Imm	USFWS, Georgia	June 11 w/Sean by phone
26. Sean Bloomquist	USFWS, Florida	June 11 w/Don by phone
27. Tom Frazer	UF/FDEP Governor's Science Adv.	June 11 in person in Tallahassee
28. Tom Frick	FDEP	June 13 by phone
29. Steve Leitman	FSU Adjunct URP/Modeler	June 13 by phone
30. Jenna Harper	ANERR/FDEP	June 21 by phone
31. Jim Estes	FWC	July 15 by Phone
32. Deborah Keller	Oystermom/TNC	July 15 by Phone
33. Kent Smith	FWC – Habitat & Species Cons.	July 16 with Katie by Phone
34. Katie Konchar	FWC – Habitat & Species Cons.	July 16 with Kent by Phone
35. Erik Lovestrand	Sea Grant/Franklin Co. IFAS	July 16 by Phone
36. Holly Binns	Pew Charitable Trusts	July 16 with Chad by Phone
37. Chad Hanson	Pew Charitable Trusts	July 16 with Holly by Phone
38. Alan Pierce	Franklin Co. Planning Services	July 17 by Phone

39. Katherine Waldron	Panacea Oyster Co-op	July 17 by Phone
40. Preston Robertson	Florida Wildlife Federation	July 18 by Phone
41. Jack Rudloe	Gulf Marine Specimen Panacea	July 18 by Phone
42. Bill Pine	UF	July 18 by Phone
43. David Larsen	Concerned Citizen	July 18 by Phone
44. Kevin Claridge	FDEP Resilience/Coastal Protection	July 18 by phone with Richard
45. Richard Noyes	FDEP Grants Coastal Program Ad.	July 18 by phone with Kevin
46. Brenda La Paz	Mayor, Carrabelle	July 19 in Person in Apalachicola
47. Brandon Martina	Lynn's Seafood	July 19 in Person in Apalachicola
48. TJ Ward	Commercial/Retail Seafood	July 19 in Person in Apalachicola
49. Smokey Parrish	Franklin Co. Commissioner	July 19 in Person in Apalachicola
50. Ricky Jones	Franklin Co. Commissioner	July 19 in Person in Apalachicola
51. John Solomon	Apalach Chamber of Commerce	July 19 in Person in Apalachicola
52. Kris Kaufman	NOAA, Tampa Bay	July 25 by Phone in Apalachicola
53. Eric Bush	USACE Chief Planning & Policy	July 25 by Phone in Apalachicola
54. Paul Thorpe	NFWFMD Env./Resource Plan.	August 26 by Phone
55. Kathleen Coats	NFWFMD Water Resource Eval.	”
56. Jerrick Saquibal	NFWFMD Hydro./Engineering	”
57. Paul Thurman	NFWFMD Env. Scientist	”
58. Dusty May	BaySavers	August 26 by Phone
59. Chip Bailey	Charter Captain/in Bay Peregrine Charters	August 30 by Phone
60. Chad Taylor	Riparian Counties Stakeholder Committee (RCSC)	September 6 by Phone
61. Pat O'Connell	SGI Civic Club	September 12 by Phone w/Mike
62. Mike O'Connell	SGI Civic Club	September 12 by Phone w/Pat
63. Dennis Crosby	Charter Captain/off-shore/Bay	September 13 by Phone
64. Vance Millender	Millender & Sons Seafood	September 16 by Phone
65. Frank Gidus	CCA	September 24 by Phone

ATTACHMENT 2

ABOUT THE FCRC CONSENSUS CENTER

Robert Jones and Jeff Blair, with the Florida State University **FCRC Consensus Center**, have been retained to conduct a series of stakeholder interviews and to design and facilitate the process and meetings of the ABSI Community Advisory Board. Jones and Blair are accomplished public policy facilitators with the Center who have over 30 years of experience working with communities to build consensus on natural resource, marine fisheries and oyster fisheries, and coastal issues in Florida and nationally.

The Center was created by the Florida Legislature in 1987 and placed in our independent home at Florida State University. Many of our early successes were the result of mediating conflict to break impasse on public policy issues and projects. Over the years the work has shifted to facilitating stakeholders in the creation and implementation of strategic plans and courses of action. In hundreds of projects over the past 32 years we have assisted public, private and nonprofit leaders, agencies and organization on a wide array of national, state, regional and local issues.

In addition to the ABSI project, we are facilitating or have facilitated projects including:

- Greater Pensacola Bay Ecosystem-Based Oyster Fisheries Plan, 2019-2021 *The Nature Conservancy*.
- US Fish & Wildlife Service, Southeast Region Vision Alignment Plan, 2018-2019, *USFWS-SE*.
- Coastal SEES OysterFutures Workgroup. 2015–2018, *Chesapeake Bay Laboratory, University of Maryland/Florida State University*.
- Gulf Angler Focus Group Initiative, 2015 –2016, *ASA, CCA & Theodore Roosevelt Conservation Partnership*.
- Gulf For-Hire Charter Vessel Electronic Reporting Workgroup Assessment 2016, *Ocean Conservancy*.
- National Recreational Boating Stakeholders Growth Summit 2011, *National Marine Manufacturers Association* and NMMA Leadership Workshop (2012).
- Deepwater Horizon Natural Resource Damage Assessment Trustee Council, 2010-11, *Department of Interior, NOAA, Department of Defense, and the states of Florida, Alabama, Mississippi, Louisiana and Texas*.
- [National Saltwater Recreational Fishing National Stakeholder Summit](#), 2010, *NOAA*.
- Gulf Regional Airspace Strategic Initiative. *Jan. 2009 – December, 2010, US Airforce & Navy*.
- [Project FishSmart](#), 2008, *Chesapeake Bay Laboratory, University of Maryland/Florida State University*).
- Florida Ports Council Strategic Planning Process, 2007.
- Beach Re-nourishment Workshops, 2007, *FAU*.
- Governor’s Commission for Sustainable Emerald Coast, *Sept. 2006 – December 2007*.
- Gulf of Mexico Grouper Forum, 2007 *NOAA/FWC/FWRI*.
- Lobster Advisory Board, 2005, *FWC*.
- Florida Ocean Science Workshop, 2004, *DEP*.

- Governor's Commission for Sustainable Treasure Coast. *Sept. 2004 – December 2005.*
- Blue Crab Advisory Board, *2003, FWC.*
- Workshops on Multi-Species Management, *2004, South Florida Ecosystem Restoration Task Force & Working Group.*
- Artificial Reef Advisory Board, *2003, FWC.*
- Florida Keys Carrying Capacity Study, *2001, FWC.*
- Manatee Summit, *2000, Governor's Office.*
- Sturgeon Culture Risk Assessment Project, *1999, FDACS.*
- Florida Governor's Ocean Committee, *1998-99 resulting in the Florida Ocean Strategy.*
- Governor's Commission for a Sustainable South Florida, *1994-99.*