

**OYSTER ECOSYSTEM-BASED FISHERY MANAGEMENT PLAN (O-EBFM)
FOR THE GREATER PENSACOLA BAY SYSTEM (GPBS)**

GPBS STAKEHOLDER WORKING GROUP

MEETING I—ORGANIZATIONAL MEETING SUMMARY

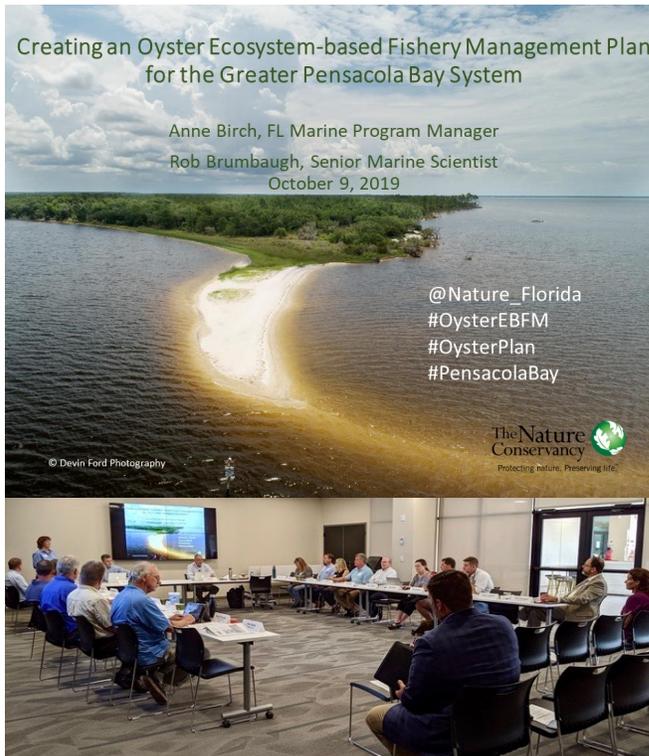
OCTOBER 9, 2019

STUDER INSTITUTE COMMUNITY ROOM

220 W. GARDEN STREET, #100, PENSACOLA, FL 32502

HOST: THE NATURE CONSERVANCY, FLORIDA

FACILITATOR: FACILITATED SOLUTIONS, LLC



Convened by:



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October 9, 2019

Anne Birch, FL Marine Program Manager, welcomed the Stakeholder Working Group members and noted The Nature Conservancy (TNC) was thrilled to convene and launch this project aimed towards seeking consensus on an oyster ecosystem-based fishery management plan for the Greater Pensacola Bay System. She introduced Florida's TNC team in addition to herself, Dr. Rob Brumbaugh-Senior Marine Scientist, Andrea Graves-Marine Projects Coordinator, and Darryl Boudreau-Watershed Coordinator. Anne introduced Facilitated Solutions LLC and the facilitation team of Jeff Blair and Bob Jones who conducted a Stakeholder Assessment Report on issues and the composition of the Stakeholder Working Group and would be helping to design and facilitate the consensus building process. She suggested the timing was excellent for working together on this plan with the standing up of the Pensacola and Perdido Bays Estuary Program, new data on oyster reefs throughout the state, and a new Florida Ocean and Coasts strategic plan being developed.

Members introduced themselves and offered their thoughts on what would be a successful outcome of the Working Group's efforts. The themes that emerged were: a water quality focus; a sustainable wild and aquaculture oyster fishery; public engagement is key; public outreach is essential; and a science-based management plan that is implemented.

Consensus procedures. The facilitators reviewed the Working Group operating assumptions and participation principles and consensus building procedures. After discussing the participation principles and consensus procedures, the Working Group unanimously agreed to follow and use these in the plan development process.

Guiding Principles. The Working Group reviewed and agreed to the following set of guiding principles covering respecting differences, collaboration and consensus building, clear procedures equitably applied and serving as liaisons with the stakeholder groups and interests they have been appointed to represent. Working Group members agreed to strive to work together collaboratively, seek to understand and respect differing perspectives, build consensus on recommendations, operate with clear procedures equitably applied, and serve as accessible liaisons between the stakeholder groups they have been appointed to represent and the GPBS Working Group.

Overview Presentation on the Greater Pensacola Bay System. Dr. Brumbaugh offered a presented on TNC's Role for the Pensacola Bay Oyster Ecosystem Based Fishery Management Plan: convene people and organizations who will contribute ideas and energy; develop and interpret science for application in the planning process to help evaluate and support different

options/ scenarios; and support and amplify ideas externally that are developed through the plan (during and after the plan's development).

Oyster reefs have declined 85% globally, and a comprehensive assessment of Florida's reefs was recently completed by a Florida Fish and Wildlife Conservation Commission team showing for the first time spatially explicit estimates of oyster reef area in all of Florida's bays, which have declined by 80-90% statewide. He noted that there were good enabling conditions in Pensacola Bay (salinity and temperature), and a number of known reefs have recently been enhanced with early Natural Resource Damage Assessment funding as a result of the Deepwater Horizon oil spill (covering 235-245 acres).

Oyster recovery plans from around the country and found they have been organized around three primary purposes: fishery recovery, habitat recovery, and oyster recovery (i.e., species recovery). No plans appear to integrate all of these purposes in a clear and quantitative way under an Ecosystem-Based Fisheries Management approach (EBFM). Ecosystem-based oyster management should involve explicit management toward multiple objectives, utilize a transparent and inclusive planning process, and work with support from all sectors and stakeholders for all objectives. Rob noted there are tools that will be made available to the Working Group including a TNC "Oyster Habitat Suitability Analysis" tool, and a TNC "Oyster Calculator" that allows users to estimate filtration and fisheries enhancement, two ecosystem services provided by oysters.

Working Group Comments and Questions covered the following areas: Target Pensacola Bay reefs and oysters in 1900-1930s; hard bottoms in the Bay; estuary ready to reintroduce oysters; general oyster and oyster reef ecology information; nutrients; mapping for bottoms associated with Deepwater Horizon; monitoring the cultch; TNC Project origin story; oysters are resilient; will plan result in new regulations or laws; master plan to guide permitting agencies; and clarifying funding sources for plan implementation.

Review Summary of Questionnaire Results and Additional Input

TNC and Facilitated Solutions issued a questionnaire to the Working Group members prior to the meeting. The questionnaire was divided into sections: Key Milestones and People, Tailwinds, Headwinds, and Trends. It was completed by 15 Working Group members. The consolidated responses were summarized and reviewed during the meeting and the members were asked to offer any additional input.

Key Milestones and People. Members noted any additional significant "Key Milestones", "People", and "Eras" in terms of the management of the Greater Pensacola Bay System oyster fishery and ecosystem. Under key milestones: Multiple impacts of climate change- warmer waters, rising sea level, more rain events changing; dredging of Intracoastal Waterway, channels, transporting coals, changed habitat bottom in some areas of the Bay; amount of controlled forest burning on the Eglin Air Force Base property, building of the road between

Pensacola and Gulf Breeze; and weather events in general - hurricanes, rain etc. Under people: Captain Walt Reese from Milton, and Donnie McMahan.

Tailwinds, Headwinds & Trends. Members reviewed Tailwinds, Headwinds, & Trends to consider in the framing of the project and added the following tailwinds: Ecosystem focus; conservation lands on Escambia and Yellow rivers purchased; more community groups with an environmental focus. For headwinds they added: Coordinating regulatory actions with a new master plan; HOA mandates for monocrop, i.e. lawns and existing legislation forcing harmful impacts to waterways; global climate change; legacy of pollution - having to cleanse the Bay, sediments, habitat; managing increased ecotourism impacts on the Bay; septic tanks and point source discharge from waste water plants. (problematic in low coastal wetlands); and education and community outreach challenge - educate new and existing residents.

For trends members added: Increased impacts of climate change in all respects; industrial economy strong growth and not shifting overall to ecotourism at the present; decline resulting from automation; advanced manufacturing- with technology; more citizen action groups and the community cares more about water quality than ever before and are willing to listen more than in the past; resiliency including gray-green infrastructure; resiliency condition for federal funding for Metropolitan Statistical Areas.

Critical Issues in the Greater Pensacola Bay System

These reflect the critical issues drawn from the Stakeholder Assessment Report and rated by Members in the Questionnaire. The figures are the averages on a 4 point scale.

1. The Role of Oysters in a Healthy Greater Pensacola Bay System—How Critical? (3.4 of 4)

The members discussed the following issues to be considered in the management plan: this is an economically important fishery, historically, and is connected to a healthy Bay; ecotourism hasn't caught on yet but probably coming; recreational fishing is included in ecotourism; big birding community; historic down town we have a huge resident and tourist fishing community; aquaculture attracting fish; if we bring oysters back we could we see a return of scallops and seagrass beds; monitoring seagrasses that are needed for scallop larvae, survey every year; the next census will establish a Pensacola Metropolitan Statistical Area (regional population of 500,000 or more as an opportunity and growth/land use projections and their impacts on the bay.

2. The Water-Land Interface for Sustainable Growth and Development—How Critical? (3.7 of 4)

The members discussed the following issues: sustainable development, mitigation and water quality; stormwater and discharge; green infrastructure alternatives to reduce impacts from development; conserve/preserve open spaces for clean water and reduce land converted to development.

3. Water Quality Issues and Challenges—How Critical? (3.6 of 4)

The members discussed the following issues: water quality related to land water interface, need to have growth policies in place to minimize effects; recommendations will have to be implemented by counties and cities; include bacteria; aging sewer pipes tied to decreased water quality; public pressures to fund and build wastewater and stormwater infrastructure; challenge is the Bay may look “good” but actually in crisis with contaminated sediments and harder to tell this story; micro-plastics and endocrine disruptors; misinformation from social media; factor climate and sea level rise into plans for restoration; identify major and moderate water quality/pollution sources; improve runoff and nutrient loading and seek solutions at the local and state levels; reduce sediment loading to wetlands and other water bodies; green infrastructure and local government support for native vegetation.

4. Public and Leadership Education and Outreach Challenges—How Critical? (3.2 of 4)

The members discussed the following issues: where and how do local communities get information; public acceptance of investing infrastructure money to replace septic tanks; reflecting the polarized society in trying to communicate simple ideas supporting the critical connections to the Bays.

5. Research and Data Gaps—How Critical?(3.1 of 4)

The members discussed the following issues: there is no central point of information about oysters and their habitat; getting researchers and research groups in the region better coordinated and aware of each other’s work; aquaculture research not focused on the needs of the industry (NOAA trying to change this in light of sustainability, job creation, trade deficits, etc.); the need for creating an “oyster industry cluster” that helps with assistance in shell placement and reef building; research and data gaps will be most critical in addressing funding for research; Drs. Jane Caffrey and Matt Deitch are supporting the emerging estuary programs in the Panhandle with science guidance through a research grant managed by the Center of Excellence with Deepwater Horizon funding.

Potential Strategies. The Questionnaire asked for potential strategies to address key challenges and issues identified in the Stakeholder Assessment Report. In the meeting members offered comments on the following: we should highlight we are identifying science and relying on it in shaping the Plan; we need to understand how the regulatory programs work related to oysters and oyster reefs; the plan should help provide a road map to enhance- and connect the dots and provide guidance; do we need a NOAA or ACOE representative as a part of the working group or find a way to connect and brief them as we are going forward; the Panhandle Estuarine Restoration Team (PERT) had every ACOE and NOAA permitting agency at the meeting.

Working Group Goal. The Working Group reviewed, rated and discussed and agreed on the draft goal statement for the overall Oyster Ecosystem-Based Fishery Management Plan (O-EBFM) for the Greater Pensacola Bay System (GPBS):

The goal of the GPBS Working Group is to develop a package of consensus recommendations informed by the best available science, data, and stakeholders' experiences for the management and restoration of the GPBS.

The process will be designed so that members can evaluate oyster fishery practices and management options and restoration policies in the Greater Pensacola Bay System. The Working Group's recommendations, in the form of a GPBS Oyster Ecosystem-Based Fisheries Management Plan, will be directed to the TNC Project Team, the Pensacola and Perdido Bays Estuary Program, state managers and regulators, and other agencies/entities as appropriate. The project's ultimate goal is to ensure that the regulation and management of the oyster fishery, and oyster restoration policies are informed by the best available science and shared stakeholder stewardship values, resulting in an economically viable, healthy and sustainable Greater Pensacola Bay System oyster fishery and ecosystem.

Vision of Success. Members were asked to review and reflect on the Questionnaire results describing a very undesirable future for the Greater Pensacola Bay System and added: an ineffective and unimplementable management plan. Members were then asked to review and reflect on the Questionnaire results envisioning a very successful future and what those managing, using, and enjoying the Greater Pensacola Bay System will be doing in 2030 that is different from what they are doing today. The members added: wide public knowledge and embracing the goals of the effort; public officials are partners and champions of the plan, working to make the vision plan a reality; living shorelines used as the preferred method of protection (vs. hardened); we are the center for shellfish innovation and research - successful work leads to the restoration of scallops and other species; the work serves as a model of success for other estuaries; create a culture locally with residents, businesses and visitors, and work together to achieve the part of the goal; socially the community will have a sense of place and appreciation of the unique natural environment.

Vision of Success Themes. The following draft "Vision of Success" themes were drawn from the Questionnaire responses and reviewed and rated by the Working Group at the October 9 meeting. The average of the ratings is presented in parentheses at the end of each of the four themes below. The vision themes represent key topical issue area strategies that characterize the desirable future for the oyster reef ecosystem and the Greater Pensacola Bay System. The Vision Themes will be helpful in establishing a framework for the plan goals and objectives and are not ordered by priority. Revisions to that draft vision themes were based on October 9 Working Group discussion.

1. Oyster reef management and regulation based on science. The management, regulation, and restoration of the oyster reef ecosystem is conducted by working collaboratively with

stakeholders to create and implement a plan with ongoing monitoring that ensures the protection of the fishery and habitat based on science, data and industry experience and observation, which will provide a guide for fair and equitable access to the resource. (3.8 of 4)

- 2. Ecosystem services.** The oyster reef ecosystem is managed in a manner that supports ecosystem services by protecting and enhancing the habitat and oyster resource in a sustainable manner. (4.0 of 4)
- 3. Thriving economy based on connection to the Bays and cultural heritage.** The Greater Pensacola Bay oyster reef ecosystem serves as key components of the region’s cultural heritage and economic viability and serve to sustain an economically viable and thriving fishery, recreation and tourism industry. (4.0 of 4)
- 4. Stakeholder driven collaborative plan guided by a hub for research and best practices.** Stakeholders of the Greater Pensacola Bay System are committed to working together collaboratively to serve as a hub for best practices and research and provide education and communication on the importance of maintaining the health and productivity of the oyster reef ecosystem, fishery and aquaculture, and the role they play in ensuring the community thrives. (4.0 of 4)

The facilitators reviewed the agenda for the 2nd meeting that will be held on November 15 at the UF/IFAS Extension office in Santa Rosa County in terms of refining the vision themes, goals and objectives. They reviewed the data and information needs and tools (e.g., baseline water quality data, Oyster 101, oyster and oyster reef regulatory framework, funding; information on the Pensacola and Perdido Bays Estuary Program, monitoring, data on harvest/landings - both wild and aquaculture, habitat suitability analysis, and TNC restoration project history). The members completed meeting evaluation forms and adjourned at 3:00 pm.



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

I. INTRODUCTIONS AND PROJECT CONTEXT AND PROCEDURES

A. WELCOME AND OVERVIEW OF THE PROJECT

Anne Birch welcomed the stakeholder Working Group members and noted The Nature Conservancy (TNC) was thrilled to convene and launch this project aimed towards seeking consensus on an oyster ecosystem-based fishery management plan for the Greater Pensacola Bay System. She introduced Facilitated Solutions LLC and the facilitation team of Jeff Blair and Bob Jones who conducted a stakeholder assessment and would be helping to design and facilitate the consensus building process.

She suggested the timing was excellent for working together on this plan with the standing up of the Pensacola and Perdido Bays Estuary Program, new data on oyster reefs throughout the state, and a new Florida Ocean and Coasts strategic plan being developed.

B. WORKING GROUP MEMBERS' EXPECTATIONS FOR PROJECT SUCCESS

Members introduced themselves and answered the question, "From your perspective, what would a successful outcome of the Working Group's efforts produce?"

Member Desired Outcomes for a Successful Working Group Process:

Water quality consensus plan

- A good plan to improve water quality and reestablish fisheries and find funding to make it happen
- Water quality consensus plan
- Pollution will have to be addressed as our biggest enemy
- Water quality - get that back and sustain an oyster fishery
- Good water quality = oysters
- City of Pensacola more engaged in water quality in the Bay
- Water quality benefits from a healthy oyster system
- See a day when not worried about flesh eating bacteria in swimming

Sustainable wild and aquaculture oyster fishery

- See natural beds come back
- Overall, looking at the Bay as a whole, sustainable fishery, wild and aquaculture and providing the ecological services. Having that map to implement that is key
- For the system - a sustainable commercial and recreational fishery
- See a mix of farm raised and wild oysters in Pensacola Bay - as an end goal
- See half of the oysters return from the 1970s level

Public engagement

- Public participation central to that happening
- Outreach and public involvement are key
- Engage the broader community - we need to engage the business community - to show the importance of these efforts to their bottom lines
- Those making a direct living off the Bay - provide a business model that protects the Bay.

Science-based management plan

- Science-based fishery management plan
- Jump start for Florida’s estuaries similar efforts
- Back to meaningful science based policy solutions for the Bay

SUMMARY OF SUCCESSFUL WORKING GROUP PROCESS OUTCOMES- QUESTIONNAIRE
1.) An implementable science-based plan for reestablishing an oyster fishery in the Greater Pensacola Bay System.
2.) Identify ecosystem priorities and solutions.
3.) Re-establish an oyster fishery.
4.) A growth plan for the Region that protects the health of the Greater Pensacola Bay.
5.) Improved water quality in the Greater Pensacola Bay System.
6.) Achieve consensus on the Plan.

C. CONSENSUS PROCEDURES

The facilitators reviewed the Working Group operating assumptions and participation principles and consensus building procedures. After discussing the participation principles and consensus procedures, the Working Group unanimously agreed to follow and use these in the plan development process.

D. WORKING GROUP GUIDING PRINCIPLES

The Working Group reviewed and agreed to the following set of guiding principles covering respecting differences, collaboration and consensus building, clear procedures equitably applied and serving as liaisons with the stakeholder groups and interests they have been appointed to represent. One minor reservation expressed was if the Working Group recommends actions that become law or regulation, “we need to be cautious and inform ourselves about the consequences and impacts.” The principles presented included:

1. Working Group members will strive to work together collaboratively and seek to understand and respect differing perspectives.
2. The Working Group will strive to achieve consensus on the evaluation and development of recommendations submitted to the TNC Project Team and appropriate management and regulatory agencies.
3. The Working Group will operate under policies and procedures that are clear, concise, and consistently and equitably applied.
4. Working Group members will serve as accessible liaisons between the stakeholder groups they have been appointed to represent and the GPBS Working Group and should strive to both inform and seek input on issues the Working Group is addressing from those they represent.

II. OVERVIEW PRESENTATION ON THE GREATER PENSACOLA BAY SYSTEM

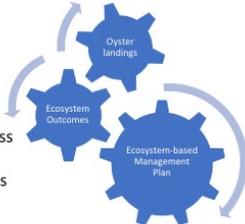
Dr. Robert Brumbaugh offered a presentation setting forth the TNC Roles for Pensacola Bay Oyster Ecosystem Based Fishery Management Plan:

- 1) Convene people and organizations who will contribute ideas and energy
- 2) Develop and interpret science for application in the planning process to help evaluate and support different options/scenarios
- 3) Supporting and amplifying ideas externally that are developed through the plan (during and after the plan's development)

Rob noted a comprehensive assessment of Florida's reefs was recently completed by a Florida Fish and Wildlife Conservation Commission team showing for the first time spatially explicit estimates of oyster reef area in all of Florida's bays. He noted that there were good enabling conditions in Pensacola Bay (salinity and temperature), and a number of known reefs have recently been enhanced with NRDA funds (covering 235-245 acres).

What does ecosystem-based oyster management look like?

- Explicit management toward multiple objectives
- Transparent and inclusive assessment and planning process
- Support from all sectors and stakeholders for all objectives




Photos: Rob Brumbaugh, Darryl Boudreau, Erika Nortemann

Dr. Brumbaugh noted a review of 12 oyster recovery plans from around the country organized around three primary aims: fishery recovery; habitat recovery; and ‘oyster recovery’ (i.e., species recovery). However, no plans appear to integrate these aims in a clear and quantitative way under an Ecosystem-based Fisheries Management approach, which addressed ecological, social and economic objectives.

2019

“Many Florida estuaries have lost 80-90% of the oyster reefs that were present before human development.”

<https://myfwc.com/media/21768/oimmp-report-2019.pdf>

Excerpts from OIMPP Chapter 2

“Pensacola Bay provides appropriate salinity and temperature ranges for oyster habitat.”

“There are an estimated 95-99 ha (235-245 ac) of oyster reef within Pensacola Bay.”

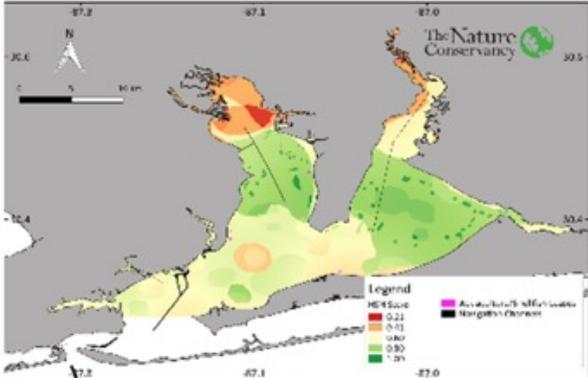
“Water quality in the bay improved significantly since the passage of the Clean Water Act and implementation of best land-use practices within the watershed.”

(Konchar et al., 2019)

Rob noted there are tools that will be made available to Working Group to support discussion and decisions as we move forward such as:

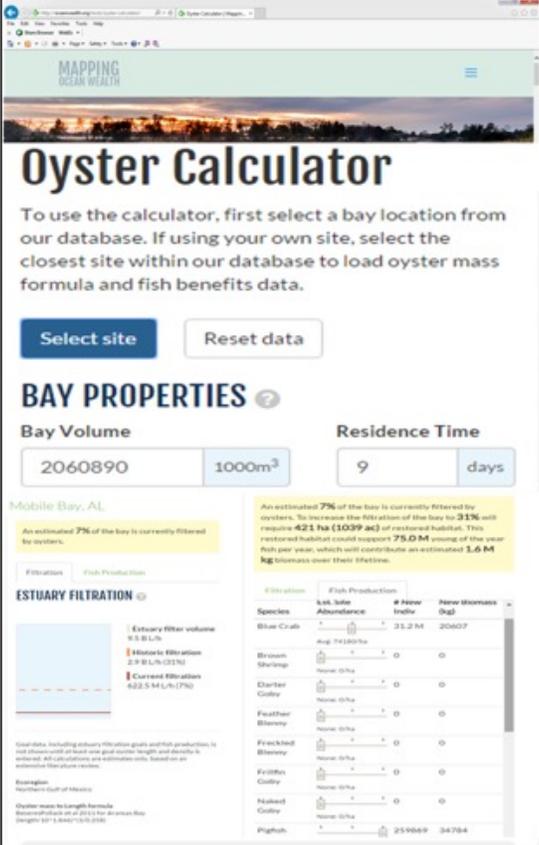
- A TNC supported development of an “Oyster Habitat Suitability Analysis” that identifies areas most suitable for oysters on the bottom of the estuary based on environmental conditions, oceanography/larval distribution, etc.); and
- A TNC developed ‘Oyster Calculator’ that allows users to estimate the level of two ecosystem services (filtration and fisheries enhancement) that could be delivered with specified areas of oyster reef and oyster abundance.

Decision-Support Tools: Science and data to answer questions evaluate ideas



Component	Factor	Reference	Model Scoring
Biological, Chemical And Physical	Present Day Oyster Beds	FWR	Reefs Present = 1 Reefs Absent = 0
	Historical Oyster Beds	US Fish Commission	Reefs Present = 1 Reefs Absent = 0
	Dissolved Oxygen	EPA	DO Conc. < 2 mg/l = 0 DO Conc. ≥ 2 mg/l = 1
	Seagrass	FWR	Seagrass Present = 0 Seagrass Absent = 1
	Sediments	EPA	Mud = 0 Sand = 0.5
	Salinity	EPA	S < 5 = 0.5 S ≥ 5 = 1.0
Avoidances	Aquaculture and Shellfish Lease Areas in the Study Area	FDACS	N/A
	Navigation channels	NCAA	N/A

Johnston et al. 2019



10/9 Working Group Summary of Comments

- **Target Pensacola Bay reefs and oysters in 1900-1930’s.** The FWC report on Florida’s reef system includes harvest data to 1880s. Data from the FWC 2019 report started with 1950s
- Shows significant oyster reefs and oysters -1900-30s results. Set a target /goal this period 1900-30s vs. the 1950s?
- **Hard bottoms in the Bay.** It seems like a good representation of where the hard bottoms exist in the Bays.

- **Estuary ready to reintroduce oysters.** Right salinity. Circulation patterns favorable. Lots we can do with this estuary.
- **General oyster and oyster reef ecology information** Asked for a briefing at a future meeting
- **Nutrients-** underlying geology influences nutrient accumulation?
- 30 days of circulation in Greater Pensacola Bay until emptying into the Gulf. Similar to period of oyster larvae settling
- **Mapping for bottoms associated with Deepwater Horizon (DWH).** DWH funds used by FDACS to cultch harvested oyster beds = Use their information to expedite the mapping process. Sonographs, shot the bottoms. Teams did this work. Followed NOAA QA/QC. FWC will help with this.
- FDACS did some mapping (Joe and John)- incorporated into FWC report.
- Mapping oyster reefs within Santa Rosa County- TNC current project with Santa Rosa County DWH funds.
- **Monitoring the cultch.** Apalachicola NERR is on point to monitor the FDACS clutched reefs mentioned above.
- **TNC Project origin story?** Oyster centric approach. vs. marsh or seagrass. What got us here to focus on oyster reefs in this ecosystem? Our deep experience with oyster restoration and understanding that restoration requires an ecosystem-based approach that includes fisheries. *A: Important to keep in mind the big picture of Watershed management. An ecosystem-based approach versus an oyster-centric focus is what needs to happen in the watershed- and include in the broader watershed management plan. Restoration of oyster habitat- fishery in decline. History on land management on long leaf pine. Currently no statewide shellfish management plan. This project is a pilot for managing oysters on a bay system moving forward..*
- In planting a garden, think of preparing the soil- likewise water quality is key- marshes and seagrasses for providing environment to enhance oyster fishery. *A:Not currently managed to reflect the interconnected nature. Estuary program looking at broader system.*
- **Oysters are resilient.** Habitat mosaic works across the landscapes. Oysters can survive in less than suitable habitat for a period of time. If substrate is there and conditions are right, they will produce oysters, e.g. appropriate places to get reefs to grow. Look over the long term.
- **Will plan result in new regulations or laws?** Helpful to know what we are ultimately trying to do, e.g. are we writing regulations to be adopted as state regs, laws, local ordinances. *A:Not decided at this point. Evolve over time as we agree over time.*
- Are we doing restoration correctly, e.g. Navy Point good project or waste money.
- Do oysters go in cages, concrete bags on shorelines for restoration?
- FWC doesn't permit anything but asks FDEP and ACOE before putting restoration in place. Over time substrate has been lost and putting hard material back are restoration initiatives.

- **Master plan to guide permitting agencies.** We need to come up with master plan which will be reviewed and welcomed by permitting agencies in their assessments for cumulative impact.
- Roadblocks dealing with fisheries farming and restoration (e.g. ACOE- NOAA Gulf sturgeon habitat and restoration).
- **Clarifying funding sources for plan implementation.** \$\$ in DWH streams for oyster restoration. Identify best areas to use the funding sources.
- Project Green shores brought in seagrasses. Presentation available? A: Yes.
- Resource list? A: *We will post those as well.*

III. SHARED HISTORY—LOOKING BACK—WHERE HAVE WE BEEN?

Members noted any additional significant “Key Milestones,” “People”, and “Eras” in terms of the management of the Greater Pensacola Bay System oyster fishery and ecosystem.

A. “KEY MILESTONES/INITIATIVES”

10/9 Working Group comments on anything missing

- Multiple impacts of climate change- warmer waters, rising sea level, more rain events changing
- Dredging of intercoastal water way, channels, transporting coals, changed habitat bottom in some areas of the Bay
- Amount of control burning, Eglin Reservation, lots of sulphur runs off. Is the burning affecting the health of oysters. 10,000 acres of property. Burn every Eglin every year. Old timers reporting this
- Building of road between Pensacola and Gulf Breeze- documents the harvest of oyster used to make the road. US 98 – used for road material
- Weather events in general- hurricanes, rain etc.

From the Stakeholder Working Group Questionnaire Responses:

- Founding of the Bream Fisherman Association in 1950's. (2)
- Clean Water Act 1972.
- EPA/Olinger 1975 recovery report.
- 1996, the County Water Quality Division, the County Marine Resources Division.
- Chemical discharges into eleven-mile creek severely impacted the health of Perdido Bay.
- Industrial discharges into Escambia River severely impacted the health of upper Escambia Bay.
- Pre-NPDES development (including ag. and silviculture) throughout watershed yielding sedimentation and channelization of nearly all 1st and 2nd order streams (exponential loss of ecological services for all bay inputs)!
- 1999 Grand jury investigation, Report of the Special Grand Jury on Air and Water Quality 1999 Pensacola Bay System.
- Escambia County Wetlands Ordinance 2002.

- Lack of Rx Fire throughout watershed yielding ecological succession to high standing biomass forest with effects on hydroperiod and other ecological parameters.
- Overharvesting of shellfish (oysters and scallops) greatly decreased their abundance in the bay.
- Establishing the County Department of Neighborhoods and Environmental Services.
- Excessive development resulted in increased run-off and decline of habitats such as seagrasses and oyster beds.
- 2014 growing population in city of Pensacola and especially infill development downtown, which avoids some of the water quality damaging sprawl development happening on undeveloped lands.
- Industrialization of Bayou Chico.
- Continued operation of an industrial port.
- Failure to maintain Navarre Pass.
- Acquisition of Escribano Point and associated restoration.
- Establishment of Yellow River Aquatic Preserve.
- Restoration activities on Garcon Peninsula.
- Relocation of ECUA to mid-county / IP joint effluent project.
- Escambia County inclusion of wetland buffers in LDC.
- Beach Haven septic remediation project.
- Holley-by-the-Sea stormwater retrofit (in process).
- Establishing the Bay Area Resource Program.
- The Environmental Grand Jury Findings Report.
- All septic to sewer conversion project.
- Project Greenshores.
- Wastewater treatment plant modernization and relocation.
- Project Green Shores.
- Addressing sedimentation, water quality and stormwater issues.
- Hopefully the shelling projects a few years ago were beneficial to the reef systems.
- Relocation of ECUA WWTP from downtown Pensacola (post Ivan).
- Sewer vs. septic in Navy Point and Beach Haven (ongoing).
- Stormwater capture around Bayou Texar.
- Establishment by Yarboro and Carlson of Seagrass Integrated mapping and monitoring program.
- These habitat reductions triggered a decline of certain estuarine species – some of the economically important.
- The conversion from septic to sewer, and the installation of baffle boxes, reduced the levels of bacteria (and the number of health advisories issued) in the local bayous.
- Those same conversions and mitigations reduced the amount of nutrients in these waters and the number of large fish kills reported. The creation of the Estuary Program.

B. “PEOPLE” WHO MADE A DIFFERENCE

10/9 Working Group comments on anything missing

- Captain Walt Reese, Milton
- Donnie McMahon

From the Stakeholder Working Group Questionnaire Responses:

GPBS Stakeholder Working Group October 9, 2019 Meeting I Summary

- Sandy Pizzalato, NPDES mitigation on Eglin
- Mike Lewis EPA
- Barbara Albrecht
- Ernie Rivers
- JD Brown BFA
- Keith Wilkins
- Chips Kirschenfeld
- Robert Turpin Escambia County
- Darryl Boudreau
- Sava Varazo, [Emerald Coast Keeper](#)
- Grover Robinson, City of Pensacola Mayor
- Like with many other fisheries, it's a long list of people, events, and regulations that led to our current situation with oysters in the GPBS.

C. "ERAS"

10/9 Working Group comments on anything missing

- Building of road between Pensacola and Gulf Breeze- documents the harvest of oyster used to make the road. US 98 – used for road material

From the Stakeholder Working Group Questionnaire Responses:

- 1800-1950 over harvest of oysters without replacing substrate.
- 1880-1950 shift from natural forested uplands to silviculture with unpaved logging roads.
- 1880-PRESENT Accelerating sea level rise and climate alterations due to human caused climate change causing changes in freshwater flows, salinity regimes, coastal erosion and inundation.
- 1900-2018 landscape alterations, (coastal development) due to human population increase- includes watershed alterations for commercial purposes.
- 1930s--decision to recruit industry to settle here 1950--post war economic boom combined with zoning and cheap gasoline fueled a new spread-out and land-gobbling (and waterway destroying) form of low-density development--sprawl; the worst land use for water quality.
- 1950s-70s -unchecked direct discharges (IP; Navarre WWTP, ECUA); lack of investment in stormwater infrastructure; road building in wetlands (Santa Rosa County); culverts vice spanning of new bridges in Santa Rosa.
- Bad polluting of the Bays in the 1970's and 1980's.
- Allowing point source discharges from Industries, Monsanto, American Cyanamid, Air Products, Gulf Power Coal Plant and International Paper In addition to, allowing the use of septic tanks, currently numbered in the tens of thousands all along the coastal areas.
- 1970-2018 Shift on military lands from consumptive natural resource uses to conservation and restoration of natural communities.
- 1980-2010 Florida Forever and NFWWMD large-scale conservation and land purchases and habitat restoration efforts.
- 1990-PRESENT Focal shift toward improving water quality through shifting communities to advanced wastewater treatment systems.
- 1990-PRESENT Active implementation of live shoreline projects along public and private shorelines (coastal hazard reductions for effects of climate change).

- 1999 - 2004 Citizen and some political engagement supporting local government environmental regulation and effective state regulation.
- UWF- PERCH project – 2002-2007.
- 2010-2019 response to the BP oil spill. I know it seems counterintuitive, but the political support and citizen engagement had waned to the point the County was going to significantly cut their environmental department as had happened across the state with local governments as a result of the recession. The oil spill galvanized the need for environmental engagement by local government and solidified the need and their commitment for the next decade.
- I'm not going to go negative on people but for eras: any time there was a good economy and building boom such as pre-recession 2005,6,7 and somewhat now. Great things are happening with the flow of BP money, but it seems the focus on capital projects and project management has distracted our local and state governments from environmental permitting, compliance and enforcement. Also, the past state administration was extremely detrimental to environmental programs.

IV. LOOKING AROUND—SETTING THE CONTEXT

A. TAILWINDS, HEADWINDS, & TRENDS

1. Tailwinds- Questionnaire Responses and Working Group Comments

Tailwinds-Factors Enhancing the Health and Success of the Greater Pensacola Bay	
<i>Summary of questionnaire responses listed in order of frequency</i>	
1.	Growing public consciousness of the Bay's importance and health. (5)
	Pensacola/Perdido Bay Estuary Program. (5)
	Restore funding, restoration and awareness. (5)
2.	Expansion of aquaculture in the region. (3)
	Cities are cool again, focus on urban living. (3)
3.	Improving water quality, reduction in industrial/commercial uses of waterways. (1)
	New development regulations addressing run-off (retention ponds, silt screening, etc.). (1)

10/9 Stakeholder Working Group comments on additional tailwinds:

- Ecotourism
- Conservation lands on Escambia and Yellow rivers purchased
- More community groups with and environmental focus

2. Headwinds- Questionnaire Responses and Working Group Comments

Headwinds-Factors Impeding the Health and Success of the Greater Pensacola Bay	
<i>Summary of questionnaire responses listed in order of frequency</i>	
1.	Construction, coastal and urban development. (9)
2.	Water quality and habitat loss. (8)
3.	Regulation and enforcement. (4)
	Public and leaders lack of support and awareness of issues affecting the health of the Bay. (4)
4.	Stormwater discharge and runoff. (3)

Funding for restoration and infrastructure. (3)
5. Lack of unity on a plan of action. (1)

10/9 Stakeholder Working Group comments on additional headwinds:

- Coordinating regulatory actions with a new master plan
- HOA mandate monocrop lawns. Existing legislation forcing harmful things to water ways
- Global climate change.
- Legacy of pollution- having to cleanse the Bay. sediments, habitat
- Managing ecotourism impacts on the Bay.
- Septic tanks and point source discharge from waste water plants. (problematic in low coastal wetlands).
- Education and community outreach challenge- educate new and existing residents.

3. Trends- Questionnaire Responses and Working Group Comments

TRENDS-AFFECTING THE GREATER PENSACOLA BAY	
<i>Summary of Questionnaire responses listed in order of frequency</i>	
1.	Population growth and development pressures. (9)
2.	Shift away from industrial economy to retail/tourism economy and focus on quality of life and the link between the economy and the Bay ecosystem. (8)
3.	Political will and engagement to address ecosystem resilience. (2)
	Green infrastructure. (2)
	Rise of Aquaculture. (2)
4.	Use of non-native landscaping. (1)
	Marine debris. (1)

10/9 Stakeholder Working Group comments on additional trends:

- #2 not necessarily correct. Industrial economy strong growth, jobs. Not shifting overall to ecotourism. Chemical discharges.
- Decline resulting from automation? Way down but job count going back up. Advanced manufacturing- with technology. 66% of people coming for advanced manufacturing jobs
- More citizen action groups. Community cares more about water quality than ever before. Want cleaner water and are willing to listen more than in the past.
- Jurisdictions- USN, National Seashore, ACOE, USFWS Eglin, no federal agencies at the table?
- Increased impacts of climate change in all respects.
- Resiliency add to Green infrastructure. Resiliency condition for federal funding

B. CRITICAL ISSUES IN THE GREATER PENSACOLA BAY SYSTEM

1. The Role of Oysters in a Healthy Greater Pensacola Bay System—How Critical?

<i>Very Critical</i>	<i>Critical</i>	<i>Less Critical</i>	<i>Not Critical</i>	
4	3	2	1	<i>Avg.</i>
6	7	1	0	3.4 of 4

What are the related issues as you see them and any options the Working Group should explore? *(From Questionnaire Report, listed in order of frequency)*

- Oysters in the Greater Pensacola Bay System. (6)
- Enhancing water quality. (6)
- Political will and citizen education and engagement. (2)
- Land development codes to protect coastal wetlands. (1)

What key information do you think the Working Grouping needs to make informed recommendations to address issue(s)? *(From Questionnaire Report, listed in order of frequency)*

- Mapping. (4)
- Evidence of oysters enhancing fisheries, including wild and farmed oysters. (2)
- Green infrastructure alternatives. (1)
- Lesson learned from previous oyster restoration efforts. (1)
- State-of-science quantitative data to support recommendations. (1)
- Historical water quality data. (1)
- FDOT and County transportation plans and projects. (1)
- Sewer/septic data (ECUA and other sewer providers). (1)

10/9 Stakeholder Working Group Comments

- Economically important, historically, and connection to a healthy Bay
- Huge fishing community= large local group and coming in from out of town
- Huge economic
- Farms are greater for fishing than I expected. Perhaps better than wild beds. Fish are attracted to habitats, floating in the water, water. E.g. bridges are good. Cages on top attract fish- fall out of cages and there is part of the food change. Structured complexity in unstructured
- Rec fishing is included in ecotourism. Big birding community. Historic down town.
- Farming tours. Interested
- Ecotourism hasn't caught on yet. Probably coming. Something in management plan to consider
- If bring oysters back, could we see a return of scallops? If seagrass beds coming back.
- Fishing included- in IFAS program. Include as ecotourism
- Monitoring seagrasses. Scallop survey every years. Similar to Barbara's oyster gardening

- Scallops grow in different environment than oysters. Density of salinity is low=impacting the larvae. Capture the density in pockets around. Got to have the seagrass because scallops larvae
- MSA ½ million people another grant. Potential
- Santa Rosa struggling
- Growth/land use projections. Impacts on the bay

2. The Water-Land Interface for Sustainable Growth and Development—How Critical?

<i>Very Critical</i>	<i>Critical</i>	<i>Less Critical</i>	<i>Not Critical</i>	
4	3	2	1	Avg.
10	4	0	0	3.7 of 4

What are the related issues as you see them and any options the Working Group should explore? *(From Questionnaire Report, listed in order of frequency)*

- Sustainable development, mitigation and water quality. (8)
- Stormwater and discharge. (2)
- Green Infrastructure alternatives to reduce impacts from development. (1)
- Conserve/Preserve open spaces for clean water and reduce land we convert to development. (1)

10/9 Working Group Comments

- No comments

3. Water Quality Issues and Challenges—How Critical?

<i>Very Critical</i>	<i>Critical</i>	<i>Less Critical</i>	<i>Not Critical</i>	
4	3	2	1	Avg.
9	5	0	0	3.6 of 4

What are the related issues as you see them and any options the Working Group should explore? *(From Questionnaire Report, listed in order of frequency)*

- Reduce sediment loading of wetlands and other water bodies, hold local governments accountable for stormwater repairs. (3)
- Identify major and moderate water quality/pollution sources, improve runoff and nutrient loading and seek solutions at the local and state levels. (3)
- Factor climate and sea level rise into plans for restoration. (1)
- Green Infrastructure and local government support for native vegetation. (1)

What key information do you think the Working Group needs to make informed recommendations to address issue(s)? *(From Questionnaire Report)*

- Water quality trend data.
- Microbial source tracking of pathogens to determine source species.
- What pollutants are getting into the water and where are they coming from? What non-natural products are getting into the water encouraging unhealthy bacteria growth.
- Impacts from impervious surface cover and changing water quality parameters.

10/9 Stakeholder Working Group Comments

- Highly related to land water interface. As we grow, how does the growth manifest, will there be policies put in place to minimize effects.
- Make recommendations, but will be implemented by Counties and cities. Biggest challenge.
- Include bacteria as well. It is a big issue.
- Aging sewers pipe- ties into water quality. Public pressures to make this infrastructure happen.
- The Bay may look “good” but actually in crisis. Contaminated sediments. Harder to tell this story.
- Micro plastics and endocrine disruptors- a growing issue and impacts on species in the Bay
- Misinformation from social media.

4. Public and Leadership Education and Outreach Challenges—How Critical?

<i>Very Critical</i>	<i>Critical</i>	<i>Less Critical</i>	<i>Not Critical</i>	
4	3	2	1	Avg.
6	6	1	1	3.2 of 4

What are the related issues as you see them and any options the Working Group should explore? *(From Questionnaire Report, listed in order of frequency)*

- Education and engagement of the public to highlight progress and seek input. (4)
- Political support. (3)
- Changing behavior of residents and tourists on protecting the health of the ecosystem. (2)
- Encourage Green Infrastructure. (2)
- Informed communication from technically adept leaders. (1)

What key information do you think the Working Group needs to make informed recommendations to address issue(s)? *(From Questionnaire Report)*

- I.D. the conflicts with existing laws/codes and the group’s recommendations. Identified conflicts should have resolutions thought out at the same time.

10/9 Stakeholder Working Group Comments

- Where do you get this information. Local level, people interested but where is the source

- Money to replace septic tanks, infrastructure. Votes down ½ cent sales tax. This will be a huge problem
- People trying to convince public and elected officials often do it wrong. Us vs. them won't get anything done
- Communication informed by the reality of the binary polarized society and hindered/enhanced by the communication
- CivicCon- lessons learned. What does “right” look like. Highlight the things that look right and wrong to help the public with these broader issues

5. Research and Data Gaps—How Critical?

Very Critical	Critical	Less Critical	Not Critical	
4	3	2	1	Avg.
6	4	4	0	3.1 of 4

What are the related issues as you see them and any options the Working Group should explore? (From Questionnaire Report, listed in order of frequency)

- Comprehensive integration of existing data to identify gaps. (3)
- Identifying and funding research to fill data gaps. (2)
- Adaptive management requires data and science. (2)
- Monitoring both short and long term to inform oyster management and determine water quality stressors. (2)
- Experiment with new techniques and scientific approaches. (1)
- Data on water quality. (1)
- Habitat suitability modeling for restoration efforts. (1)
- Data on green infrastructure. (1)
- Sites of historic oyster beds for restoration. (1)

What key information do you think the Working Group needs to make informed recommendations to address issue(s)?

- Failure of past restoration efforts-why?
- What data do we currently have available? What data do we need? Where do we go to acquire needed data? How do we pay for the data collection and processing into a usable format?
- Water quality trends.
- What do we have now (water quality data); what is needed to make this work?

10/9 Working Group Comments

- Challenge is different groups doing research and monitoring. Getting these researchers and research groups better coordinated and aware
- NOAA forming coalition groups. E.g. genetically grow stronger oysters. UWF water quality, FSU hatchery in Apalachicola, UF. No central point of info

- Coalition on the gulf coast to assess what we know and don't know about oysters and habitat
- Aquaculture research not focused on the needs of the industry. NOAA trying to change. This in light of sustainability, job creation, trade deficits, etc.
- 4 other commercial leases for oysters. Important for them to have data on water quality. Will be sustainable over time
- Creating an "oyster industry cluster". Where would you grow aquaculture? Florida leads in this area. Help with assistance in placement
- Economics work well
- In survey-15 of 23. Have these requested data sets been reviewed by the TNC scientists
- Science based plan. Research and data gaps most critical. Advocate funding for research
- Jane Caffrey and Matt Deitch- supporting science inventory- helping the emerging estuary programs in panhandles. Look for developing info products and trends.

C. LOOKING AROUND—SETTING THE CONTEXT—POTENTIAL STRATEGIES

The Questionnaire asked for potential strategies to address key challenges and issues identified in the Assessment Report.

PROCESS SUGGESTIONS FOR GPBS STAKEHOLDER WORKING GROUP
<i>Listed In order of frequency from the interview responses</i>
1. Framing the initiative. (6)
2. Stakeholder process suggestions. (5)
3. The table needs to be inclusive. (3)
WHAT STRATEGIES SHOULD THE GPBS STAKEHOLDER WORKING GROUP CONSIDER
<i>Listed In order of frequency from the interview responses</i>
1. Create and utilize technology. (11)
2. Create and utilize visuals and technology to inform and educate the public. (8)
3. Support the development of living shorelines. (6)
4. Oyster habitat restoration. (5)
5. Update and enhance regulation and compliance. (4)
6. Promote best development practices. (3)
Provide targeted public education and engagement. (3)
7. Create a dedicated funding source. (2)

10/9 Stakeholder Working Group Comments

- Communication piece (#2)
- Highlight- identifying science and relying on it in shaping the Plan
- Understanding how the regulatory program works. What are the regulations
- Help provide a road map- to enhance- and connect the dots and provide guidance

- Gap by not having Dept of Commerce/NOAA at the table? Deregulate federal guidelines for aquaculture. Special consideration
- ACOE- need at the table. From the top down get support?
- Find a way to connect
- Road map- build this and emphasis on this locally- focusing on new projects. Entrepreneurial focus- for navigating regulation. Lack of guidance on how to do things in town
- Enabling conditions- e.g. for regulatory pathways.
- Local efforts-Panhandle Estuarine Restoration Team (PERT). Many ACOE permittees came to the meeting. (Jax). Have all of the regulatory contacts. Have NOAA. (state programmatic permit). DEP, ACOE and NOAA. Bio opinion for regulatory.

V. WORKING GROUP DRAFT GOAL STATEMENT

The Working Group reviewed, rated and discussed and agreed on a draft goal statement for the Working Group and for the overall Oyster Ecosystem-Based Fishery Management Plan for the Greater Pensacola Bay System. Below is the draft and the revisions made in the October 9 Working Group meeting noted with an underline (additions):

The goal of the GPBS Working Group is to develop a package of consensus recommendations informed by the best available science, data, and stakeholders' experiences for the management and restoration of the GPBS.

The process will be designed so that members can evaluate oyster fishery practices and management options and restoration policies in the Greater Pensacola Bay System. The Working Group's recommendations, in the form of a GPBS Oyster Ecosystem-Based Fisheries Management Plan, will be directed to the TNC Project Team, the Pensacola and Perdido Bays Estuary Program, state managers and regulators, and other agencies/entities as appropriate.

The project's ultimate goal is to ensure that the regulation and management of the oyster fishery, and oyster restoration policies are informed by the best available science and shared stakeholder stewardship values, resulting in an economically viable, healthy and sustainable Greater Pensacola Bay System oyster fishery and ecosystem

	AVERAGE	4—Acceptable	3—Minor Reservations	2—Major Reservations	1—Not Acceptable
<i>October 9 WG Rating</i>	4.0	12	0	0	0

10/9 Working Group Comments

- Is a "Roadmap" the title for this goal?

VI. VISION OF SUCCESS FOR THE GREATER PENSACOLA BAY SYSTEM OYSTER RESOURCE AND ECOSYSTEM

A. UNDESIRABLE FUTURE FOR THE GREATER PENSACOLA BAY SYSTEM

Members were asked to review and reflect on the Questionnaire results describing a very undesirable future for the Greater Pensacola Bay System and add any additional characteristics.

A very undesirable future for the Greater Pensacola Bay System in 2030
• Submerged aquatic vegetation dead.
• Diminished, nearly nonexistent wild oyster population—stressed by decreased salinities and illegal harvest by locals.
• Harmful algal blooms, fish kills, and vibrio infections increase, and public wary of getting in the water.
• Diminished and degraded water quality and unbalanced ecosystem.
• Unusable or unsafe water for public resource, pollution, bacteria, etc.
• The current path we are on—more people with no comprehensive plan to minimize their impacts.
• Public ignorance and indifference to existing and future issues within the watershed.
• Economy based on a healthy bay system sputters and suffers.

10/9 Working Group Comments

- System wise- ineffective and unimplementable management plan

B. A SUCCESSFUL FUTURE FOR THE GREATER PENSACOLA BAY SYSTEM IN 2030

Members were asked to review and reflect on the Questionnaire results envisioning a very successful future and what those managing, using, and enjoying the Greater Pensacola Bay System be doing in 2030 that is different from what they are doing today.

1. It's 2030. You are drafting a column for a special combined edition of the Pensacola News Journal and the Santa Rosa's Press Gazette on the stellar accomplishments in improving the health of the Greater Pensacola Bay System and implementing the Oyster Ecosystem-Based Fishery Management Plan. What would be the headline? What would you say?

Headline: The stellar accomplishments of the Plan in improving the health of the Greater Pensacola Bay System
• Oyster Ecosystem-Based Fishery Management Plan is Success! What a difference a decade makes! Wild Oyster populations returning to their historic levels and farmed raised oysters thriving. We are sustainably harvesting and eating oysters in all water bodies. Crab harvest improves with the help of restored oysters.
• From most polluted water in the country, to most pristine in only ten years! Water quality is such that oysters can thrive and help increase water clarity and the seagrasses and fish have returned.
• Ecosystem and the Economy are thriving.
• Public education and engagement promote the connection to the Bay System. Students are

learning more about oysters and estuarine ecology by helping local oyster restoration.

The members noted below any additional headlines for the Plan and health of the Greater Pensacola Bay System:

- Wide public knowledge and embracing the goals of the effort
 - Public officials are partners and champions of the plan, working to make the vision plan a reality.
 - Living shorelines used as the preferred method of protection (vs. hardened)
 - Center for shell fish innovation and research- successful work leads to the restoration of scallops and other species.
 - The work serves as a model of success for other estuaries.
 - Create a culture locally with residents, businesses and visitors, work together to achieve the part of the goal. Public officials will embrace the effort.
2. What would those managing, using and enjoying the Greater Pensacola Bay System be doing in 2030 that is different from what they are doing today?

What are those managing, using and enjoying the Greater Pensacola Bay System doing in 2030 different from today
<ul style="list-style-type: none"> • Fish and oysters have returned, and sustainable wild harvest is back including record catches of speckled trout and redfish. Talk by managers that Gulf sturgeon are doing so well, there might be a limited season on them in 5 years if trends continue. Wild harvest, commercial, and recreational is back. The return of the scallop harvest.
<ul style="list-style-type: none"> • Quality over quantity. The economic development model based on endless growth would be replaced by one based on quality over quantity.
<ul style="list-style-type: none"> • Water quality job #1 that is prioritized and preserved. Informed boaters would know not to plow through seagrass beds.
<ul style="list-style-type: none"> • Recreation, swimming, and public access to the water without health worries. More underwater recreation in Santa Rosa Sound and Big Lagoon.
<ul style="list-style-type: none"> • Public and leaders appreciate the region’s connection to the Bays, and understand and minimize the impacts.

The members noted below any additional differences in management and use of the Greater Pensacola Bay System:

- Socially the community will have a sense of place and the unique natural environment.
- Education- increase the level of public knowledge.

C. DRAFT GREATER PENSACOLA BAY SYSTEM VISION OF SUCCESS THEMES

The following draft “Vision of Success” themes were drawn from the questionnaire responses and reviewed and rated by the Working Group at the October 9 meeting. The vision themes represent key topical issue areas that characterize the desirable future for the oyster reef

ecosystem and the Greater Pensacola Bay System. The Vision Themes will be helpful in establishing a framework for the plan goals and objectives and are not ordered by priority.

Revisions to that draft vision themes were based on October 9 Working Group discussion and are noted with a strikethrough (deletions) or underline (additions).

1. The management, regulation, and restoration of the oyster reef ecosystem is conducted by working collaboratively with stakeholders to create and implement a plan with ongoing monitoring that ensures the protection of the fishery and habitat based on-science, data and industry experience and observation, which will provide a guide for fair and equitable access to the resource.

Vision Theme 1 (*Oct. 9 Underline/Strikethrough version*) **The management, regulation, and restoration of the oyster reef ecosystem resource** is conducted by working collaboratively with stakeholders to create and implement a plan with ongoing monitoring that ensures the protection of the fishery and habitat based on ~~is implemented in a manner that provides fair and equitable access to the resource that is supported by~~ science, data ~~field~~ and industry experience and observation, which will provide a guide for fair and equitable access to the resource.

Vision statements from the questionnaire: The Bays are teeming with oysters, crabs and fish. There is sustainable harvesting and consumption of oysters, crabs and fish in all water bodies (both through aquaculture and a managed fishery).

	AVERAGE	4—Acceptable	3—Minor Reservations	2—Major Reservations	1—Not Acceptable
October 9 WG Rating	3.8	10	2	0	0

10-9 Vision Theme Stakeholder Working Group Comments

Regulation- licenses, open or limited access to harvesting.

- Have to be regulated. Our oysters have to be 3 inches minimum. If we invest and it works they will come. 11 am. FWC watches it. Air support and water support. 100-200 boats a day. Careful with regulations. Stop commercial oystering in the Bay may have the industry collapse.
- Effective enforcement and compliance is an issue.
- Special licenses required?
- Careful about using “Limited entry”- turns people off very quickly before reviewing options for management.
- FWC regulates harvest- Apalachicola- restoration may need a closure of the Bay to help restore the industry? Efforts depleted quickly if all over the Panhandle they come to the Pensacola.
- Fishing licenses- like liquor licenses. Set # of harvesting licenses.
- Regional Panhandle- many flock to areas that are open, e.g. scallops undergoing overharvesting. When you close one area, have to consider other areas.

- FWC stretched thin. Community that cares more here. Effective enforcement. Fishermen are their eyes.

“Access” to water, to harvest?

- Is access the objective of the vision theme? (vs. ecosystem services). Access to harvest and how you manage and control that. If we do it right- figure out a fair harvest.
- Shoreline projects- public promised water access- need to not further reduce water access.

Data.

- Monitoring- creating the right kind of data and implement an adaptive management approach
- Need to know where the right data is and is coordinated with all.

People

- People need to know that “we” are listening. We are going to listen. E.g. Red snapper experience was distressing for people on the water. This will impact.
- Need to clarify how the management and regulation will be based on science and open to stakeholder input.

Inter-species effect of a successful oyster reef ecosystem plan.

- Plan look at a wider regional context. Interspecies effect. Oysters impacting other species to think about.
- We might be killing our children’s future.

Upstream impacts.

- Upgrading input related to management. Alabama play a role in what we might have to consider. Upstream Alabama issues here?
- Interstate issues on water can be a very difficult proposition (e.g. ACF issue)

Biological/ecological and social parts of the vision.

Fair and equitable.

- Identifying “fair and equitable”- to who? To all stakeholders.

User education.

- Regional management- education of users, inform on the regs etc.

Rating- Minor Concerns (3s)

- Liked the initial wording vis a vis access.
- Like to think about further about this

2. The oyster reef ecosystem is managed in a manner that supports ecosystem services by protecting and enhancing the habitat and oyster resource in a sustainable manner.

Vision Theme 2: *(Oct. 9 Underline/Strikethrough version)* The oyster reef ecosystem is managed in a manner that supports ecosystem services by protecting and enhancing the habitat and oyster resource in a sustainable ~~and productive~~ manner.

Vision statements from the questionnaire: From most polluted water in the country, to most pristine in only ten years! Water quality is such that oysters can thrive and help increase

water clarity and the seagrasses and fish have returned. Living shorelines used as the preferred method of protection (vs. hardened)

	AVERAGE	4—Acceptable	3—Minor Reservations	2—Major Reservations	1—Not Acceptable
October 9 WG Rating	4.0	12	0	0	0

10-9 Vision Theme Stakeholder Working Group Comments

- **Defining and measuring ecosystem services.** Which ecosystem services? Using as benchmarks of success? E.g. climate regulation- reduce turbidity
 - How do you measure this? “that is supported by science, data”?
- 3. The Greater Pensacola Bay oyster reef ecosystem serves as key components of the region’s cultural heritage and economic viability and serve to sustain an economically viable and thriving fishery, recreation and tourism industry.**

Vision Theme 3: (Oct. 9 Underline/Strikethrough version) The Greater Pensacola Bay ~~System~~ oyster reef fishery and ecosystem serves as a key component of the region’s cultural heritage and economic viability and serve to sustain an economically viable and thriving fishery, recreation and tourism industry.

Vision statements from the questionnaire: Economic development model based on sustaining quality over quantity. A healthy ecosystem = a thriving economy for the community.

	AVERAGE	4—Acceptable	3—Minor Reservations	2—Major Reservations	1—Not Acceptable
October 9 WG Rating	4.0	12	0	0	0

10-9 Vision Theme Stakeholder Working Group Comments

- **Economic contribution of oyster reef ecosystem.**
- What % of fisheries contribute to the economy? Need data to know what cost/benefit analysis.
- Goes way back for the Bay in terms of fishery. Tourism draw.
- Says a lot? Too much? Oyster fishery has an economic impact?
- **Education and research hub.**
- Part of the economy.
- **Cultural heritage and economy** combined?
- **Parts of the regional economy not tied to the Bay.**
- What about objections to plan’s vision? Parts of economy that aren’t tied to the Bay. How are they impacted by the vision?
- **Cultural heritage**
- local tribal entities. Cultural historic ties. Perdido Bay chief. Reach out. Escribano tribes.
- Project living shoreline- contacts. Porch Creek Band.

4. Stakeholders of the Greater Pensacola Bay System are committed to working together collaboratively to serve as a hub for best practices and research and provide education and communication on the importance of maintaining the health and productivity of the oyster reef ecosystem, fishery and aquaculture, and the role they play in ensuring the community thrives.

Vision Theme 4: Stakeholders of the Greater Pensacola Bay System are committed to working together collaboratively to serve as a hub for best practices and research, and provide education and communication on the importance of maintaining the health and productivity of the oyster reef ecosystem, fishery and aquaculture, resource and the role they play in ensuring the community thrives.

Vision statements from the questionnaire: Public engagement and education in the schools and on the water regarding the oyster’s role in water quality, resilience, and restoration result in an appreciation of connections with the Bay System, an understanding of impacts and embracing the goals of the effort. There has been an increase the level of public knowledge of the Bay and. public officials are partners and champions of the plan, working to make the vision plan a reality.

	AVERAGE	4—Acceptable	3—Minor Reservations	2—Major Reservations	1—Not Acceptable
October 9 WG Rating	4.0	12	0	0	0

10-9 Vision Theme Stakeholder Working Group Comments

- Add: “serve as a hub for best practices and research, and”?

VII. NEXT STEPS

The facilitators reviewed the agenda for the 2nd meeting on November 15 at IFAS in Santa Rosa County in terms of refining the vision themes, goals and objectives. They reviewed the following data and information needs:

Summary of Data and information needs

- **Baseline water quality data.** Assumptions about negative parameters and impact on water quality. What are the issues and gaps in knowledge.
 - How many sewer spills in Escambia and Santa Rosa counties (FDACS- state watch) in the last year. How much/how often.
- **Oyster 101-** preference and status.
- **Regulatory framework.** An outline of regulatory framework.
- **Funding.** Dedicated funding sources

- Funders historically hadn't always provided funding for post restoration monitoring and adaptively managed forward.
- Dedicated funding sources- sometimes too restrictive.
- **Description of the Bay Estuary Program**
- **Monitoring.** Length of time for monitoring based on project objectives.
 - Where there are living shorelines already out there or planned. Are they being monitored and are they working? (*TNC handbook on reef restoration projects*). Critical to have this in the plan. You have to work them and manage and monitor.
- **Data on harvest/landings-** both wild and aquaculture.
- **Habitat suitability analysis-** reef habitat restoration. E.g. water quality data in parts of the Bay.
- **TNC restoration project history-** some information from other estuaries.
 - TNC oyster restoration project- Pensacola East Bay Oyster Habitat Restoration project being constructed with limestone rock. Construction will start in early 2020
- Hear from 2 counties directly on the areas covered by this plan

Review of tools

- **Presentation on tools** – a deeper dive. Oyster Calculator use?
- **Technology.** Science part needs to be updated and incorporate technology. E.g. drills eat the spring spat like crazy. If you restore- need to monitor, add early components to protect reefs, use other innovative techniques. Which substrate more or less predator prone. E.g. keeping plastics out of water. Drills- creating commercial fishery around that. (Paul – study for creating a drill fishery)

The members completed meeting evaluation forms and adjourned at 3:00 pm.

Appendix #1 Meeting Agenda

**OYSTER ECOSYSTEM-BASED FISHERY MANAGEMENT PLAN (O-EBFM)
 FOR THE GREATER PENSACOLA BAY SYSTEM (GPBS)
 GPBS STAKEHOLDER WORKING GROUP
 MEETING I—ORGANIZATIONAL MEETING SUMMARY
 OCTOBER 9, 2019
 STUDER INSTITUTE COMMUNITY ROOM
 220 W. GARDEN STREET, #100, PENSACOLA, FL 32502
 HOST: THE NATURE CONSERVANCY, FLORIDA
 FACILITATOR: FACILITATED SOLUTIONS, LLC**

GPBS STAKEHOLDER WORKING GROUP MEETING I AGENDA—OCTOBER 9, 2019

All Agenda Times—including Adjournment—are Approximate & Subject to Change

1.	8:30 AM	WELCOME AND OVERVIEW OF THE TNC GOAL IN CONVENING THE STAKEHOLDER WORKGROUP, INTRODUCTION OF THE FACILITATION TEAM
2.	8:45	INTRODUCTIONS & REVIEW OF EXPECTATIONS FOR SUCCESS: OYSTER ECOSYSTEM-BASED FISHERY MANAGEMENT PLAN GPBS STAKEHOLDER WORKING GROUP PROCESS
3.	9:30	AGENDA REVIEW AND MEETING OBJECTIVES
4.	9:35	REVIEW AND ACCEPTANCE OF PARTICIPATION GUIDELINES, CONSENSUS-BUILDING PROCEDURES, AND GUIDING PRINCIPLES
5.	9:45	OVERVIEW PRESENTATION ON THE GREATER PENSACOLA BAY SYSTEM
6.	10:15	LOOKING BACK: REVIEW OF QUESTIONNAIRE RESULTS
~10:45		BREAK
7.	11:00	LOOKING AROUND: SETTING THE CONTEXT (<i>REVIEW AND DISCUSSION OF QUESTIONNAIRE RESULTS</i>) <ul style="list-style-type: none"> • Factors enhancing success- Tailwinds • Factors impeding success- Headwinds • Key Trends driving the Region
8.	11:40	LOOKING AROUND: SETTING THE CONTEXT- CRITICAL ISSUES AND CHALLENGES (<i>REVIEW AND DISCUSSION OF QUESTIONNAIRE RESULTS</i>) <ul style="list-style-type: none"> • The Role of Oysters in a Healthy Greater Pensacola Bay System
12:30 PM		WORKING LUNCH—ON SITE LUNCH PROVIDED BY THE NATURE CONSERVANCY
9.	1:00 PM	LOOKING AROUND: SETTING THE CONTEXT- CRITICAL ISSUES AND CHALLENGES (<i>REVIEW AND DISCUSSION OF QUESTIONNAIRE RESULTS</i>) <ul style="list-style-type: none"> • The Water-Land Interface for Sustainable Growth and Development • Water Quality Issues and Challenges • Public and Leadership Education and Outreach

		<ul style="list-style-type: none"> • Research and Data Gaps (<i>to be reviewed in Meeting I, and discussed in Meeting II</i>) • Potential Strategies for Working Group to Consider
~2:30		STRETCH BREAK
10.	2:45	REVIEW AND RATING OF WORKING GROUP DRAFT GOAL STATEMENT
11.	3:00	SHARED VISION OF SUCCESS IN 2030—MOVING FROM THEMES TO GOALS <ul style="list-style-type: none"> • Undesirable Future and Successful Future (<i>Review Questionnaire results</i>) • Review and Rating of Draft Vision Themes • Discuss Vision Themes as Goal Framework
12.	3:55	PUBLIC COMMENT
13.	4:15	NEXT STEPS AND AGENDA ITEMS FOR THE NEXT MEETING <ul style="list-style-type: none"> • Review of the Working Group meetings schedule • Review of action items and assignments • Identify agenda items and any needed information for the next meeting • Meeting evaluation
~4:30 PM		ADJOURN

Please contact Andrea Graves if you have individual needs agraves@tnc.org.

MEETING FACILITATION

Meetings are facilitated by Jeff Blair and Robert Jones from Facilitated Solutions, LLC. Information at: <http://facilitatedsolutions.org>.



Appendix #2 Working Group Members, Project Team & Facilitators

(Bold= members who attended the October 9, 2019 meeting)

GPBS STAKEHOLDER WORKING GROUP MEMBERSHIP AND REPRESENTATION	
MEMBER	AFFILIATION
Building/Development	
1. Shelby Johnson	Johnson Construction of Pensacola Inc.
2. Glen Miley	biome Consulting Group
Business/Real Estate/Economic Development/Tourism	
3. Will Dunaway	Environmental Lawyer
4. Steve Hayes	Visit Pensacola
5. Donnie McMahon	Business and Aquaculture
Environmental/Citizen	
6. Christian Wagley	Healthy Gulf
Local Government	
7. Shelley Alexander	Santa Rosa County Environmental Programs
8. Chips Kirschenfeld	Escambia County Natural Resources Management
9. Jim Trifilio	Pensacola and Perdido Bays Estuary Program
10. Keith Wilkins/ Chris Mauldin	Pensacola City Administrator
Recreational Fishing	
11. Chris Phillips	Hot Spot Charters
Seafood Industry	
12. Pasco Gibson	Seafood Industry/Waterman
13. Josh Neese	Aquaculture
14. Pete Nichols	Seafood Industry/Waterman
15. Tommy Pugh	Seafood Dealer
16. Phil Rollo	Seafood Dealer
17. Calvin Sullivan	Oyster Harvester
18. William (Hub) Williamson	Oyster Harvester
State Government	
19. Beth Fugate	DEP/Aquatic Preserves
20. Kent Smith	FWC Division of Habitat and Species Conservation
21. Mike Norberg	FWC Division of Marine Fisheries Management
22. Becky Prado	DEP Office of Resilience & Coastal Protection
23. Portia Sapp/ Michelle Smith	DACS Division of Aquaculture
24. Paul Thurman	NWFWMD
University/Research	
25. Jane Caffrey	UWF
26. Rick O'Connor	UF/IFAS Escambia County
27. Chris Verlinde	UF/IFAS/Sea Grant Santa Rosa County
PROJECT TEAM AND FACILITATORS	
THE NATURE CONSERVANCY	
Anne Birch	Marine Program Manager
Robert Brumbaugh	Senior Marine Scientist
Andrea Graves	Marine Projects Coordinator
FACILITATED SOLUTIONS, LLC	
Jeff Blair	Working Group Facilitator
Robert Jones	Working Group Facilitator

Appendix #3 Meeting Evaluation Summary

GREATER PENSACOLA BAY SYSTEM STAKEHOLDER WORKING GROUP OCTOBER 9, 2019—PENSACOLA, FLORIDA MEETING EVALUATION SUMMARY REPORT

Members used a 0 to 10 rating where a 0 meant Totally Disagree and a 10 meant Totally Agree. The average ratings and comments from the 12 evaluation forms that were submitted are presented below.

1. PLEASE ASSESS THE OVERALL MEETING.

- 8.2 ___ The background information was very useful.
- 9.0 ___ The agenda packet was very useful.
- 9.3 ___ The objectives for the meeting were stated at the outset.
- 9.2 ___ Overall, the objectives of the meeting were fully achieved.

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

- 9.0 ___ TNC Goal in Convening the GPBS Stakeholder Working Group Review.
- 8.3 ___ Member Expectations for Success.
- 8.8 ___ Participation Guidelines and Consensus-Building Process Agreements.
- 8.4 ___ Presentation on the Greater Pensacola Bay System.
- 8.7 ___ Questionnaire Results for Looking Back and Looking Around Review.
- 8.8 ___ Questionnaire Results for Critical Issues and Challenges Review.
- 8.7 ___ Questionnaire Results for Looking Ahead.
- 8.8 ___ Goal Statement Discussion and Rating.
- 8.9 ___ Vision Themes Discussion and Rating.
- 8.4 ___ Next Steps, Schedule and Assignments Discussion.

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

- 8.9 ___ The members followed the direction of the Facilitator.
- 9.5 ___ The Facilitator made sure the concerns of all members were heard.
- 9.3 ___ The Facilitator helped us arrange our time well.
- 9.3 ___ Participant input was documented accurately on screen by facilitators

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

- 9.4 ___ Overall, I am very satisfied with the meeting.
- 9.5 ___ I was very satisfied with the services provided by the Facilitator.
- 9.3 ___ I am satisfied with the outcome of the meeting.

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

9.1 ___ I know what the next steps following this meeting will be.

8.6 ___ I know who is responsible for the next steps.

6. WHAT DID YOU LIKE BEST ABOUT THE MEETING?

- Collaboration
- Collaboration- diversity
- The mix of group members
- The group, good members
- I enjoyed hearing all the different ideas and viewpoints
- Good mix of community interests
- Good introductory meeting, lots of good discussion
- Facilitators
- Well facilitated
- Interaction to move- example, let's all stand up and take a lap around the room.
- Learning more about oyster reef ecosystem- Rob's presentation.

7. HOW COULD THE MEETING HAVE BEEN IMPROVED?

- More background on how this fits into existing efforts with oyster restoration.
- More background and on trends of PB oyster fishery
- Possibilities for some FWC. Personnel/officials
- Public press release
- Not sure

8. DO YOU HAVE ANY OTHER COMMENTS?

- Great job all!
- Overall, great people and great job!

Appendix #4 Project Schedule & Workplan

Meetings Dates are Subject to Change

PROJECT WORKPLAN		
GPBS STAKEHOLDER WORKING GROUP MEETING SCHEDULE AND WORKPLAN		
STANDING UP AND ORGANIZATION OF THE GPBS STAKEHOLDER WORKING GROUP		
Meeting I.	Oct. 9, 2019	Scoping and organizational meeting, review and refinement of overall project purpose, vision and goal framework.
Meeting II.	Nov. 15, 2019	Review and refinement of goal framework, draft management plan outline, review of science and data gaps. Introduction to decision-support tools and requested presentations.
SCOPING OF GPBS ISSUES, IDENTIFICATION OF PERFORMANCE MEASURES & OPTIONS		
Meeting III.	Jan. 15, 2020	Review of oyster management plans, issues and options. Identification of draft performance measures, draft outline of Oyster Ecosystem-Based Fisheries Management Plan.
Meeting IV.	March 18, 2020	Identification of decision-support tools options, review of performance measures and identification of policy issues, review of Oyster Ecosystem-Based Fisheries Management Plan outline.
Meeting V.	May 20, 2020	Review of decision-support tools scenarios and consensus rating of options and policy Issues. Review and agreement on draft Oyster Ecosystem-Based Fisheries Management Plan. Public Workshop Draft.
Public Workshop 1	June 2020	Review of Vision, Goal Framework, Plan outline, issues & options.
BUILDING CONSENSUS ON GPBS OYSTER ECOSYSTEM-BASED FISHERIES MANAGEMENT PLAN		
Meeting VI.	July 22, 2020	Review of public comments on Draft Plan, review of decision-support tools scenario results and consensus rating of options, draft performance measures, and identification of policy issues.
Meeting VII.	Sept. 16, 2020	Review of Draft Plan, recommendations on policy issues, decision-support tools scenario results, and consensus rating of options.
FINALIZING CONSENSUS ON GPBS OYSTER ECOSYSTEM-BASED FISHERIES MANAGEMENT PLAN		
Meeting VIII.	Nov. 18, 2020	Review and consensus testing of Draft Plan and recommendations on policy issues.
Meeting IX.	Jan. 27, 2021	Review and consensus testing of Draft Plan and implementation guidance and agreement on Workshop Draft Plan.
Public Workshop 2	February 2021	Review of GPBS Oyster Ecosystem-Based Fisheries Management Plan and implementation guidance.
Meeting X.	March 17, 2021	Review of public comment, refinement and consensus on the GPBS Oyster Ecosystem-Based Fisheries Management Plan and implementation guidance.

PROJECT WEBPAGE (URL): TBD

PROJECT FACILITATION: Meetings are facilitated, and meeting reports drafted by Jeff Blair and Robert Jones from Facilitated Solutions, LLC. Information at: <http://facilitatedsolutions.org>.

Appendix #5 Project Summary and Statement of Purpose

GPBS PROJECT SUMMARY AND STATEMENT OF PURPOSE

PROJECT SUMMARY. The Nature Conservancy (TNC) in Florida is convening stakeholders to develop an oyster ecosystem-based fisheries management plan for the Greater Pensacola Bay System (GPBS). For the purpose of this initiative the system is defined as Escambia, Pensacola, East and Blackwater Bays in Escambia and Santa Rosa Counties. TNC has been supporting and implementing projects in the GPBS for the past several years in collaboration with partners. Oysters and the once vibrant fishery are disappearing from the System. Significant funding as a result of the Deepwater Horizon oil spill is being dedicated to restoration of oysters throughout the Gulf of Mexico. This is a once-in-a-lifetime opportunity to reverse the trend and create a robust future for oysters and the fishery in Florida and the Gulf.

STATEMENT OF PURPOSE. The goal of the initiative is that by 2022 an oyster ecosystem-based fisheries management plan (Plan) for the GPBS is approved by the stakeholders. The Plan will be offered as a model for management of oyster resources throughout Florida's estuarine systems, the Gulf of Mexico and other regions. The intent is for the Plan to be developed, owned and implemented by the community and the State, not a "TNC plan".

The Working Group and the resulting Plan will seek to address and determine the priority of multiple objectives including wild harvest, oyster aquaculture, ecosystem service outcomes (i.e., clear water, more crabs and fish, nitrogen removal), and social benefits (e.g., recreational angling opportunities, and opportunity to participate in defining credible management processes) for the GPBS.

The Plan resulting from this initiative will help to define long-term estuary-scale goals for restoring and sustaining oysters in the estuary. It will work in the broader context of the Pensacola and Perdido Bays Estuary Program that received EPA funding in 2018 as part of the Deepwater Horizon oil spill settlement. The program hired an executive director in 2019 and is organizing to develop a Comprehensive Conservation and Management Plan (CCMP) for the Pensacola and Perdido Estuary System.