

**OYSTER ECOSYSTEM-BASED FISHERY MANAGEMENT PLAN (O-EBFM)  
FOR THE GREATER PENSACOLA BAY SYSTEM (GPBS)  
GPBS STAKEHOLDER WORKING GROUP  
MEETING VI—MEETING SUMMARY  
JULY 22, 2020**

**HOST: THE NATURE CONSERVANCY, FLORIDA  
FACILITATOR: FACILITATED SOLUTIONS, LLC  
ZOOM ONLINE MEETING**

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**GPBS Oyster EBFM Plan Working Group  
Meeting #6 July 22, 2020**



# GPBS STAKEHOLDER WORKING GROUP

## MEETING VI—MEETING SUMMARY

July 22, 2020

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**MEETING VI EXECUTIVE SUMMARY  
July 22, 2020**

Anne Birch, Florida Marine Program Manager, The Nature Conservancy, welcomed the Stakeholder Working Group members to the online Zoom 6<sup>th</sup> meeting. Anne introduced the Zoom technology, asked a question of and introduced the GPBS facilitation team of Jeff Blair and Bob Jones with Facilitated Solutions LLC. Members introduced themselves and the facilitator reviewed the meeting objectives and agenda which members agreed to follow. Members also approved, without changes, the April 9, 2020 facilitator’s meeting summary.

Laura Geselbracht, Florida Senior Marine Scientist for The Nature Conservancy, reviewed Larval Source and Sink Maps based on the 2007-08 research and modeling done by Bill Arnold and colleagues. She reviewed oyster larval distribution using the model that simulated larval releases and showed good distribution (“communication”) among sites around the system. Good distribution of larvae is important for healthy reefs. Reefs in areas prohibited to harvest are producing larvae that are transported to fished reefs and it’s important to keep these “donor” reefs healthy. Laura then presented the results of input from Watermen on the Habitat Suitability Model Map in June 2020. The Working Group’s questions and comments covered the following topics: GIS points to areas with good larvae distribution; some reefs are more efficient at larvae transport; some areas have less transport of larvae but oystermen suggested there are important reefs in some of these areas; this is a snapshot, and we need to continue this type of research over time and incorporate oystermen experience to get a more robust picture of oysters in the bay system.

The Working Group continued to agree on the “vision of success” themes that were drawn from the questionnaire responses, reviewed and rated at the October 9 and November 15 Working Group meetings and formed the basis for the goal framework. The vision themes represent key topical issue areas that together characterize the desirable future for the oyster reef ecosystem and the Greater Pensacola Bay System. The goals, outcomes and objectives were developed at the January and April meetings of the Working Group.

**GPBS STAKEHOLDER WORKING GROUP GOAL FRAMEWORK**

A. A HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM	B. THE MANAGEMENT AND REGULATION OF THE OYSTER FISHERY AND AQUACULTURE INDUSTRY
C. THRIVING ECONOMY CONNECTED TO THE GREATER PENSACOLA BAY SYSTEM	D. AN ENGAGED AND INFORMED PUBLIC

**THE HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM** vision theme, goal, outcomes, and objectives are set forth in Appendix 6. The goal for this theme is, “The Greater Pensacola Bay System sustains a healthy and productive oyster reef ecosystem.” There are nine objectives covering: oyster populations; ecosystem services; substrate; and future conditions.

The Working Group at its January 2020 meeting reviewed and agreed on a definition for a strategy as a method or plan of action or policy that can be tested to determine whether it solves a problem and helps to achieve objectives and goals in the context of bringing about a desired future for the Greater Pensacola Bay System.

The following strategies were reviewed and agreed to during the July 22<sup>nd</sup> meeting subject to further refinement. The Working Groups comments and questions are set forth in the detailed summary starting on p. 16.

1. Manage oyster populations using data collection and monitoring, including using annual stock assessment data combined with comprehensive shell budget models.
2. Update a spatial database and create a prioritized list of restoration projects with a variety of objectives.
3. Establish restoration and management targets for functional oyster habitat using 1-3 ecological health indicators (e.g., amount of water filtered by oysters, amount of juvenile fish enhancement by reefs); differentiate between harvest and non-harvest reefs.
4. Implement policies and programs for the return of sufficient oyster shell back to the GPBS to support sustainable oyster population and demographic targets and thresholds.
5. Identify sources and manage silt and sedimentation to the estuary impacting the oyster reef ecosystem.
6. Remediate sediments in areas of the Bay currently unable to support oyster reef growth.
7. Design and implement local community initiatives for growing oysters for their ecosystem services (i.e., Mobile Bay oyster gardening), ensuring that science-based best practices are utilized.
8. Utilize models and other relevant information on climate change impacts to influence adaptive, sustainable reef management.
9. Allocate sufficient funding for habitat restoration based on the oyster HSM (e.g., Develop funding source for cultch used in oyster reef restoration).

Other Strategy Topics discussed included: Seagrass objective; Buffering capacity; Long term environmental impacts- ocean acidification; Sediment impacts on water quality standards; Oyster predation; Climate changes; Catalogue other restoration projects in the area; Enhance funding proposals for implementing the Plan; and an Oyster decadal super spawn?

**THE MANAGEMENT AND REGULATION OF THE OYSTER FISHERY AND AQUACULTURE INDUSTRY** vision theme, goal, outcomes and objectives are set forth in Appendix 6. The Working Group agreed to the proposed changes to the Goal and objectives.

**GOAL:** A productive, and sustainably managed and regulated oyster reef fishery and aquaculture industry in the Greater Pensacola Bay System.

**OBJECTIVES.** The Working Group reviewed proposed changes to combine objectives #1 & 3, and agreed with the changes:

1. Establish and manage for sustainable biological and production thresholds and target for wild harvest and aquaculture that are adaptable and re-assessed on a periodic basis to account for changes in climate and other future environmental conditions.
2. Growth and expansion of the oyster aquaculture industry in the GPSBS uses best management practices that have broad support of the industry and community, and enables economic opportunities, while maximizing beneficial services of aquaculture, and preventing negative effects to the GPBS and its users.

The following 18 strategies were reviewed and agreed to during the meeting subject to further refinement. The Working Groups comments and questions are set forth in the detailed summary starting on p. 20.

1. Oyster population and demographic targets and biological thresholds are developed, at the smallest scale that makes sense, using routine monitoring data combined with shell budget models. *Need to define the scale used for the specific boundaries.*
2. Evaluate management scenarios of harvestable oyster reefs that allow for sustainable spat production and spawning to allow the oyster populations to recover (e.g., closures, rotational harvest, set aside spawning reefs).
3. Enhance the monitoring and accuracy of commercial and recreational oyster harvest data collection and reporting methods through co-management of the resource by agencies and watermen.
4. Enhance the monitoring and accuracy of aquaculture stock and harvest data collection for inclusion in ecosystem benefits and sustainability targets.
5. Management of oyster resources are enforced through co-management oversight by agencies and watermen.
6. Evaluate existing allowable and alternative gear type options and harvest methods, including the use of experimental gear for wild oyster harvesting.
7. Allocate sufficient funding for restoration of harvested reefs and aquaculture farms based on the oyster Habitat Suitability Model (HSM).
8. Utilize the HSM as a means for identifying areas for oyster reef restoration and the siting of aquaculture facilities.
9. Design and build reef structures suitable for subtidal oyster settlement and harvesting.
10. Investigate oyster shell and oyster relay programs to move both cultch and live oysters to more favorable habitat based on the HSM, information on larval source areas and environmental conditions.
11. Traditional and novel policies and programs are implemented to support return of shell back to the system to support oyster population and demographic targets and thresholds for wild harvest.
12. Evaluate additional management strategies that support the current commercial oyster industry members (e.g., rotational harvest, Territorial Use Rights of Fishing, limited entry, regulations, transferable license program).
13. Create a public/private program to cooperatively manage specific harvested reefs.

14. Review and revise state management agency regulations and management goals in consultation with oyster resource stakeholders to ensure they are clear, consistently applied, and enforceable and include a working co-management feedback loop with regulators to refine the program and enhance compliance.
15. Develop an aquaculture growth plan that outlines and defines the optimal expansion of the aquaculture industry in terms of both number of leases and amount of leased area. The idea of the plan is to prepare for expected future growth of the industry.
16. Develop Spatial Area Management Plan that maps ideal areas for aquaculture and future growth potential for aquaculture in the system using abiotic (DO, salinity, temperature, etc.) and social variables (proximity to docks, exclusion zones, etc.).
17. Establish Aquaculture Use Zones (AUZ) for the Greater Pensacola Bay System based on the Oyster EBFM Plan.
18. Develop "future oyster farmers" program that helps locals in the area learn about aquaculture and the potential for making a living by growing oysters in the GPBS. (e.g., Partner with existing programs such as Sea Grant MS/AL programs).

#### **A THRIVING ECONOMY CONNECTED TO THE GREATER PENSACOLA BAY SYSTEM**

The Thriving Economy vision theme, goal, outcomes are set forth in Appendix 6. The draft changes for the changes for the six (6) objectives were reviewed and agreed to subject to further refinements.

#### **OBJECTIVES**

1. Oyster habitat, oyster harvesting, and oyster aquaculture are recognized and valued as key components of the local economy and cultural heritage by the GPBS community and the state.
2. Economic indicators of the commercial oyster fishery, aquaculture industry and associated industries in the GPBS demonstrate increasing viability and growth over 10 × years.
3. Investments in water quality management are being made with the goal of protecting and supporting the oyster habitat and oyster aquaculture industry (including land use impacts).
4. The oyster fishery and oyster aquaculture industries provide economic and career growth opportunities.
5. Industries, and businesses within the GPBS are supportive of and compatible with a healthy, well-managed, and resilient GPBS ecosystem.
6. Government policies, plans and regulations affecting oysters are compatible with a healthy and well-managed ecosystem while maintaining a thriving economy and supporting cultural heritage.

#### **DRAFT THRIVING ECONOMY STRATEGIES**

The Working Group reviewed and refined and agreed to five (5) draft thriving economy strategies for further future refinements.

1. Monitor key economic indicators for changes over time based on restoration efforts to the GPBS.
2. Develop a marketing and communication plan that promotes wild harvest and cultured oysters and the ecosystem services provided by restored oyster populations in the GPBS and celebrates oysters as an important feature of the area's cultural heritage.



3. Demonstrate the connection between enhanced recreational fishing and tourism opportunities and oyster reef habitat quality and quantity.
4. Align local and state government policies and practices that support oyster restoration, fisheries and aquaculture.
5. Develop oyster farming/harvesting and restoration workforce planning. *(review and correlate with Goal B strategy #18)*

#### **AN ENGAGED AND INFORMED PUBLIC AND DECISION-MAKERS**

The Public Education and Communication vision theme, goal, outcomes, objectives, and performance measures are set forth in Appendix 6. The Working Group reviewed and agreed to suggested changes to the “Outcome” of this effort. The draft changes for the three (3) objectives were reviewed and agreed to subject to further refinements. The 13 public education and communication strategies were reviewed and agreed to subject to further refinements.

**OUTCOME:** By 2030, the Greater Pensacola Bay System stakeholders are informed of the importance of sustaining the health of the Bay System, and will work actively to invest in and implement the Plan.

*WG Comments/Questions July 22*

- OK with changes to the outcome statement.

#### **DRAFT PUBLIC EDUCATION AND COMMUNICATIONS OBJECTIVES**

1. Establish a coordinated outreach and education plan to increase public and stakeholder awareness and support for a healthy and well-managed oyster and GPBS ecosystem.
2. Funding resources are identified and utilized to generate awareness, education, and support for a healthy oyster and GPBS ecosystem.
3. The Pensacola and Perdido Bays Estuary Program incorporates and promotes the recommendations of the GPBS oyster plan.

#### **DRAFT PUBLIC EDUCATION AND COMMUNICATIONS STRATEGIES**

The Working Group reviewed, refined and agreed to thirteen (13) draft public education and communications strategies for further future refinements.

1. Businesses, industries, non-profits, and local governments are supportive and included in outreach and education efforts to generate and increase public awareness and support for a healthy and well-managed GPBS ecosystem. *Note: this was moved from an objective to a strategy in support of Objective #1.*
2. Support the development and improvement of existing and develop new volunteer citizen-science programs for monitoring, data collection, and restoration efforts for oyster restoration projects that involve youth, K-12, universities, and adults.
3. Enlist advocacy groups to help improve conditions in Escambia, Pensacola, East and Blackwater Bays in Escambia and Santa Rosa Counties. *Note: Consider referring this to Pensacola and Perdido Bay Estuary Program as a longer-term strategy.*
4. Education efforts address both positive and negative consequences of restored and depleted/lost oyster reef habitat respectively.

5. Demonstrate the benefits of shell recycling programs to return shell back into the System.
6. Demonstrate the economic and social benefits derived from the ecosystem services provided by oyster fisheries and restored/natural reef habitat.
7. Seek public buy-in for supporting restoration efforts by highlighting the benefits to and enlisting the support of recreational fishing, ecotourism, and water sports interests.
8. Develop metrics for public engagement and education programs.
9. Develop and support education programs that focus on oysters as drivers of restoration and management of the GPBS.
10. Develop education and mentoring programs to ensure there is new entry into restoration, wild harvest, and aquaculture industries.
11. Develop education and mentoring programs to ensure there is new entry into restoration, wild harvest, and aquaculture industries. [review with same strategy for Goals B and C]
12. Conduct a comprehensive QA analysis for future grant funding for strategies deriving from the Plan.
13. Evaluate whether the GPBS Plan contradicts and/or works synergistically with and leverages other plans and strategies and initiatives (i.e., DOD/Eglin, NFWFMD, Aquatic Reserve/DEP, existing restoration efforts). *County plans: Carpenters Creek and x Harbor, living shoreline in SRC on public lands, SR Sound, East Bay, Upper Escambia Bay; Gulf Island National Seashore, state parks, FWC properties, state forests. PERT Plan. Region-wide Gulf trustee implementation group for NRDA funding (M. Parker/FWRI). Whitney Scheffel will provide a management plan data base and will provide a list to Anne Birch.*

The Working Group reviewed the Performance Measures that are the decision-support tools that the Working Group will use for evaluating the potential outcomes of different strategies. They reviewed Goals A-D and reviewed TNC Team suggested edits and discussed potential new measures (See Appendix 6 for the performance measures for each goal areas).

The facilitators invited members of the public to comment and there was no one who offered public comments. They then reviewed possible agenda items for the Meeting VII, which will take place September 9, 2020 in a Zoom virtual meeting format. The TNC Team agreed to review the comments and address in revised strategies and send out in advance an updated Worksheet document. The next several meetings will review and refine strategies and actions.

In terms of future presentations suggestions included: an outline of the resource management planning landscape; a continuing update on the Estuary Program progress; an update on Apalachicola Bay FWC shut down of oyster harvest.

The meeting concluded with an evaluation and adjourned at 12:30 p.m. CT. (See Appendix #3)



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PENSACOLA BAY SYSTEM (GPBS)  
GPBS STAKEHOLDER WORKING GROUP  
MEETING VI DETAILED SUMMARY- July 22, 2020**

*This section provides a more detailed summary of the meeting with additional data from the presentations and verbatim comments from the Working Group members during review and discussion of the Themes.*

## **I. INTRODUCTION**

### **A. WELCOME AND AGENDA AND PROCEDURES REVIEW**

Anne Birch, Florida Marine Program Manager, The Nature Conservancy, welcomed the Stakeholder Working Group members to the online Zoom 6<sup>th</sup> meeting. The Working Group members participated in a chat icebreaker that asked where is their next vacation destination after it's safe to travel? Responses included staycations, Belize, Key Largo, a wedding in Cincinnati, Vancouver Island, Kaneohe Bay, Hawai'i, Max Patch (North Carolina on the Appalachian Trail), Yellowstone Natl. Park, New Zealand, Scalloping in St. Joe Bay, Bonaire, Crystal River, Port St Joe, it's no New Zealand!, Sicily, Ireland and elsewhere. (see Appendix 3)



Anne introduced the GPBS facilitation team of Jeff Blair and Bob Jones with Facilitated Solutions LLC. Members introduced themselves (See Appendix #2) and the facilitator reviewed the meeting objectives and agenda which members agreed to follow (See Appendix #1). Members also approved, without changes, the May 19, 2020 facilitator's meeting summary and the GPBS Watermen Workshop on June 5, 2020 that members had received in advance of the meeting. Jeff then reviewed guidelines for GPBS virtual meetings.

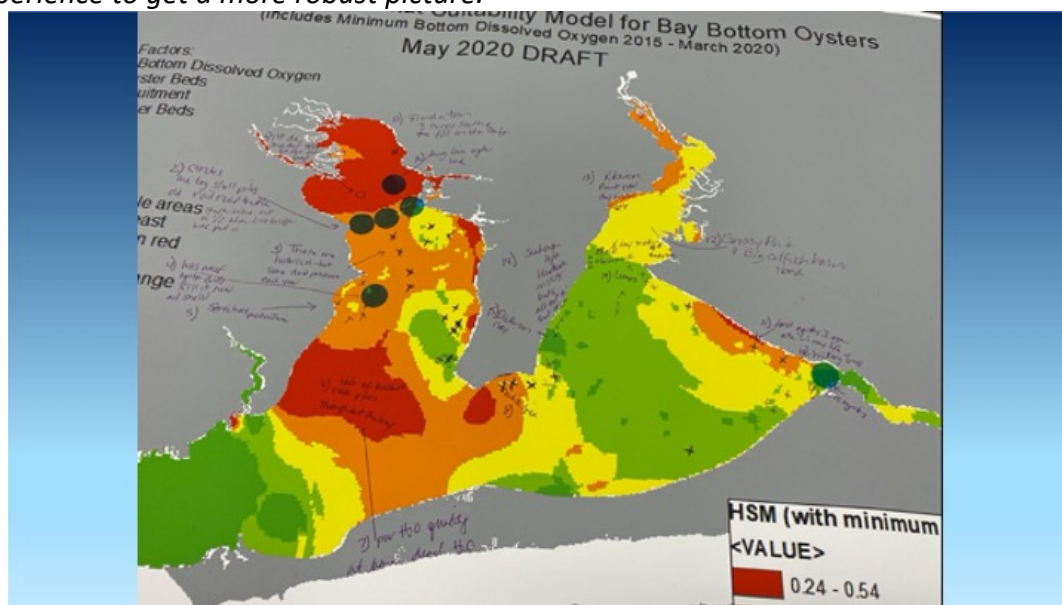
## II. PRESENTATION ON THE GREATER PENSACOLA BAY SYSTEM

### A. UPDATE ON OYSTER HABITAT SUITABILITY MAPPING- UTILIZING BOTTOM AND SURFACE DISSOLVED OXYGEN

Laura Geselbracht, Florida Senior Marine Scientist for The Nature Conservancy, reviewed a Larval Source Map based on the 2007-08 research and model of Bill Arnold's team. She reviewed oyster larval distribution using Bill Arnold's model which simulated larval releases and showed good distribution ("communication") among sites. Larvae good distribution are important for healthy reefs. Laura then presented the results of input from Watermen on the Habitat Suitability Model Map in June 2020 (*see below*).

#### WG Comments/Questions July 22

- Visually the GIS map points to higher % areas for transport of larvae. *A: This is interpolation and best guess. It is also based on data for a point in time- 2007-08*
- 8% vs 1% transport- are some reefs more efficient at transport than others? *A: Yes. It is based on the simulations.*
- What about the north shore (Escrimano Point and river and north into Blackwater Bay and East Bay? Is there no transport of larvae? *A: Don't know. Oyster men map shows there are important reefs in the area.*
- The TNC artificial reefs are in here and they colonized rapidly. *A good test to see if reefs get populated after the first year. TNC will monitor for 5 years.*
- Do we know how the inter-reef larval transport works and time frames? *A: It is variable. There have been 10-year larvae bursts in the Northeast but not in the Gulf of Mexico. This data won't support decisions of where to site reefs. Simulated larvae transport included in the model. Average conditions are included and targeted to particular year. This is a snapshot, and we need to continue this type of research over time and incorporate oystermen experience to get a more robust picture.*



### III. GREATER PENSACOLA BAY SYSTEM GOAL FRAMEWORK

The Working Group continued to agree on the “vision of success” themes that were drawn from the member Questionnaire responses, reviewed and rated by members at the October 9 and November 15 Working Group meetings and formed the basis for the goal framework. The vision themes represent key topical issue areas that together characterize the desirable future for the oyster reef ecosystem and the Greater Pensacola Bay System. The goals, outcomes and objectives were developed at the January and April 2020 meetings of the Working Group. (See Appendix #7)

#### GPBS STAKEHOLDER WORKING GROUP GOAL FRAMEWORK

A. A Healthy and Productive Oyster Reef Ecosystem	B. The Management and Regulation of the Oyster Fishery and Aquaculture Industry
C. Thriving Economy Connected to the Greater Pensacola Bay System	D. An Engaged and Informed Public

#### A. HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM (THEME- ECOLOGICAL)

The Healthy and Productive Oyster Reef Ecosystem vision theme, goal, outcomes are set forth in Appendix 6. The goal for this theme is, “The Greater Pensacola Bay System sustains a healthy and productive oyster reef ecosystem.” There are nine objectives covering: oyster populations; ecosystem services; substrate; and future conditions.

##### OBJECTIVES

The Working Group reviewed proposed changes to the objectives #2,3,4 & 6 and agreed with the changes:

##### Oyster Populations

2. Oyster recruitment and survivorship occurs in the estuary on an annual basis at a level that sustains oyster harvest and ecosystem services from harvested and non-harvested oyster reefs.
3. Spawning stock biomass and parental standing stock has increased across the ecological gradients (e.g., salinity, dissolved oxygen) appropriate for oyster growth and survival
4. A net positive shell-budget on both harvested and non-harvested ~~fished and non-fished~~ oyster reefs is sustained while oyster reef restoration is underway.

##### Substrate

6. Policies and programs are established and implemented that provide the means to return a significant portion of the harvested oyster shell back to the GPBS for substrate needed for larval recruitment to enhance population productivity on harvested and non-harvested oyster reefs.

*WG Comments/Questions July 22*

- OK with objectives changes

##### DRAFT ECOLOGICAL STRATEGIES

The Working Group reviewed and refined nine (9) draft ecological strategies and identified new strategy areas for consideration.

1. Manage oyster populations using data collection and monitoring, including using annual stock assessment data combined with comprehensive shell budget models.

2. Update a spatial database and create a prioritized list of restoration projects with a variety of objectives.
3. Establish restoration and management targets for functional oyster habitat using 1-3 ecological health indicators (e.g., amount of water filtered by oysters, amount of juvenile fish enhancement by reefs); differentiate between harvest and non-harvest reefs.

*WG Comments/Questions July 22*

- Tie in seagrass with a separate strategy?
  - Add as a distinct strategy? Tying to other ecological system restoration efforts?
  - Add seagrass after “Amount of water filter”?
  - Add a potential metric: seagrass habitat established as a result of oyster restoration
  - Seagrass also enhances oyster restoration projects co-benefits
  - Increase health productivity of oyster reefs.
  - Focus on seagrass restoration project with the plan. Enhance that goal. Appropriate strategy for goal independent of other measures.
  - Seagrass- restoration and oyster restoration- are there regulatory limitations for joining these two?
  - Are these tied together on Dissolved Oxygen (DO)? Can we keep track of both at same time?
  - There are benefits for both- have restoration of both systems.
  - For ecological restoration projects are SAV, emergent marsh and oyster reefs combined?
  - Review funding sources and permitting limitations for each.
  - Salt marsh and emergent vegetation
  - This may be the heart of restoring a bay system and it will need program goals and action items.
  - Seagrass and Oysters- should this be a target for the Estuary Program’s CCMP? Strategy for the PPBE program?
  - This plan is about oysters and restoring the system.
  - This is a powerful idea. Explicitly reference riparian and wetland areas for sediment removal.
  - Broader coverage- other than seagrass- other SAV- would address?
  - Emergent vs. Emergent vegetation
  - It will help securing grants if this is identified in the plan.
4. Implement policies and programs for the return of sufficient oyster shell back to the GPBS to support sustainable oyster population and demographic targets and thresholds.

*WG Comments/Questions July 22*

- Add “oyster” after sufficient
  - OK with changes to the strategy
5. Identify sources and manage silt and sedimentation to the estuary impacting the oyster reef ecosystem.
  6. Remediate sediments in areas of the Bay currently unable to support oyster reef growth.

*WG Comments/Questions July 22*

- OK with changes to the strategy

7. Design and implement local community ~~incentive~~ initiatives for growing oysters for their ecosystem services (i.e., Mobile Bay oyster gardening), ensuring that science-based best practices are utilized.

*WG Comments/Questions July 22*

- OK with changes to the strategy
8. Utilize models and other relevant information on climate change impacts to influence adaptive, sustainable reef management.
  9. Allocate sufficient funding for habitat restoration based on the oyster HSM ~~restoration suitability model~~ (e.g., Develop funding source for cultch used in oyster reef restoration.).

*WG Comments/Questions July 22*

- OK with changes to the strategy

#### **OTHER WG COMMENTS/QUESTIONS ON STRATEGIES**

- **Seagrass.** Consider drafting Seagrass objective and strategy? Oyster reef and seagrass synergistic- tie in with seagrass objective
- Ecosystem targets measure seagrass extent? Tie into the #3 strategy?
- **Buffering capacity-** Consider the buffering capacity of wetlands, riparian zones, coastal areas that are documenting in the NFWMD SWIM plan
- **Long term environmental impacts-** “Including but not limited to ocean acidification”
- **Sediment impacts on water quality standards-** should we add sediment impacts?
- **Predation.** Consider predation- impact on oyster spat.
- **Climate changes.** Factor in a changing climate? E.g. higher salinity levels and other alterations to the system. E.g. consider water flow regimes regarding where to site reefs, and how high they need to be sustainable.
- **Other restoration projects** in relation to oysters that are underway (e.g. living shoreline projects in Santa Rosa and Escambia Counties, Carpenters Creek, Navarre Beach Marine Park on Santa Rosa Sound; Mapped vertical sea wall in Santa Rosa County, etc.
- What projects have sought NFWF funding?
- Reference a prioritized list of restoration projects that Santa Rosa and Escambia Counties.
- Reference any Gulf Islands National Seashore, and state parks projects in the study area.
- Whitney Scheffel will put together a folder of various management plans for restoration projects for the next meeting.
- Reference the strategy document for the regionwide Gulf Trustee Implementation Group (NRDA Funding.
- PERT (Panhandle Estuarine Restoration Team) plan may be helpful to review and reference.
- **Enhance funding proposals for implementing the Plan.** We need a QA review to enhance grant funding applications to implement parts of the plan in coordination with the Estuary Program.
- Addendum to the Plan to help tie to other plans and funding sources. E.g. DOD funding plans for Eglin and Hulbert
- **Oyster decadal super spawn?** E.g. in the Northeast. This is infrequent in South along the Gulf of Mexico.

## A HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM PERFORMANCE MEASURES

The TNC Team suggested some edits to some of the performance measures (*see Appendix 6 for the list of performance measures for each goal*) including adding “height” to B, adding live oysters and density of dead oysters to D, and adding a new performance measure J to include: Water quality improvement data (i.e., clarity, filtration by oysters, total suspended solids).

### WG Comments/Questions July 22

- Salinity stabilization as a performance measure?
- Add a chlorophyll measure?
- Area settlement substrate and reef height
- Height or relief- spatial configuration. Relief different from height. Height relative to the substrate- area and relief
- “Interstitial space to describe relief?”
- The TNC will review the comments and prepare any suggested additional measures the review by the Working Group.

## B. THE MANAGEMENT AND REGULATION OF THE OYSTER FISHERY AND AQUACULTURE INDUSTRY (THEME: WILD HARVEST AND AQUACULTURE)

The Wild Harvest and Aquaculture vision theme, goal, outcomes are set forth in Appendix 6.

**GOAL:** A productive, and sustainably managed and regulated oyster reef fishery ~~and ecosystem~~ and aquaculture industry in the Greater Pensacola Bay System.

### WG Comments/Questions July 22

- OK with changes to the Goal

### OBJECTIVES

The Working Group reviewed proposed changes to combine objectives #1 & 3, and agreed with the changes:

1. Establish and manage for sustainable biological and production thresholds and target for wild harvest and aquaculture (no thresholds) that are adaptable and re-assessed on a periodic basis to account for changes in climate and other future environmental conditions. \*

*\*Note: this is new wording proposed to combine Objectives 1 & 3 below.*

~~1. Establish and follow a biological threshold for harvest that provides for a sustainable commercial and recreational wild oyster fishery.~~

~~3. Sustainable production thresholds and targets for wild harvest and aquaculture, respectively, are considered adaptable and re-assessed on a periodic basis to account for changes in climate and other future environmental conditions.~~

### WG Comments/Questions July 22

- Thresholds vs targets? Define? Threshold = minimum? and Target = goal?
- Once lease site is set there is minimum production but FDACS don't set maximum production. Amount of production based on # of sites.
- The Team will review, clarify and bring back to the Working Group for review



- OK with changes in combining objectives 1 and 3.
3. Growth and expansion of the oyster aquaculture industry in the GPSBS uses best management practices that have broad support of the industry and community, and enables economic opportunities, while maximizing beneficial services of aquaculture, and preventing negative effects to the GPBS and its users.

#### DRAFT WILD HARVEST & AQUACULTURE STRATEGIES

The Working Group reviewed and refined and agreed to eighteen (18) draft ecological strategies for further future refinements.

1. ~~Estuary-specific~~ Oyster population and demographic targets and biological thresholds are developed, at the smallest scale that makes sense, using routine monitoring data combined with shell budget models. *Need to define the scale used for the specific boundaries.*

*WG Comments/Questions July 22*

- OK with changes to the strategy
2. Evaluate management scenarios of harvestable oyster reefs that allow for sustainable spat production and spawning to allow the oyster populations to recover (e.g., closures, rotational harvest, set aside spawning reefs).

*WG Comments/Questions July 22*

- OK with changes to the strategy
3. Enhance the monitoring and accuracy of commercial and recreational oyster harvest data collection and reporting methods through co-management of the resource by agencies and watermen.
  4. Enhance the monitoring and accuracy of aquaculture stock and harvest data collection for inclusion in ecosystem benefits and sustainability targets.
  5. Management of oyster resources are enforced through co-management oversight by agencies and watermen.
  6. Evaluate existing allowable and alternative gear type options and harvest methods, including the use of experimental gear for wild oyster harvesting.

*WG Comments/Questions July 22*

- This is drawn from the June 2020 Waterman Workshop
  - OK with the new strategy
7. Allocate sufficient funding for restoration of harvested reefs and aquaculture farms based on the oyster Habitat Suitability Model (HSM).

*WG Comments/Questions July 22*

- OK with changes to the strategy
8. Utilize the HSM as a means for identifying areas for oyster reef restoration and the siting of aquaculture facilities.

*WG Comments/Questions July 22*

- OK with changes to the strategy
9. Design and build reef structures suitable for subtidal oyster settlement and harvesting.

#### WG Comments/Questions July 22

- This is drawn from the June 2020 Waterman Workshop
  - Subtidal? A: Most not pulling from intertidal
  - OK with the new strategy
10. Investigate oyster shell and oyster relay programs to move both cultch and live oysters to more favorable habitat based on the HSM, information on larval source areas and environmental conditions.

#### WG Comments/Questions July 22

- OK with changes to the strategy
11. Traditional and novel policies and programs are implemented to support return of shell back to the system to support oyster population and demographic targets and thresholds for wild harvest.
12. Evaluate ~~Institute~~ additional management strategies that support the current commercial oyster industry members (e.g., rotational harvest, Territorial Use Rights of Fishing, limited entry, regulations, transferable license program).

#### WG Comments/Questions July 22

- Follow with a review of these management strategies? Are there viable management options? This currently doesn't lead to action.
  - What is meant by "evaluate"? Is this to evaluate to get deliverables on management strategies?
13. Create a public/private program to cooperatively manage specific harvested reefs.
14. Review and revise state management agency regulations and management goals in consultation with oyster resource stakeholders to ensure they are clear, consistently applied, and enforceable and include a working co-management feedback loop with regulators to refine the program and enhance compliance.

#### WG Comments/Questions July 22

- Interface with State regulations? A: watermen would need to engage and provide input as "co-managers"
  - FWC will evaluate existing regulations with stakeholders consistent with the co-management foundation for this plan.
  - OK with changes to the strategy
15. Develop an aquaculture growth plan that outlines and defines the optimal expansion of the aquaculture industry in terms of both number of leases and amount of leased area. The idea of the plan is to prepare for expected future growth of the industry.
16. Develop Spatial Area Management Plan that maps ideal areas for aquaculture and future growth potential for aquaculture in the system using abiotic (DO, salinity, temperature, etc.) and social variables (proximity to docks, exclusion zones, etc.).
17. Establish Aquaculture Use Zones (AUZ) for the Greater Pensacola Bay System based on the Oyster EBFM Plan.

#### WG Comments/Questions July 22

- This is focused on expediting the process
- FDACS uses this strategy for grouping of leases together. Larger areas of leases. Already established leases. Congregated together makes enforcement and management easier.

- OK with changes to the strategy
18. Develop "future oyster farmers" program that helps locals in the area learn about aquaculture and the potential for making a living by growing oysters in the GPBS. (e.g., Partner with existing programs such as Sea Grant MS/AL programs).

WG Comments/Questions July 22

- The "e.g." will be an action to implement the strategy
- OK with changes to the strategy

#### **THE MANAGEMENT AND REGULATION OF THE OYSTER FISHERY AND AQUACULTURE INDUSTRY**

The Working group reviewed and agreed with the 12 measures and a 13<sup>th</sup> new measure

WG Comments/Questions July 22

- Add a measure- size/aerial extent of harvestable reefs?

#### **C. A THRIVING ECONOMY CONNECTED TO THE GREATER PENSACOLA BAY SYSTEM**

The Thriving Economy vision theme, goal, outcomes are set forth in Appendix 6. The draft changes for the six (6) objectives were reviewed and agreed to subject to further refinements.

##### **OBJECTIVES**

~~Develop a Marketing Strategy to promote wild harvest and cultured oysters and the ecosystem services provided by improved oyster populations in the GPBS. (This was moved to the strategy section)~~

1. Oyster habitat reefs, oyster harvesting fishing and oyster aquaculture are recognized and valued as key components of the local economy and cultural heritage by the GPBS community and the state. ~~Panhandle region, including supporting diverse and healthy fisheries, ecotourism, and other recreational activities~~
2. Economic indicators of the commercial oyster fishery, aquaculture industry and associated industries in the GPBS demonstrate increasing viability and growth over 10 × years.
3. Investments in ~~Key~~ water quality management ~~investments~~ are being made with the goal of protecting and supporting enabling the oyster habitat fishery and oyster aquaculture industry (including land use impacts).
4. The oyster ~~wild harvest~~ fishery and oyster aquaculture industries provide economic and career growth opportunities.
5. Industries, and businesses within the GPBS are supportive of and compatible with a healthy, ~~and~~ well-managed, and resilient GPBS ecosystem.
6. Government Growth management policies, plans and regulations affecting oysters ~~the GPBS~~ are compatible with a healthy and well-managed ecosystem while maintaining a thriving economy and supporting cultural heritage.

WG Comments/Questions July 22

- OK with changes to each of the 6 objectives.

## DRAFT THRIVING ECONOMY STRATEGIES

The Working Group reviewed and refined and agreed to five (5) draft thriving economy strategies for further future refinements.

1. Monitor key economic indicators for changes over time based on restoration efforts to the GPBS.
2. Develop a marketing and communication plan that promotes wild harvest and cultured oysters and the ecosystem services provided by restored oyster populations in the GPBS and celebrates oysters as an important feature of the area's cultural heritage.

*Note: the following two strategies were refined and combined into strategy #2 above.*

- ~~• Develop business plans for the industry that reflect trends for consumer interest in local products.~~
- ~~• Build an oyster aquaculture brand for the GPBS that emphasizes clean water and local connection.~~

*WG Comments/Questions July 22*

- OK with combined changes to this strategy.
3. Demonstrate the connection between enhanced recreational fishing and tourism opportunities and oyster reef habitat quality and quantity.

*WG Comments/Questions July 22*

- OK with changes to this strategy.
4. Align local and state government growth management policies and practices that support oyster restoration, fisheries and aquaculture.

*WG Comments/Questions July 22*

- Delete "growth management" as there are other local and state policies and practices.
  - OK with changes to this strategy.
5. Develop oyster farming/harvesting and restoration workforce planning. (review and correlate with Goal B strategy #18)
    - Connect with #18 Goal B- future oyster farmers Add strategy #5 for developing a workforce pipeline. Training and encouraging oyster farmers. Not just farming, but the oyster industry at large.
    - Does this duplicate #18 in Goal B? Augment this strategy? Synergize wording and reference each other.
    - OK with adding this strategy to Thriving Economy.

## A THRIVING ECONOMY CONNECTED TO THE GREATER PENSACOLA BAY SYSTEM PERFORMANCE MEASURES

The Working group reviewed and agreed with the 28 measures,

*WG Comments/Questions July 22*

- add chlorophyll to X.
- How is BB tied into a thriving economy?
- Ecosystem service- quantify? Move to A as a performance measure?  
In the Economic section include a bullet list for ecosystem services- combine C & D for a sustainable workforce development performance measure

- Organize categorically under each list of performance measures

#### **D. AN ENGAGED AND INFORMED PUBLIC AND DECISION-MAKERS (THEME: PUBLIC EDUCATION COMMUNICATION)**

The Public Education and Communication vision theme, goal, outcomes, objectives and performance measures are set forth in Appendix 6. The draft changes for the three (3) objectives were reviewed and agreed to by the Working Group subject to further refinements. The Working Group reviewed and agreed to suggested changes to the “Outcome” of this effort.

**OUTCOME:** By 2030, the Greater Pensacola Bay System stakeholders ~~private and nonprofit civic leaders, the public, and decision-makers~~ are informed of the importance of sustaining the health of the Bay System, and work actively ~~together along with elected and appointed leaders and managers~~ to invest in ~~and the implementation of~~ the Plan.

*WG Comments/Questions July 22*

- OK with changes to the outcome statement.

#### **DRAFT PUBLIC EDUCATION AND COMMUNICATIONS OBJECTIVES**

4. Establish a coordinated outreach and education plan to increase public and stakeholder awareness and support for a healthy and well-managed oyster and GPBS ecosystem.
5. Funding resources are identified and utilized to generate awareness, education, and support for a healthy oyster and GPBS ecosystem.
6. The Pensacola and Perdido Bays Estuary Program incorporates and promotes the recommendations of the GPBS new oyster plan.

*WG Comments/Questions July 22*

- OK with changes to objectives #1 and #3.

#### **DRAFT PUBLIC EDUCATION AND COMMUNICATIONS STRATEGIES**

The Working Group reviewed, refined and agreed to thirteen (13) draft public education and communications strategies for further future refinements.

1. Businesses, industries, non-profits, and local governments are supportive and included in outreach and education efforts to generate and increase public awareness and support for a healthy and well-managed GPBS ecosystem. *Note: this was moved from an objective to a strategy in support of Objective #1.*

*WG Comments/Questions July 22*

- OK with draft new strategy.
2. ~~Develop and~~ Support the development and improvement of existing and develop new and the development of new volunteer ~~public~~ citizen-science programs for monitoring, data collection, and restoration efforts for oyster ~~reef~~ restoration projects that involve youth, ~~adult~~, K-12, universities, and adults.

*WG Comments/Questions July 22*

- Existing and/or new? Add “new”
- “Support existing and develop new”
- For youth, K12, universities and adults

- OK with draft changes to the strategy.
3. Enlist advocacy groups to help improve conditions in Escambia, Pensacola, East and Blackwater Bays in Escambia and Santa Rosa Counties. *Note: Consider referring this to Pensacola and Perdido Bay Estuary Program as a longer-term strategy.*

*WG Comments/Questions July 22*

- Define hydrologic code [HUC 8 for Program]?
  - GPBS- no map. Is this the watershed. PBS? A: "Greater" Pensacola Bay meant to include both SR and Escambia.
  - PBS- definition.
  - This has been an issue for the Estuary Program, includes sub bays.
  - PBS as entire watershed is a Bay?
  - Is PBS watershed a defined thing?
  - Should we include Alabama as a source for water flowing through the GPBS?
  - Map HUC 8 for the program?
  - It may be simpler to using a defined term vs, creating a new term
  - OK with draft changes to the strategy. The Team will review and bring back suggestions to the Working Group.
4. ~~In~~ Education efforts address both positive and negative consequences of restored ~~(including shell recovery programs)~~ and depleted/lost oyster reef habitat respectively.

*WG Comments/Questions July 22*

- OK with changes for this strategy.
5. Demonstrate the benefits of shell recycling programs to return ~~and the negative aspects of not recycling the shell back into the System.~~

*WG Comments/Questions July 22*

- OK with changes for this strategy.
6. Demonstrate the economic and social benefits derived from the ecosystem services provided by oyster fisheries and restored/natural reef habitat.
7. Seek public buy-in for supporting restoration efforts by highlighting the benefits to and enlisting the support of recreational fishing, ecotourism, and water sports interests.

*WG Comments/Questions July 22*

- OK with this new strategy.
8. Develop ~~economic~~ metrics for public engagement and education programs.

*WG Comments/Questions July 22*

- OK with changes for this strategy.
9. Develop and support education programs that focus on oysters as drivers of restoration and management of the GPBS.

*WG Comments/Questions July 22*

- A premise of the plan is that oysters drive restoration
  - OK with this new strategy.
10. Develop education and mentoring programs to ensure there is new entry into restoration, wild harvest, and aquaculture industries.

*WG Comments/Questions July 22*



- This may involve pairing oystermen with new entrants.
  - Look at B and C and connect the related strategies.
  - OK with this new strategy.
11. Develop education and mentoring programs to ensure there is new entry into restoration, wild harvest, and aquaculture industries. [review with same strategy for Goals B and C]
  12. Conduct a comprehensive QA analysis for future grant funding for strategies deriving from the Plan.
  13. Evaluate whether the GPBS Plan contradicts and/or works synergistically with and leverages other plans and strategies and initiatives (i.e., DOD/Eglin, NFWFMD, Aquatic Reserve/DEP, existing restoration efforts). County plans: Carpenters Creek and x Harbor, living shoreline in SRC on public lands, SR Sound, East Bay, Upper Escambia Bay; Gulf Island National Seashore, state parks, FWC properties, state forests. PERT Plan. Region-wide Gulf trustee implementation group for NRDA funding (M. Parker/FWRI). Whitney Scheffel will provide a management plan data base and will provide a list to Anne Birch.

#### **AN ENGAGED AND INFORMED PUBLIC AND DECISION-MAKERS PERFORMANCE MEASURES**

The Working group reviewed and agreed with the 7 measures and agreed to an 8<sup>th</sup>: Number of volunteers participating in oyster reef restoration efforts.

#### *WG Comments/Questions July 22*

- The County recently approved funding Milton treatment plant to get all septic tanks off the Gulf Breeze peninsula.
- The Estuary Program will be tracking changes to local land development code development
- We need to engage local government leadership and increase their involvement in the plan development and implementation to restore the oyster fishery
- Schools- student field trips and involved in restoration efforts
- Sustainable workforce development that supports non-traditional and underserved employees of the industry.

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

The facilitators invited members of the public to comment and there was no one who offered public comments.

The Working Group discussed a question raised by a member about why the plan is called the “Greater” Pensacola Bay System when the system is typically referred to without the word “Greater” (e.g. by the estuary program and in the water management district’s plan for the region). TNC staff agreed to revisit the name.

The Working Group reviewed possible agenda items for the Meeting VII, which will take place September 9, 2020 in a Zoom virtual meeting format. The TNC Team agreed to review the comments and address in revised strategies and send out in advance an updated Worksheet document. The next several meetings will review and refine strategies and actions.

In terms of future presentations suggestions included:

- An outline of the resource management planning landscape;
- A continuing update on the Estuary Program progress and from the new PPE Business Partnership Committee;
- A report later in 2020 from Matt Deitch and Jane Caffrey on the results of a funded study of historical trends in each watershed in Northwest Florida and some modeling in each watershed;
- A presentation from Terry Strickland who is a marketing consultant and former journalist who writes on Pensacola as a food destination; and
- An update on Apalachicola Bay FWC shut down of oyster harvest. Mike Norberg might present on this at the next meeting.

The meeting concluded with a Zoom evaluation. *(See Appendix #3)*

*The meeting adjourned at 12:30 p.m. CT.*

## Appendix #1 - Meeting Agenda

**OYSTER ECOSYSTEM-BASED FISHERY MANAGEMENT PLAN  
FOR THE GREATER PENSACOLA BAY SYSTEM  
GPBS STAKEHOLDER WORKING GROUP  
MEETING VI  
JULY 22, 2020—8:30 AM – 12:30 PM CT  
VIRTUAL MEETING VIA ZOOM  
HOST: THE NATURE CONSERVANCY, FLORIDA  
FACILITATOR: FACILITATED SOLUTIONS, LLC**

### MEETING VI OBJECTIVES

- ✓ To Approve Regular Procedural Topics (Agenda, and Meeting V and Workshop Summary Reports)
- ✓ To Review Meeting Schedule and Updated Workplan
- ✓ To Receive Requested Presentation
- ✓ To Review, Clarify, and Refine Objectives and Strategies to Achieve Goals
- ✓ To Identify Needed: Next Steps, Information, Presentations, and Agenda Items for Sept. Meeting

### GPBS STAKEHOLDER WORKING GROUP MEETING VI AGENDA—JULY 22, 2020

<b>8:30 AM CT</b>		<b>CALL TO ORDER</b>
1.	8:30	WELCOME, REVIEW OF VIRTUAL MEETING PARTICIPATION GUIDELINES, AND ROLL CALL
2.	8:40	REVIEW AND APPROVAL of Agenda
3.	8:45	APPROVAL OF FACILITATORS' SUMMARY REPORTS (MAY 19, 2020 & JUNE 4, 2020 MEETINGS)
4.	8:50	REVIEW OF PROJECT MEETING SCHEDULE, UPDATED WORKPLAN, AND PROPOSED ADDITION OF MEETINGS TO ACCOMMODATE THE SHORTER VIRTUAL MEETINGS FORMAT
5.	9:00	STAKEHOLDER REQUESTED PRESENTATIONS AND BRIEFINGS <ul style="list-style-type: none"> <li>Larval Source Map Review, and Results of Input from Watermen on Habitat Suitability Model Map – Laura Geselbracht, TNC</li> </ul>
6.	9:30	B.) THE MANAGEMENT AND REGULATION OF THE OYSTER FISHERY AND AQUACULTURE <ul style="list-style-type: none"> <li>Identification and Evaluation of Strategies to Achieve Goal</li> </ul>
<b>10:15 AM CT</b>		<b>FULL BREAK (15 MINUTES) AND GROUP PHOTO</b>
7.	10:30	C.) A Thriving Economy Connected to the Greater Pensacola Bay System <ul style="list-style-type: none"> <li>Refine and Clarify Objectives, as Needed</li> <li>Identification and Evaluation of Strategies to Achieve Goal</li> </ul>
8.	11:00	D.) An Engaged and Informed Public <ul style="list-style-type: none"> <li>Refine and Clarify Objectives, as Needed</li> <li>Identification and Evaluation of Strategies to Achieve Goal</li> </ul>
<b>11:30 AM CT</b>		<b>STRETCH BREAK (5 MINUTES)</b>
9.	11:35	A.) A HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM <ul style="list-style-type: none"> <li>Identification and Evaluation of Strategies to Achieve Goal</li> </ul>
10.	12:15 PM	PUBLIC COMMENT
11.	12:25	NEXT STEPS AND ASSIGNMENTS, INFORMATION NEEDS, PRESENTATIONS AND AGENDA ITEMS FOR THE NEXT MEETING <ul style="list-style-type: none"> <li>Review of action items and assignments</li> <li>Identify needed information and presentations for the next meeting</li> <li>Identify agenda items for the next meeting</li> <li>Group Photo</li> <li>Meeting evaluation – Online Survey</li> </ul>
<b>12:30 PM CT</b>		<b>ADJOURN</b>

## Appendix #2 -Working Group Members, Project Team, Facilitators & Public Participating

(**Bold** = members who attended the July 22, 2020 meeting. When two people are listed on the same line the first person listed is the Working Group member and the second person listed is their Alternate)

GPBS STAKEHOLDER WORKING GROUP MEMBERS AND PUBLIC ATTENDANCE	
MEMBER	AFFILIATION
<b>Building/Development</b>	
1. <b>Shelby Johnson</b>	Johnson Construction of Pensacola, Inc.
2. <b>Glen Miley</b>	biome Consulting Group
<b>Business/Real Estate/Economic Development/Tourism</b>	
3. Will Dunaway/ <b>Barbara Albrecht</b>	Environmental Lawyer
4. <b>Donnie McMahon</b>	Business and Aquaculture
<b>Environmental/Citizen</b>	
5. <b>Christian Wagley</b>	Healthy Gulf
<b>Local Government</b>	
6. <b>Shelley Alexander/Tanya Linzy</b>	Santa Rosa County Environmental Programs
7. Chips Kirschenfeld/ <b>Mark Nicholas</b>	Escambia County Natural Resources Management
8. <b>Matt Posner/Whitney Scheffel</b>	Pensacola and Perdido Bays Estuary Program
9. <b>Mark Jackson</b>	Pensacola City Administrator
<b>Recreational Fishing</b>	
10. <i>Chris Phillips</i>	Hot Spot Charters
<b>Seafood Industry</b>	
11. <b>Thomas Derbes II</b>	Aquaculture
12. <i>Pasco Gibson</i>	Seafood Industry/Waterman
13. <b>LD Henderson</b>	Waterman
14. <b>Josh Neese</b>	Aquaculture
15. <i>Pete Nichols</i>	Seafood Industry/Waterman
16. <i>Tommy Pugh</i>	Seafood Dealer
17. <i>Phil Rollo</i>	Seafood Dealer
18. <i>Calvin Sullivan</i>	Oyster Harvester
19. <i>William (Hub) Williamson</i>	Oyster Harvester
<b>State Government</b>	
20. <b>Beth Fugate</b>	FDEP/Aquatic Preserves
21. Kent Smith/ <b>Katie Konchar</b>	FWC Division of Habitat and Species Conservation
22. <i>Mike Norberg</i>	FWC Division of Marine Fisheries Management
23. <b>Portia Sapp</b>	FDACS Division of Aquaculture
24. <b>Paul Thurman</b>	NWFWMD
<b>Tourism</b>	
25. <i>Shawn Brown</i>	Visit Pensacola
<b>University/Research</b>	
26. <b>Jane Caffrey</b>	UWF
27. Rick O'Connor/ <b>Carrie Stevenson</b>	UF/IFAS Escambia County
28. <b>Chris Verlinde</b>	UF/IFAS/Sea Grant Santa Rosa County
<b>PROJECT TEAM AND FACILITATORS</b>	
<b>THE NATURE CONSERVANCY</b>	
<b>Anne Birch</b>	Marine Program Manager, Florida
<b>Bryan DeAngelis</b>	Marine Habitat Scientist, North America
<b>Laura Geselbracht</b>	Sr. Marine Scientist, Florida

<b>Andrea Graves</b>	Marine Projects Coordinator, Florida
<b>FACILITATED SOLUTIONS, LLC</b>	
<b>Jeff Blair</b>	Working Group Facilitator
<b>Robert Jones</b>	Working Group Facilitator
<b>PUBLIC</b>	
<b>1. Jennifer Sagan</b>	WOOD

### Appendix #3 -Next Vacation Icebreaker Chat Reponses

Where is your next vacation destination once it's safe to travel again...real or in your dreams?



- We just had a staycation, was a blast.
- Belize but probably Key Largo
- I am headed home for my brother's wedding back home in Cincinnati last week of August.
- Vancouver Island! If it is summer that is.
- Kaneohe Bay, Hawai'i. We had to cancel the trip once but hopefully we can go next year.
- Max Patch (North Carolina on the AT)
- Yellowstone Natl. Park
- New Zealand
- Scaloping in St. Joe Bay
- Bonaire
- Crystal River
- Port St Joe, it's no New Zealand!
- Sicily
- Was to be in Ireland a few weeks ago. Alas...COVID. grrrrr
- Hopefully I will be in the Middle Keys "quarantining" in September
- "Quarintini"...gin and emergen-C
- Margaritas are antiviral...right??



## Appendix #4- Zoom Working Group Member Meeting VI Evaluation and Chat Summary

### 1. The meeting objectives were clearly communicated at the beginning

Average Rating	5.Strongly Agree	4.Agree	3.Not Sure	2.Disagree	1.Strongly Disagree
4.6 of 5	12	5	1	0	0

### 2. The meeting objectives were met.

Average Rating	5.Strongly Agree	4.Agree	3.Not Sure	2.Disagree	1.Strongly Disagree
4.3 of 5	8	9	0	1	0

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

Average Rating	5.Strongly Agree	4.Agree	3.Not Sure	2.Disagree	1.Strongly Disagree
4.7 of 5	13	3	1	0	0

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

Average Rating	5.Strongly Agree	4.Agree	3.Not Sure	2.Disagree	1.Strongly Disagree
4.7 of 5	12	5	0	0	0

### 5. The meeting was the appropriate length of time.

Average Rating	5.Strongly Agree	4.Agree	3.Not Sure	2.Disagree	1.Strongly Disagree
4.5 of 5	8	9	0	0	0

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

Average Rating	5.Strongly Agree	4.Agree	3.Not Sure	2.Disagree	1.Strongly Disagree
5.0 of 5	17	0	0	0	0

### July 22, 2020 Online Chat

- Glen Miley: Much of this team in the news...  
[https://urldefense.com/v3/\\_\\_https://www.pnj.com/story/news/2020/07/21/civiccon-pensacola-and-perdido-bays-estuary-program-aims-restore-waterways/5472804002/\\_;!!PhOWcWs!igfiAQzLWx5TcBCdA8lwBAHtklIWpaEDGDxKwn8Kc3EoAraVqTLfDxqrUpu4tU\\$](https://urldefense.com/v3/__https://www.pnj.com/story/news/2020/07/21/civiccon-pensacola-and-perdido-bays-estuary-program-aims-restore-waterways/5472804002/_;!!PhOWcWs!igfiAQzLWx5TcBCdA8lwBAHtklIWpaEDGDxKwn8Kc3EoAraVqTLfDxqrUpu4tU$)
- Chris V: Ld Henderson, Tommy Pugh, Calvin Sullivan and Phil Rollo contributed to the maps.
- Anne Birch: Thank you to them!
- Matt Posner: Could you add the publications discussed today, and from previous presentations, to the Box folder? Lot of great resources. A: Anne Birch: Yes and we will let you know when they are posted...likely later today along with Laura's PPT from today with all simulations.

- Anne Birch: the worksheet is on the way to your email. It's also in your Box folder here [https://urldefense.com/v3/\\_\\_https://tnc.box.com/s/2fkzt24eei9ayjqjlc3fywjfoggjmcc\\_\\_;!!PhOWcWs!igfiAQzLWx5TcBCdA8lwBAHtklIWpaEDGDxKwn8Kc3EoAraVqTLIfDxqnqSU-hQ\\$](https://urldefense.com/v3/__https://tnc.box.com/s/2fkzt24eei9ayjqjlc3fywjfoggjmcc__;!!PhOWcWs!igfiAQzLWx5TcBCdA8lwBAHtklIWpaEDGDxKwn8Kc3EoAraVqTLIfDxqnqSU-hQ$)
- Beth Fugate: thanks Anne!
- Barbara Albrecht: Good Morning All, According to the 'Old Timers', East Bay oysters were harvested and depending on the market conditions in the city c/would hold them in lower Bayou Texar until the ones at market were depleted. This would go back to the 40s and 50s.
- Glen Miley: [https://urldefense.com/v3/\\_\\_https://www.nfwwater.com/Water-Resources/Regional-Wetland-Mitigation-Program/Regional-Mitigation-Plan/Watersheds/Pensacola-Watershed\\*:text=Pensacola\\*20Bay\\*20System\\*20Watershed&text=The\\*20watershed\\*20cover s\\*20nearly\\*207\\*20000,substantial\\*20area\\*20of\\*20southern\\*20Alabama\\_\\_;!34IJSUIJSUIJSUIJSU !!PhOWcWs!igfiAQzLWx5TcBCdA8lwBAHtklIWpaEDGDxKwn8Kc3EoAraVqTLIfDxq2Y7MZY0\\$](https://urldefense.com/v3/__https://www.nfwwater.com/Water-Resources/Regional-Wetland-Mitigation-Program/Regional-Mitigation-Plan/Watersheds/Pensacola-Watershed*:text=Pensacola*20Bay*20System*20Watershed&text=The*20watershed*20cover s*20nearly*207*20000,substantial*20area*20of*20southern*20Alabama__;!34IJSUIJSUIJSUIJSU !!PhOWcWs!igfiAQzLWx5TcBCdA8lwBAHtklIWpaEDGDxKwn8Kc3EoAraVqTLIfDxq2Y7MZY0$) .
- Shelley #2: Can we put a map in the document showing what it is?
- Chris V: what page are you on? Whitney Scheffel: Page 3 of the worksheet :)
- Jane Caffrey: "chlorophyll"
- Mark Nicholas: seems like salinity stabilization might be listed
- Josh Neese: "Interstitial space"
- Chris V: Sustainable workforce development that supports non-traditional and underserved employees of the industry.
- Glen Miley: Completely random thought...Thinking about pubic awareness / participation and the surface area of dock pilings in our system. Is there a coating, sleeve, or other mechanism to promote oyster attachment to a surface? If there is such, we could encourage dock-owners participation and add a large volume of oysters to the system...
- Carrie Stevenson: There's the oyster gardening projects that Chris V has worked towards
- Anne Birch: Not exactly what you're referencing but there are 'oyster gardening programs that involve dock owners putting grow cages under their docks.
- Glen Miley: Good meeting, thanks y'all!
- Portia Sapp: Who oversees the oyster gardening program?
- Chris V: Barbara Albrecht,
- Barbara Albrecht: The Bream Fishermen has an oyster project where we placed 75 oysters in a cage off citizen's docks.
- Barbara Albrecht: The resulting information has provided a mini site suitability index for where we think they might do best.
- Chris V: We would like to continue or expand, there is a lot of interest in the area.
- Thomas Derbes: Thanks guys, stay safe these next weeks
- Josh Neese: Thanks everyone

## Appendix #5 - Project Schedule & Workplan

*Meetings Dates are Subject to Change*

GPBS STAKEHOLDER WORKING GROUP MEETING SCHEDULE AND WORKPLAN		
STANDING UP AND ORGANIZATION OF THE GPBS STAKEHOLDER WORKING GROUP		
<i>TNC/Facilitated Solutions LLC Stakeholder Assessment and Report</i>	<i>May-Sept. 2019</i>	<i>TNC contracted <a href="#">Facilitated Solutions, LLC</a>, based in Tallahassee, to conduct a series of stakeholder interviews and meetings in the community outline key issues and to recommend stakeholder representatives on a Working Group. Facilitated Solutions LLC subsequently designed and facilitated the Working Group meetings and process going forward.</i>
<i>Stakeholder Working Group Questionnaire</i>	<i>Sept. 2019</i>	<i>Working Group members completed a questionnaire in advance of the Organizational Meeting</i>
<b>Meeting I. Studer Institute</b>	Oct. 9, 2019	Scoping and organizational meeting, review of the assessment report and questionnaire, and review and refinement of overall project purpose, vision and goal framework.
<b>Meeting II. UF/IFAS SRC Extension</b>	Nov. 15, 2019	Introduction to tools (e.g. oyster calculator, etc.) and member requested presentations on oyster ecology and restoration. Review and refinement of vision themes and goal framework.
SCOPING OF GPBS ISSUES, IDENTIFICATION OF PERFORMANCE MEASURES & OPTIONS		
<b>Meeting III. Sanders Beach</b>	Jan. 15, 2020	Presentations on regulatory management roles and framework for oysters, and strategic communications. Review and refinement of vision goals (4) framework continued. Introduction to potential performance measures to evaluate strategies.
<b>Meeting IV. <a href="#">Zoom Platform</a></b>	April 9, 2020	Presentations on Oyster Habitat Restoration Suitability Model, Pensacola & Perdido Bays Estuary Program (PPBEP) and <u>G</u> ulf of Mexico <u>E</u> cosystem Service Logic Models & <u>S</u> ocio-Economic Indicators-GEMS Project. Review of draft vision theme and objectives, identification of strategies and related performance measures to evaluate strategies.
<b>Meeting V. <a href="#">Zoom Platform</a></b>	May 19, 2020	Member requested presentations on FDEP Responsibilities in Oyster and Estuarine Management in Florida, An Economic Research Agenda for the GPBS, and Shell Budget Briefing. Review testing acceptability and refinement of strategies in the 4 goal areas, review performance measures for evaluating strategies, and identify potential Plan implementation actions and steps.
<b>Watermen Workshop <a href="#">Zoom Platform</a></b>	June 4, 2020	Workshop with Working Group watermen stakeholders to hear their comments and perspectives regarding draft Objectives and Strategies.
BUILDING CONSENSUS ON GPBS OYSTER ECOSYSTEM-BASED FISHERIES MANAGEMENT PLAN		

Update and Presentation to PPBEP	July 14, 2020	Presentations by TNC to the Pensacola & Perdido Bays Estuary Program's Technical Advisory Committee on the Plan goals and framework.
<b>Meeting VI.</b> <b>Zoom Platform</b>	July 22, 2020	Member requested presentations. Review of comments and suggestions from Watermen Workshop. Review testing acceptability and refinement of strategies in the 4 goal areas, review performance measures for evaluating strategies, and identify potential Plan implementation actions and steps.
TENTATIVE: Presentation to PPBEP	Sept. 9, 2020	Presentation by TNC to the Pensacola & Perdido Bays Estuary Program's Policy Board on the Plan goals and framework.
<b>Meeting VII.</b> <b>Zoom Platform</b>	September 16, 2020	Review of comments and suggestions from the PPBEP presentations, test acceptability and refinement of strategies and actions in Goal area A review related performance measures for evaluating strategies/actions.
<b>Meeting VIII.</b> <b>Zoom Platform</b>	<u>October 21, 2020</u>	Test acceptability and refinement of strategies and actions in Goal area B review related performance measures for evaluating strategies/actions.
<b>FINALIZING CONSENSUS ON GPBS OYSTER ECOSYSTEM-BASED FISHERIES MANAGEMENT PLAN</b>		
<b>Meeting IX.</b> <b>Zoom Platform or UF/IFAS</b>	Nov. 18, 2020	Test acceptability and refinement of strategies and actions in Goals C & D and review related performance measures for evaluating strategies/actions. Review the GPBS Oyster Ecosystem-Based Fisheries Management Plan outline.
<u>Watermen Workshop #2</u>	<u>December 2020</u>	Review strategies and draft actions with watermen
<u>Update and Presentations to PPBEP</u>	<u>January 2021</u>	Presentations by TNC to the Pensacola & Perdido Bays Estuary Program on the Plan's progress and the Estuary Program's role in implementing the Plan.
<b>Meeting X.</b> <b>Zoom Platform or Studer Institute</b>	Jan. 27, 2021	Review and consensus testing of Draft Plan and implementation guidance and agreement on Draft Plan for Public Workshop,
Public Workshop Escambia & Santa Rosa counties	February 2021	Review and seek input on GPBS Oyster Ecosystem-Based Fisheries Management Plan and implementation guidance.
<b>Meeting XI.</b> <b>Zoom Platform or Studer Institute</b>	<u>February 2021</u>	Review of public comment and refinement of the GBBS plan
<b>Meeting XII.</b> <b>Zoom Platform or UF/IFAS SRC Extension</b>	March 17, 2021	Refinement and agreement on the GPBS Oyster Ecosystem-Based Fisheries Management Plan and implementation guidance.
<i><u>Presentation of final GPBS O-EBFM Plan to the PPBEP</u></i>	<i><u>April 2021</u></i>	<i>Presentation by TNC and Working Group members to the Pensacola &amp; Perdido Bays Estuary Program on the Plan and the Estuary Program's role in implementing the Plan.</i>

## **Appendix #6- Vision Themes, Goals, Outcomes, Objectives and Performance Measures**

The GPBS Working Groups agreed to the following statements at the October & December 2019, and January & April 2020 meetings.

### **THEME A. A HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM (THEME: ECOLOGICAL)**

**VISION THEME A:** The oyster reef ecosystem is managed in a manner that supports ecosystem services by protecting and enhancing the habitat and resource in a sustainable and productive manner.

**GOAL:** The Greater Pensacola Bay System sustains a healthy and productive oyster reef ecosystem.

**Outcome:** By 2030, the oyster reef ecosystem within the Greater Pensacola Bay is managed in a sustainable manner providing measurable ecosystem services.

**Key Topical Issues:** At the November 15, 2019 meeting members brainstormed key topical issues including: Identifiable and achievable targets; Growth; Public understanding and support; Best practices as a framework for recommendations; Link the Plan to the Estuary Program; Model successes from other estuaries and scale up faster; Leverage and support funding for advance wastewater treatment facilities; Geo spatial mapping; Integrate and build on existing management plans; Identify existing and planned projects; Resiliency and adaptive management as guiding principles; and, Clarify and mitigate potential impacts to sustainably managing the PBS.

#### **OBJECTIVES**

##### **Oyster Populations**

1. Measurements of oyster reef and population conditions (including larval production spat settlement, Spawning Stock Assessment, shell budgets) are defined and quantifiable, with target and threshold levels identified.
2. Oyster recruitment and survivorship occurs in the estuary on an annual basis at a level that sustains oyster harvest and ecosystem services from oyster reefs.
3. Spawning stock biomass and parental standing stock has increased across the ecological gradients (e.g., salinity, dissolved oxygen) appropriate for oyster growth and survival
4. A net positive shell-budget on both fished and non-fished reefs is sustained while oyster reef restoration is underway.

##### **Ecosystem Service**

5. Ecosystem services and ecological health indicators are defined and measurable, with identified target and threshold levels.

##### **Substrate**

6. Policies and programs are established and implemented that provide the means to return a significant portion of the harvested oyster shell back to the GPBS for substrate needed for larval recruitment to enhance population productivity.
7. Abundant oyster settlement substrate exists across the estuarine ecological gradients, where appropriate for oyster growth and survival.

## Future Conditions

8. Climate-ready considerations are incorporated into restoration and management plans for the GPBS to consider changes in management and future environmental conditions, such as freshwater flow (quantity, timing, hydrodynamics), water quality (e.g., salinity and temperature), sea level, and habitat change.
9. Impacts and activities from future climate scenarios affecting the health and restoration of the GPBS ecosystem are considered and addressed to minimize negative effects to the GPBS ecosystem

**Performance Measures** are the decision-support tools forecast results that stakeholders will use for weighing the potential outcomes of different strategies

### A.) A HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM

#### *Related Performance Measures to Evaluate Strategies*

- A. Shell budget model indicators.
- B. Area and relief (spatial configuration and Josh's comment on chat) of settlement substrate in the estuary (possibly with goals defined for each 'management objective' – fishing, water filtration, fish production). Extent/size amount of oyster reef structure.
- C. Larval abundance in the water column or on standardized settlement substrates.
- D. Density of live oysters, and density of dead oysters (number per m<sup>2</sup>).
- E. Total oyster biomass (by reef and/or by reefs with different management objectives).
- F. Biomass of spawning stock (> 3 inches or 75 mm) and biomass of very-large spawning stock (> 5 inches or 127 mm).
- G. Reef-enhanced species (or selected species) are increasing in abundance.
- H. Seagrass area is expanding within the estuary.
- I. Number of reef-enhanced species (Oyster Calculator, and FWC's fishery-independent monitoring program).
- J. Water quality improvement data (i.e., clarity, filtration by oysters, total suspended solids, chlorophyll, salinity stabilization).

## THEME B. THE MANAGEMENT AND REGULATION OF THE OYSTER FISHERY AND AQUACULTURE INDUSTRY (THEME: WILD HARVEST AND AQUACULTURE)

**VISION THEME B:** The management, regulation, restoration and enhancement of the oyster fishery and aquaculture industry is conducted by working collaboratively with stakeholders to create a plan that ensures that protection of the fishery and habitat is monitored and implemented in a manner that is supported by science, data, and field and industry experience and observation, and provides fair and equitable access to the oyster resource.

**GOAL:** A productive, and sustainably managed and regulated oyster reef fishery and ecosystem and aquaculture industry in the Greater Pensacola Bay System.

**OUTCOME:** By 2030, oyster reefs in the Greater Pensacola Bay System support a sustainably managed and productive fishery and an aquaculture industry and supported by stakeholders, using the best available science and monitoring to manage and regulate fishery and aquaculture activities in a fair and equitable manner.



**KEY TOPICAL ISSUES:** Ongoing funding for management; Ecological restoration principles; Fish and oyster production objectives; Adapt for future changes and circumstances; Incorporate state vetted plans; Address enforcement of regulation; Manage wild harvest differently than aquaculture; Regulation of aquaculture; define fair and equitable; and, Consider providing access to the fishery through changes in licensing requirements, building in a preference for locals or specific user types.

#### **OBJECTIVES**

1. Establish and follow a biological threshold for harvest that provides for a sustainable commercial and recreational wild oyster fishery.
2. Growth and expansion of the oyster aquaculture industry in the GPSBS uses best management practices that has broad support of the industry and community and enables economic opportunities, while maximizing beneficial services of aquaculture, and preventing negative effects to the GPBS and its users.
3. Sustainable production thresholds and targets for wild harvest and aquaculture, respectively, are considered adaptable and re-assessed on a periodic basis to account for changes in climate and other future environmental conditions.

**Performance Measures** are the decision-support tools forecast results that stakeholders will use for weighing the potential outcomes of different strategies

#### **B.) THE MANAGEMENT AND REGULATION OF THE OYSTER FISHERY AND AQUACULTURE INDUSTRY**

##### *Related Performance Measures to Evaluate Strategies*

- A. Total harvest in bushels.
- B. Harvest by size category.
- C. Harvest by location.
- D. Harvest by fishery type (recreational/commercial).
- E. Timing of harvest during the fishing season.
- F. Harvest per licensed harvester.
- G. Effort expended harvesting.
- H. Catch per unit effort (catch per trip).
- I. Amount of illegal harvest.
- J. Number of full-time harvesters that the fishery can support.
- K. Percent of live oysters harvested.
- L. Biomass of oysters (> 3 inches?) on fishable reefs.
- M. Number and size of aquaculture leases.
- N. Extent/size amount of harvestable oyster reefs

## **THEME C. A THRIVING ECONOMY CONNECTED TO THE GREATER PENSACOLA BAY SYSTEM (THEME: THRIVING ECONOMY)**

**VISION THEME C:** The Greater Pensacola Bay System oyster fishery, aquaculture, and oyster reef ecosystem serve 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.

**GOAL:** A healthy Bay System contributes measurably to a thriving economy for the Greater Pensacola Bay region.

**OUTCOME:** By 2030, recovery of the Greater Pensacola Bay ecosystem spurred by restoration of oyster reef ecosystems and a sustainable oyster fishery and development of aquaculture has led to a thriving economy that provides opportunities for sustainable and responsible industry, development, business, recreation and tourism.

**KEY TOPICAL ISSUES:** Growth and conflicts among users; Aquaculture regulation and user conflicts; Aquaculture Use Zones; Economic activities that rely on a healthy bay; Social science; Controlling runoff; Public pushback for living seashore projects; Revenue generation and the plan; Local government involvement; Access opportunities to the water; Maintaining working waterfronts; and, Promotion and branding of aquaculture and oysters and the health of the Bay.

### **OBJECTIVES**

1. Develop a Marketing Strategy to promote wild harvest and cultured oysters and the ecosystem services provided by improved oyster populations in the GPBS.
2. Oyster reefs, oyster fishing and oyster aquaculture are recognized as key components of the local economy and Panhandle region, including supporting diverse and healthy fisheries, ecotourism, and other recreational activities.
3. Economic indicators of the commercial oyster fishery, aquaculture industry and associated industries in the GPBS demonstrate increasing viability and growth over X years.
4. Key water quality management investments are being made with the goal of protecting and enabling the oyster fishery and oyster aquaculture industry (including land use impacts).
5. The wild harvest fishery and oyster aquaculture industries provide economic and career growth opportunities.
6. Industries, and businesses within the GPBS are supportive and compatible with a healthy and well-managed GPBS ecosystem.
7. Growth management policies, plans and regulations affecting the GPBS are compatible with a healthy and well-managed ecosystem while maintaining a thriving economy and supporting cultural heritage.

**Performance Measures** are the decision-support tools forecast results that stakeholders will use for weighing the potential outcomes of different strategies.

### **C.) A THRIVING ECONOMY CONNECTED TO THE GREATER PENSACOLA BAY SYSTEM**

#### *Related Performance Measures to Evaluate Strategies*

- A. Value of harvest that meets an economic minimum for sustainability for waterman.
- B. Cost/value per bags.
- C. Number of fishermen participating in the fishery.
- D. Number of aquaculturists.
- E. Sustainable workforce development (chat from Chris V.)
- F. Total aquaculture production and revenue.

- G. Revenue per harvester (and perhaps its distribution).
- H. Travel time costs, and distance travelled.
- I. Cost of management measures (e.g., restoration efforts).
- J. Percent of local oysters in the market.
- K. Revenue per harvester (and perhaps its distribution).
- L. Revenue raised in fees/bushel taxes.
- M. Restoration costs avoided.
- N. Social benefits (value of ecosystem benefits).
- O. Performance metric for economic sustainability of the community.
- P. Cost-Benefit Analysis (total economic investment versus outcome to economy).
- Q. Area of prohibited (or open) waters.
- R. Number of days of emergency closures.
- S. Water quality data.
- T. Economic measures (number of fishers, aquaculturists, days fishing).
- U. Commercial and recreational catch, as well as aquaculture production (bags per day, total annual catch).
- V. Estimated filtration at estuarine scale (Oyster Calculator).
- W. Percentage of “residence time filtration” (Oyster Calculator).
- X. Estimated enhancement of reef-enhanced species (Oyster Calculator, along with FWC’s fishery-independent monitoring program data).
- Y. Turbidity/Water clarity (reduction in suspended matter and chlorophyll).
- Z. Nitrogen reduction (sequestration, burial and/or denitrification).
- AA. Value of nitrogen reduction (\$ in dollars).
- BB. Percent Removal of Nitrogen.
- CC. Filtration of estuary volume by oysters (wild and aquaculture stock) occurs within estuary residence time (27 days).

#### **THEME D: AN ENGAGED AND INFORMED PUBLIC AND DECISION-MAKERS (THEME: PUBLIC EDUCATION COMMUNICATION)**

**VISION THEME D:** 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 a thriving community.

**GOAL:** The oyster reef ecosystem of the Greater Pensacola Bay System is supported and protected by an engaged and informed public, and decision-makers.

**OUTCOME:** By 2030, the Greater Pensacola Bay System stakeholders are informed of the importance of sustaining the health of the Bay System and work actively to invest in the implementation of the Plan.

**KEY TOPICAL ISSUES:** A communication strategy to bring the PBS back to health; Marine habitats- out of sight out of mind; Plan should fit into the Estuary CCMP; Local government support; Unique community/state partnership; Distrust of science; and, Lack of information and measures on benefits to the community for a restored system.

#### **OBJECTIVES**

1. Establish a coordinated outreach and education plan to increase public awareness and support for a healthy and well-managed GPBS ecosystem.
2. Businesses, industries, non-profits, and local governments are supportive and included in outreach and education efforts to generate and increase public awareness and support for a healthy and well-managed GPBS ecosystem.
3. Funding resources are identified and utilized to generate awareness, education, and support for a healthy oyster and GPBS ecosystem.
4. The new estuary program incorporates and promotes the recommendations of the new oyster plan.

**Performance Measures** are the decision-support tools forecast results that stakeholders will use for weighing the potential outcomes of different strategies.

**D.) AN ENGAGED AND INFORMED PUBLIC AND DECISION-MAKERS- THEME: PUBLIC EDUCATION COMMUNICATION**

*Related Performance Measures to Evaluate Strategies*

- A. Amount of funding for Plan implementation.
- B. Number times plan is referenced in growth management plans.
- C. Number of people with improved understanding of the issues important to health and restoration of the GPBS.
- D. Number of businesses, schools, industries, non-profits, and local governments participating in outreach efforts. (Local government leader involvement in helping with this)
- E. Percent funding of available in relation to funding needed to implement the Plan.
- F. Amount of local, state, federal (and RESTORE) funds allocated for management and restoration actions in Pensacola Bay.
- G. The extent to which the Pensacola and Perdido Bays Estuary Program implements recommendations in the new Plan.
- H. Number of volunteers participating in oyster reef restoration efforts.
- I. Tracking changes to LDC policy for enhancing Bay system.

## Appendix #7 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.

**PROJECT WEBPAGE (URL):** <https://ppbep.org/oyster-ebfm-plan>

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