

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

JUNE 4, 2020

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

Convened by:



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GPBS WATERMEN WORKSHOP

June 4, 2020

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

WATERMEN WORKSHOP DETAILED SUMMARY

June 4, 2020

Anne Birch, Florida Marine Program Manager, The Nature Conservancy, welcomed the Workshop participants to the online Zoom and in person workshop and thanked Chris Verlinde for her continuing efforts to engage watermen in the GPBS O-EBFM process. Anne introduced the GPBS facilitation team of Jeff Blair and Bob Jones with Facilitated Solutions LLC. Participants introduced themselves (*See Appendix #2*) and the facilitator briefly reviewed the workshop objectives and agenda which participants agreed to follow (*See Appendix #1*).

Jeff Blair briefly noted the GPBS Stakeholder Working Group has agreed on a goal framework representing key topical issue areas that together characterize the desirable future for the oyster reef ecosystem and the Greater Pensacola Bay System.

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 MANAGEMENT AND REGULATION OF THE OYSTER FISHERY AND AQUACULTURE INDUSTRY

He noted the agenda calls for the review of Goal B first: “A productive, and sustainably managed and regulated oyster reef fishery and ecosystem and aquaculture industry in the Greater Pensacola Bay System.” He reviewed the vision theme, outcome and objectives for this goal and provided a quick overview of the twelve draft wild harvest and aquaculture strategies that had been developed by the Working Group to date:

Wild Harvest and Aquaculture Draft Strategies (12)

1. Estuary-specific oyster population and demographic targets and biological thresholds are developed, using routine monitoring data combined with shell budget models. Need to define the scale used for the specific boundaries.
2. 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.
3. Enhance the monitoring and accuracy of aquaculture stock and harvest data collection for inclusion in ecosystem benefits and sustainability targets.
4. Management of oyster resources are enforced through co-management oversight by agencies and watermen.

5. Allocate sufficient funding for restoration of harvested reefs and aquaculture farms based on the oyster habitat suitability model.
6. 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.
7. Institute additional management strategies that support the current industry members (e.g., rotational harvest, Territorial Use Rights of Fishing, limited entry, regulations).
8. Create a public/private program to cooperatively manage specific harvested reefs.
9. Review and revise state management agency regulations and management goals in consultation with oyster resource stakeholders to ensure they are clear and enforceable and include a working feedback loop with the regulated public to refine the program and enhance compliance.
10. 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.
11. Develop a 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.)
12. 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.

He then opened it up for discussion of the strategies and other ideas among the watermen present at the Workshop.

6-04 Watermen Comments/Suggestions listed as strategy topics in order of frequency of comments:

Overall

- 1990s 200 sacks a day across his dock from January-May and selling for 5 cents an oyster. Shucked 300 dozen in 4 hours a day. Now can't catch an oyster today.

Cultch Substrate (17)

1. Strategy for building beds- fish populations will go up because they are feeding on the reefs
2. Find more substrate to build up the reefs
3. Important that cultch is set sideways with ridges to catch spat
4. Oyster beds "need hills and valleys on the substrate surface". Can't blow cultch all over. Have to place it. The higher we can build the reefs up the better. Historically some of the best beds extended off the bottom about 3 feet.
5. Natural oyster hulls work best.
6. BP 57 gravel. Works well. Took bed put 23 Xmas trees. Over 3 inches/ great cover. Spat attaches to bark
7. 3D formation needed so there are surface areas to catch oyster spat.
8. We could restore oysters by 2025-26 if we get the cultch out over the next 2 years.

9. How many cubic yds per acre are advisable? 200 cubic yards? *A: Apalachicola Bay put different amounts from 100-400 yds per acre. It appears 300 cubic yards per acre is ideal*
10. Pick the areas with the best bottoms.
11. Consider bottoms with good oxygen, salinity - pick the best first
12. Escambia bay- clam shells clustered oysters
13. Brick substrate- highest clustering rate.
14. 150 acre of beds- 45,000 cubic yards of material
15. \$10.5 million 150 acres of already established. More acreage for newer oyster beds
16. Marble chips- used for cultch as well as crushed brick (check if pH is good) and small clam shells.
17. If bottom is more than 2" thick, oyster shell will sink in.

Aquaculture (14)

1. Like the aquaculture strategies (#3, 10, 11, 12)
2. Mortality rates affect both on and off bottom aquaculture vs floating.
3. Mortality of cultured oysters, but lots of diploid spate settling on the farms.
4. Fresh water rinse- recently. Mortality
5. Die off is happening for aquaculture from Texas to Florida's Big Bend
6. While there is oyster die off in summer, never seen as many blue crab, trout, red fish, and mullets on oyster farm,
7. Aquaculture is helping out with the fish habitat
8. Very much like the future oysters farming program strategy (#13)
9. Panacea- per year leases. Pay the fees
10. MS/AL Sea Grant farmer training program has been successful. Bill Walton at Auburn University
11. Bringing it to Panacea. Consider Pensacola
12. FDACS Apalachicola Bay oyster farmers. Class is free. Film and make available
13. Consider creating an AUZ (aquaculture use zone) to expedite the leasing process. Identify where the leases should go.
14. Aquaculture is helping with the fish habitat

Oyster Relay program (10)

1. Relay oyster shell (dead oysters/hulls) from one location to another- accelerate the production of the reefs and bed. Help other fish- come in right away.
2. Need to be able to move oysters. Can be done cheaply and fast.
3. Where there is not proper cultch material, need to replenish system
4. Oyster relay (transported and transplanted) needs to be part of management regime.
5. Garcon Point bridge- 4 inches thick. Bridges and railroad trusses have oysters
6. Good areas need to be selected not dropped anywhere
7. Consider strategy for moving oyster substrates from Escambia and Perdido Bays to suitable places in GPBS.
8. FDEP permitted. Monitor
9. Work boats to deal with this

10. Get a relay approved and get TV coverage- ecology- Sportsman fisherman will not ignore.

Limited entry (10)

1. Close down the oyster fishery and let it grow for 4 years.
2. Limited entry- some reefs closed but Bay open for fishing
3. What would demonstrate someone can gain entry?
4. Adequate equipment including a good boat adequate for doing oystering and bringing the catch to dock, historically in the fishery
5. Transferable licenses.
6. Need to know where going in GPBS. Weekenders, amateurs will get lost and don't know to keep oysters wet and in the shade.
7. Need to abide by the FWC which have good rules for oysters
8. Experience/ knowing where the oyster are.
9. New people in the industry- limited entry permits transfer
10. Blue crab industry example- moratorium on new permits. One retires, could transfer through sales.

Oyster Regulations (9)

1. Diving for oysters? *A: if open for harvest diving and hand tongs are legal. Can't use mechanical means. Can't dredge. Could use if harvested by hand.*
2. What are the regulations for bringing oysters up from the bottom?
3. FWC- basket or a wench?
4. For 5 years haven't renewed his fishing license
5. Experimental gear for deeper waters.
6. Gear type strategy- experimental- helpful harvest
7. Should be easy to enforce and shouldn't take a law degree.
8. FWC should approve gear (but can't modified)
9. FDACS is helpful with accelerating permitting

FWC Enforcement (8)

1. Debating with FWC. Have to be in writing and told to every game warden.
2. \$500 ticket most people can't pay.
3. Need clear and consistent enforcement of regulations
4. Inconsistent management.
5. FWC marine patrol officers- I haven't been checked for 2 years
6. FWC is aware of the problem of #s of officers and funding for law enforcement
7. Look at Apalachicola enforcement language
8. Howard Jones wrote more tickets on oysters. East Bay. Monitor. Now volunteering with FWC. He is a resource we should tap.

Causes of Summertime Oyster Die Off in GPBS? (8)

1. More spat in the system but in summertime there is an oyster die off over the last 6-8 years and the die-off is bigger now

2. Does excess rain influence the die off?
3. Is it too much nitrogen? Dissolved oxygen?
4. Bottom- East Bay mouth of bay is “on fire with oysters and reef fish.”
5. While there is oyster die off in summer, never seen as many blue crab, trout, red fish, and mullets on oyster farm
6. Eastern shore- Tom King Bayou in Navarre from new school runoff?
7. More waterfront subdivisions where none existed 10 years ago
8. Water issues Santa Rosa Sound runoff but many oysters despite the water quality problems

Bottom and lack of flushing (7)

1. There is a dead zone on the bottom that is several inches thick.
2. Nothing on bottom surviving. Is it heavy metals?
3. Not a good exchange on the bottom. No flushing of silt.
4. Need to identify sources of silt into the Bay.
5. Lots more hardbottom available in Escambia and BWB than elsewhere in the PBS.
6. Need mapping
7. 36 identifiable blast rock piles in BWB, very deep, can't tong for oysters there.

FDACS Cultched Oyster Reefs funded by Deepwater Horizon oil spill Year 3 Monitoring Report is promising for oysters and fish (6)

1. It is looking good from BP cultch put down in 2016 in 7 places over 2 weeks- East Bay and Escambia Bay are in good shape based on recent monitoring reports.
2. In general, not enough for commercial harvest. Escribano Point- nothing for harvest
3. Speckled Trout are spawning around the beds and Red Fish are plentiful along the Eastern and Northern shore, and flounder are coming back.
4. Northern shore is alive.
5. Plenty of mullet around reefs
6. On Scenic Highway side there are oysters now. Swapped sides- in 1960s

Rotation and conservation of oysters (5)

1. “I leave the oysters alone until they grow to 5-6 inches.”
2. Rotational harvest worked well in 70s as State paid oysterman not to harvest in certain areas.
3. Build up and they will take care of themselves
4. Protect spawning stock
5. Spat travel now 10 miles off Garson point. Select reefs that offer shorter distance for spat to travel to reefs

Shell supply and recycling program (3)

1. Plenty of natural oyster shells. Permission to move from other places.
2. Shell recycling program strategy. Strategy #6.

3. Chris V. trying to collect shells. 8000 lbs. in 2 months. Can put 8000 lbs. on his boat per day.

Manage oyster beds (2)

1. Plenty of oysters- plow/manage beds
2. A little from here a little from there. Controlled, and managed. Would be cheap and fast

Oyster Reef and Oyster Aquaculture contribution to building fisheries (1)

1. Aquaculture is helping out with the fish habitat

HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM

Goal A provides “The Greater Pensacola Bay System sustains a healthy and productive oyster reef ecosystem.” Jeff reviewed the vision theme, outcome and objectives covering oyster populations, ecosystem services, substrate, and future conditions for this goal. He provided a quick overview of the 8 draft ecological strategies that had been developed by the Working Group to date:

Ecological Strategies

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 shell back to the GPBS to support oyster population and demographic targets and thresholds.
5. Identify sources and manage silt and sedimentation to the estuary impacting the oyster reef ecosystem.
6. Design and implement local community incentive initiatives for growing oysters for the ecosystem services (i.e., Mobile Bay oyster gardening), ensuring that science-based best practices are utilized.
7. Utilize models and other relevant information on climate change impacts to influence adaptive sustainable reef management.
8. Allocate sufficient funding for habitat restoration based on the oyster restoration suitability model.

6-04 Watermen Comments/Suggestions listed as strategy topics in order of frequency of comments:

Living shorelines (3)

1. Need to be putting in uniform mounds. Wave action
2. Design with wave action will take the top off it.

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3. Living shorelines get beaten down

Oysters reefs decline in the GPBS (2)

1. Something happened with the Bay system in terms of oysters over the past decade.
2. Destroyed the oyster reefs during the DWH oil spill. State declared an emergency all summer with dredges flattening out the reefs. No longer mounds or mountains of oysters

TNC Side-Scan Sonar Mapping Project (1)

1. Bay mapping project? TNC will be doing sonar scanning for the existing reefs in Pensacola East Bay and Blackwater Bay, Summer 2020. Interested in finding out if there are any intertidal reefs. This will be combined with state collected data on productivity and sampling for height and size and % dead/live

Funding for cultch (1)

1. Need funding for new oyster bed and cultch. Presently no \$\$ budgeted

Seismographic data (1)

1. Seismographic data on bottoms?

Eglin AFB (1)

1. Eglin AFB help with this overall effort to restore oysters in the GPBS. They do studies and can provide materials.

A THRIVING ECONOMY CONNECTED TO THE GREATER PENSACOLA BAY SYSTEM

Goal C, provides “A healthy Bay System contributes measurably to a thriving economy for the Greater Pensacola Bay region.” Jeff reviewed the vision theme, outcome and the 7 objectives for this goal. He provided a quick overview of the 4 draft thriving economy strategies that had been developed by the Working Group:

Thriving Economy Strategies

1. Monitor key economic indicators for changes over time based on restoration efforts to the GPBS.
2. Develop business plans for the industry that reflect trends for consumer interest in local products.
3. Growth Management. Work with local governments to align growth management policies and practices with awareness and support for oyster restoration success from land impacts.
4. Build an oyster aquaculture-brand for the GPBS that emphasizes clean water and local connection.

6-04 Watermen Comments/Suggestions listed as strategy topics in order of frequency of comments:

Recreational fishing contributions to the GPBS economy (6)

1. Recreational fishing lives off oyster beds and farms
2. Few recreational oyster harvesters. Tongs may keep them out of the fishery. They cost \$300 for a good pair.
3. Charter boats- 250 trips a year
4. Stimulating economic activity– stay in hotels, gotten big in Bays.

GPBS Watermen Workshop Summary, June 4, 2020

5. Draw for us for tourist funding
6. More rec fishing now than ever has been

Market Potential (3)

1. Can only get live oysters at 10 restaurants in the area. Could sell lots of oysters if they were available.
2. Oysters have been the #1 delicacy for everyone. Oyster from the PBS so much better than from Houston. East Bay is famous for its oysters. Even the cultured oysters are delicious.
3. People come from quite a distance to eat East Bay oysters once they know how good they are.

Promote local oysters (1)

1. Build on seafood integrity and promote the best oysters around in East Bay and throughout the Panhandle, restaurants and customers want fresh Florida oysters.

AN ENGAGED AND INFORMED PUBLIC AND DECISION-MAKERS

Goal D, provides “The oyster reef ecosystem of the Greater Pensacola Bay System is supported and protected by an engaged and informed public, and decision-makers.” Jeff reviewed the vision theme, outcome and the 4 objectives for this goal. He provided a quick overview of the 6 draft public education and communication strategies that had been developed to date by the Working Group:

Public Education/Communication Strategies

1. Develop volunteer public citizen-science programs for monitoring, data collection, and restoration efforts for oyster reef restoration projects.
2. Enlist advocacy group(s) to help improve conditions in the GPBS.
3. In education efforts address both positive and negative consequences of restored (including shell recovery programs) and depleted/lost oyster reef habitat respectively.
4. Demonstrate the benefits of shell recycling programs, and the negative aspects of not recycling the shell back into the System.
5. Demonstrate the economic and social benefits derived from the ecosystem services provided by oyster fisheries and restored/natural reef habitat.
6. Develop economic metrics and public engagement and education programs.

6-04 Watermen Comments/Suggestions listed as strategy topics in order of frequency of comments:

Public support (2)

1. Need to get the public on board to understand the benefits of restoring the GPBS oyster beds
2. Public will support oyster restoration if done in a monitored way

Education (1)

1. Ties into education. Need good education on oysters have the public buy in.

LOOK FORWARD 10 YEARS- WHAT IF OYSTERS CAME BACK TO THE GPBS?

The Workshop watermen participants were asked to imagine a successful implementation of the plan and offered the following:

- The plan is 10 years old and there are sustainable oyster beds everywhere in the GPBS
- Aquaculture is supported like farming a field and there is public support for building the reef system back up
- We are moving shells and oysters to places suitable for oysters- like transplanting trees
- Closing 3 months to all harvesting to encourage spat, close earlier in the season to allow spawning
- Go swimming and bathing in the GPBS but don't cut your feet on oyster beds
- Consider different farming of wild oysters like in Texas, Louisiana and Mississippi.

The facilitators and TNC team thanked the watermen and Working Group members for their significant input and invited them to continue to participate in the GPBS Working Group's process at the next online meeting on July 22, 2020.

The Workshop adjourned at 7:25 p.m. CT.

Appendix #1 - Workshop Agenda

**OYSTER ECOSYSTEM-BASED FISHERY MANAGEMENT PLAN
FOR THE GREATER PENSACOLA BAY SYSTEM GPBS STAKEHOLDER WORKING GROUP**

WATERMEN WORKSHOP

JUNE 4, 2020—5:30 PM CT

VIRTUAL MEETING VIA ZOOM

<https://tnc.zoom.us/j/95084733395?pwd=eEcvOTdzOW16ZEIwUHlrdUZoYlhaUT09>

MEETING ID: 950 8473 3395 PASSWORD: 972603

**If you cannot connect on your computer or other electronic device Call (646) 876-9923 Meeting ID:
992 2194 6221**

HOST: THE NATURE CONSERVANCY, FLORIDA

FACILITATOR: FACILITATED SOLUTIONS, LLC

GPBS STAKEHOLDER WORKING GROUP

WATERMEN WORKSHOP OBJECTIVE

**To Receive Watermen’s Comments and Perspectives Regarding
Draft Objectives and Strategies**

GPBS STAKEHOLDER WORKING GROUP WATERMEN WORKSHOP AGENDA—JUNE 4, 2020

All Agenda Times are Central Time Zone

All Times Are Approximate and Subject to Change (including Public Comment and Adjournment)

5:30 PM CT		CALL TO ORDER
1.	5:30	WELCOME, REVIEW OF VIRTUAL MEETING PARTICIPATION GUIDELINES, AND ROLL CALL
2.	5:35	REVIEW AND APPROVAL of Agenda
3.	5:40	REVIEW OF PROJECT MEETING SCHEDULE AND UPDATED WORKPLAN
4.	5:45	B.) The Management and Regulation of the Oyster Fishery and Aquaculture Watermen’s Comments and Perspective Regarding Draft Objectives and Strategies
5.	6:20	A.) A HEALTHY AND PRODUCTIVE OYSTER REEF ECOSYSTEM Watermen’s Comments and Perspective Regarding Draft Objectives and Strategies
6.	7:00	C.) A Thriving Economy Connected to the Greater Pensacola Bay System Watermen’s Comments and Perspective Regarding Draft Objectives and Strategies
7.	7:10	D.) An Engaged and Informed Public specific Watermen’s Comments and Perspective Regarding Draft Objectives and Strategies
8.	7:20	PUBLIC COMMENT
9.	7:25	NEXT STEPS, INFORMATION NEEDS, PRESENTATIONS, AND AGENDA ITEMS FOR THE NEXT MEETING
7:30 PM CT		ADJOURN

Appendix #2 -Workshop Participants, Project Team, Facilitators

(**Bold** = members who attended the June 4, 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)

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

Laura Geselbracht	Sr. Marine Scientist, Florida
Andrea Graves	Marine Projects Coordinator, Florida
FACILITATED SOLUTIONS, LLC	
Jeff Blair	Working Group Facilitator
Robert Jones	Working Group Facilitator

Appendix #3 -Oystermen Workshop – ‘Mapping Session’ with Chris Verlinde

Chris Verlinde, UF/IFAS/Sea Grant Santa Rosa County, worked with the waterman following the meeting to identify on a GPBS map their knowledge of the bay in reference to the instructions below. Chris will continue to work with them to complete it and send it to TNC with a goal to show the map at the July 22, 2020 meeting of the Working Group.

Instructions for the Watermen- Please Note on the map...

1. Given your knowledge of where oysters are today, do the high to low suitable areas on the map look right to you? If not, where does it look wrong?
2. Identify where oyster beds were historically. Note both natural and harvested areas. How long ago? Do they still exist today?
3. Identify where oyster beds are today? Note both natural and harvested areas.
4. Please note intertidal oyster areas on the map
5. Fast forward to the future and the Bay is being restored and the oyster fisheries plan is being implemented – where would it be best for the following 4 scenarios. Think about the effects of climate change on oysters and when thinking about where it would be best for ...
 - A. Harvesting?
 - B. Larval source reefs to be restored? (reefs built to serve as parent stock to support larval settlement to other harvested reefs.)
 - C. For natural reef areas? (areas to restore oysters that would contribute to a healthy bay but less used for harvest.)
 - D. Aquaculture?

Appendix #4 -Workshop Zoom Chat Comments

Unexplained Oyster Mortality

- Brandon Smith: I was on a conference call last week with UF and Auburn on Unexplained Mortality in Cultured Oysters in the Gulf. This is not isolated in occurring in market sized oysters in Spring and Summer. It is happening throughout the Gulf.
- Christian Wagley: Is the summer mortality associated with low DO?
- Thomas Derbes: Can confirm, we're experiencing up to 70% die off at both of our off-bottom farms.
- Michelle Smith: We do tend to see lower DO in the summer on the bottom
- Brandon Smith: They just don't know what it is. They are looking at all water quality and including an abundance of a certain anthropod. But conclusion is they don't know and we need to keep looking at it. One thing they do know is by looking at the gills, they are showing signs of fighting something off.
- Brandon Smith: We can talk with Leslie Sturner with UF, they led the webinar. Here is a link to the webinar they posted. <https://youtube.be/069ZMIFp1UA> for Trying to Explain Unexplained Cultured Oyster Mortalities in the Gulf of Mexico
- Kent Smith: Could be increased susceptibility to pathogens caused by low DO events or higher temperatures. Melanie Parker's work in Apalachicola Bay indicates thermal thresholds are likely being exceeded and causing stress leading to mortality.
- Kent Smith: One issue that the oystermen are mentioning is the importance of rugosity. They have talked about current interruption causing improved spat settlement, but similar summertime death in the Chesapeake was linked to DO sinks just off the bottom. Reefs with higher architecture had oysters that survived. Might be interesting to see if live adult oyster cover/survival is better on the highest portions of the reefs. Could lead to a simple solution of ensuring maintenance of minimum reef heights.
- Brandon Smith: <https://shellfish.ifas.ufl.edu/news/webinar-recording-available-cultured-oyster-mortalities/>

Gear and Diving for Oysters

- Brandon Smith: You need volume in order to make it worth it. Diving is not going to give you enough to make it worth it.
- Kent Smith: Instead of a basket, couldn't you use a bag? No dredging possibility with fabric.
- Kent Smith: Corbicula?

Limited Entry

- Michelle Smith: He's talking about limiting the amount of people allowed to relay
- Jeff Blair: yes and also entry into the fishery

Appendix #5 -Meeting Via Webinar-Teleconference Participation Process

GENERAL

- Please be aware that background noise from participants is picked-up and amplified on the webinar system, especially when using a speaker-phone or your computer without a headset.
- Greater Pensacola Bay System Stakeholder Working Group (Working Group) members, and any other meeting participants should offer their names each time they speak to ensure all participants know who is speaking.
- Members should offer their names when making and seconding motions.
- Working Group members should announce if they have to sign-off before the virtual meeting is complete.
- Acceptability rating exercise results will be tallied by recording members' votes by name in turn.

ATTENDANCE

- Facilitator will conduct roll call of Working Group members and Project Team.
- Once attendance is complete, the agenda will be reviewed and approved by the Working Group.

PARTICIPANT ETIQUETTE

- Please keep your phones on mute if calling in, and mute the microphone icon in the Virtual Meeting Control Panel if you are connected by webinar. The default mode for your microphone is mute and is reflected by a red microphone icon next to your name, to unmute click the red microphone icon and it will turn green when you are unmuted.
- It works best if everyone mutes themselves except when speaking.
- Please don't put your phones on hold.
- Please wait until invited by the Facilitator to speak to avoid confusion.
- Names will be stacked by the Facilitator to ensure order.
- Participants will have ample time to speak on substantive agenda items.

DISCUSSION PROCESS

- Facilitator will introduce discussion item or presenter.
- Presenter will provide overview of issue and recommendation(s) for Working Group action.
- Hold questions until presentation is complete.
- Once presentation is complete, Facilitator will ask if Working Group members have clarifying questions on the issue, create a speaker's list, and call on members in-turn for clarification.
- Facilitator will ask if any Working Group member wishes to discuss the issue or propose alternative options, create a speaker's list, and call on members in-turn for discussion.
- Once clarification and discussion is complete, Facilitator will conduct a rating exercise or test for consensus on the issue as appropriate.

PUBLIC COMMENT

- Facilitator will ask if anyone from the public wishes to comment during the Public Comment agenda item, create a speaker's list, and call on members of the public in-turn for comments.
- Comments will be limited to three minutes per person.
- Members of the public having questions or wanting to provide additional feedback are encouraged to send their questions and comments to Andrea Graves: agraves@tnc.org.

TEST THE ACCURACY OF YOUR PERCEPTIONS

- Be aware of your perceptions in a virtual meeting, test them by clarifying intent with the speaker, and recognize that technology can alter our ability to accurately interpret subtle verbal and non-verbal cues as to intent and meaning.
- Being on a video call requires more focus than a face-to-face meeting.
- Video conversations require us to work harder to process nonverbal cues like facial expressions, the tone and pitch of the voice, and body language; paying more attention to these consumes a lot of energy and can be stressful.
- Research conducted by German academics in 2014 shows that delays on phone or webinars shaped our views of people negatively—even delays of 1.2 seconds made people perceive the responder as less friendly or focused.
- There is dissonance between our minds and bodies causing people to have conflicting feelings resulting from processing communication through technology.

Appendix #6 - 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		
Meeting I. Studer Institute	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.
Meeting II. UF/IFAS SRC Extension	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		
Meeting III. Sanders Beach	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.
Meeting IV. Zoom Platform	April 9, 2020	Presentations on Oyster Habitat Restoration Suitability Model, Pensacola & Perdido Bays Estuary Program (PPBEP) and Gulf of Mexico Ecosystem Service Logic Models & Socio-Economic Indicators-GEMS Project. Review of draft vision theme and objectives, identification of strategies and related performance measures to evaluate strategies.
Meeting V. Zoom Platform	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.
Watermen Workshop Zoom Platform	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		
Meeting VI. Zoom Platform or UF/IFAS SRC Extension	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.
Update and Presentations to PPBEP	July 2020	Presentations by TNC to the Pensacola & Perdido Bays Estuary Program's Policy Board, and the Technical, Education and Economic Committees on the Plan goals and framework.
Meeting VII. Zoom Platform or Studer Institute	Sept. 16, 2020	Review of comments and suggestions from the PPBEP presentations, test acceptability and refinement of strategies in the 4 goal areas, review performance measures for evaluating strategies, and identify potential plan implementation actions and steps. Review of Draft Plan outline.
Public Workshop I	October 2020	Review and seek input on the GPBS Oyster Ecosystem-Based Fisheries Management Plan outline, and on the goals, objectives, strategies and actions.
FINALIZING CONSENSUS ON GPBS OYSTER ECOSYSTEM-BASED FISHERIES MANAGEMENT PLAN		

Meeting VIII. Zoom Platform or UF/IFAS	Nov. 18, 2020	Review of comments and suggestions from the Public Workshop. Initial review, refinement and consensus testing of Draft Plan's 4 goals, objectives, strategies and actions and implementation recommendations.
Update and Presentations to PPBEP	December 2021	Presentations by TNC to the Pensacola & Perdido Bays Estuary Program's Policy Board, and the Technical, Education and Economic Committees on the Plan's progress and the Estuary Program's role in implementing the Plan.
Meeting IX. Zoom Platform or Studer Institute	Jan. 27, 2021	Review and consensus testing of Draft Plan and implementation guidance and agreement on Draft Plan for Public Workshop,
Public Workshop II Escambia & Santa Rosa counties	February 2021	Review and seek input on GPBS Oyster Ecosystem-Based Fisheries Management Plan and implementation guidance.
Meeting X. Zoom Platform or UF/IFAS SRC Extension	March 17, 2021	Review of public comment, refinement and agreement on the GPBS Oyster Ecosystem-Based Fisheries Management Plan and implementation guidance.

PROJECT WEBPAGE URL <http://www.myescambia.com/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>



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://myescambia.com/oyster-ebfm-plan>

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