

CITY OF PENSACOLA
ENVIRONMENTAL ADVISORY BOARD

Thursday, December 6, 2018~2:00 p.m.
Vince Whibbs, Sr. Conference Room

AGENDA

1. Call to Order/Quorum
2. Welcome—Mayor Grover C. Robinson, IV
City Council President Andy Terhaar
3. Approval of Meeting Minutes—November 1, 2018
4. Updates:
 - a) 12th Avenue Tree Replacement and No Parking Enforcement—Kyle Kopytchak
 - b) Review of tree and landscaping regulations—Michael Lynch
 - c) Criteria for Tree Fund Grant Proposals
 - d) Sanders Beach Stormwater Drainage—Steve Elliott
 - e) Environmental Justice/Injustice—Calvin Avant
 - f) Water Quality of Bay/Gulf—Blaise Butts
 - g) Flooding/Toxin Issues in Tanyard—Gloria Horning
 - h) Environmental Impacts on Disenfranchised Communities—Gloria Horning
 - i) Renewable Energy Sources—Neil Richards, Robert Bennett
5. New Business
 - a) Climate Mitigation and Adaptation Task Force Report
6. Board Member Comments
7. Reports and Announcements
8. Public Comments—Open Forum
9. Adjourn

The next meeting of the Environmental Advisory Board is January 3, 2019, unless changed.

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CITY OF PENSACOLA
ENVIRONMENTAL ADVISORY BOARD
WITH SPECIAL PRESENTATION BY MEMBERS OF THE
CLIMATE MITIGATION AND ADAPTATION TASK FORCE

MEETING MINUTES
Thursday, November 1, 2018

Members Present: Neil Richards, Chairman, Kyle Kopytchak, Michael Lynch, Blase Butts, Bob Bennett, Calvin Avant, Dr. Gloria Horning

Members Absent: Steve Elliott, Vice Chair

Others Present: Rick O'Connor, Cynthia Cannon, Carrie Stevenson, Kathy Smith, Daron Horne, Dr. Harris Alibašić, Elaine Sargent, Tim Haag, Christy Johnson, Laurie Murphy, Sherri Myers, Don Kraher, Elaine Mager, Sonja Gaines

1. Call to Order/Quorum: The meeting was called to order by Chairman Richards. A quorum was established.
2. Approval of Meeting Minutes—October 4, 2018

Member Bob Bennett's name was omitted from the list of members present. **Motion made by Member Kopytchak to approve the minutes as amended, seconded by Member Bennett and was unanimously carried.**

3. Updates:
 - a) 12th Avenue Tree Replacement and No Parking Enforcement—Kyle Kopytchak
Council Executive reported City Council passed the recommendation of the Environmental Advisory Board to place no parking signs to protect the heritage trees in the 12th Avenue Tree tunnel. City staff is working on getting signs up and also working with contractors to provide protective barriers around heritage trees.
 - b) Review of tree and landscaping regulations—Michael Lynch
City Council Member Sherri Myers reported that Laurie Murphy is working on re-writing the Tree Ordinance and will hopefully have it ready for presentation in January. The tree trust funds are safe until it gets fine tuned.
 - c) Criteria for Tree Fund Grant Proposals
 - d) Sanders Beach Stormwater Drainage—Steve Elliott—No update given by member Elliott. Covered by Member Horning under g) and h).

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e) Environmental Justice/Injustice—Calvin Avant

Member Avant issued an invitation to members of the Environmental Advisory Board to attend a workshop sponsored by the Deep South Center for Environmental Justice on asset mapping and community health profile on November 15, 2018 at 6 p.m. at the Marie Young Community Center.

f) Water Quality of Bay/Gulf—Blaise Butts

Member Butts reported so far to date, 7,756 pounds of shoreline debris has been collected from area shorelines along scenic highway, Chimney Park, bay bluffs, Bayou Texar, Bartram Park and the Visitors Information Center during monthly 2 hour clean ups sponsored by Ocean Hour. He then introduced Rick O'Connor with the Florida Sea Grant, University of Florida/IFAS Extension, Escambia County Extension Office, 3740 Stefani Road, Cantonment FL 32533 to make a presentation to the Board.

*Presentation—Rick O'Connor, SeaGrant Representative, University of Florida/IFAS Extension

Rick O'Connor reviewed and presented a written report on the Escambia County Sea Grant Bays and Bayous Program reviewing Water Quality, Habitat Restoration and Monitoring, Wildlife and Fisheries and Invasive Species outlining the various studies and monitoring data that has been collected for this region, and briefly touched on the issuance of health advisories.

He also mentioned the establishment of the new Pensacola Perdido Bays Estuary Program through a cooperative agreement between the Gulf Coast Ecosystem Restoration Council and the US Environmental Protection Agency's Gulf of Mexico Program that will succeed and absorb BARC. The \$2 million start-up funds will enable the Estuary Program to develop and implement a Comprehensive Conservation and Management Plan to restore and protect the Pensacola Bay System and the Perdido Bay System. However, ongoing management funds will need to come from other sources. The next meeting is scheduled for November 14, with the technical committee meeting at 1:30 p.m. and the Policy Board meeting at 3:30 p.m. The place has not been determined. It will probably rotate between the various communities that it covers. Council Executive reported that there will be an item on Council's agenda for the City to enter into an Interlocal Agreement for the Pensacola Perdido Bays Estuary Program.

Further questions, comments and remarks were made by board members, Daron Horne, Carrie Stevenson, and Cynthia Cannon.

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Chair Richards asked about the Lion Fish situation in Pensacola Bay, within the boundaries of the City. Mr. O'Connor indicated there have been five Lion Fish reported—one between NAS Pensacola and the Gulf Islands National Sea Shore, close to Ft. Pickens and one near the fishing pier at Wayside Park. The others were reported in Grand Lagoon. All have been removed.

g) Flooding/Toxin Issues in Tanyard—Gloria Horning

h) Environmental Impacts on Disenfranchised Communities—Gloria Horning

Member Horning reported that Sanders Beach is a neighborhood within the Tanyard community. There are continued sewage overflows in the Sanders Beach neighborhood as well as the Tanyard going into Bruce Beach and the lack of public notice to the public about water quality to boil water and not swim or fish. It is a health impact issue. Stormwater runoff and sewer system overflows are the number one polluters of bays. Further discussion occurred on reporting requirements and notification process. City Council Member Sherri Myers indicated that under the City's present form of government, the Mayor is in charge of the public works department and the public works department enforces the stormwater permit. The only thing the Council can do is to ask that the matter be referred to the EAB for investigation and recommendations and if the Mayor does not want the staff to follow through with any of the recommendations made.

i) Renewable Energy Sources—Neil Richards, Robert Bennett. No update given.

4. New Business

a) Presentation—Climate Mitigation and Adaptation Task Force Report

Elaine Sargent, Chair and Members of the Task Force

Elaine Sargent, Chair, Laurie Murphy, Vice Chair and Members Cynthia Cannon, Carrie Stevenson, Dr. Haris Alibašić, Tim Haag, and Christy Johnson joined with members of the Environmental Advisory Board to review their report and presentation.

Climate Chair Sargent reviewed the need for and formation of the Task Force, the goals and objectives, the planning and the areas of emphasis.

Climate Member Dr. Haris Alibašić reviewed the eight areas of emphasis that the Climate Mitigation and Adaptation Task Force addressed. They included Greenhouse Gas Emissions Reduction Goals, Transportation, Build Environment, Emergency Planning Local Utilities, Public Health, Outreach and Economic Development and Resilience. Greenhouse Gas Emissions Reduction Goals are critical to building strong, sustainable and resilient communities. It is important to

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look at what is being done in other communities, what is being done here locally without adding additional costs to operations, and more work to administrators.

Climate Chair Sargent reviewed the Task Force Findings and Recommendations that included: Incorporate the Climate Mitigation and Adaptation element into the Comprehensive Plan; Seek funding to develop a Climate Action Plan or Climate Resilience Plan; Complete an inventory of city-wide GHG emissions to begin the mitigation plan; Conduct a Vulnerability Assessment and establish resilience strategies based on the findings; Reestablish the City of Pensacola Office of Sustainability; Engage the Environmental Advisory Board to work with the City to ensure climate policies are being implemented; and Pursue grant opportunities for City and regional partners to develop climate adaptation programming.

In addition to the expert speakers who made presentations to the Task Force, public comments were given at each of the meetings, as well as sharing the draft report with various stakeholders for their feedback on the report.

With regard to prioritizing the recommendations of the Task Force as requested by members of the Environmental Advisory Board, Climate Member Dr. Alibašić indicated that the Task Force agreed that these were recommendations that needed to be addressed immediately.

EAB Member Bennett voiced his disagreement about prioritization. In general he appreciates the work the Task Force did, they did a great job. To achieve the renewable energy goals, without a change in regulations in the State of Florida, and the active participation of Gulf Power and Florida Power and Light, it will be almost impossible to achieve.

EAB member Butts indicated that he got in touch with a representative from Gulf Power to ask about viability of putting solar panels on city buildings and in the city area. Based on the way the regulations that are written in Florida, it would not be practical. To make it worthwhile to have solar panels for the City, you have to produce 20 mega watts or more. Once you are over 20 mega watts, they will only pay the lowest amount they generate electricity for and that is with natural gas and that is 2.4 cents a kilowatt. The lowest recorded price for generating electricity utilizing solar panels, not including transmission lines is 9.4 cents. That means that every kilowatt you produce to try and sell, you will lose 7 cents per kilowatt. It is just the way the regulations are written in Florida. It has to be in front of the meter and can only be for that particular site.

EAB Member Bennett indicated there are only 69 cities in the country that have committed to 100% renewable energy goals and of the ones in Florida that have

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committed, they have control over their own power. The action would be to work with the Public Utility Commission to get it changed, even if it is only for government and not the private sector so that government can achieve these goals.

Climate Member Cannon stated that this document is the beginning and recognizes the complex issue that it is important. How to make it happen is to be determined.

Climate Chair Sargent indicated that the Task Force is giving the Environmental Advisory Board a lot of work. The City Council is not going to be passing this, they are going to be using it as a tool and the Task Force is giving the report to the Environmental Advisory Board as a tool to be altered to fit with how the political dynamic is. The ultimate goal is to reduce carbon emissions. Solar energy is the way to go.

Climate Member Cannon commented that the Task Force looked at other communities similar in size and nature to Pensacola and there were some outstanding climate plans done that were built into their comprehensive plans. The Task Force realized that compromises are necessary. Some of the plans reviewed were done by a big consortium of groups that were high dollar grants to do them. This document is a jump off point.

City Council Member Myers expressed her appreciation for how hard the Task Force and the Environmental Advisory Board works. The goals and objectives set forth and priorities set forth are aspirational. They are bullet points. It is not up to any of the City's committees to figure out the details of how to get something done. The main thing is that there is a road map. The City has planners and engineers and city staff to figure out how to get things done. There are specific things the Council can do with this document.

EAB member Avant expressed concern for economic impacts of climate change in low income communities.

EAB Chair Richards gave background on the 2014 recommendations of the Environmental Advisory Board to form the Climate Mitigation and Adaptation Task Force and it was the intent to have it be a regional of joint City/County task force, but there wasn't support from other areas. Through the leadership of City Council Member Myers, the City took it on. He is looking forward to having the document come back to the EAB and the EAB determining priorities and action items and to also respond to the City Council and Mayor on items they may pick out as priority items for the EAB to review. This will be a working document to bring forward action items either for long term or short term. The expertise of the

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members of the Task Force will be utilized by the Environmental Advisory Board when considering particular items.

EAB members expressed their thanks and appreciation to the Task Force.

City Council Member Myers indicated that the most important recommendation is having a city staff person in charge of sustainability because that person should be able to constantly look for grant opportunities and where the money is and taking pieces of this report and seeing what can be implemented.

5. Board Member Comments

- a) Member Bennett asked the Board to consider moving the December meeting to December 4 instead of December 6, since he will be unable to attend the meeting on December 6.
- b) Member Avant indicated that Unity in the Family would be accepting applications for their Environmental Career Worker Training program. This is the fourth year of the training program. Individuals have to be 18 years old, high school graduate or GED and drug free.
- c) Member Lynch reported the County's Restore project for Carpenter's Creek is underway.
- d) Member Horning reported on additional grants and paint coming in for the adopt a drain program. Also, the outreach being done of Flood Forum and Preparedness.
- e) Chair Richards indicated that he has two items for next month's agenda to discuss. One is the invitation of the building inspector or person that assigns the monetary value for cutting for protected trees, how that revenue actually gets into the tree fund. The other one is to invite the Mayor to the meeting for his guidance as far as the Environmental Advisory Board.
- f) Member Lynch reopened discussion on the proposed new tree ordinance to allow Laurie Murphy to make comments. She hopes to set up a meeting with the new Mayor to review and get his input and then ultimately return it to the EAB. EAB members should have received the proposed changes and she would like any feedback individual members of the EAB might have on the proposed changes.

6. Reports and Announcements

Science Hour will be November 8, 2018, from 6 – 7 p.m. at the County Central Office Complex. The topic is Managed Aquatic Wetlands and Bayou Chico and will feature Brent Wipf and Dana Morton as guest speakers.

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Master Gardening fund raiser for the Escambia Master Gardeners on Saturday, at the Extension office on Stefani Road from 8 to 12 Noon.

Saturday, November 3, 2018 at 9 a.m. is the Bruce Beach ribbon cutting.

Saturday, November 17, 2018 an invasive species Phase II removal at the Waterford on Davis Highway. A public presentation will be given at 8 a.m.

7. Public Comments—Open Forum

Public comments on solar energy were made by Beverly Perry and Daron Horne

8. Adjourn

There being no further business to come before the EAB, the meeting was adjourned at 3:57 p.m.



Rick O'Connor
Florida Sea Grant
University of Florida / IFAS Extension
Escambia County Extension Office
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(850)475-5230 ext 111 roc1@ufl.edu

Lewis, M.J., J.T. Kirschenfeld, T. Goodhart. 2016. *Environmental Quality of the Pensacola Bay System: Retrospective Review for Future Resource Management and Rehabilitation*. U.S. Environmental Protection Agency. Gulf Breeze FL. EPA/600/R-16/169.

Escambia County Sea Grant Bays and Bayous Program

Water Quality

- Fish Kills – Lakewatch (nutrient monitoring and education)
- Health Advisories – Water Watch (bacteria monitoring and education)
- Microplastics – (monitoring and education)

Habitat Restoration and Monitoring

- Living Shorelines – Grasses in Classes (grass propagation), education, permitting, and monitoring
- Seagrass – (monitoring and education)
- Marine Debris – Ocean Hour (monitoring, removal, and education)
- Mangroves – (surveys) **just beginning**

Wildlife & Fisheries

- Diamondback Terrapin Nesting – (surveys, monitoring, and education)
- Bay Scallop – (surveys and education)
- Horseshoe Crabs – (surveys, tagging, and education) **just beginning**
- Killifish – (monitoring and education) **just beginning**
- Blue Crab and Brown Shrimp Landings – (monitoring and education) **just beginning**
- Seafood Safety – **under development**

Invasive Species

- Lionfish – (surveys, monitoring, commercial harvest, DNA barcoding prey, and education)
- Beach Vitex – (surveys, reporting, removal, and education)
- Dirty Dozen – **under development**

WATER QUALITY

Fish Kills

	<u>Decade</u>	<u># of Fish Kills</u>	<u># Fish Killed</u>
•	1970's	9	1,041,402
•	1980's	12	5,032,321
•	1990's	8	3,262
•	2000's	64	20,428
•	2010's	131	26,717

ESCAMBIA COUNTY DATA

Provided by the Florida Fish and Wildlife Conservation Commission

FWC fish kill data for Pensacola Bay area

Year	# of Kills Reported	Location	Cause
2012	7	Pensacola (3)	Algal Bloom, Menhaden
		Perdido Key (1)	Variety of species
		Navarre (1)	Unknown
		Milton (2)	Baitfish
2013	1	Pensacola (1)	Unknown
2014	16	Pensacola (13)	Menhaden (Texar, Chico) DO
		Molino (2)	Bluegill
		Pace (1)	Bluegill
2015	22	Pensacola (11)	Unknown
		Gulf Breeze (2)	Algal Bloom
		Navarre Beach (4)	Red tide
		Pensacola Beach (5)	Red tide
2016	6	Pensacola (1)	Unknown
		Pensacola Beach (3)	Each 1 species
		Navarre Beach (1)	Unknown
		Gulf Breeze (1)	Unknown
2017	5	Pensacola Beach (1)	Unknown
		Pensacola (2)	Sturgeon, bonito, catfish
		Navarre Beach (2)	Shark
2018	7	Pensacola (2)	Unknown, pinfish
		Gulf Breeze (3)	Snapper, trigger, unknown
		Milton (1)	Triploid grass carp
		Navarre Beach (1)	Alewife

Fish Kill Data provided by FWC

Month	# of Fish Kills	# of Dead Fish	Cause
Jan	5	107	Unknown – probably cold
Feb	0	0	
Mar	0	0	
Apr	0	0	
May	1	4	unknown
Jun	0	0	
Jul	0	0	
Aug	0	0	
Sep	0	0	
Oct	1	?	Alewives - unknown
TOTAL	6	111	

Nutrient Monitoring

LAKEWATCH DATA

The parameters selected to monitor are trying to determine the waters trophic state. Trophic refers to “feeding” and biological productivity. An excess of nutrients can cause low dissolved oxygen and fish kills. This has historically been a problem in Escambia County, particularly in the bayous.

Oligotrophic – indicates the waterbody is nutrient poor.

Mesotrophic – indicates the waterbody is mid-range for nutrients.

Eutrophic – indicates the waterbody is high in nutrients.

Hypereutrophic – indicates the waterbody is excessively high in nutrients.

It is important to understand that (a) some bodies of water are naturally oligotrophic or eutrophic, and (b) secchi readings are subjective.

Below is the 2018 update on water quality from each.

Summary:

Creeks

Only Carpenters Creek has been monitored by LAKEWATCH, and has not been monitored in four years. However, there are 14 years of data prior and the creek seems to be low in nutrients. That said, the water clarity is not as good and there could be sediment discharge issues that the community could address.

Lakes

LAKEWATCH has monitored five lakes in Escambia County over the years. Two of those, Blue Angel and Crescent Lake, were both low in nutrients but had not been monitored by LAKEWATCH for 14 years. Crown Point Lake seems to be doing well but has not been monitored in five years.

Though they have not been monitored in four years, Grand Lagoon and Stone Lake were high in nutrients. The residents of those communities may want to consider monitoring again and, if nothing has changed, change behaviors to help improve them.

Estuaries

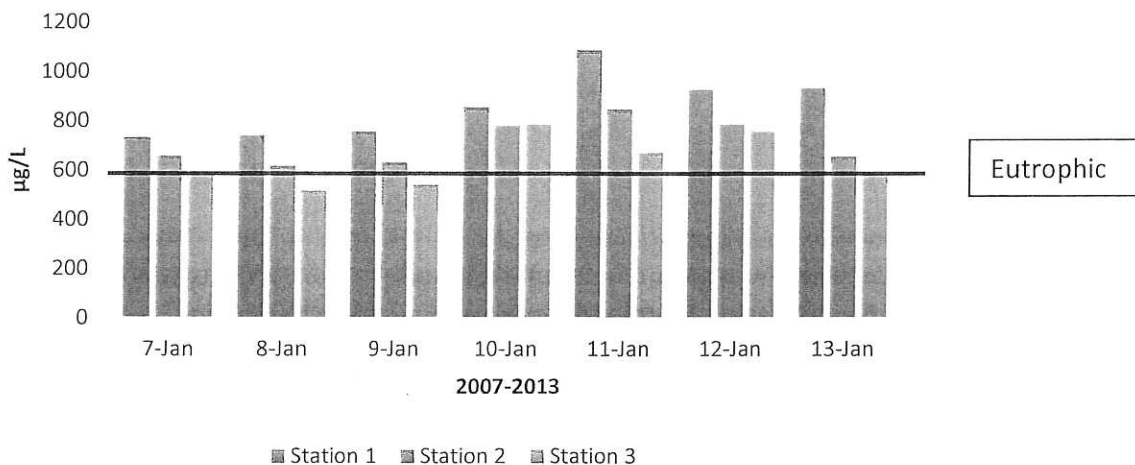
Bayou Texar has been monitored by LAKEWATCH for almost 20 years. It has gone from hypereutrophic to eutrophic over that time.

Bayou Chico has been monitored since 2014 and is high in nutrients and algae

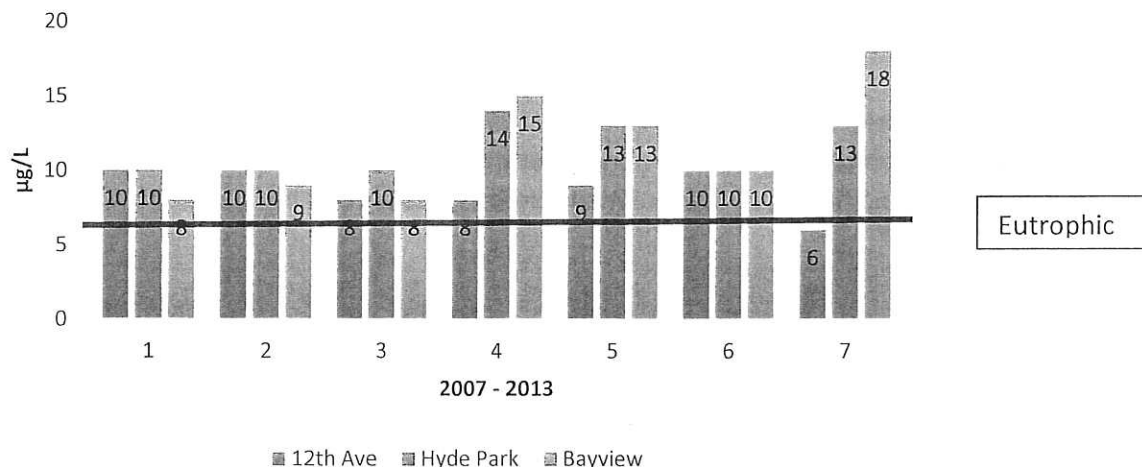
Bayou Grande has improved since LAKEWATCH began monitoring in 2012. It is still eutrophic but nutrients have been decreasing over time

Lower Perdido Bay is low in nutrients and mid-range in chlorophyll a.

LAKEWATCH - AVG. TN - BAYOU TEXAR

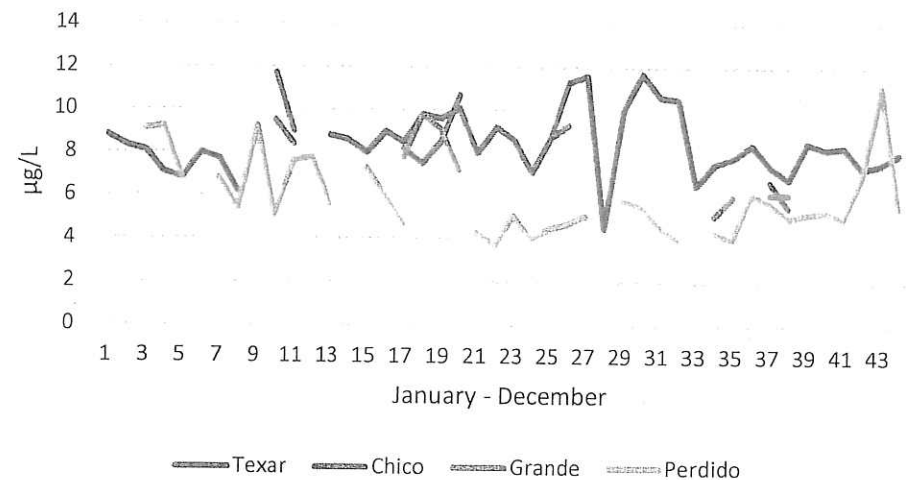


LAKEWATCH - Chlorophyll - Bayou Texar

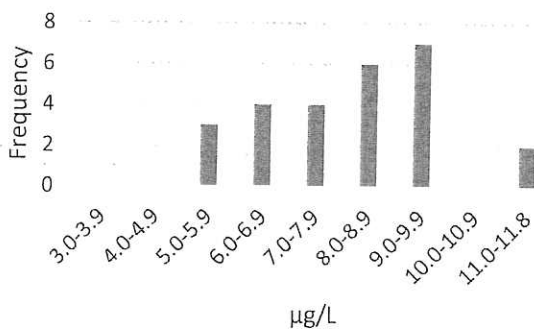


Dissolved Oxygen

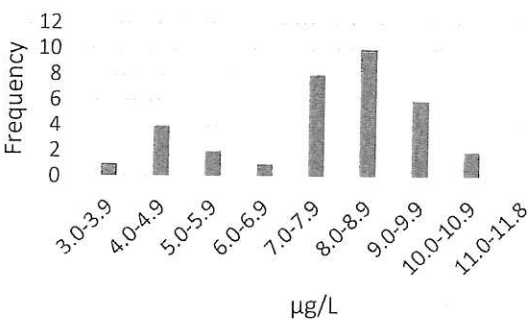
FDEP - Dissolved Oxygen - 2014



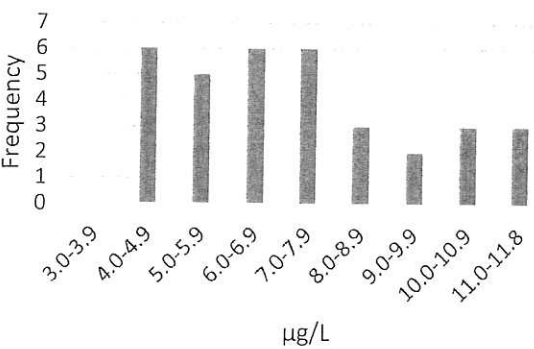
FDEP - DO - Winter 2014



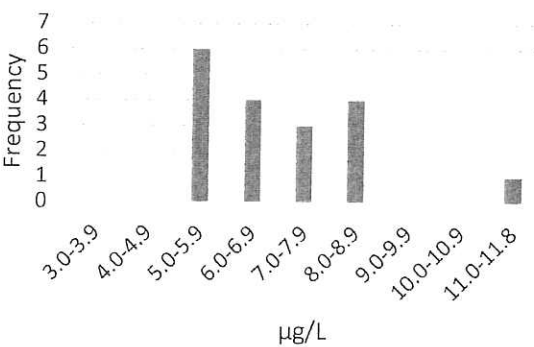
FDEP - DO - Spring 2014



FDEP - DO - Summer 2014



FDEP - DO - Fall 2014



Data Obtained from the Florida Department of Health

Location	Year	# of samples	# of advisories	% of samples with advisories
Bayou Texar	2012			
	2013	37	9	.24
	2014	42	8	.19
	2015	37	11	.30
	2016			
	2017			
	2018	42	17	.40
Sanders Beach	2012			
	2013			
	2014			
	2015			
	2016			
	2017			
	2018	50	4	.08
Bayou Chico	2012			
	2013	28	9	.32
	2014	42	8	.19
	2015	15	6	.40
	2016			
	2017			
	2018	17	10	.59
Bayou Grande	2012			
	2013	29	7	.24
	2014	17	7	.41
	2015	11	3	.27
	2016			
	2017			
	2018	17	8	.47

Location	Year	# of samples	# of advisories	% of samples with advisories
Bayou Texar	2012-18	158	45	.28
Sanders Beach	2012 – 18	50	4	.08 (only 1 year of data)
Bayou Chico	2012-18	102	33	.32
Bayou Grande	2012-18	74	25	.34

2018 Data provided by Florida Department of Health

Month	Water Body	Good	Moderate	Poor	Advisory Issued
Jan	Bayou Texar	2	1	2	2
	Sanders Beach	3	1	3	0
Feb	Bayou Texar	0	2	2	2
	Sanders Beach	2	1	3	1
Mar	Bayou Texar	1	2	1	1
	Sanders Beach	2	2	0	0
	Bayou Chico	0	1	1	1
	Bayou Grande	0	2	0	0
	Big Lagoon SP	2	0	0	0
	Perdido Key SP	2	0	0	0
	Casino Beach	2	0	0	0
	Park East	2	0	0	0
	Park West	2	0	0	0
	Quietwater	2	0	0	0
	Bayou Texar	0	1	3	3
	Sanders Beach	4	0	0	0
	Bayou Chico	0	1	1	1
Apr	Bayou Grande	2	0	0	0
	Big Lagoon SP	2	0	0	0
	Perdido Key SP	1	0	0	0
	Casino Beach	2	0	0	0
	Park East	2	0	0	0
	Park West	2	0	0	0
	Quietwater	2	1	0	0
	Bayou Texar	3	1	1	1
	Sanders Beach	4	1	1	0
	Bayou Chico	2	0	0	0
	Bayou Grande	1	1	0	0
	Big Lagoon SP	2	0	0	0
	Perdido Key SP	1	0	0	0
May	Casino Beach	2	0	0	0
	Park East	2	0	0	0
	Park West	2	0	0	0
	Quietwater	2	0	0	0
	Bayou Texar	2	1	1	1
	Sanders Beach	4	0	0	0
	Bayou Chico	0	1	1	1
	Bayou Grande	0	0	2	2
	Big Lagoon SP	2	0	0	0
	Perdido Key SP	2	0	0	0
	Casino Beach	2	0	0	0
	Park East	2	0	0	0
	Park West	2	0	0	0
June	Quietwater	1	0	1	0
	Opal Beach	2	0	0	0

	Johnson's Beach	1	1	0	0
	Ft. Pickens	2	0	0	0
July	Bayou Texar	1	1	3	3
	Sanders Beach	4	0	1	1
	Bayou Chico	1	0	2	2
	Bayou Grande	1	0	2	2
	Big Lagoon SP	2	1	0	0
	Perdido Key SP	3	0	0	0
	Casino Beach	2	1	0	0
	Park East	2	1	0	0
	Park West	3	0	1	0
	Quietwater	3	0	0	0
	Opal Beach	3	0	1	0
	Johnson's Beach	3	0	0	0
	Ft. Pickens	3	0	0	0
Aug	Bayou Texar	2	1	1	1
	Sanders Beach	3	1	2	0
	Bayou Chico	0	1	1	1
	Bayou Grande	1	0	1	1
	Big Lagoon SP	2	0	0	0
	Perdido Key SP	2	0	0	0
	Casino Beach	2	0	0	0
	Park East	2	0	0	0
	Park West	2	0	0	0
	Quietwater	2	0	0	0
	Opal Beach	2	0	0	0
	Johnson's Beach	2	0	0	0
	Ft. Pickens	2	0	0	0
Sep	Bayou Texar	1	0	2	2
	Sanders Beach	1	1	2	1
	Bayou Chico	0	0	2	2
	Bayou Grande	0	0	2	2
	Big Lagoon SP	0	2	0	0
	Perdido Key SP	2	0	0	0
	Casino Beach	2	0	0	0
	Park East	2	0	0	0
	Park West	2	0	0	0
	Quietwater	2	0	0	0
	Opal Beach	0	0	0	0
	Johnson's Beach	0	0	0	0
	Ft. Pickens	0	0	0	0
Oct	Bayou Texar	1	1	2	2
	Sanders Beach	1	1	2	1
	Bayou Chico	0	0	2	2
	Bayou Grande	1	0	1	1
	Big Lagoon SP	1	1	0	0
	Perdido Key SP	1	1	0	0
	Casino Beach	1	0	0	0
	Park East	1	0	0	0

	Park West	1	0	0	0
	Quietwater	1	0	0	0
	Opal Beach	0	0	0	0
	Johnson's Beach	0	1	0	0
	Ft. Pickens	0	0	0	0
TOTAL		160	36	54	39
Percent	Samples with advisories				.16

Health Advisory Frequency

Body of Water	# of samples	# of advisories	% frequency
Bayou Texar	42	17	.40
Sanders Beach	50	4	.08
Bayou Chico	17	10	.59
Bayou Grande	17	8	.47

Habitat Restoration and Monitoring

LIVING SHORELINES

Partnership with the Florida Department of Environmental Protection

Grasses in Classes

Four area high schools participate – Escambia, West Florida, Washington, and Gulf Breeze

They produce an average of 800 plants / year = 3200 plants annually

Each school restores an average of 100 linear feet ~ 500 linear feet annually

- Removes 3.45 mg/L of Nitrogen / m²/hr
- Removes 13-44% of the chlorophyll a
- Increases summer SAV biomass 21-43%
- \$785-\$15,000 / acre savings over cost of traditional treatment

Information provided by Florida Sea Grant Law College

Private Homeowners Installing Living Shorelines with the Assistance of Sea Grant

Pensacola Beach – 100'

Bayou Grande – 1200' – have been trained to monitor

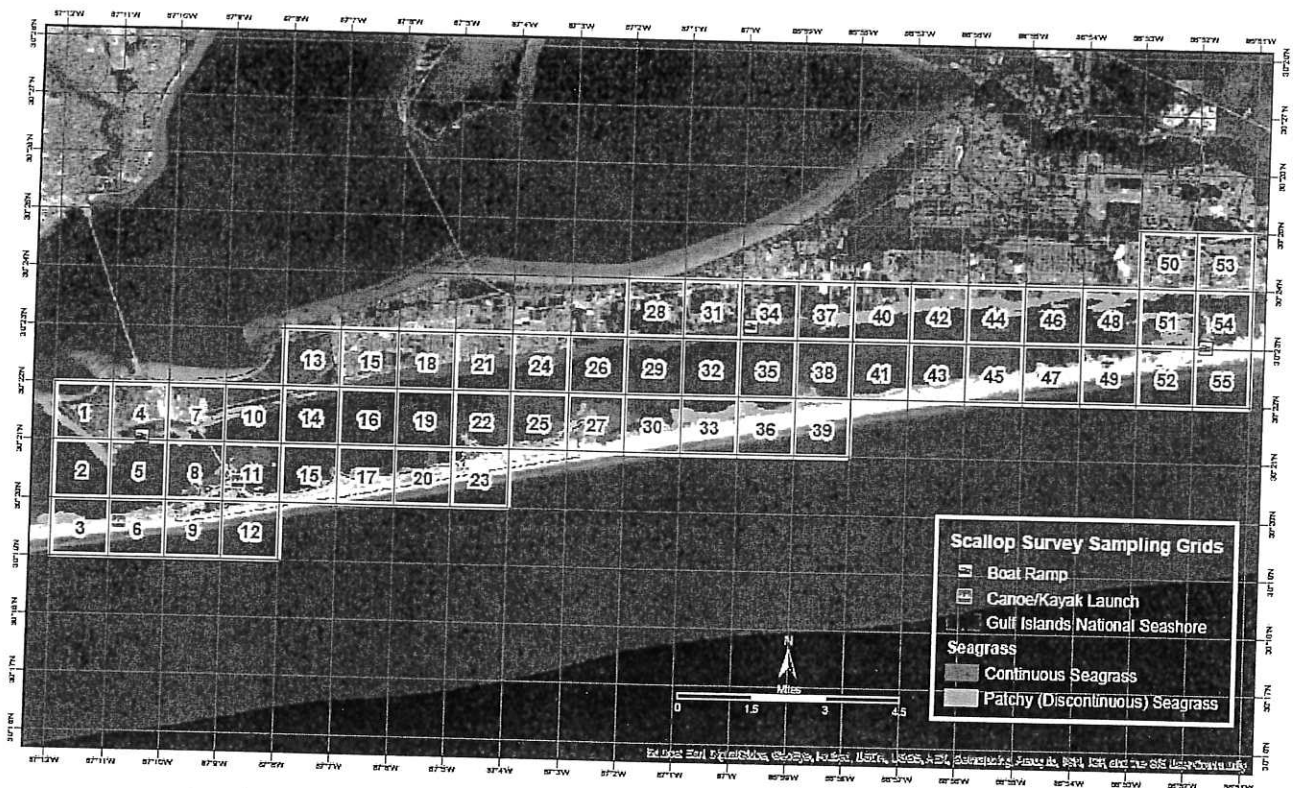
Perdido Key – 200' – have been trained to monitor

Have trained Escambia County Division of Marine Resource interns to monitor their projects

SEAGRASS

Currently working with Dr. Jane Caffrey (UWF) on citizen science monitoring of seagrasses in Santa Rosa Sound and Big Lagoon – one location in Bayou Grande

BELOW ARE THE SURVEY GRIDS FOR BOTH THE SCALLOP AND SEAGRASS MONITORING PROJECTS



Wildlife & Fisheries Monitoring

DIAMONDBACK TERRAPINS

Training citizen scientists to locate, and monitor, diamondback terrapin nesting beaches in the bay area. Working with FWC and UF on this project.

Location	# of Locations Surveyed	# of Nesting Beaches Found
Perdido Key area	10	3
Pensacola area	4	0
Pensacola Beach area	3	1
Escambia River Delta area	3	0
Garcon Point area	4	1
Navarre area	3	1

SCALLOPS

Bay scallop were once found in the lower Pensacola Bay system. Loss of habitat, declining water quality, and over harvesting resulted in a large decline of this fishery. Today, bay scallop are hard to find in the bay system. This project trains citizen scientists to assess the current status of bay scallop in Santa Rosa Sound and Big Lagoon for a possible restoration effort.

Year	# of volunteers	Location	# of (nm ²) grids surveyed	# of grids with scallop	% of grids with scallop	# of live scallop found	# of grids with scallop shell	% of grids with scallop shell
2015	101	Santa Rosa Sound	20	0	0	0	6	.30
		Big Lagoon	8	0	0	0	5	.62

2016

	SRS	BL	Total	Other
# of volunteers	63	33	96	
# of grids surveyed	20	11	31	The number of grids did not significantly differ between 2015 and 2016
# of transects surveyed	68	43	111	There were more transects conducted in Big Lagoon in 2016
# of scallop found	0	1	1	The first live scallop was found in Big Lagoon
# of grids with scallop shell	4 20%	4 36%	8 26%	The number of scallops shells reported declined in both bodies of water in 2016
# of grids with epiphytic algae	73%	28%	57%	There was very little macro-algae in Big Lagoon in 2016
# of grids with horseshoe crab	0	0	0	Live horseshoe crabs were reported in Santa Rosa Sound BEFORE the surveys were conducted in 2016
# of grids with lionfish	0	0	0	No lionfish found
# of grids with manatee grass	0	0	0	No manatee grass reported in 2016

2017

No scallop surveys were conducted due to continuous rain events

2018

Scallop survey data sheets just coming – report coming soon – no scallops found

HORSHOE CRABS

Horseshoe crabs have been reported as being found in the Pensacola Bay system in the past. Like the bay scallop, horseshoe crabs are now uncommon to find. This project trains citizen scientists to surveying potential nesting beaches to determine if, and how many, horseshoe crabs still remain in the area. If nesting beaches can be identified, we will work with FWC on a tagging program to monitor them.

This project began in 2017

Horseshoe crabs, or their molts, were reported from Ft. Pickens, Project Greenshores, Little Sabine, and Big Sabine on Pensacola Beach.

In 2018 a male/female couple were found in Little Sabine and five individuals were reported on the beach near Big Sabine – suggesting nesting is occurring on Pensacola Beach.

We are planning to initiate a citizen science monitoring and tagging program on Pensacola Beach in 2019.

KILLIFISH DIVERSITY AND ABUNDANCE

Research conducted by Dr. Chris Anderson (Auburn) suggest that certain species of killifishes are tolerant of freshwater runoff from land, while others are not. In 2019 we plan to train citizen scientists to monitor baited minnow traps and log which species they find over the course of the year. This could give us an idea of where stormwater runoff is more problematic. Some locations will be in the Pensacola area.

Invasive Species Identification, Reporting, and Removal

LIONFISH

There have been five verified records of lionfish inside of the Pensacola Bay system since 2013. It is not believed they current reside, or are reproducing here. Monitoring continues.

BEACH VITEX

Beach vitex is an invasive vine that has been found in Escambia County. The primary concern, and focus of our surveys and removals, have been on Pensacola Beach.

No surveys have occurred in the Pensacola area.

THE DIRTY DOZEN

Sea Grant, and the Six Rivers Cooperative Invasive Species Management Area (CISMA) are currently developing a “dirty dozen” list of the invasive species of highest concern. Several of these plants are found in the Pensacola area. Reporting and removal are encouraged.

Giant salvinia has been found in the tributaries of Bayou Chico

ECHI Invasive Plants – Dirty Dozen

This list was compiled with input from Agents, Specialists, Estuary programs, NERRS, CISMAS, and FDEP
They are in alphabetical order

Common Name	Scientific	Federal Noxious	Florida Noxious	Florida Prohibited	FLEPPC Invasive
Alligator Weed	<i>Alternanthera philoxeroides</i>	No	No	Yes	Category II
Beach Vitex	<i>Vitex rotundifolia</i>	No	No	No	Category I
Brazilian Pepper	<i>Schinus terebinthifolia</i>	No	Yes	Yes	Category I
Common reed	<i>Phragmites australis</i> ¹				See comment ¹
Eurasian Milfoil	<i>Myriophyllum spicatum</i>	No	No	Yes	Category II
Giant Salvinia	<i>Salvinia molesta</i>	Yes	No	Yes	IUCN worst weeds
Hydrilla	<i>Hydrilla verticillata</i>	Yes	No	Yes	Category I
Parrot Feather	<i>Myriophyllum aquaticum</i>	No	No	No	
Torpedograss	<i>Panicum repens</i>	No	No	No	Category I
Water Hyacinth	<i>Eichhorina crassipes</i>	No	No	Yes	Category I
Water Lettuce	<i>Pistia stratiotes</i> ²	No	No	Yes	Category I ²
Wild Taro	<i>Colocasia esculenta</i>	No	No	No	Category I

¹ UF IFAS Center for Aquatic and Invasive Plants list but indicates it is a native – more discussion needed

² Some are no longer considering this an invasive species

Listing by number of comments made by survey

4 comments Water lettuce
 3 comments Water hyacinth, Torpedograss, Hydrilla, Brazilian pepper
 2 comments Phragmites, Wild taro, Alligator weed
 1 comment Beach vitex, Parrot feather, Eurasian milfoil, Giant salvinia

Other Plants that Ranked for Consideration as a Replacement for one of the Above

Naupaka
 Sweetheart Plant
 Chinese Tallow
 Cogongrass

Item 4-f

December 6, 2018

Update from Member Blase Butts

The Marine Debris picked up by OceanHour FL for the city of Pensacola only. Consider this is the amount picked up by volunteers in ONE hour per month per location. Bayou is on those months with a 5th Saturday.

	2017	2018
Chimney/Bay Bluffs Parks	2757	3829
Pensacola Visitor Center/Bartram Park	2238	4182
Bayou Texar		990
Total	4995	9001

Item 4-i

December 6, 2018

Update from Member Bob Bennett

Please distribute to EAB board members as how renewable energy is successfully implemented by cities.

Follow this link <https://www.rmi.org/wp-content/uploads/2018/06/the-Carbon-Free-City-Handbook-1.0.pdf>