PENSACOLA & PERDIDO BAYS ESTUARY PROGRAM

Comprehensive Monitoring Workshop
Technical Committee
February 29, 2024
9:00 AM – 3:00 PM CT
Bayview Community Center, 2000 E. Lloyd St., Pensacola, FL 32502

Participants

Haley Gancel	PPBEP
Logan McDonald	PPBEP
Matt Posner	PPBEP
Whitney Scheffel	PPBEP
Barbara Albrecht	UWF AIMS/PWA
Shelley Alexander	Santa Rosa County
Jessica Aukamp	EPA
Katie Bennett	City of Gulf Breeze
Aaron Bland	Dauphin Island Sea Lab
Ashley Boshinski	EPA
Darryl Boudreau	NWFWMD
Jane Caffrey	UWF
Lani Cameron	Western Perdido Bay Watershed Action Committee
Ashley Campbell	Baldwin County
Kiersten Cavender	Dewberry
Mike Cleveland	Western Perdido Bay Watershed Action Committee
Amanda Croteau	UWF
Zachary Darnell	USM
Kelly Darnell	USM
Matthew Davis	FWC
Steve Doss	Escambia County
Maekayla Emerson	Escambia County
Mike Fazio	Santa Rosa County
Casey Fulford	AACD
Clark Gerken	ADEM
Josh Goff	Dauphin Island Sea Lab
Gaelyn Gros	EPA
Linda Harwell	EPA
Jane Herndon	South Alabama Land Trust
Matthew Hicks	USGS
Kelsey Hofheinz	Dauphin Island Sea Lab
Joie Horn	ADEM

Brandon Jarvis	EPA
Janelle Johnson	FWC
Matthew Kelly	Escambia County
Michael King	DEP
Jackie Lane	Friends of Perdido Bay
Paul Looney	WRA
Richard Looney	WRA
Elizabeth Major	League of Women Voters
Emelia Marshall	Dauphin Island Sea Lab
Jackie McGonigal	City of Orange Beach
Blair Morrison	Mobile Bay NEP
Dana Morton	Escambia County
Janet Nestlerode	EPA
Erin Reschke	EPA
Amanda Richey	RESTORE Council
Alex Rodriguez	Dauphin Island Sea Lab
Lisa Smith	EPA
Michelle Smith	FDACS
Dana Vestal	Escambia County
Christian Wagley	Healthy Gulf
Katie Wallace	Gulf of Mexico Alliance
Brent Wipf	Escambia County
Chris Verlinde	Santa Rosa County

Workshop Summary

1. **Workshop Goal and Objectives**
    a. Goal: Establish framework for Comprehensive Monitoring Program for Pensacola and Perdido Bays watersheds, including parameters, locations, frequency, and funding strategy for implementation.
    b. Objectives:
        i. Develop a list of monitoring sites, monitoring parameters, and monitoring frequencies
        ii. Determine what entities have capacity and funding to assist in filling data gaps
        iii. Develop criteria for a memorandum of understanding (MOU) among participating monitoring partners
        iv. Develop funding strategy for future monitoring

2. **Workshop Process**
   a. Introductory presentation given by Whitney Scheffel, *PPBEP Senior Scientist* and Haley Gancel, *PPBEP Environmental Scientist* (*see shared Google Drive folder link for PDF of slides*)
      i. Registrant affiliations and preferred monitoring topics of interest
      ii. Steps to implementing the Program's Monitoring Strategy
      iii. Uses for monitoring data
      iv. Overview of the Comprehensive Monitoring Strategy
      v. Gulf wide efforts to compile and standardize monitoring efforts
      vi. 2023 Management Conference break out session overview
      vii. Next steps to implementation of comprehensive monitoring
      viii. PPBEP and partner monitoring activities
         1. Water quality
         2. Habitats
         3. Fisheries
   b. Table Talk Session 1 (2 hours)
      i. Participants completed an ice breaker activity at their tables that focused on looking back and looking forward. They were asked to identify the strengths and challenges of existing monitoring programs and next steps (within 1-2 years) to integrate monitoring efforts throughout the watersheds.
      ii. Next, participants completed a parameter prioritization activity at their tables focused on identifying ideal monitoring frequencies for several parameters and prioritizing parameters as either low, medium, or high priority for including in the Comprehensive Monitoring Program.
      iii. A roving map activity gave participants an opportunity to rotate around tables that had maps displaying existing water quality (upper watershed and coastal), seagrass, and fisheries monitoring sites led by PPBEP and other partner agencies and organizations. At each table, they discussed suitable site locations for future monitoring. After the first round, participants rotated through the other tables for the second and third rounds, giving participants the opportunity to build off the previous group's feedback.
      iv. Lastly, participants discussed water quality assessment criteria and target setting. Participants discussed water quality assessment criteria and provided feedback on whether those criteria were sufficient or insufficient and provided reasons why. Subsequently, different strategies for setting seagrass restoration targets were then discussed, which included using a specific reference period, basing it off current mapping efforts, or setting a minimum restoration target based on previous status and trends.
   c. Table Talk Session 2 (1 hour)
      i. This session was focused on the What (Roles and Responsibilities), the How (Funding and MOU), and the Who (Personnel and Barriers) which identified the needs of every participating agency.
      ii. *See Table in shared Google Drive folder*

3. **Staff Action Items**
    a. Synthesize workshop feedback received from workshop participants and provide resources discussed
        i. *See PPBEP Pelican Post Technical Newsletter, e-mail, or shared Google Drive folder for summary, presentation, monitoring maps and tables*
    b. Follow up with partners individually to discuss funding opportunities, needs, and capacity of organization to implement Monitoring Program goals.

Workshop Activity Discussion Notes

Table Talk Session 1

Ice Breaker Activity

1. Based on your knowledge of local monitoring and what you heard summarized earlier, what are the **top three strengths** of existing monitoring programs?
    - Consistent data collection
    - Geographically diverse - many sites along watershed gradient
    - Establishing good baselines
    - Well designed and adaptable
    - Higher number of sites over a large area
    - Basic water quality parameters
    - Scope of downstream monitoring
    - Community and local involvement (partnerships)
    - Well represented agencies, interagency communication, multiple collaborators
    - Motivation
    - Productive partnerships
    - Data are available and accessible
    - Diverse interests and parameters
    - Historical datasets
    - RESTORE funded
2. What have been the **top challenges** integrating monitoring efforts in the past?
    - Lack of upstream coverage
    - Lack of immediate response to critical water quality threats
    - Past negative perceptions
    - Communication, coordination, and data sharing (trust, red tape, QA/QC, variable uses)
    - Consistent funding
    - Time to digest and synthesize data
    - Accessible data
    - Standardized methodologies and protocols
    - Geographic separation challenges

- Consistent shared understanding of ongoing monitoring
- Appropriate restoration
- Capacity
- Avoiding data gaps
- Integration of data
- Shifting baseline syndrome
- Inconsistent sampling metrics, frequency, and data formats
- Public support
- Program maintenance
- Legacy vs. new contamination

3. What are the **most achievable next steps** we can take in 1-2 years to integrate monitoring?

- Continue ongoing monitoring efforts
- Incorporate additional upstream sites
- Partner with academic institutions to conduct trend analyses
- Use "How's my Waterway" website
- Use regional, consistent standards for comparable data
- Increase community and partner awareness and engagement
- Incorporate citizen/community science
- Develop database
- Identify data gaps to inform monitoring strategy
- Identify relevant baselines for long-term monitoring
- Align future monitoring directions among collaborators
- Improve coordination, communication, and collaboration
- Secure dedicated funding
- Develop specific goals and products
- Tier data according to source (citizen science/government science)
- Leverage existing efforts
- Communicate with public and elected officials

Group Parameter and Tiered Monitoring Prioritization (*See Table 1 on Pg. 8*)

Water Quality Assessment Criteria and Thresholds

1. Do you think the current water quality assessment criteria are **sufficient, insufficient, or not enough information** to determine status of bay health?

    - Turbidity, dissolved oxygen, air temperature, salinity/hardness, pH, bacterial monitoring are sufficient
    - Resolution of data are not sufficient – aggregating data will lose resolution

2. For those that said **insufficient or not enough information**, why?

- Lack of status and trends (coastal)
- Not enough information

- Standards are insufficient (estuarine)
- No framework for data sharing
- Tiered assessment prioritization
- Old data may not be representative
- Need updated TMDLs
- Beach advisory is not a water quality violation
- Does not include sediment
- Need for enforcement
- Need loading information
- Biology is inadequate

3. Which water quality assessment determinations are limited by spatial or temporal frequency?

- All are limited
- Need more monitoring of headwater streams

Seagrass Recovery and Restoration Targets

1. Do we go back to a point in time or **reference period**? Why or why not?

- Yes, it's a good goal to find a reference, but may not be able to get back to historical coverage.
- Yes, the reference. Should be pre 1960s. You can get public buy in from shared memory
- Yes, having a reference period provides a benchmark/goal
- Yes, create an original unimpaired baseline: that ideal state provides a more desirable state that is easier for the public to see and work toward
- Use surveys and historical aerial imagery to develop the baseline extent (cultural heritage, LEK)
- Need to consider sea level rise, land use, and shifting baselines
- No, not realistic to go back
- No, should focus where seagrass is currently established
- No, future impacts will change the status so dramatically

2. Do you think the target should be based on the **most current** mapping efforts? Why or why not?

- Consider technological advancements (e.g., spatial resolution)
- More recent maps show more detail like patchiness in species distributions
- Need to use both current mapping and historical distributions to inform focal restoration areas
- Yes, use current mapping and accompanied by ground truthing
- Yes, but recognize seagrass is degraded
- Different targets in different areas based on historical context (e.g., Santa Rosa sound has been stable since 1980s)

3. Do we want to set a minimum restoration target based on previous **status and trends for our bay systems**? Why or why not?

- Yes, because we can evaluate success with data comparability
- Yes, use Tampa as an example for setting targets based on historical distributions

- Minimum target may imply a non-continuous restoration effort
- Yes, have to have a goal to work toward to help make restoration and management decisions
- Set minimum standard based on current status and expand and improve
- Combine historical and current levels to reach an effective restoration target
- Regional targets based on suitability models, salinity, light, etc.

Table Talk Session 2

"The Who, The What, The How" activity feedback (*See Table in shared Google Drive folder*)

Table 1. Prioritized parameters sorted by high, medium, and low priority based on workshop participant rankings.

Priority	Parameter Group			
	Water Quality	**Sediment/Soils**	**Habitat**	**Fish and Wildlife**
High	Dissolved Oxygen	Grain size	Seagrass acreage	Fish tissue contaminants - mercury
	Turbidity	Streambank erosion	Macroalgal presence/absence in seagrass beds	Fish tissue contaminants - metals other than mercury
	Water temperature	Benthic macroinvertebrates (abundance and composition)	Live oyster density/recruitment density	Fish tissue contaminants - PCBs and pesticides
	pH	Trace metals	Oyster reef areal dimension: total reef area	Fish tissue contaminants - lipids
	Conductance	Mercury	Oyster reef areal dimension: project footprint	Fish species compostion
	Total Nitrogen	PAHs, PCBs, Pesticides	Oyster reef height	Diversity
	Total Phosphorus		Wetland acreage	Fish abundance
	Chlorophyll-a		Wetland vegetation composition	Total length
	Total Kjeldahl Nitrogen (TKN)		Shoreline accretion/erosion	Nekton
	Total Suspended Solids			
	Total depth			
	Ammonia			
	Nitrate-nitrite			
	E. Coli			
	Fecal Coliforms			
	Enterococcus			
	Streamflow			
Medium	Total Dissolved Solids (TDS)	Total Organic Carbon Content (TOCC)	Seagrass bed patchiness	Biodiversity of diatoms
	MST genomic markers	Carbon	Propellar scarring	
	Algal toxins (microcystin)	Nitrogen	Stable isotope analysis of C and N	
	Algal toxins (Cylindrospermopsin)	CaCO3	Density of selected species and/or faunal groups	
	Orthophosphate			
Low	Color	Cation exchange capacity	Seagrass stressor proteins	
	Sulfate	Electrical conductivity	Herbivory	
	Chloride	Sediment fingerprinting	Leaf allometry	
	Total Organic Carbon (TOC)		Disease	
			Invertebrates	
			Epiphytic grazers	