Mobile Bay National Estuary Program
Science Advisory Committee Meeting
Hybrid Meeting

March 15th, 2024

The Mobile Bay National Estuary Program Science Advisory Committee was established to bring area experts together to provide advice, guidance, and recommendations to ensure that MBNEP activities will be conducted in a scientifically relevant and rigorous manner.

In-person attendance: Cassie Bates, Alex Beebe, Don Blancher, Ronald Bond, Dottie Byron, Kevin Calci, Steve Jones, John Mareska, Missy Partyka, Alison Rellinger

Online attendance: Jahson Alemu, Ronald Baker, Katie Baltzer, Brian Dzwonkowski, Rich Fulford, Jeremiah Henning, Latif Kalin, Katherine Keating, Julian Lartigue, John Lehrter, Fred Leslie, Troy Pierce, Tim Thibaut, Chris Warn,

MBNEP Staff: Blair Morrison, Bethany Hudson, Vanessa Romero, Bekah Farmer, Cody Aloi, Wayne Pendle (contracted facilitator)

This meeting was held both virtually (via Zoom) and in-person.

Blair Morrison, MBENP called the meeting to order at 10:07 CST.

Blair opened the meeting with a description of the day's agenda and turned things over to **Dottie Byron, DISL/ALCOE** and **Steve Jones, GSA** to introduce themselves as the new co-chairs of the SAC. Attendees were also given the opportunity to introduce themselves as well. Steve proceeded to give a brief overview of the Science Advisory Committee purpose and tasks to reorient everyone to the charge of the committee as we move into a new year of work.

Before moving into presentations, Steve asked for a motion to approve the minutes from the September 22nd,2023 meeting; minutes were shared via email prior to the meeting. A motion to accept the minutes was made by **Missy Partyka, Auburn Extension/MASGC** and seconded by **Alex Beebe, USA.**

Wayne Pendle, Second Mile Consulting also introduced himself to the committee and explained his role as a facilitation consultant to the MBNEP and a resource for the management conference committees.

Blair walked through the proposed process for reviewing the 2023 Stressor Matrix Report. Prior conversations with the SAC co-chairs yielded the suggestion for a 30-day anonymous review process, administered via SurveyMonkey. The review form allows participants to give specific comments, to upload in-line edits to the document (optional), and to choose a preferred review designation label (e.g. SAC approved, SAC reviewed, no review designation, do not approve document, etc.). Attendees had the opportunity to provide feedback on the process before the 30-day period began. **John Mareska, ADCNR** asked for clarification on the review designations, and if caveats could be added (i.e. I approve the document, pending above revisions). Edits and feedback will be compiled into an appendix and responses will be given below each comment, similar to a response to reviewers document in the peer-review publication process. Any changes to the main document will be noted in the appendix. Missy asked what the follow up process would be if there was a split vote on the review designation for the

document. If there is not a simple majority (51% or greater; (n=7)) in review designation, there will be a revote. The breakdown of votes for each review designation category will also be captured in the appendix of the Stressor Matrix Report. Dottie mentioned that the review designation vote gives additional structure to how the SAC lends their advisory role and to MBNEP communications about SAC documents. **John Lehrter, USA/DISL** asked about any committee participation requirements for voting and potential conflicts of interest. The feedback form was sent to the entire SAC listserv, with the intent that those most involved in the committee would likely be the bulk majority of responses to the survey. There will likely be additional discussions about membership/voting requirements and expertise distribution of the SAC; Blair recommended the formation of a subcommittee or off-cycle meeting.

Blair shared the timeline of the CCMP rewrite. Please refer to the attached slide deck for more information.

Dottie gave a brief overview of the SAC strategies for the CCMP. Please refer to the attached slide deck for more information. The SAC will likely create subcommittees and hold off-cycle meetings over the next year to flesh out aspects of the CCMP strategies for the committee. Blair mentioned that the CCMP rewrite may involve a transition to strategies for each management conference committee, rather than Action Areas, to create a more comprehensive view of the work that is done (EST,ERP,TAC, EPI initiatives done by the SAC committee).

Blair presented an overview of the 2018-2023 CCMP Evaluation for EST strategies. Please refer to the attached slide deck for more information.

Attendees moved into a structured discussion session on the EST strategies in breakout groups. In-person attendees used easel paper and virtual attendees used a provided google jamboard to take notes. Groups evaluated the pros, cons, feasibility, and level of commitment to each current EST strategy, and provided feedback on what is missing from the EST strategies. At the end of the session, each breakout group shared their thoughts with the broader committee. Please refer to the attached summary and one-pager of discussion points.

Lastly, Blair and **Chris Warn, ESA** shared some announcements. There are upcoming State of the Bay and Monitoring Summit workshops for folks to get involved and give feedback (scheduled for May 9th and 10th).

Dottie asked for a motion to adjourn. Alex motioned to adjourn the meeting, seconded by **Don Blancher, Moffet and Nichol**. Meeting adjourned at 12:01pm.

DRAFT

Science Advisory Committee

March 15th, 2024

In-person attendees: Please write your name and affiliation on the sign- in sheet

Virtual attendees: Please type your name and affiliation in the chat

Today's Agenda

- Welcome Back - *SAC Co-chairs Dottie Byron and Steve Jones*
- Facilitation Introduction
- Review and Approval of Minutes
- Old Business
  - **Stressor Evaluation: introduction of process for review** – Blair Morrison, MBNEP
- Updates and Presentations
  - **Timeline of CCMP rewrite –** Roberta Swann, MBNEP
  - **SAC tasks - development of EST strategy -** Dottie Byron and Steve Jones
  - **Overview of 2018-2023 CCMP evaluation and recommendations -** Blair Morrison
    - Discussion questions and considerations
    - Development of subcommittees?
  - **Small group brainstorming, discussion, and report-out of ideas for updated SAC strategy**
- Announcements
  - **Upcoming Monitoring Summit** – Blair Morrison
    - Planning committee, revisit of the Subwatershed Monitoring Framework
  - **Off-cycle State of the Bay Workshop** – Chris Warn, Environmental Science Associates
    - Registration coming shortly
- Adjourn

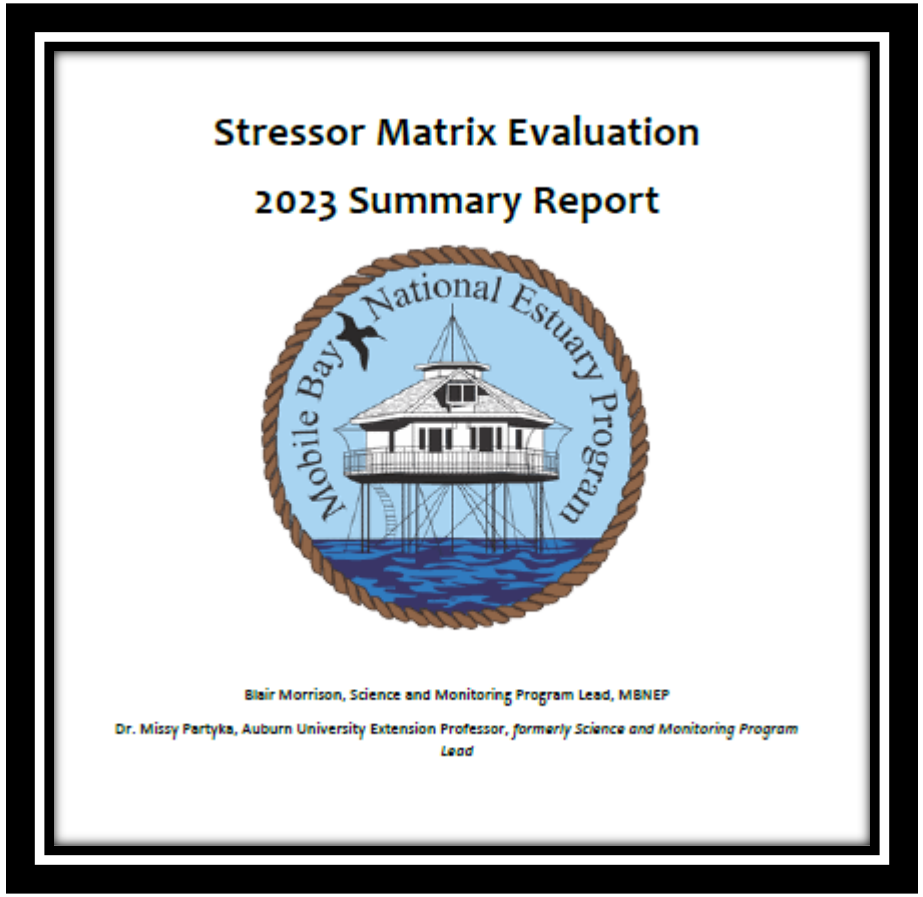
Welcome and Facilitation Introduction

Dottie Byron and Steve Jones

Stressor Evaluation: Process for Review

Blair Morrison

Introduction to Review Process



- 30-day comment period
- Anonymous SurveyMonkey poll
- 2023 Stressor Evaluation will be emailed to SAC listserv along with link to the review form

Feedback and Evaluation - 2023 Stressor Matrix Report

Introduction

Thank you for participating in the Science Advisory Committee formal feedback process. Your input and evaluation is important.

Please review the 2023 Stressor Matrix Report and then complete the survey questions. The feedback process will be open for 30 days following the opening of the form. Comments and edits will be compiled, considered, and assimilated into the report.

Device View

Next

Survey Format

Powered by

Feedback and Evaluation - 2023 Stressor Matrix Report

1. Please provide any feedback on the 2023 Stressor Matrix report here. Please provide line numbers for specific edits.

2. If you prefer to provide in-line edits and suggestions, please feel free to upload a marked-up version of the report here with your comments.

Choose File No file chosen

* 3. Please select one of the following review designations for this document:

- ◯ Yes, I approve this document and would recommend a "SAC approved" designation
- ◯ Yes, I approve this document and would recommend a "SAC reviewed" designation
- ◯ Yes, I approve this document but do not recommend any specific designation
- ◯ No, I do not approve of this document
- ◯ Other (please specify)

Prev Done

Timeline of CCMP Rewrite

Blair Morrison

Element	Completion Date	Status
Watershed Plan Assessment	9/30/2023	Complete
CCMP Evaluation of Implementation Technical Report	9/30/2023	Complete
Stressor Evaluation Technical Report	1/31/2024	Complete; on agenda at SAC mtg for review
Management Conference Organizational Assessment-Bylaws Update	3/31/2024	Complete
State of the Bays and Coast Report	6/30/2024	In Progress
CCMP Development-Outreach, Strategies for each committee, Financing, Publication	6/30/2025	In Initial Planning; this will be a mix of in-house staff effort and support from contractor
CCMP Comment Period and Approvals	9/30/2025	Not Initiated

SAC Task: EST Strategy

Dottie Byron and Steve Jones

- The SAC is charged with creating strategies for the next CCMP
- Likely will need to form subcommittees / convene off-cycle meetings to flesh out ideas and descriptions for the strategies
- Potentially developing a SAC committee strategy – which includes pillars of Ecosystem Status and Trends (EST), Ecosystem Restoration and Protection (ERP), Technical Assistance and Capacity-Building (TAC), and Education and Public Involvement (EPI)

2018-2023 CCMP Evaluation Overview

Blair Morrison

2018-2023 CCMP Evaluation:

Overview and Recommendations

EST Strategy

EST 1: Increase availability and use of data related to how coastal ecosystems and their services respond to manmade stresses

EST 2: Establish a process for measuring, analyzing, and communicating change in marine, estuarine, and freshwater ecosystem conditions

EST 3: Model and predict connections between ecosystem condition and the ecosystem services people value

EST 1.1: Establish a data management and usage strategy

- To facilitate effective data management and use, MBNEP developed a Data Management and Usage Strategy. Through this strategy, all data generated through MBNEP activities, are to be:
  - Assembled with standardized metadata and uploaded to the Dauphin Island Sea Lab (DISL) repository
  - Identified using a unique digital object identifier (DOI), making them easily located and cited
  - Made accessible for viewing and download through open online access

Dauphin Island Sea Lab

EST 1.1: Recommendations

Continue to promote a consistent, widely-adopted Data Management Strategy (EST-1.1) for data generated by MBNEP projects, including pre- and post-construction monitoring and environmental data. Considerations could include:

- Assemble and upload data from completed projects to the DISL data repository
- Promote formal adoption of the Data Management Strategy by partners
- Require all new research and monitoring to follow the strategy
- Continue to task the Science Advisory Committee to lead this work

Dauphin Island Sea Lab
Data Center

EST 1.2: Maintain or improve existing level of monitoring and data analysis to assess trends in coastal ecosystem health at a watershed scale.

- In 2015, the MBNEP Science Advisory Committee developed a *Subwatershed Restoration Monitoring Framework* (MBNEP SAC 2015) consisting of protocols designed to standardize data collection for evaluating pre- and post-restoration efforts in Mobile and Baldwin Counties.
- The Framework recommends standardized monitoring procedures to help determine:
    - Changes in water quality, flow, sedimentation, biology, and habitat quality and quantity resulting from watershed management plan implementation and restoration projects
    - Relationships between ecosystem health indicators and ecosystem function and services
    - The long-term status and trends in the watershed.
- Since its development, the Monitoring Framework has been incorporated into new watershed management plans and restoration proposals and contracts, is included in all watershed planning packages for reference, and is followed in the collection of any pre- and post-restoration work funded through MBNEP sources.

EST 1.2: Recommendations

Continue to promote, update, and adapt the Monitoring Framework (EST-1.2). Priorities could include:

- Develop a data sharing/data user agreement that is mindful of both academia and resource management data considerations. Convene a SAC subcommittee to further evaluate the needs of all parties.
- Continue to evaluate and refine the Framework to ensure consistency with other monitoring guidelines throughout the Gulf of Mexico, including those developed by Gulf of Mexico Alliance, The National Oceanic and Atmospheric Administration, and the Gulf of Mexico Coastal Ocean Observing System.
- Continue to update older watershed management plans to follow the Monitoring Framework. MBNEP should also update the Framework, possibly with the assistance of Alabama Water Watch, to promote best practices for the collection and use of volunteer monitoring data
- Update the Monitoring Framework to incorporate volunteer monitoring data.

EST 1.3: Promote consistent system-wide monitoring to assess trends in coastal ecosystem health

- Sediment studies - D'Olive, Fowl River, Bayou La Batre, West Fowl River, and Deer River watersheds and the Dog River, Bon Secour River, Weeks Bay, Wolf Bay, Eastern Shore, and Mobile-Tensaw-Apalachee watershed complexes.
- Hydrologic models - Bon Secour, Wolf Bay, Dog River, Bayou La Batre, Fowl River, West Fowl River, and Tensaw East and West watersheds, and the 12 Mile Creek sub-watershed.
- ADEM maintains an extensive network of 317 environmental monitoring locations in the MBNEP study area, with 154 sites within Baldwin County and adjacent waters, 163 in Mobile County and adjacent waters, and seven in open ocean locations
- Local *Enterococci/ E. coli* Bacterial monitoring is implemented by ADEM Beach Monitoring Program, Mobile Baykeeper, and AL Water Watch
- SAV monitoring surveys have occurred in 2002, 2005, 2008–2009, and 2015.
- Alabama Department of Conservation and Natural Resources Marine Resources Division (AMRD) monitors Alabama's public oyster reefs annually using divers to count oysters along transects
- MBNEP funded a groundwater quality study of the surficial aquifer discharging into Little Lagoon as part of watershed planning in the Gulf Frontal Watershed.
- Volunteers actively monitor almost 100 sites in coastal Alabama, focusing on Dog River, Fowl River, Wolf Bay, Weeks Bay, Gulf Frontal, and Western Perdido Bay.
- Baseline pre-restoration monitoring is ongoing for restoration projects planned for the Deer River shoreline and marsh system, Fowl River marsh spits, and incised tributaries to Lower Fish River
- In 2019, post-restoration monitoring confirmed that the siltation impairment no longer existed for Joes Branch, resulting in its delisting from the State's List of impaired waterbodies in 2020 (ADEM 2020a).
- Following MBNEP's 2016 restoration of the northern tip of Mon Louis Island, analyses of existing and acquired aerial imagery were used to assess loss or accretion of the shorelines north of the Fowl River navigation channel and shoreline areas adjacent to and south of the rock dike breakwater.
- ARCOS network has expanded

EST 1.3: Recommendations

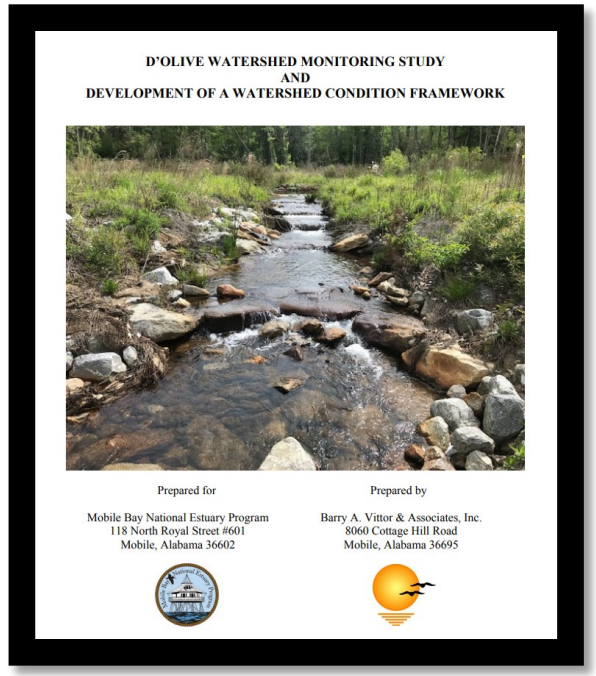
Continue to promote consistent system-wide monitoring to assess trends in coastal ecosystem health (EST-1.3). Considerations could include:

- **Data use and monitoring support:** Continue to engage with local and state partners to use existing data in decision support and to commit to "trends" monitoring investments.
- **Habitats and sedimentation:** Continue to conduct baseline and monitoring studies of habitats and sedimentation as an important component of watershed planning.
- **Hydrologic modeling:** Continue to model hydrology in priority watersheds and calibrate hydrologic models to improve performance and capability.
- **Bacteria:** Increase efforts to monitor *Escherichia coli*. The leading agency could be the Alabama Department of Public Health or FDA.
- **Groundwater:** Continue to engage with groundwater monitoring partners in a support role to recommend groundwater data collection needs and help identify potential sources of pollutants to surface waters.
- **Water Quality (ADEM):** Continue to engage with ADEM and Partners in a support role to recommend water quality data collection needs and provide input on monitoring protocols. Evaluate whether the three-year cycle of surface water monitoring in basins is sufficient to allow timely detection of problems and adaptive management response. Engage county support for key monitoring locations, including areas with known or emerging stressors.
- **Water Quality (Volunteers):** Continue to support volunteer monitoring by partnering with Alabama Water Watch to provide training and technical support. Expand and integrate Alabama Water Watch's capacity to rapidly assess emerging conditions or focus on hypothesis-driven monitoring to supplement and inform ADEM's sampling strategy. Incorporate volunteer monitoring data into the Monitoring Framework and continue to coordinate and refine a monitoring network which mixes volunteer with State resources.
- **Pre- and Post-Restoration:** Continue to prioritize pre- and post-restoration monitoring, especially for major restoration projects like those in the D'Olive Watershed with the goal of delisting more streams with impaired segments. Evaluate needs for post-restoration management, focusing on monitoring that can inform adaptive management of invasive species and other restoration features to ensure success.
- **Remote Sensing:** Develop a more comprehensive remote sensing strategy.
- **Benthic Habitats:** Continue to support seagrass and oyster monitoring.

EST 2.1: Synthesize monitoring data to develop a watershed condition index to track and communicate trends in watershed restoration and management

In 2019, MBNEP led the development of a Watershed Condition Framework (WCF), using the D'Olive Watershed as a model, that could later serve as a template for other watersheds (MBNEP 2020). The WCF is based on using a Biological Condition Gradient (BCG) to describe the biological condition of habitats along a continuum of stress.

- Geological Survey of Alabama sediment load monitoring
- Cities of Daphne and Spanish Fort water quality data (conductivity, temperature, pressure/depth, and dissolved oxygen)
- ADEM/USGS water quality data (flow, conductivity, temperature, pressure/depth, and dissolved oxygen)
- DISL monitoring in D'Olive Bay (TSS, chlorophyll a, CDOM, DO, temperature, and salinity)
- Riparian Buffers - Habitat Health Level Evaluation
- Wetlands – Wetland Rapid Assessment Procedure
- Streams – Rapid Stream Assessment (including ADEM Habitat Assessment and Riparian Habitat Health Level Evaluation).


D'OLIVE WATERSHED MONITORING STUDY
AND
DEVELOPMENT OF A WATERSHED CONDITION FRAMEWORK

Prepared for

Mobile Bay National Estuary Program
118 North Royal Street #601
Mobile, Alabama 36602

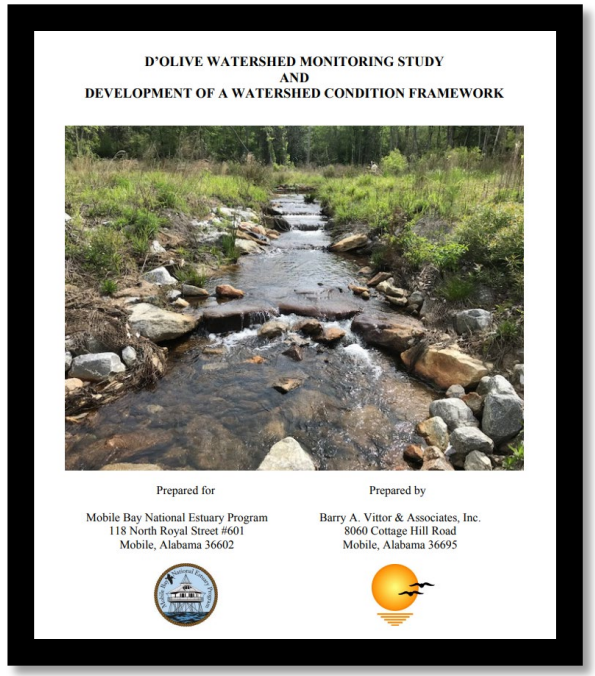
Prepared by

Barry A. Vittor & Associates, Inc.
8060 Cottage Hill Road
Mobile, Alabama 36695

EST 2.1: Recommendations

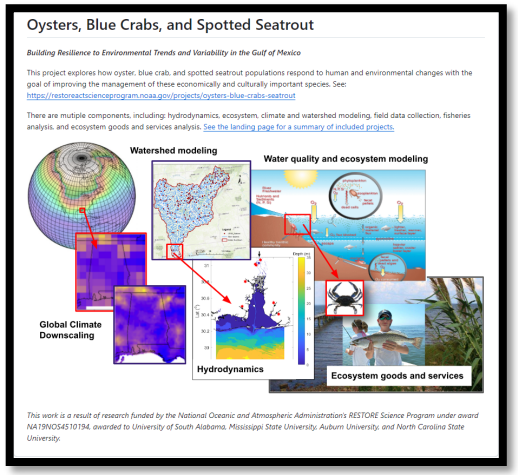
Improving the process for measuring, analyzing, and communicating change in marine, estuarine, and freshwater ecosystem conditions (EST-2) should remain a focus. Considerations could include:

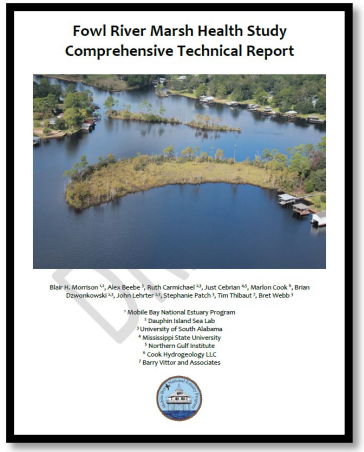
- Continue to calibrate and improve the performance of the Watershed Condition Framework to measure benefits of restoration.
- Utilize the Watershed Condition Framework in additional watersheds under watershed management plan implementation.
- Utilize the Watershed Condition Framework to help develop State of the Bay reports every five years.



EST 3.1: Manage system for multiple services

- Maintaining connection between the things most valued by people living on Alabama's coast and actions to protect and restore waterbodies and watersheds is key to generating and sustaining public support.
- The MBNEP Science Advisory Committee has developed a Stressor Matrix that determines perceptions on what stressors are having the most impact throughout the Mobile Bay estuarine system The Matrix is intended to be used as a rapid decision-making tool to quantify stressors, inform water quality and habitat protection and restoration strategies, and elucidate appropriate estuarine indicators to determine relationships between hydrologic, hydrodynamic, sedimentological, and biological processes.
- Planning for climate impacts to coastal Alabama is underway by MBNEP and partners:
  - Alabama Coastal Comprehensive Plan
  - SLAMM and SLOSH models incorporated in Watershed Management Plans
  - Decadal Study
  - Fowl River Marsh Study
  - West Fowl River System Study





Alabama Coastal Comprehensive Plan

EST 3.1: Recommendations

Modeling and predicting connections between ecosystem condition and the ecosystem services people value (EST-3) should remain an important goal over the next ten years. Considerations could include:

- Continue to quantify impacts of anthropogenic and climate stressors on ecosystem health and services as well as the economic importance of protecting and restoring water and habitat quality for the things people value most about living in coastal Alabama.

- Promote hypothesis-driven monitoring to better understand connections between ecosystem condition and services.

Let’s Discuss!

Breakout Session: Discussion of EST Strategies

40 minutes

Breakout Session Instructions

- In person attendees - will split into groups with easel paper
- Virtual attendees – will join a breakout room with a jamboard
- Discussion Questions: ~40 minutes
  - For each EST Strategy: 10 minutes each
    - Pros? Cons?
    - Feasibility?
    - Are we still committed to this as an EST strategy?
  - What is missing? : 10 minutes
- Report-out from all groups : ~20 minutes
  - Each group should designate a reporter during discussion

Virtual Jamboard for Breakout Rooms

Add post-it notes

Add text boxes

Click arrows to advance to new EST strategy note sheet

Report-out from Small Groups

20 minutes

Announcements

Upcoming Monitoring Summit :

- Revisiting and updating the 2015 Monitoring Framework
- Planning Committee – reach out if interested!
- Likely held in the next few months

Off-cycle State of the Bay Workshop :

- Registration coming soon!

Thank You For Attending!

3.15.24 SAC Roundtable Discussion Summary

Overall, the committee cited a need for greater specificity in strategies to use as benchmarks for progress. These could be subcategories under a larger umbrella strategy.

EST-1:

Pros?

- Creating a knowledge base to execute EST-2
- DOI process now exists for DISL repository
- Frameworks for data guidelines already exist – can align with other programs
- Inclusion of citizen monitors
- Useful to assess that targets are being met

Cons?

- Difficult to make comprehensive, given disparate data sets
- High level of manpower needed to maintain or improve monitoring
- Requires continued data support and high level of technical expertise to process and analyze data streams
- Backlog of data to be uploaded to the DISL repository
- Need to synergize with GOMOD and other regional efforts
- Need a better website

Feasibility?

- Could narrow the focus to certain kinds of data to increase feasibility
- Data needs to be searchable and able to be queried

Are we still committed to this as an EST strategy?

- Too broad – needs specificity
- Perhaps start requirement for NEP funded projects
- Strategy is important – need to increase proactive communication about data requirements for upcoming projects
- Can MBNEP be a central location for planned restoration, monitoring, and research in coastal AL waters?
- Need to create a Data Management team

EST-2:

Pros?

- Long term, consistent monitoring is needed
- Standard methods allow for comparisons

- State of the Bay could become more frequent (annual)
- Using ecosystem indices of condition is more efficient than looking at individual species

Cons?

- Requires resources to synthesize across groups of data and collection sources
- Resources are needed to maintain publicly available tools
- Lack of data in the Delta
- Lack of data in the marine environment – continental shelf
- Expensive- consistent funding is a constant struggle
- Lots of current monitoring efforts are snapshots – not continuous

Feasibility?

- Without dedicated funding for bay-wide evaluation, relies on outputs from individual projects
- Perhaps create an online dashboard that could be updated more frequently than a report
- Possible (i.e. ARCOS network), but needs long-term data set support and funding
- Need to determine a biological metric for assessment
- Establishing a standard method across all collection entities is difficult
- Monitoring strategies need to be updated periodically

Are we still committed to this as an EST strategy?

- Needs more specificity and measurable goals
- Start with certain types of ecosystems to collect data within?
- Yes, but needs continuous funding

EST-3:

Pros?

- Modelling system is a good step
- Can be used to develop science communication materials for the public
- Can be used to create tools that support community decision-making
- Provides links between ecosystem parameters and things that people care about
- Can drive action taken to gain public support

Cons?

- Science is still developing – not yet ready to use for decision-making purposes
- Modelling requires a lot of resources – people and computing power
- Uncertainty about what the community values now; are they the same as in 2013?

Feasibility?

- Difficult to implement

- Communicating model quality can be challenging – physical models can be empirically tested, whereas biological models and ecosystem service models have a lot more variation and stochasticity
- Models are difficult to build and maintain – computing demand is large
- May not have enough data yet to create a robust model
- Need more social science input
- Could have conflicts between managing different ecosystem services and value systems
- Need to develop and document natural capital accounting to get at ecosystem services valuation
- May need to focus communications more on outcomes rather than drivers

Are we still committed to this as an EST strategy?

- Strategy may have been influence by the Decadal study – funding will run out in the next 5 years or so unless new funding is found

What are we missing?:

- Central location for info about upcoming projects, restoration, associated datasets, etc.
- Include trustee reps (Alabama trustee implementation group reps) to provide updates
- Stronger connection with youth and citizen scientists
- Specific, measurable goals
- Inclusion of younger stakeholders in strategy development
- Stronger connections to Gulf-wide monitoring
- Synthesis projects to connect across datasets
- Larger scale vision of processes affecting the Bay
- Are the values IDed in the original CCMP still valid today?
- Transparent communication with the public about impacts
- Data for upstate watershed, Delta, and offshore
- More complete list of folks to pull in that complement the work that is done by the MBNEP management conference

Thoughts on 2018-2023 EST Strategies

Overall, SAC members want greater specificity and measurable goals to be incorporated into future CCMP strategies.

EST -1

- Important to have a solid knowledge base to accomplish other EST goals
- DOIs issued through DISL repository
- Data frameworks already exist- can synergize with other regional efforts
- Difficult to make comprehensive guidelines across disparate data sets and data types
- Need for better web access and search functionality
- Need to increase proactive communication about data requirements for new MBNEP projects

EST -2

- Long-term consistent monitoring is needed system-wide
- Environmental status documents could become more frequent with better data
- Consistent funding is an ongoing issue, along with capacity to upkeep and maintain systems
- Lack of data in the Delta and offshore endmembers limits scope
- Need online dashboard that can be updated more easily than a report

EST -3

- Models can help develop science communication materials for the public
- Provides links between ecosystem parameters and things people care about
- Science is still developing- we may not have enough data to create robust frameworks for use in decision-making
- Communicating quality and levels of uncertainty within models can be challenging
- Large computing demands
- Need more social science input

What are we missing?

- Central hub for information on upcoming projects, restoration, associated datasets
- Stronger connection with younger stakeholders - are the 2013 values still relevant?
- Larger-scale vision of processes affecting the Bay and monitoring
- Data for upstate watershed, Delta, and offshore
- Synthesis to connect across datasets
- Transparent and public facing communication