

Draft Meeting Summary
Florida's Coral Reef Coordination Team (FCRCT)
Meeting #4
November 29, 2023

1. Welcome and Introductions

Wes Brooks, Chair, called the meeting to order and thanked everyone for attending. He reminded everyone there is an opportunity for public comment at the end of the meeting and that the meeting is being recorded.

Eric Stabenau, Vice Chair, introduced Allyn Childress from the Office of Everglades Restoration Initiatives (OERI) for a review of the meeting procedures.

2. Meeting Procedures and Member Introductions/Whip-around

Allyn Childress thanked the team and members of the public for joining today. As a reminder, this team serves in an advisory role to the South Florida Ecosystem Restoration Working Group (WG) and Science Coordination Group (SCG). The team's progress is reported back to the Task Force at their biannual meetings. An update on the team's efforts will also be included in the Task Force's upcoming 2024 Biennial Report that is required by Water Resources Development Act of 1996 and is provided to Congress. She provided instructions for participating via Zoom.

Wes reminded everyone to identify themselves and speak clearly into their microphones when called on to speak. He went through the roster and asked each member to introduce themselves and provide any brief remarks. Wes also recognized WG/SCG members in attendance: Karen Bohnsack (NOAA) and Mark Rains (FDEP).

VOTING MEMBERS	ATTENDANCE
Wes Brooks , PhD, Chair Florida's Chief Resilience Officer	√
Erik Stabenau , Vice Chair NPS South Florida Natural Resources Center (SFNRC)	√
Christian (Chris) Eggleston , Project Leader USFWS, Florida Keys National Wildlife Refuge Complex	√
Sarah Fangman , Superintendent Florida Keys National Marine Sanctuary	√
Wade Lehmann USEPA, Oceans and Estuarine Management Section	√
Gil McRae , Director FWC's Fish and Wildlife Research Institute	√
Nicole (Nikki) Morgan , PhD FDEP - Division of Environmental Assessment and Restoration	√
Christopher "CJ" Sweetman , PhD, Federal Fisheries Section Leader FWC-Division of Marine Fisheries Management	√
Joanna Walczak FDEP Office of Resilience and Coastal Protection	√
Dana Wusinich-Mendez NOAA's Coral Reef Conservation Program	√

NON-VOTING MEMBERS	
Cassandra Armstrong , Section Administrator SFWMD - Coastal Ecosystems	√ Derek Cox , Alternate
Angela Delaney , Manager Broward County's Marine Resources Environmental Program	√
Deb Drum , Director; Palm Beach County ERM	√ Katelyn Armstrong , Alternate
Laura Eldredge , Chief of the Restoration and Enhancement Section Miami-Dade County DERM	√
Ian Enochs , PhD, Coral Program Lead NOAA-Atlantic Oceanic & Meteorological Laboratory	-
Elizabeth Kelly , PhD, Coordinator Martin County Environmental Programs	-
Christina (Chris) Kellogg , PhD USGS - St. Pete Coastal and Marine Science Center	-
Shelly Krueger Monroe County, SeaGrant, UF/IFAS Extension	√
Gina Ralph , PhD, Lead Scientist U.S. Army Corps of Engineers	√
Adam Gelber , Director USDOI Office of Everglades Restoration Initiatives (OERI)	-

3. Meeting Summary Approval

The summary from the September 7, 2023, meeting was provided. Nikki Morgan made a motion to approve which was seconded by Erik Stabenau. There were no objections, and the summary was approved.

4. Monitoring Framework

Wes went over the process to create the document and noted several key members that helped pull it together. The next step is to flesh out the Coordinated Actions and Wes invited Erik to lead the discussion.

Erik said the framework is an inventory of existing water quality monitoring programs along Florida's Coral Reef (FCR) and nearshore waters. They had a good start thanks to work done by Luke McEachron's group.

Coordinated Actions 3-6 are part of finding an effective monitoring program. Coordinated Action 3 is the next big section to tackle. It can be an unwieldy conversation, and the team may need to work with outside partners.

Gaps: we need to understand what we want to get out of monitoring and Coordinated Actions 9 and 10 are pencils down and working on implementation. It took a year for the team to develop a 4-page framework which indicates that there are a lot of agencies moving forward with a plan to tackle these items.

5. Biscayne Bay Southeastern Everglades Ecosystem Restoration (BBSEER) Project

Gina Ralph introduced April Patterson (USACE) who provided information on the BBSEER project.

The BBSEER project objectives include the following:

- Restore Salinity Regimes, Minimize Unnatural Canal Releases:
 - Improve quantity, timing, and distribution of freshwater to estuarine and nearshore subtidal areas, including mangrove and seagrass areas (500-meter zone).
- Freshwater Wetland Water Depth, Ponding Duration, and Flow Timing:
 - Restore freshwater depths, hydroperiods, and flows, for dry and wet seasons in terrestrial wetlands.
- Restore Natural Ecological and Hydrological Connectivity:
 - Restore connectivity and habitat gradients in areas compartmentalized by federal and state canal systems in Southern Everglades, Model Lands, Biscayne Bay Coastal Wetlands.
- Sea Level Change Resiliency:
 - Increase and restore ecological resilience in coastal habitats in southeastern Miami-Dade County

The BBSEER Project Delivery Team (PDT) has conducted several rounds of alternatives development. Several factors, including source, conveyance, and flood protection, are being considered. Habitat Units were defined and the process to evaluate was described in the presentation. April said that they are currently waiting on the Interagency Modeling Center (IMC) to complete the third round of alternatives. Next month they will receive the hydrology and hydraulics (H&H) model results.

In addition to its surface water classification Class III, Biscayne Bay water is an Outstanding Florida Water (OFW). This designation adds a layer of protection to prevent lowering of the existing water quality and to preserve the exceptional ecological and recreational significance of the waterbody. Permitted activities in an OFW are not allowed to degrade water quality in the OFW (beyond natural variability) from the existing background levels for the year of OFW designation or the year prior to permit application, whichever is better water quality.

December 20, 2023, is the next PDT meeting to go over the transects and how to optimize the alternatives. They will then engage with their subteams from January to March 2024. Robert Kirby and team is working with RECOVER on monitoring and an Adaptive Management (AM) plan.

Wes thanked April and opened up the meeting for any questions.

Erik asked about the Corps' water quality expertise. April said they have looked at where we are moving the water and how it affects water quality in the northern bay. Gina said that from the Corps' perspective, there are certain projects that have water quality components as originally authorized. In BBSEER, we treat water quality as a constraint. One of the improvements, such as removing point source discharges to sheet flow, would help improve water quality in downstream areas. Salinity is a water quality performance measure (PM). We will have ancillary benefits and will abide by all water quality constraints.

Wes asked how the team can give input. Robert noted the BBSEER eco-subteam is a great place to provide input. As round 3 modeling results come in, the eco-subteam meetings will become more frequent. There is also a water quality subteam.

Laura Eldredge noted that there are many Army Corps studies in Miami-Dade and the team should get involved, there is a lot of opportunity for input and engagement. Gina noted there is an integration team and that Tim Gyson could come and give an overview.

6. RECOVER Conceptual Ecological Models (CEMs)

Erik introduced Dr. Melody Hunt and Gina Ralph introduced Dr. Stephanie Verhulst (USACE). The focus of the presentation is how CEMs are implemented in the Southern Coastal System (SCS) and how that is helpful to this team.

Stephanie explained RECOVER's role and how they were developed through the Programmatic Regulations. RECOVER is the science arm of the Comprehensive Everglades Restoration Plan (CERP).

The three major missions of RECOVER are:

- Assessment: measuring performance of projects through research and monitoring,
- Evaluation: forecasting project performance through predictive modeling and performance measures, and
- Planning: integrating RECOVER with planning and operation of the system.

There are several CEMs defined by ecosystem regions. They have also established a system-wide monitoring plan.

CEMs use hypotheses to develop PMs and ecosystem monitoring to evaluate and assess projects, ultimately to inform CERP projects. The CEMs are non-quantitative planning tools that help us understand what causes the ecosystem to change. The CEMs have 4 components: drivers, stressors, effects, and attributes.

Melody went over the Southern Coastal Systems region. The SCS has 3 different regions: Florida Bay, Biscayne Bay, and the Everglades freshwater to marine ecotone. Each zone has a mosaic of habitats and each region has a CEM.

Recent update efforts grouped the elements to streamline the CEMs. The 4 drivers are climate, sea level rise, water use management, and land use. The groupings were described. Attributes are measurable parts of diagram.

The second step in science strategy is developing the hypotheses clusters (HC). These are created with subject matter experts. Mostly they are from the CEM effects. An example is the Water Quality and Phytoplankton HC. They used the same drivers from the CEM but used the single stressors. In the HC the attributes are split out much more than in CEMs (measurable items). Melody noted that if there is a problem, monitoring recovery times is important too. The diagrams are simplistic but illustrate the interactions to show the important components. This is an iterative process. Detailed narratives are necessary for each element and periodic updates are necessary. Updates may lead to changes in attributes and monitoring, updates to PMs, and new tools.

Erik asked FCRCT members if they have any questions or comments.

CJ asked about slide 15, wondering about downstream fisheries effects, nearly every part of the ecosystem, and the amount of data to measure the effects. Is there a monitoring program and if so, how many agencies are involved? Melody noted that many agencies, including those working on CERP. Also the monitoring program prioritizes the effects and the main uncertainties. These are linked to the Monitoring and Assessment Plan (MAP) and the Adaptive Management (AM) Plan. They help inform and guide monitoring. Stephanie noted there are 7 attributes listed but that they don't monitor everything. MAP tries to incorporate spatial and temporal gaps and is trying to focus on missing areas. There are a lot of interconnected attributes between HCs and we try to look at them. Gina added that monitoring is also done if CERP can affect it.

Derek Cox thought it is a challenge to draw a line from the water management changes of CERP to a specific attribute. Making those direct connections will be a challenge with restoration. Looking to simplify it. Wes stated that he hopes we are not starting from scratch and that this group is compiling the work already being done and identifying any new work needed. It is a complicated system and deserves a thorough look. Melody said the team will have to look at the time scale and noted that not all stressors are equal at a given time. She recommended the team pick one or two of the main stressors for now to focus on.

Erik there is a whole area of work that needs to be done to differentiate between signals. It's a subtle science.

7. Marine and Estuarine Goal Setting for South Florida (MARES) CEMs

Wes introduced Chris Kelble (NOAA/AOML) who provided an overview of MARES and CEMs.

Chris noted that different models work for different purposes. For MARES the goal was to "reach a science-based consensus about the defining characteristics and fundamental regulating processes of a south Florida coastal marine ecosystem that is both sustainable and capable of providing the diverse ecosystem services upon which our society depends."

MARES incorporated social scientists and over 100 participants. They worked to develop an Integrated CEM (ICEM). They also focused on consensus building and communication. They replaced impacts with ecosystem services. They had to incorporate the human population since they could see it on every part of land, including pressures like sewage, levees, dredged channels, etc. Tried to incorporate Everglades Restoration but behind all the other pressures like climate change and ocean acidification. Chris used an example model for the southeast coast and one for the Florida Keys. He noted the need for different models for different areas. This group is focused on restoration but also need to consider broader management. He noted there is a difference between the attributes people care about and the attributes we measure.

The website <https://sanctuarywatch.ioos.us> can pull up an indicator and the time series to see change over time and space. MARES is a decade old, and the model has evolved. Drivers Pressures Stressors Condition and Responses (DPSCR4) is being used now and has parsed apart pressures and stressors. Another model, Drivers-Pressures-State-Impact-Response (DAPSI), measures human welfare instead of services. Increasing flows would be a management measure. CEMs should include humans, ideally

graphically, and ecosystem services instead of attributes is key to discuss with social scientists. Chris stated that there is no need to start over, instead build on what's out there.

Wes asked FCRCT members for questions or comments.

Erik thanked Chris and said looking at the hardbottom and chlorophyll A, asked if maybe a crosswalk between the existing models and not reinventing the wheel. Chris said that's a good place to start.

Gil McRae said that with all these parameters we might measure, that's one thing, but when they interact the collective band gets narrower. He suggested getting a few parameters that are easily measured. Chris replied that he thinks it's worthwhile to do that. Even with a couple of indicators and we expand it, it doesn't differentiate if this is because of water management or if it's a halo effect around the Florida Keys. You have to develop the indicator around the system and how things might change. There is no single thing you can measure and say this is how Everglades Restoration is affecting the reef.

Joanna Walczak asked if freshwater delivery had significant impacts on ecosystem services? Chris will follow up. Looking at rain events and highwater discharges linked to stony coral disease.

Wes thanked Chris and noted the team would like to engage further.

Public Comment

There were no requests for public comment.

Next Steps, Assignments, and Closing Comments

Wes thanked everyone for discussion and noted that they will coordinate with the WG and SCG for the 2024 meeting calendar and will share that ASAP so everyone can save the dates. The chairs will determine if the first meeting will occur in January or March. The Chairs will also be working on some further experiential learning opportunities for 2024 focusing on late summer or early fall.

Allyn will send out calendar invites for team meetings and will also share information for upcoming Task Force and WG/SCG meetings. Wes noted we should look for opportunities for in person meetings.

Erik thanked all the speakers from today.

Meeting adjourned at 3:52PM