Minutes – Florida Keys and South Florida Ecosystem Connectivity Team
September 19, 2023

Attendees: Karen Bohnsack, Jerry Lorenz, Shelly Krueger, Suzy Roebling, Paul Julian, Anteneh Abiy (guest speaker), Gretchen Luchauer, Gina Ralph, ERM Reef Program, Raechel Littman, Will Benson, Kelly Cox, Emma Haydocy, Nick Parr, Luke McEachron, Tylan Dean, and Fred Sklar

Absent: Chris Bergh, Erin Muller, Steve Blackburn, and Chris Madden, Adam Gelber, Steve Davis, Amelia Moura, Joe Weatherby, Mike Goldberg, Matt Semcheski, Steve Friedman, and Cara Capp

Action Item 1: Provide a resolution by the end of this week and circulate with the Team for comments and edits. Cara, Kelly, and Jerry can lead writing the resolution. Add to the "whereas" the connectivity between Florida Bay, Biscayne Bay, and the FKNMS, including fish populations that have moved south due to high water temps this year in Florida Bay.

Action Item 2: For the FKNMS SAC October 17 meeting - Karen will put time on the agenda (30 minutes). Need final resolution by Monday, October 2nd for advanced notice for any action item.

Action Item 3: Invite Wes Brooks to speak about Coral Task Team and OERI

Action Item 4 (January or March meetings): - Are we started to see seagrass impacts in Florida Bay from marine heat wave this summer? Dr. Jim Fourqurean noted high temps in July/August had not yet impacted seagrass but those impacts could manifest in October when the solar period declines and longer periods of nighttime hypoxia.

Action Item 5: Karen will contact Superintendent of FKNMS, Sarah Fangman to add Dr. Raechel Littman from Florida Bay Forever and a coral scientist at College of the Florida Keys as a new Team member and will change Paul Julian's affiliation to Everglads Foundation (pjulian@evergladesfoundation.org).

Agenda:
10:00am Welcome, Introductions, Administrative Items (15 min)
Jerry Lorenz called the meeting to order at 10:02 am. Welcome remarks by Jerry Lorenz and mission of the Florida Keys and South Florida Ecosystem Connectivity Team ("Team"). Karen Bohnsack captured roll call. Karen outlined Google Meet platform and the control buttons and features. Public comment will be after presentations and will have 3 minutes.

Biscayne Bay & Southeastern Everglades Ecosystem Restoration (BBSEER) Project Update + Potential Impacts for Florida Bay

Presentation by Dr. Anteneh Abiy, Hydrogeologist, The Everglades Foundation on the status of BBSEER planning alternatives, and priority project features for the health of Everglades National

Park, Biscayne National Park, Florida Bay, and the Florida Keys National Marine Sanctuary. Presentation followed by Q&A and team discussion.

BBSEER part of CERP, the footprint is south of Tamiami Trail and east of ENP, to Florida Bay and Florida Keys. Designed to move more water to Biscayne National Park (BNP), Biscayne Bay (BB), and eastern Florida Bay; water from the north will be distributed to the east, especially Barnes Sound and Card sound. BBSEER undergoing modelling to find which components will best benefit these habitats. Dr. Anteneh Abiy is a hydrologist working on these projects. Key objectives are to 1) Keep Everglades Water in the Everglades; 2) Improve coastal wetlands and nearshore/sheet flows; 3) Store Water and Move from North to South Bay; and 4) Supplement Regional Water Budget with Reuse.

Component 1: Northwest storage area: highly transmissive aquifer system with limited water holding capacity and limited water transfer efficiency. Seepage and groundwater loss from WCA3B to the storage area. Want water to flow south. NW Storage Area (NWSA) benefits to improve groundwater recharge, flood resilience, environmental buffer to the EvPA and providing short-hydroperiod foraging habitat for wading birds.

Component 2: Conveyance. To deliver water from the NWSA to BNP and coastal wetlands. Existing canals will be used to convey water, but other structures can be added to improve water movement. Flow models show that there is a gap between the amount of water needed vs. what will be delivered in the coastal areas. Conveyance challenges: limestone is characterized by high transmissive aquifer, shallow groundwater table condition, actions in the developed land can result in enhanced seepage loss from the ENP. There is also a decrease in the operational water levels by 0.5 ft and enhanced seepage from ENP, which can allow increased saltwater intrusion.

Component 3: Sea Level Rise (SLR). BBSEER is the first CERP project to attempt to include SLR. Projections of 1 to 3 feet (see NOAA's Sea Level Rise Viewer). The model assumes 1.6' of SLR and 1.4 feet of peat accretion, and looks to see what will happen between 2035 and 2085. The circular flow-model results in misinterpretation. High water impoundment is seen in the model by 2085 within the ENP, along with enhanced seepage from ENP to the developed areas. Because 1.6' of SLR will not happen by 2035, the model is unable to evaluate project benefits over the project lifetime.

Component 4: Redistribution in the southern glades, triangle and model lands. The goal is to restore natural sheet flow pattern. Sheet flow is seen in all directions from the South Miami agricultural area. The Everglades Foundation recommends a spreader canal and full backfilling of the C-111. This is important because this is a large, deep canal that crosses a section of the aquifer; this drains water from the system as a concentrate flow into the bay and results in negative impacts vs. ecological benefits. Alternative 31 fully backfills C-111 canal while providing additional flood protection infrastructure. Question: Can BBSEER project fully backfill the C-111 canal while providing for upstream flood protection? Backfilling C-111 spreader canal = restores natural flow to Florida Bay, adjust flows to protect Cape Sable Seaside Sparrow

habitat, reduces invasive species habitat in the canal, and distributes water effectively across the region. BBSEER modelling is currently in alternative formulation and analysis.

Questions:
Why not partially backfill C-111?

- C-111 is very deep and takes a lot of water out of the system. Partial backfilling is not going to stop what is happening now. SLR means the area is going to be underwater sometimes. Major issues it is taking water out of the system quickly, and it is a lot of water. Goal to keep the water in the system, and to control how, when and where the water is distributed.

Question about additional land in Miami Dade supporting rehydration and impacts from expanding the Miami urban development boundary.

- Land that could support BBSEER is in the coastal WPAs, north of the Homestead Airbase. Some of this land available to store water (whether it's reuse or runoff water) will benefit the project. This is the area that needs the most additional water to reach the targets, so more land will help the Bay. There could be some challenges with expanded development but BBSEER does not seem to address this.

Question: Card Sound and Barnes Sound is where Sanctuary waters interact (which is adjacent to the triangle and model lands). Does modeling show restored water flows to these habitats that abut the Sanctuary? Want to make sure the benefits are modelled; to assess the benefits of BBSEER without SLR and with 1' foot or so SLR to plan.

- There are gaps within the modelling process and issues because the 1.6' SLR scenario shows everything underwater. Other models show benefits into the triangle and model lands, which would then flow into FKNMS. There is benefit; the question is how to maximize that without affecting ENP water. The alternatives also have to be implementable. Assessing BBSEER with and without SLR and peat accretion will help understand how climate change will impact the area, which can also be used to plan for resiliency measures. USACE is modeling scenarios with existing SLR, 1' and the intermediate curve. This output will be available.

Question: Regarding the agriculture drawdown – how does that affect BBSEER and is it still incorporated into the modelling?

- At this point this is not included. The round 2 modeling did include shallow groundwater dewatering wells to allow drawdown from agricultural land, but that was determined no to be helpful for BBSEER purposes/ to hydrate southern Biscayne Bay. This is not being incorporated into round 3. While drawdown is good for ag, it does not add value to this project. Agricultural lands have other practices that can continue outside of this project.

DISCUSSION:
Several environmental NGOs sent a letter to the Army Corps and to the SFWMD to support BBSEER and features such as the complete backfilling of the C-111 canal and the NWSA conveyance features.

This letter is in the Connectivity Team's share folder.
https://drive.google.com/file/d/1E3nclOwwbYBwIocZLDF91wDlksBAk-2Q/view?usp=drive_link

Further discussion ensued about the possibility of crafting a similar letter for the SAC's consideration, with a focus on the importance of this project to the Sanctuary, especially Barnes Sound and Card Sound, and the connected waters of BNP, ENP, and Florida Bay. Discussion about if this is the right time to send a letter. This is the 3rd round of modelling for BBSEER. Jerry summarized the letter and the priority for BBSEER to maximize ecosystem benefits for ENP and BNP. Would need to add the Florida Keys National Marine Sanctuary waters that abuts these systems. Water budgets with the I-model, which is the amount of water that needs to be moved to achieve appropriate salinity level. The Everglades Coalition recently sent a letter to the PDT (Link: Everglades Coalition letter: https://www.evergladescoalition.org/_files/ugd/599879_ee29865548784f079534edd50a8e840c.pdf).

Water quality features are critical, must be clean water sent south. Groundwater and aquifer recharge is critical. SLR should be incorporated into the modelling and understanding what the system would look like without SLR. Worth taking the time to look at different scenarios. Note: Army Corps plans to incorporate both, and a middle ground to show benefits now and in the future; looking at snapshots in time how specific management measures or alternatives will affect over a 50-year planning horizon. An adaptive management plan will be developed; this will trigger an action or altered course (e.g., operational change, additional structural feature, etc.) if we reach certain threshold. This will be developed in the Ecosystem Team Forum. Supporting adaptive management is also a good idea for this Team. Adaptive management will be included for any plan selected. DOI has a proposal to implement backfill of C-111 in segments to take advantage of specific points in time and assess benefits in response to SLR. Are there sequencing strategies that could provide better benefits sooner? Good idea to consider this also in our resolution.

The BBSEER sub-team Ecosystem Team Forum is also a good place for this Team to provide recommendations. Meets on Thursday, Robert Kirby is team lead and anyone can be added to those lists (POC: Kirby, Robert J CIV USARMY CESAJ (USA) Robert.J.Kirby@usace.army.mil). Supporting adaptive management is also a good idea for this Team.

Action Item: Provide a resolution by the end of this week and circulate with the Team for comments and edits. Cara, Kelly, and Jerry can lead writing the resolution. Add to the "whereas" the connectivity between Florida Bay, Biscayne Bay, and the FKNMS, including fish populations that have moved south due to high water temps this year in Florida Bay.

Public Comment – none

Team Member Updates
Historic levels of coral funding are included in the FDEP budgets requests. Wes Brooks offered to speak at this meeting or at the SAC.

Action Item: Invite Wes Brooks to speak about Coral Task Team and OERI

Action Item for January or March meetings - Are we started to see seagrass impacts in Florida Bay from marine heat wave this summer? Note: August SAC meeting had presentations about marine heat wave focused on coral response and restoration practitioners. Dr. Jim Fourqurean noted high temps in July/August had not yet impacted seagrass but those impacts would be potential in October when the solar period declines and nighttime hypoxia.

Please come prepared to give relevant updates. If more than five minutes will be needed or you want to share slides, please contact the Chair and Vice Chair in advance to arrange additional time.

Review Action Items & Adjourn

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Action Item: Karen will contact Should we add Dr. Littman from Florida Bay Forever and a coral scientist at College of the Florida Keys as a possible new Team member. Would need approval from Superintendent of FKNMS, Sarah Fangman. And change Paul Julian's affiliation (pjulian@evergladesfoundation.org).

Adjourned at 11:25 am.