

**Minutes - South Florida Ecosystem connectivity working group  
May 17, 2022**

**Action items:**

- Topics for next South Florida Ecosystem connectivity working group meeting: discussion about the Florida Keys National Marine Sanctuary Restoration Blueprint draft rule. Could have a subteam to assess Restoration Blueprint and how to respond through a connectivity lens.
- FKNMS WQPP SC could add Lake O discharges via the Caloosahatchee River into a special priority-funding topic to look into connectivity between Lake O discharges and water turbidity into the Florida Keys. This is already a priority since the special geographic regions were extended into the IRL, St. Lucie River, and Caloosahatchee River through EPA South Geographic Initiative. The EPA RFA that usually comes out in the springtime could address this. Steve Blackburn will share the RFA when it comes out.
- Dr. Nick Parr can share the FDEP sensor data from Lignum Vitae AP and information about the new data buoys being established at 4 reef sites in partnership with FIU.
- Would like to invite someone from SCCF to join this working group at least on a regular basis.
- FKNMS SAC Standing time to report out for this working group: can this be added to a standing time for the agencies report?
- FKNMS WQPP SC is August 11 at Marathon City Hall (in-person; likely remote will be available, too). Shelly can help to present updates to the FKNMS WQPP SC and Shelly will recommend adding this to the agenda for August 11 via the management committee.
- Steve Blackburn, Kelly Cox, and Joe Weatherby will help Chris Bergh draft mainland wastewater resolution.
- Links to previous meeting minutes:  
<https://nmsfloridakeys.blob.core.windows.net/floridakeys-prod/media/docs/20220315-connectivity-team-minutes.pdf>

**Attendees:** Karen Bohnsack, Jerry Lorenz, Shelly Krueger, Cara Capp, Brian Cumbie, Joe Weatherby, Adam Gelber, Chris Madden, Ashley Postlewait, Chris Bergh, Suzy Roebing, Emma Haydocy, Amelia Moura, Kelly Cox, Tylan Dean, Nick Parr, Steve Blackburn, and Erin Muller, and Gina Ralph. Guests: Matt DePaolis and Paul Julian

**Absent:** Jolly Benson, Matt Semcheski, Steve Friedman, Mike Goldberg, Steve Davis and Luke McEachron

**Agenda:**

10:00am **Welcome, Introductions, and Administrative Items**

Roll call.

Jerry Lorenz followed-up on action items from the last meeting. Specifically, a recommended resolution from the Connectivity Team was passed by the Sanctuary Advisory Council at their

meeting on April 19, 2022. The resolution expressed appreciation for record federal funding for CERP and supported continued high-level funding. The language as approved by the SAC is available on the Connectivity Team webpage [here](#). Florida Keys National Marine Sanctuary (FKNMS) Act charges Water Quality Protection Program Steering Committee (WQPP SC) with identifying funding for implementation of the program including federal and state cost sharing. South Florida Ecosystem connectivity working group is unable to lobby or directly communicate with Congress per FKNMS Sanctuary Advisory Council (SAC) working group bylaws.

Cara Capp introduced speaker, Matt DePaolis.

10:15 am

### **Estuary Connection: Health and Restoration of the Caloosahatchee and its Relationship to FKNMS**

Presentation by Matt DePaolis, Environmental Policy Director, Sanibel-Captiva Conservation Foundation (SCCF), most recently with University of Florida Center for Coastal Solutions. Presentation on state of the Caloosahatchee estuary. Loxahatchee River estuary, St. Lucie River estuary and southern Indian River Lagoon (IRL), Caloosahatchee River estuary all part of the Everglades system with connectivity to the Florida Keys National Marine Sanctuary (FKNMS). Caloosahatchee was not historically connected to Lake Okeechobee (aka Lake O). Drainage began in the 1880s for flood control and other purposes. Three water control structures on Caloosahatchee River control water from Lake O to the estuary. The Caloosahatchee now depends upon Lake O for water; too little flow results in salinity spikes and impacts to brackish species, while too much (nutrient-laden) water causes algae blooms. Lake O is currently managed by “hold and dump” where excess water is dumped to the east and west to reduce lake levels.

Seagrass, tapegrass and oysters are all biological indicators used to gauge benefits of CERP. Warming temperatures and ocean acidification are adding pressure to the biological indicators and affect ability to measure CERP effectiveness. SCCF monitors via the RECON (river, estuary and coastal observing network) water column sensors that continuously monitor. They also monitor red tide via monthly surveys, macroalgae blooms, seagrass, and wildlife and provide a weekly conditions report. There is a water conditions tracker and areal water quality drone images at Lighthouse Beach Park (weekly). The drone images provide a visual tracker of water discharges taken from near the lighthouse. This is a partnership with University of Florida, Conservancy of SW Florida, and Mote Marine Lab. Phytoplankton is measured as an analog for the amount of nutrients in the water. Sources of nutrients are anthropogenic and natural (e.g., wildlife in Ding Darling State Park). Pine Island was recently listed as impaired for nutrients from phytoplankton counts.

Large concentration of red tide sampling sites for *Karenia brevis*. The macroalgae *Caulerpa fastigiata* occurring in large mats and new macroalgae species are being observed as well. Mouth of estuary is brackish and there is real-time monitoring for salinity. Previous 173 days of salinity in the “good” range for the desired salinity envelope inside the estuary; this is

monitored in conjunction with discharges from Lake O. Sea turtle monitoring started 30 years ago. Shorebird nesting impacted by anthropogenic influences. Working on educating public not to harass the shorebirds or have them chased by dogs on beaches.

In 2018 a massive red tide event decimated the local environment and economy. 425 tons of dead sea life removed and thousands of lost visitors. Calculated \$47 million in lost revenue, cleanup costs exceeded \$1.6 million. Business community realized water quality and nutrients are affecting tourism. Chamber of Commerce on-board with improving water quality. Medina et al. (2022) paper connects anthropogenic nitrogen with amplifying effect on *K. brevis*. Utilizing restoration projects at SCCF to restore mangroves, oyster reefs (area is substrate limited for oyster spat).

Threats: anthropogenic nutrients, Lake O, and Caloosahatchee watershed discharges, agriculture, stormwater runoff, and residential septic tanks. Development is increasing, wetland loss, seagrass die-offs, and algal blooms (micro- and macroalgae). Diminishing water quality is the biggest contributor and ties to all these threats. Hydrogen sulfide from decomposing organic matter impacts wildlife and can have human health impacts.

Currently in a hold and dump pattern with water released from Lake O. Changes to the Lake O Systems Operation Manual (LOSOM) draft should come out end of July 2022 (delayed).

Recent legislation passed is the South Florida Clean Coastal Waters Act waiting for presidential signature; this will start an assessment for how to reduce harmful algal blooms in the northern estuaries. Protecting Local Communities from Harmful Algal Blooms Act was introduced to the house and would classify HABs as a natural disaster that could make additional funding available for cleanups.

Florida State Senate Bill 2508 will be sent to Governor DeSantis' desk. Bill includes language that instead of science-based water control would instead mandate water managers to pass water management systems through the Florida state legislature. This is a concern as it would slow down science and add politics to water management decisions. Net-metering bill was vetoed. Seagrass mitigation bill was removed last session but likely will be reintroduced.

**Question and Answer:**

Q. Are you monitoring phosphorus? Is Caloosahatchee a nitrogen limited system?

A. Monitoring phytoplankton as a proxy for both nitrogen and phosphorus. Caloosahatchee River has a total nitrogen total maximum daily load (TMDL) established from Franklin Lock to Gulf of Mexico and has numeric nutrient criteria. The Caloosahatchee is nitrogen limited, but at times is also P limited.

Q. Many dive operators inside FKNMS believe releases from Lake O are biggest issue that leads to zero visibility on the reefs in the Lower Keys. Is water clarity in the Keys part of the decision-

making process for releasing water from the Lake? Do the periods of poor visibility coincide with the freshwater releases from the Caloosahatchee?

A. When there are high discharges from Lake O, visibility decreases and turbidity increases around Sanibel. Lake O decisions are not likely accounting for Keys visibility, but as we move to a more consistent/improved water management system it may improve overall water quality and clarity. Water discharge levels are publicly available and could be further analyzed for patterns with Keys visibility.

Action Item: FKNMS WQPP could add Lake O discharges via the Caloosahatchee River into a special priority-funding topic to look into connectivity between Lake O discharges and water turbidity into the Florida Keys. This is already a priority since the special geographic regions were extended into the IRL, St. Lucie River, and Caloosahatchee River through EPA South Geographic Initiative. The EPA RFA that usually comes out in the springtime could address this.

11:00am **Public Comment** – no public comments

Discussion ensued. Boyer et al. have a paper that discusses inputs and outputs for connectivity within the Everglades watershed, Gulf of Mexico, and FKNMS (link: <http://serc.fiu.edu/wqmnetwork/boyerj/pubs/Gibson%20et%20al.%202008.pdf#:~:text=There%20is%20a%20net%20discharge%20of%20water%20and,of%20the%20bay%20exiting%20throug%20the%20channel%20is>). FKNMS has quarterly water quality monitoring via FIU but it does not address episodic events. In the past, had in situ monitoring that was collecting temperature, salinity, etc. on a network of buoys that are no longer extant. West Florida Shelf was also part of the long-term monitoring but discontinued. There are satellites that can capture water clarity/chlorophyll a. Jim Fourqurean has been monitoring sea grasses. There is now a continuous sensor at Lignum Vitae Aquatic Preserve and FDEP is looking to put one into Coupon Bight aquatic preserve that will be publicly available. Data buoys are also being reestablished by DEP and FIU on the reef at Sand Key, Sombrero, Molasses and Fowey Rocks which will provide near-real time water quality data. Dr. Nick Parr will share additional information once available.

Q. Where are SCCF conditions report and tracker available?

A. Updates every morning at this site: [https://sccf-tech.github.io/CRE\\_Conditions/report/RegionalConditions](https://sccf-tech.github.io/CRE_Conditions/report/RegionalConditions)

Would like to invite someone from SCCF to join this working group at least on a regular basis.

### **Draft Resolution**

Jennifer Carpenter from FDEP presented a status of wastewater projects on our last call in March 2022 within the S. Florida watershed. Chris Bergh presented a draft proposed resolution on wastewater management on the mainland and impacts to the Florida Keys. To be sent to the named parties at the bottom of the resolution, primarily municipalities with pending/impending/needed wastewater upgrades.

This working group makes recommendations to the FKNMS SAC. Therefore, this resolution would need to be sent to the FKNMS SAC, publicly noticed at least 15 days, voted on, and approved. June 21 is the next SAC meeting. Would need to complete the final draft Monday, June 6, 2022 in order to make the 15 days advance notice to the public. The Superintendent or director of NOAA Office of National Marine Sanctuaries are required to approve transmittal of this resolution to external parties. Chris Bergh will lead this resolution.

Discussion about ability of this working group to add items to the resolution, such as proposing no new development until sewer systems are performing. This working group can only make resolutions that are presented to the SAC for approval. We have no regulatory authority, can only lead with recommendations. Currently the working group does not have a standing agenda item on SAC agendas, as time available varies based on other business before the SAC. Action item: A suggestion was made that this could be added to a standing time during the "agencies report out" section of the SAC agendas. FKNMS WQPP SC August 11 at Marathon City Hall. Shelly can help to present updates to the this group, and make sure there is some time on the agenda via the management committee. Chris Bergh will be off the SAC soon. The resolutions needs to be finalized and sent to George Garrett, SAC chair.

Steve Blackburn, Kelly Cox, and Joe Weatherby will help Chris Bergh draft the resolution.

SB2508 interferes with using science to inform statewide Everglades restoration planning and replaces with legislature approvals instead. Will automatically pass if Governor does not sign by July 1, 2022. Individuals are free to support or oppose legislation but the timeline/process for review and approval of a resolution from this working group to the SAC related to state legislation is prohibitive.

#### 11:10am **Team Member Updates**

EPA RFA should hit grants.gov in the next couple of weeks. Funding this cycle of \$10 million as part of Build Back America funding for infrastructure and natural habitat. South Florida is a priority. Funding can be used to address discharges from Lake O, Caloosahatchee River, IRL, and St. Lucie River. FKNMS Act charges WQPP steering committee with identifying funding for implementation of the program including federal and state cost-sharing.

Applicants can apply to the new EPA RFA for research on minimum flows and levels (MFLs) from Lake Okeechobee since it is within the geographic region.

**Action item:** Topics for next meeting to have a FKNMS discussion about the Restoration Blueprint draft rule. The Connectivity Team was encouraged to attend the SAC meeting presentations about the draft rule; could then have a subteam meet to assess Restoration Blueprint and how to respond through a connectivity lens.

Next meeting of the Connectivity Team is Tuesday, July 19.

***Adjourned ~ 11:47 am***