

**FLORIDA KEYS NATIONAL MARINE SANCTUARY
Water Quality Protection Program Steering Committee Meeting
With the Sanctuary Advisory Council**

September 23, 2020

DRAFT MINUTES

Steering Committee Members Present

Jon Iglehart, Florida Department of Environmental Protection (DEP) (Chair)
Natalie Ellington, US Environmental Protection Agency, Region 4 (Co-Chair)
Sarah Fangman, Florida Keys National Marine Sanctuary
Shelly Krueger, Florida Sea Grant/IFAS Extension Monroe County
John Hunt, FWC Fish and Wildlife Research Institute (for Gil McRae)
Chris Bergh, Florida Keys Program, The Nature Conservancy
Sandy Walters, Sandra Walters Consultant, Inc.
George Garrett, City of Marathon
Christopher Kavanagh, National Park Service, Everglades National Park (for Pedro Ramos)
Andrea Leal, Florida Keys Mosquito Control District
Sue Heim, Key Largo Wastewater Treatment District
Barbara Powell, Florida Department of Economic Opportunity
Commissioner Michelle Coldiron, Board of County Commissioners of Monroe County
Charles Causey, Florida Keys Environmental Fund
Clint Barras, Sanctuary Advisory Council, Florida Keys National Marine Sanctuary

Special Guest: Jeaneanne Gettle, US Environmental Protection Agency, Region 4

Sanctuary Advisory Council Members Present

Citizen at Large – Middle Keys: George Garrett, (Chair)
Commercial Fishing – Tropical/Marine Life: Ben Daughtry, (Co-Chair)
Citizen at Large – Upper Keys: Suzy Roebling
Citizen at Large – Upper Keys: David Makepeace (Alternate)
Conservation and Environment: Chris Bergh
Conservation and Environment: Caroline McLaughlin (Alternate)
Diving – Lower Keys: Joe Weatherby
Education and Outreach: Jessica Dockery
Research and Monitoring: Erinn Muller
Research and Monitoring: Patrick Rice (Alternate)
South Florida Ecosystem Restoration: Jerry Lorenz
Submerged Cultural Resources: Corey Malcom
Tourism – Lower Keys: Karen Thurman
Tourism – Upper Keys: Andy Newman
Tourism – Upper Keys: Lisa Mongelia (Alternate)
Local/County Government: Michelle Coldiron
City of Layton: Cindy Lewis (Alternate)
State Government – FDEP: Joanna Walczak
State Government – FWC: John Hunt
Federal Government – NPS: Christopher Kavanagh
Federal Government – EPA: Steven Blackburn
Federal Government – U.S. Navy: Edward Barham

Summary of Resolutions:

- Motion 1 (passed): George Garrett moved to approve the November 2019 WQPP Steering Committee meeting minutes and Ms. Ellington seconded the motion. The minutes were approved with no objections.
 - Motion 2 (passed): Motion for the Water Quality Protection Program Steering Committee to develop a South Florida Ecosystem Restoration Subcommittee, to encompass members from the SAC and WQPP Steering Committee, which will strengthen engagement with and provide input to the South Florida Ecosystem Restoration Task Force, and report those efforts back to the SAC and WQPP.
 - Motion 3 (passed): Motion to accept the recommendation as the WQPP priorities.
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I. Introduction and Opening Remarks

Jon Iglehart, South District Director, DEP, called the meeting to order and welcomed everyone. Natalie Ellington, Ocean and Estuarine Section Chief, EPA Region 4 Water Division, and Mr. Iglehart are the meeting co-chairs. Mr. Iglehart thanked the members of the Water Quality Protection Program (WQPP) Management Committee for putting together the agenda and members of the public who are in attendance. Public comment will be held in the afternoon.

Members from the WQPP Steering Committee, Technical Advisory Committee (TAC), Management Committee and Sanctuary Advisory Council (SAC) in attendance were recognized.

Karen Bohnsack provided an introduction to the virtual meeting format and how attendees are able to participate. The presentations and materials associated with the meeting will be available at the Steering Committee page on the Water Quality Protection Program website http://ocean.floridamarine.org/FKNMS_WQPP/.

Mr. Iglehart gave the opening remarks on behalf of FDEP. Mr. Iglehart gave a summary of the WQPP's past accomplishments and noted the status of current projects working towards nearshore water quality improvements. He welcomed the SAC members and noted that although much work has been completed, the need for more and larger scale action is pressing.

Ms. Ellington gave the opening remarks on behalf of EPA. Ms. Ellington noted that the EPA had received \$4 million for the South Florida Geographic Initiative, a million dollars more than last year and the highest in 10 years. Forty proposals totaling \$13 million dollars were received for projects that support South Florida ecosystems including the Florida Keys and Florida Reef Tract. The EPA anticipates funding 10-15 project proposals in South Florida this year. She noted that the current administration included more funding for South Florida for next year (FY21).

Jeanneanne Gettle remarked that she was pleased to support South Florida and address environmental needs in this area. Ms. Gettle also informed the WQPP that Natalie Ellington will be retiring at the end of this month. They are rehiring her position soon and Wade Lehman will serve in her place during the interim.

Sanctuary Advisory Council Chair George Garrett gave opening remarks on behalf of the SAC. Mr. Garrett expressed his appreciation for allowing the WQPP and SAC to gather together, noting their different but complimentary roles and the importance for each group to see the other's perspective in the large scale. Mr. Garrett also highlighted the value of ongoing projects in the Keys including canal

restoration, waste and stormwater systems, and the various sanctuary resource protection efforts like buoys, zones, boater safety.

Agenda and Minutes

Mr. Iglehart reviewed the agenda and requested input from the Steering Committee on participation guidelines for the SAC. Sarah Fangman, Superintendent of Florida Keys National Marine Sanctuary (FKNMS), clarified that the WQPP members be allowed to speak first, but that the SAC should also be invited to participate in the discussions. Ms. Fangman made the motion, George Garrett seconded. No opposition. The agenda was approved with no changes, with the understanding that SAC participation guidelines would be followed as discussed. George Garrett moved to approve the November 2019 WQPP Steering Committee meeting minutes, Ms. Ellington seconded. The minutes passed with no objections.

II. WQPP Prioritization: Resolution, Process, and Recommendation

Karen Bohnsack, FKNMS, reviewed the resolution passed by the Steering Committee during their meeting on November 13, 2019. This resolution specifically directed a subgroup composed of Management Committee and TAC members to identify a shortened list of WQPP priorities to bring to the Steering Committee during this next meeting, after which a facilitated planning process should be initiated to develop action plans for those priorities. As instructed, a working group was developed and over the course of several months succeeded in creating a draft recommended short list of priorities for the Steering Committee's consideration. A total of 17 participants representing a number of agencies and organizations were involved in this process. This group reviewed the purpose, activities, past achievements, and strengths of the WQPP, identified the perceived top contributors to water quality decline in the Keys, and developed a revised list of potential WQPP strategies to be considered as part of the final recommendation. Using a combination of objective criteria and a prioritization framework, the working group evaluated each potential strategy and applied expert opinion to identify the subset of priorities that became the draft recommendation being presented today. Ms. Bohnsack noted that the top water quality issue areas and associated priorities will be individually discussed as separate agenda items during the rest of the meeting. The recommendation also includes strategies related to core WQPP responsibilities, which will not specifically be discussed today; these include activities related to program administration, data collection and analysis, and education and outreach.

Comments/Discussion

- George Garrett mentioned the document prepared is crucial to the Steering Committee for looking 20 years forward and making meaningful progress, and noted Ms. Bohnsack's gargantuan efforts to pull the working group and recommendation together. He remarked that significant improvements have already been made to wastewater, and that focus has more recently shifted to canals.
- John Hunt highlighted that it will be important for the Steering Committee to review the appendix to the recommendation document and pay attention to the identified strategies for addressing the top water quality issues. Mr. Iglehart noted enthusiasm for the renewed energy and upcoming progress.

III. Priority Review: Water Quality Issues and Associated Priorities

South Florida Regional Influences and Tidal Flooding and Climate

Christopher Bergh, TNC, provided an overview of the South Florida Regional Influences and Tidal Flooding and Climate issue areas and the priorities recommended by the working group. Mr. Bergh summarized historic versus present day water flow out of Lake Okeechobee, noting that restoration requires restoring flow south and away from the northern estuaries. The lack of freshwater flow to the south has affected water quality in Florida Bay and the Keys more broadly. Mr. Bergh showed a diagram

with the locations and types of restoration projects included in the Comprehensive Everglades Restoration Plan and emphasized that these projects need to be enacted in whole, and in the correct order to be effective. Mr. Bergh also explained other challenges regionally that affect water quality in the Keys, such as mainland wastewater infrastructure. He noted that, while most communities are connected to sewage systems, not all are and groundwater contamination is possible in addition to impacts to nearshore and offshore water quality. Although ocean outfalls are in the process of being decommissioned, aging infrastructure is also an issue. Progress on these issues requires collaboration with local governments and regional task forces. Tidal Flooding and climate change-induced sea level rise are disrupting habitats like freshwater-dependent salt marshes and flooding low lying communities and roads. Sea level is projected to increase in the short, medium and long term, and nuisance flooding events will continue to increase annually. Upgrading water quality infrastructure to be resilient to these flooding and climate impacts is important to avoid exacerbated water quality concerns associated with stormwater and wastewater. Similarly, unless adequately addressed, South Florida regional influences can contribute wastewater and pollutants of emerging concern to Keys waters.

Comments/Discussion

- Sandy Walters remarked that the elected officials in Miami and Broward who serve on the South Florida Regional Planning Council are increasingly focusing on water quality issues. She noted they were unaware of this meeting and requested the WQPP keep them informed of future activities. The issues we are dealing with in the Keys are now impacting areas across Florida and engagement with the Planning Council offers a significant opportunity to develop working relationships with officials in the counties to the north of Monroe. There is a building recognition around Florida when it comes to water quality protection; that is “if they’re doing it in the Keys, we should probably start doing it here too.”
- Chris Bergh added that the Treasure Coast Regional Planning Council and South Florida Regional Planning Council have set up a joint coral reef ecosystem-oriented working group that focuses on the issues affecting coral reefs and is coordinating on improved policies and sharing best practices. Because the Florida Reef Tract extends across all these jurisdictions, the Treasure Coast Regional Planning Council should be kept informed as well.
- Jon Iglehart noted that in addition to tidal flooding, more extreme rainfall events will have an impact on how we look at stormwater in the future. Ronda Haag clarified that a county-wide analysis of sea level rise impacts and roadway elevations includes storm surge, wave action and rainfall projected to the year 2045.
- John Hunt expressed appreciation for Mr. Bergh’s explanation of the regional connectivity and the complexity of global issues interacting with local issues; this is challenging to address. Mr. Hunt referred to the draft priority document and noted that engagement in Everglades Restoration was deemed important, but it was unclear how the WQPP could be of influence. Mr. Hunt encouraged the Steering Committee to consider how the WQPP can better engage with and affect Everglades restoration; this is an important topic that requires additional strategizing.
- Chris Bergh encouraged increasing coordination with the SAC as well and getting engaged with the South Florida Ecosystem Restoration Task Force (SFERTF). Everglades restoration advances constantly, so the WQPP and SAC would likely have something new to learn or react to during every meeting. Others voiced similar support for the Steering Committee to be more involved and vocal on these regional issues.
- Sarah Fangman noted that Nicole LeBoeuf, National Ocean Service, represents NOAA on the South Florida Ecosystem Task Force and is interested in getting input on Everglades restoration from the local community. Ms. Fangman offered to facilitate her attendance at a future WQPP and/or SAC meeting to engage on these issues. Karen Bohnsack is also newly appointed as a NOAA representative on the South Florida Ecosystem Restoration Task Force Working Group and meets monthly with Ms. LeBoeuf and the NOAA ecosystem restoration team. As the WQPP

develops more specific actions, they can be communicated up to the Task Force and other regional groups to make those bodies aware of what we're doing and what our priorities are.

- Natalie Ellington requested a list of these various regional bodies be compiled for the Steering Committee, to include their roles, mission and points of contact. Ms. Bohnsack noted that information is available online, but she will also compile a list.
- Shelly Krueger reminded the Steering Committee that they passed a motion in spring 2019 to meet at least three times per year.
- Carolyn McLaughlin summarized the two paths through which the WQPP and SAC can influence Everglades restoration work. One involves working through NOAA and formal agency channels; the other includes the SAC's ability to write letters and pass resolutions. Annual or bi-annual updates or other interactions with restoration initiatives would also be beneficial. Ms. McLaughlin also reminded members that there are many projects in the pipeline that are ready to be funded, and that Everglades restoration will require significant investments over the next 4 to 8 years, on the order of billions of dollars. Planning for a new project, the Biscayne Bay and South Eastern Everglades Restoration project (BBSEER), was recently initiated.
- Jerry Lorenz identified himself as holding the South Florida Ecosystem Restoration seat on the SAC, which was established in the early 2000s. The SAC used to have a South Florida Ecosystem Restoration Working Group, which should be reactivated to assist in engaging the SAC on these important regional restoration issues. Mr. Lorenz suggested a motion to create a working group once again. The group clarified that such a working group could include joint membership from the SAC and WQPP.
- George Garrett recommended that the Steering Committee support the redevelopment of this type of Everglades restoration focused committee. This could include members from both the SAC and the WQPP Steering Committee, who would be charged with reporting back on these issues. The details of this group would need to be drafted separately, and then could be brought before the SAC and WQPP for review and to identify participants.

Motion (passed)

George Garrett made a motion for the Water Quality Protection Program Steering Committee to develop a South Florida Ecosystem Restoration Subcommittee, to encompass members from the SAC and WQPP Steering Committee, which will strengthen engagement with and provide input to the South Florida Ecosystem Restoration Task Force, and report those efforts back to the SAC and WQPP. Motion was seconded by Chris Bergh.

Discussion on the Motion:

John Hunt noted that strengthening engagement with Everglades restoration has been recommended as a priority, and emphasized that the Steering Committee should reflect on whether this new committee is an effective way to reinvigorate their role in Everglades restoration issues. If coordinated with representatives who sit on the Task Force, this would probably be a sound approach.

Mr. Iglehart called the question. The motion passed with no objection.

Break

IV. Priority Review: Water Quality Issues and Associated Priorities

Local Wastewater

Gus Rios, DEP, provided an overview of the Local Wastewater issue area and the priorities recommended by the working group. The Monroe County Sanitary Wastewater Master Plan was developed to create designated central sewer service areas and to reduce local nutrient loading in marine ecosystems by eliminating cesspits and septic tanks. Mr. Rios provided an update on current Florida regulations for

design capacities for wastewater treatment facilities, including permitted average effluent concentrations of nutrients and minimum injection well depth. The WQPP priorities related to wastewater include completing all sewer connections in the service areas and achieving full compliance with applicable regulations; ensuring the sustainability and functionality of wastewater infrastructure and monitoring sewer collection systems for performance and compliance; confirming compatibility of wastewater treatment systems with non-municipal wastewater, such as marine sanitation devices; monitoring shallow injection wells to determine impact on nearshore waters; and considering regulatory changes and/or new treatment technology to better protect water quality.

Wastewater Connections Update

Kevin Wilson gave the wastewater connections update for Monroe County, Islamorada and Marathon. With the exception of Cudjoe Regional, most other areas are 97-99% connected. Cross Key Wastewater System construction is expected to begin in October 2020, with notices to connect expected in December 2021. Preliminary design has just begun to expand the Big Coppitt Wastewater Treatment Plant to meet Navy requirements and potential future development; details about the size and schedule will be refined in the near future.

Questions:

- Joe Iglehart inquired if those individuals on Big Pine who will have to put in their own systems have been advised of that fact.
 - Mr. Wilson responded that they offered grant funding from EPA to build systems that the Florida Keys Aqueduct Authority would operate and manage. Some took advantage of it and others did not.
- Chris Bergh asked the reason for completion of only 97-99% of hookups. Can we reach 100%?
 - Mr. Wilson expressed hesitancy that we will ever reach 100%. In some cases, those are developing properties, so the numbers constantly change. Ongoing grinder pump litigation is a main resistance to hooking up. Marathon is essentially at 100%. Six properties are too far off the main system and have been allowed to retain on-site disposal systems.
- Barbara Powell asked about the septic tanks allowed to remain off the sewer system. How many have been upgraded? What is the penalty for non-compliance?
 - Mr. Wilson indicated that for now the focus is on connecting properties to central sewer, although there will be a need to look at those individual properties that will remain off the central sewer system. The number of remaining properties can be determined by comparing the number of developed properties to the number of properties on the central sewer system. The total is probably in the dozens in unincorporated Monroe County and almost nonexistent in the cities. The penalty for non-compliance is a fine of \$100/day until connected and could eventually result in foreclosure.
- Sarah Fangman acknowledged that the sanctuary has heard a lot of concern from stakeholders about shallow injection wells and encouraged the Steering Committee to bring the community into the conversation and work together to address these concerns.
 - Mr. Wilson acknowledged this issue and the challenges associated with it; the value of upgrading to deep well is a question of whether the benefit-cost ratio is worth it. The current DEP threshold for deep well is 1 million gallons per day; there is a need to consider how much lower that threshold should go, and if the potential benefits of that effort would warrant the expense.

TAC Engagement on Wastewater Issues

Nicolas Parr, DEP, provided an overview of the Technical Advisory Committee (TAC) and their recent involvement in providing feedback on wastewater monitoring studies. Dr. Parr discussed a TAC meeting held on June 26, 2020, during which the committee reviewed and provided input on a study design to assess nearshore water quality impacts associated with shallow wastewater injection wells. The TAC

discussion highlighted the need for a groundwater study to support targeted surface water sampling. The 2020 South Florida Geographic Initiative Request for Applications included shallow injection well monitoring as a priority topic area.

Comments/Discussion

- George Garrett recognized the concern associated with shallow injection wells. The science is limited and the City of Marathon supports a good study on this subject so that any decisions made are scientifically relevant. If it is shown that the shallow wells with Advanced Wastewater Treatment impact nearshore waters, then we will need to change the standard. If not, however, we need to adhere to those results as well. The cost is not cheap, so we need to make sure we are correct.
- John Hunt pointed out that research and corrective action related to shallow injection wells are included as a priority in the recommendation document for the Steering Committee to consider. There are other high priorities identified in this wastewater topic area as well.
- Sandy Walters noted her attendance at the TAC meeting and that she was impressed with the caliber of the conversation. Ms. Walters agreed that any decisions need to be based on science and emphasized that this is the role of the WQPP. Ms. Walters thanked DEP for bringing this to the TAC and working to address these issues; she is looking forward to the data that will come out of these studies.
- Chris Bergh iterated his support for scientifically based decision making, and reminded the committee that it was members of the public who brought these concerns and important questions to the WQPP's attention. The members of this committee do not have all the answers, and it is important to engage with the community members who care enough to ask these questions.
- Charles Causey agreed with the scientific approach; it is important to look at benefits, potentially in terms of reduced nutrient loads, vs. the cost of various priorities.
- Sue Heim noted that the Key Largo Wastewater Treatment District met yesterday, and that the benefits of their efforts are already being realized; customers have been reaching out to them to connect, despite the expense.

Local Stormwater

Michael Roberts, Monroe County, provided an overview of the Local Stormwater issue area and the priorities recommended by the working group. The county is currently working to update their stormwater regulations, which are focused on stormwater management at the parcel/lot scale due to the complications associated with identifying municipal/county-wide solutions. Mr. Roberts summarized the technical changes proposed, which represent a shift from the 30-year old South Florida Water Management District (SFWMD) standards to performance-based standards for nutrient reduction. These stipulate that treatment and disposal facilities should demonstrate a net improvement or reduce the post-development annual average total nitrogen and total phosphorous loads in stormwater by 95%. A key advantage of this approach is that it helps ensure that water quality objectives are met, while offering flexibility in the design of systems. Links were provided to a variety of resources related to these regulatory updates, including the stormwater manual and a layman's brochure. There will also be a community meeting this evening to review the stormwater updates.

Comments/Discussion

- Chris Bergh inquired how a 95% improvement or retention of nitrogen/phosphorous will be measured over time, noting that performance of some passive stormwater management systems can change over time. At what scale and what sort of frequency will this be monitored over the life of the project?
 - Mr. Roberts noted that this can be done in two ways. Swales or other low impact development technology are based on a calculated presumed 95% reduction. Alternatively, engineering professionals can take responsibility for providing the

methodology to reduce nitrogen and phosphorous to the goal, along with monitoring criteria and data collection. He noted that while these systems can be designed to reduce nutrients by 95%, they are not necessarily subsequently monitored to determine performance.

- Mr. Bergh expressed concern that although this is a new, measurable threshold for stormwater, there are no plans to measure performance. He noted that this subject could potentially be included as a special study topic in a future EPA funding opportunity. Specifically, a principal investigator could monitor a representative sample of properties and stormwater systems implemented according to the new code and determine how effective or ineffective they are. This information could be valuable for informing additional code updates in the future.
- Sarah Fangman requested clarification as to whether these updates only apply to residential properties, or also include commercial properties and roadways.
 - Mr. Roberts explained that these new stormwater regulations will apply to commercial properties too. Any entity that requires a building permit must comply with the updated stormwater code. There are also triggers under which existing developments would have to upgrade their systems to come into compliance (e.g., a significant restoration or modification), but those exact thresholds are somewhat ambiguous and still need to be clarified. As far as roadways, stormwater is being incorporated into broader planning and pilot projects the county has initiated to evaluate roadways in the context of sea level rise. Mr. Roberts noted that US1 is the state's responsibility (Department of Transportation), but he is uncertain as to their current efforts or outlook on this issue.
 - Mr. Wilson noted that stormwater is difficult to collect and make into a point source. In the future, it may need to be dealt with via ground injection through small localized systems.
- George Garrett remarked that the City of Marathon has a stormwater utility with standards similar to what the county is currently developing. This standard is more stringent than what is required by SFWMD. The cities of Key West and Key Colony Beach have similar systems, which entail subsurface drainage systems that eventually go to wells. Sea level rise is already intruding on these subsurface elements and creating issues with their capacity and use. Nutrient loading from stormwater is a big question, but not as easily managed as wastewater via injection.
- Shelly Krueger inquired whether the new Monroe County stormwater code includes a provision for mitigation banking to reduce total phosphorous and total nitrogen. For example, if a parking lot somewhere was removed and replaced with a pervious surface, that may be more effective for reducing nutrients than a homeowner dealing with stormwater drainage on their property.
 - Mr. Roberts noted that this is not currently in the proposed updates, but he asked Ms. Krueger to send some suggested language for their review and consideration.
- Sandy Walters emphasized that it is important to consider what the Department of Transportation does with respect to stormwater management. Their current standard is that stormwater does not need to be addressed if there is no change to the footprint of the road. Thus, their tendency, as motivated by funding, is to mill and resurface so there is no need to address stormwater improvements. This is a statewide issue, but the result is that roads in the Keys largely allow for sheet flow runoff, which contributes to nutrient loading and other contaminants entering nearshore waters. Ms. Walters recommended that this would be a useful conversation to have at the state level. The U.S. Army Corps of Engineers Jacksonville District has received a great deal of federal funding that is being directed to improvement projects. The Department of Transportation has also received a decent amount of federal funding for roadway improvements.

Lunch

V. Priority Review: Water Quality Issues and Associated Priorities

Canal Restoration and Sargassum and Organic Debris

Rhonda Haag, Monroe County, provided an overview of the Canal Restoration and Sargassum and Organic Debris issue areas and the priorities recommended by the working group. Ms. Haag discussed the history of canal restoration, which was initiated after low dissolved oxygen in canals was identified as an issue in the 2011 Florida Keys Reasonable Assurance Document. Since then, a Canal Management Master Plan was developed, canals categorized, and a demonstration program initiated to evaluate the cost and effectiveness of restoration technologies. Water quality and benthic habitat monitoring were also conducted to gain a better understanding about canal and nearshore water quality. After Irma in 2017, priority shifted from restoration to marine debris and sediment removal from canals. The Canal Restoration Program Guidance document provides guiding principles, lessons learned, and a process for implementation. Next, the county will coordinate with the Department of Economic Opportunity to implement canal restoration work plans over the next decade, pursue additional funding for canal restoration, hold public outreach meetings, and continue to focus on improving canal water quality in the Keys. Sargassum and organic debris seems to be more of a problem this year, but there may be a few factors to that like people being home due to COVID. The Florida Department of Health and Monroe County Tourist Development Council both provided studies and guidance about health and economic impacts associated with sargassum. The county is also working on a Sargassum Management Master Plan that incorporates hydrodynamic modeling to explain where sargassum ends up and evaluates the feasibility of various management strategies and disposal options.

Comments/Discussion

- Sarah Fangman noted that the current DEO effort to revise the work rules associated with the Florida Keys Area of Critical State Concern Program heavily emphasizes canal restoration and inquired about the degree to which this has been coordinated with the county's efforts.
 - Barbara Powell noted that DEO has been working with the county, via Ms. Haag, from the beginning to amend the work rules and get the canal restoration program in place. The intent is for the DEO rules to complement the work that Monroe County is doing.
- Jon Iglehart indicated that some vessel operators have inquired about bundling sargassum and taking it offshore for disposal, but that DEP was concerned these bales would sink to the bottom and impact the benthic resources.
- Charles Causey noted that in addition to sargassum, dead seagrass is floating into canals. He also inquired about the possibility of gathering, packaging, and taking that material away to be disposed of somewhere on the mainland. Mr. Causey emphasized that such an effort would have associated costs, and that it would be beneficial if that material had some other economic value.
 - Ms. Haag responded that sargassum makes excellent fertilizer and there is a potential market for it if the salt can be removed. She has been working with a Monroe County yard waste vendor and has had discussions with agricultural representatives about potential options.
 - Shelly Krueger added that they have initiated a new experiment to look at arsenic, salinity, and macronutrients in sargassum compared with yard waste to identify if it can be used. This is a carbon rich material which could be used in landscaping applications. Ironically, they have been struggling to find enough sargassum to run this experiment, but the project timeline is 120 days with tests conducted on day 1, 60 and 120 and compared to a local yard waste control group.
- Patrick Rice inquired whether any consideration has been given to biofuels. Mexico has made great progress in using them.
 - Greg Corning, John Wood Group PLC (WOOD), noted that all options are still on the table for using sargassum once it is removed from the shoreline. The county previously investigated building a gasification plant in homestead to burn sargassum for alternative energy, but it was economically unviable.

Marinas and Liveboards and Emerging Pollutants of Concern

Shelly Krueger, Florida Sea Grant, provided an overview of the Marinas and Liveboards and Emerging Pollutants of Concern issue areas and the priorities recommended by the working group. Marine sanitation devices only minimally treat human waste and include harmful chemicals that can impact the environment if improperly disposed of, especially with repetitive or highly concentrated areas of disposal. Thus, the working group recommended a strategy to ensure adequate marine pump out services and/or land-based facilities to eliminate such vessel discharge into FKNMS, and also identified that marinas should assume responsibility for vessels that utilize their facilities. Recent reductions in mobile vessel pumpout services have exacerbated concerns about reduced compliance with the sanctuary's no discharge rule. Emerging pollutants of concern include personal care products, pharmaceuticals and other contaminants that enter surface waters and can cause ecological and human health impacts. These are largely unregulated and wastewater facilities are largely ineffective at removing them during treatment. There is also little research surrounding the impacts of these pollutants, so the recommendation to the WQPP includes strategies to increase research on emerging pollutants and incorporation them into monitoring programs.

Comments/Discussion

None

VI. Public Comment

Ms. Jan Edelstein, Sugarloaf Shores Property Owners Association/Cudjoe Gardens Property Owners Association

Working backwards I appreciate Shelly's report on compounds of emerging concern. These community organizations were leaders in getting a deep well in Cudjoe and they continue to be leaders in protecting the Florida Keys from contaminants in treated wastewater like emerging pollutants. They have submitted comments on the proposed [shallow injection well] study. On the issue of water quality monitoring for wastewater treatment wells, they monitor the water that goes into the well, but at the moment there's no requirement to monitor surface water surrounding the well and nearshore. We call for the sanctuary and DEP to monitor this water under existing statues as well as under the NPDES rules. With regard to the priorities, thank goodness we're really happy to see the priorities deal with disposal and wastewater treatment facilities but you need long term monitoring on this. Regarding canal restoration: Rhonda did a great job but failed to mention the University of Miami (UM) half-million dollar study with results due in 2021. We urge you to not discount that study and wait for its conclusions. We encourage DEO to postpone implementation of the Canal Work Program without the (UM) study to get the best bang for the buck. Finally, the draft priority document talks about compliance with the 2000 Sanitary Master Plan and would hope that the sanctuary and these groups are looking at where it's out of date and would help get it back up to date.

- Ms. Edelstein submitted written comments as well.

Cara Capp, National Parks Conservation Association

Thank you so much, my name is Cara Capp and I'm speaking for the National Parks Conservation Association. I have the pleasure of managing the NPCA Everglades Restoration Program working together closely with Caroline McLaughlin. We are committed to the restoration of the Greater Everglades and Florida's Marine Ecosystem as we know that these two are intrinsically linked. I know the Sanctuary Advisory Council as a whole and individual members have been active in supporting Everglades restoration, in particular projects that send water south through the historic River of Grass footprint. We're at the southernmost end of the ecosystem and it is at the mercy of what's to the north and that's why it's so critical to get Everglades restoration right. Our tool is the Comprehensive Everglades Restoration Plan (CERP). Just last week the Army Corps released an updated delivery schedule. One project I wanted to highlight today was BBSEER, the Biscayne Bay Southeastern Everglades Ecosystem

Project, which is combining elements to benefit Biscayne Bay and Florida Bay. This is being brought up to the group because it will have impacts on both group's areas. The project is just starting now in scoping, so it's a good time to get involved to contribute meaningfully down the line, both representing the agency or as general public. Anyone who represents an agency or government can request to be on the Project Delivery Team. All members and public are welcome to be involved as stakeholders. NPCA will be following and wanted to encourage you all to get involved if you can.

Anonymous, Citizen

I did not listen to your morning session. I did listen to Shelly's program. I've been here since the 1950s. I don't know your science but I do know water quality has been going down just by looking at the water clearness and, I see less fish, less birds, and I go out with a 5 gal bucket every day and pick up debris from liveboards and some derelict vessels. They need a place to live, I respect that. A lot of bars have 24/7 parking allowing illegal marinas. These vessels illegally dump at night. And they come in and get fuel with no fire suppression. You can't fix climate change, but you can enforce the laws here. The law is very clear about illegal dumping. I wish to remain anonymous on this.

Caron Balkany, Florida Keys Chapter of the Izaak Walton League of America/Florida Keys Citizens Coalition, Inc./Friends of the Lower Keys (FOLKS)/Key Deer Protection Alliance, Inc./Last Stand/Save Summerland Native Areas

- Ms. Balkany submitted written comments on behalf of the aforementioned community organizations.

Open Discussion from SAC/WQPP

- Henry Briceño, Florida International University, noted that the meeting presentations provided a good summary of the various water quality issues and programs. Remote sensing should be used for tracking sargassum; USF uses this tool to monitor sargassum and forecast where and when it may impact different areas. Most sargassum in Florida doesn't come from the Sargasso Sea, but from northeastern Brazil. Dr. Briceño noted that he is currently working to incorporate robotics into the Biscayne Bay monitoring program and that similar techniques could be extended to the Florida Keys in the future. It is important to understand where water is coming from, but the concept of directional water quality is not currently well understood. This is something we can hopefully start monitoring in the coming year.
- Jerry Lorenz requested more information about next steps for following up on the Steering Committee's resolution to develop a SAC/WQPP Everglades Restoration Committee.
 - Sarah Fangman and George Garrett noted this could be further discussed at the next SAC meeting.
- Chris Bergh noted that since COVID there have been no cruise ships in the city of Key West. This has been the subject of a huge debate about their future in Key West and their effects on the economy and environment. This could be the subject of a special study, which would compare pre and post COVID-19 water quality and satellite data to correspond with normal versus reduced operations. Beyond issues of sedimentation and turbidity, he has also heard anecdotal reports of cruise ships discharging human waste.
 - Patrick Rice, College of the Florida Keys, added that the College does some water quality testing as part of their coursework in classes such as Marine Data Collection. He would be happy to work with TNC on monitoring around the Key West port and will follow-up offline. Dr. Rice's understanding from discussions with port managers is that the fines for dumping in local waters are not prohibitive, so that it may be cheaper to dump than come in and pump out. There is some validity to the idea that cruise ships are dumping human waste into the water.
 - Henry Briceño responded that they have been working with USF on remote sensing tools to detect different properties in shallow water, which has been a challenge in the past.

They have also been working with researchers at the University of Boston who are writing a paper about interpreting different remote sensing images in shallow water. This technique could be tested in Key West around the ports.

- George Garrett acknowledged that turbidity associated with cruise ships entering the port is only part of the issue. The cruise ship referendum is also seeking cleaner ships; in addition to dumping, there are also issues with exhaust, bilge water, cooling water, etc. He is not concerned that ships are dumping in the harbor, but rather that they are dumping offshore in the Area to Be Avoided (ATBA) where it is potentially legal to do so. Extending the sanctuary boundary to the ATBA may assist with some of these issues.
- Jon Iglehart recognized that outreach is part of the WQPP tasks; people arriving on cruise ships come from all over to enjoy Keys' water and resources and educating them may be an opportunity to generate national support for water quality initiatives in the Keys.
- John Hunt referenced the few suggestions made about potential special studies and emphasized the need to more systematically begin developing priorities within the WQPP early, around January. Steve Blackburn agreed.
 - Charles Causey noted that with only two meetings a year, there has not been a chance to develop project ideas to present to the committee. With a meeting in January there can be enough time for discussions about some of the problems so that potential projects can be developed.
 - Steve Blackburn clarified that typically EPA is looking for input just on the broader priorities versus individual projects. There's nothing stopping the committee from developing full projects, but he would have to recuse myself from a panel if he's actively involved in a project.
- Joe Weatherby expressed enthusiasm for this meeting, these discussions, and the work that is being done. He was on the previous SAC Ecosystem Restoration Working Group and consistently heard concerns from the public about water quality issues. It is important to find a way to translate all this technical work into layman's terms to make it more available to the public. Everyone feels like water quality is the issue, but most don't understand the level of activity and breadth of expertise directed at these issues. Mr. Weatherby noted that he will try to better communicate about this to his constituents.
 - Sarah Fangman agreed and reminded the committee that the recommendation document includes strategies related to education and outreach, including one to provide a website or other mechanism to make data and other information more readily available to the public.
 - John Hunt noted that a next step in this process could be to take this recommendation document and turn it into something that more clearly communicates to the public and decision makers about our objectives and priorities. This type of public-facing document could be disseminated in a number of ways.
- Chris Bergh reminded the committee about the importance of communicating with Congress via the Biennial Report. The most recent report was from 2013, although when the WQPP was established the requirement was to report to congress every other year. These reports don't have to be as big as the 2013 version; they could be much shorter if developed every other year as intended.
 - Shelly noted that there is a need for additional staffing to assist with items such as the biennial report, outreach, and other administrative tasks.
 - The group was uncertain whether staffing could be funded via the existing mechanisms, and Steve Blackburn reminded the committee that full staffing hasn't been in place since the South Florida EPA office was closed ~7 years ago.
 - Natalie Ellington recognized the need for more staffing to support the level of work being done, and referred to the November 2019 meeting discussions on this same topic. They will continue to work internally to determine if EPA can help fill the Keys Liaison officer role.

VII. Priority Review: Overall Evaluation

Mr. Iglehart requested additional discussion and input from the Steering Committee and SAC on the overall recommendation.

Comments/Discussion

- The group discussed the potential need to add additional detail to these identified priorities, to help determine what should be tackled first based on feasibility (e.g., the “low hanging fruit”) or what the committee might consider ‘super-priorities.’
 - John Hunt noted that much of the low-hanging fruit has already been accomplished over the years. An important part of this recommendation will be to find ways for the WQPP to play a more substantive role in the most important water quality management challenges we face moving forward, not necessarily just tackling the low hanging fruit.
 - Chris Bergh iterated that most of the work to be done within these priorities is not going to be done by EPA, the Steering Committee or sanctuary staff. An important aspect here is to refocus our efforts and determine how this group can help move the priorities forward.
 - Karen Bohnsack clarified that the next agenda topic is specifically focused on how we move forward with these priorities. For now, the goal is to determine if the Steering Committee is supportive of the priorities as presented, or if any changes need to be made based on missing items. Support does not necessarily entail that the Steering Committee would be responsible for implementing these priorities, but more a conceptual agreement that the committee will commit to helping push these priorities forward.
 - John Hunt reiterated that while some of these priorities could specifically be tackled by the WQPP, making progress on many of these will require figuring out the WQPP’s role in advancing corrective actions. As an example, we could consider how best to use the WQPP as a bully pulpit to bring awareness to these priority water quality needs.
- Jon Iglehart requested input from the group on ‘super priorities’
 - Sue Heim expressed support for expanding marina pump services.
 - Chris Bergh expressed support for increased education and outreach and strengthening the administration of the WQPP. There are recommendations related to this in the document, although they weren’t specifically highlighted today. He noted that other coastal counties and municipalities have comparatively robust marine resources divisions to support this type of work. In comparison, Monroe County and the local governments have deferred much of this burden to the federal government through NOAA and EPA, as well as to DEP and FWC. This is also an avenue that could be considered, if the county chose to prioritize it.
 - Shelly Krueger identified an acute current problem related to funding for the mobile vessel pumpout program. Mobile pump out funding is uncertain, and less than 30% of marinas have pumpout capacity, which makes it difficult for boaters to comply with the no discharge zone that encompasses all waters of the sanctuary.
- In response to an inquiry from Barbara Powell regarding the intersection between the WQPP priorities recommendation and the Keys Reasonable Assurance Document (RAD), Gus Rios clarified that there is no conflict between these various documents; the priorities are consistent with the RAD, which outlines a number of projects mostly related to wastewater and stormwater improvements.
- Charles Causey requested more information about the overall ratings of each priority in the document, and specifically a consideration about the potential benefits of any priority relative to nutrient removal. Karen Bohnsack explained that the criteria were created to favor projects that would have the most water quality benefit, as determined by the expert opinions of the working group members. This was not specifically related to nutrient reduction, although that was likely

factored in when evaluating the overall water quality benefit that could be expected from the various strategies.

Motion (passed)

Natalie Ellington made a motion to accept the recommendation as the WQPP priorities. George Garrett seconded the motion.

Discussion on the Motion:

Initial attention may be given to the following priorities identified during discussion by the Committee: enhance administrative support, resolve the pumpout infrastructure issues to reduce discharge in nearshore waters, and increase outreach activities.

Mr. Iglehart called the question. The motion passed with no objections.

VIII. Next Steps for Further Developing and Implementing WQPP Priorities

Update Presentation on Coral Reef Management Issues and Opportunities

Joanna Walczak, DEP, provided a high level overview of current coral reef management actions. While much of the short-term work is currently focused on stony coral tissue loss disease (SCTLD), the long-term focus is on strategies to reduce local stressors and restore environmental conditions that improve reef resilience. In addition to DEP's work on coral reef issues here in Florida, Ms. Walczak also works on coral reef management nationally through the US Coral Reef Task Force and US All Islands Coral Reef Committee. This year marks the 20th anniversary of the US Coral Reef Conservation Act of 2000, which is important for providing funding to the jurisdictions for coral reef management. Building long term engagement across the entire reef tract is critical, and regionally, there are a number collaborative efforts, including the Florida Reef Resilience Program, Regional Planning Councils, and C-OCEAN and SEAFAN citizen science programs. There is also a heavy focus on developing public-private partnerships to implement ecosystem restoration. Mission: Iconic Reefs as an example, and the intent is to expand this effort beyond FKNMS up the entire reef tract. Recently, the NFL was able to highlight coral reef restoration during Super Bowl LIV with a project called 'One Hundred Yards of Hope' which honored the NFL centennial and military veterans in partnership with Force Blue. This partnership will continue into Super Bowl LV in Tampa. At the state level, Governor DeSantis has prioritized environmental issues, as evidenced by his early executive order and new state legislation including the Clean Waterways Act, Sea Level Impact Projection study, and the Nature Coast Aquatic Preserve. New grant funding has also been allocated to DEP to support high level projects that help improve water quality and protect and restore Florida's coral reefs (protectingfloridatogether.gov). DEP is also focused on improving water quality monitoring metrics across the entirety of Florida's Coral Reef, including FKNMS, Biscayne National Park, and the Southeast Florida Coral Reef Ecosystem Conservation Area. In particular, DEP is investigating coral reef specific water quality criterion, and how Lake Okeechobee water ultimately affects the reefs. Over the next couple years, there will also be a strong focus on water management efforts such as mandating the closure of wastewater outfalls, developing best management practices for wastewater and stormwater in Miami to reduce pollution into groundwater and nearshore waters, and integrating lessons learned from the Keys on shallow water injection wells. Ms. Walczak reminded attendees to take the pledge and join the Florida Coral Crew at www.FloridasCoralReef.org.

Comments/Discussion

- Jon Iglehart inquired about the current status of SCTLD along Florida's reefs.
 - Ms. Walczak noted that the disease has expanded as far south/west as the Marquesas, but has not yet reached the Dry Tortugas. DEP and partners are working to set up a rapid response team in the Dry Tortugas with financial support from state and FKNMS

- Ms. Walczak noted that the next joint meeting of the South Florida and Treasure Coast Regional Planning Councils will be water quality focused, and there may be an opportunity to have a speaker from the Keys or WQPP.

Discussion on Next Steps for Developing and Implementing WQPP Priorities

- Joe Weatherby expressed his appreciation for this meeting and noted his commitment to helping to educate his constituency about these water quality issues, the progress being made, and vision for moving forward.
- Chris Bergh emphasized that the role of the SAC is to serve as a conduit between the sanctuary and the community of people who use or depend on it. To a lesser extent, the WQPP Steering Committee has a similar function, but is more agency-driven. Based on the positive experience with this meeting, Mr. Bergh suggested it is worth forging a stronger link between these groups and considering additional joint meetings in the future. From an education and outreach perspective, it would be helpful to work together to build on each groups' strengths and be consistent in messaging to the constituents and beneficiaries of these programs.
 - Related to engagement and participation, Sarah Fangman noted that it would be useful to revisit the WQPP charter and identify seats within the Steering Committee where we have lost engagement and look at filling them. A lot of entities have a role to play in making progress on these priorities, and it will be important to have everyone at the table.
- Jon Iglehart requested additional feedback from the Sanctuary Advisory Council
 - Jessica Dockery opined that attending the meeting was definitely beneficial, and it was especially enlightening for SAC members to better understand the work being done by the WQPP. Ms. Dockery inquired if the WQPP is involved with any education and outreach to the youth, and noted her overall surprise at the lack of marine science and local issues being taught in Keys' schools.
 - Mr. Iglehart responded that youth education has not been a focus in the WQPP traditionally. An outreach program was envisioned several years ago, but there hasn't been much effort on this front since then. Given that education and outreach has been identified as a super priority, this could be something to consider further.
 - Chris Bergh reminded attendees that WQPP funding used to support the Waterways television series and other education/outreach programs, although these were not specifically geared towards youth.
 - Ben Daughtry agreed that participation in the meeting was interesting and provided insight. Given that water is commonly identified as the #1 issue in the Florida Keys, Mr. Daughtry suggested that the SAC should keep engaged and updated on these issues. Participation in one of the three annual Steering Committee meetings would help achieve this.
 - Jerry Lorenz agreed with the need for further collaboration between the WQPP and SAC in the future.

IX. Meeting Wrap-Up and Closing Remarks

Jon Iglehart, DEP, thanked everyone for a great meeting with informative presentations, dialogue and exchange of information. Meeting notes, presentations and a post-meeting evaluation will be sent in the near future. Natalie Ellington reiterated her commitment to further discuss the Florida Keys Liaison position with her colleagues at EPA.

Meeting Adjourned