

**FLORIDA KEYS NATIONAL MARINE SANCTUARY
WATER QUALITY PROTECTION PROGRAM
STEERING COMMITTEE MEETING
February 12, 2014
Marathon Government Center
Marathon, FL
FINAL MINUTES**

Steering Committee Members Present

Jon Iglehart, FDEP (Co-Chair)
Jennifer Derby, EPA Region IV (Co-Chair)
Charlie Causey, Florida Keys Environmental Fund
Geraldine Zahn, Key Colony Beach
Sandra Walters, SWC, Inc. citizen representative maritime interests of the Florida Keys
Billy Causey, Southeast Region of National Marine Sanctuaries
Carol Mitchell, South Florida Natural Resources Center, Everglades National Park
Andrea Leal, Florida Keys Mosquito District
Julie Cheon, Florida Keys Aqueduct Authority
Meghan Johnson, The Nature Conservancy (for Chris Bergh)

Management Committee Members Present

Sean Morton, NOAA Florida Keys National Marine Sanctuary
Gus Rios, Florida Department of Environmental Protection
Steve Blackburn, EPA Region IV

I. Call Meeting to Order (Chair, Jon Iglehart)

Mr. Iglehart gave introductory remarks on behalf of Florida Department of Environmental Protection (FDEP) Secretary Hershel Vinyard and reviewed the establishment of the Water Quality Protection Program (WQPP) as called for by the Florida Keys National Marine Sanctuary and Protection Act. The WQPP is to be implemented by EPA and state of Florida in cooperation with NOAA. The act established the steering committee with the purpose of setting guidance and policy for the development and implementation of the program and working together to make certain that the four components of the program, which are corrective actions, monitoring, research and special studies and public education/outreach, are implemented and seek adequate funding. After years of focus on corrective actions (wastewater) and monitoring, the committee put additional equities to special studies and outreach a few years ago, these activities serve to bring dollars into the region.

This program is at a crossroads again. The main corrective actions are well underway and achieving great successes already in terms of the value provided and funding. The special studies canal infrastructure projects have taken a life of their own and are becoming the next phase of corrective action projects. The publishing of the *Tropical Connections* ended this singular long-term outreach effort. The committee has some things to think about. Work being done on corrective actions and the monitoring programs is not as robust as it used to be and that will be discussed later. Now that *Tropical Connections* is out, there isn't much of an outreach plan,

although this is a task of the program. Budget is another issue to consider and discuss along with membership and attendance.

Ms. Derby stated that she and Steve Blackburn work in EPA's Coastal and Ocean protection section based in Region 4 in Atlanta. Steve is the coordinator of the Florida Keys work and the South Florida Geographic Initiative. She is sitting in as co-chair for Bill Cox, who took a position with the National Park Service. EPA will be getting a new branch chief who will serve as the co-chair of this committee for EPA. EPA has a new regional administrator, Ms. Heather McTeer Toney, who may be visiting the Keys in the future, along with budget analysts, to learn about WQPP projects. Steve will remain on this project and retain consistency as EPA goes through reorganization in the near future. Steve has been working on the REMAP monitoring study in the Everglades, which was halted due to the government shutdown in October. This project shares the budget with the WQPP; however, EPA found the 300k needed to cover this project so this additional cost incurred because of the shutdown will not impact the WQPP.

Members introduced themselves.

Billy Causey commented that there is a lot of interest and public involvement in the canal restoration issue and water quality and he appreciates that on behalf of NOAA and the sanctuary.

Jon Iglehart thanked Sanctuary superintendent Morton, Regional Superintendent Billy Causey and Commissioner Neugent for use of the room and staff support.

Jon asked that public comment cards be given to Nancy or Steve.

Jon asked whether there were any changes to the agenda. Due to a scheduling conflict, Superintendent Morton requested to move his presentation on the marine zoning update to a time before lunch; it was agreed to do so. No other comments were made on the agenda.

Sandy Walters made a motion to approve the minutes; seconded by Charlie Causey. There were no comments or opposition to the minutes. Minutes were approved unanimously.

II. Update on Wastewater Projects in Monroe County (Kevin Wilson, Zully Hemeyer, Margaret Blank, Greg Tindle)

Kevin Wilson gave the status report for Monroe County and other entities. To view his presentation, visit http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html. He recognized Zully Hemeyer and Greg Tindle who are in attendance today and can answer questions on this topic for the City of Marathon and Village of Islamorada, respectively. Kevin also recognized Julie Cheon, FKAA, and Rhonda Haag, the sustainability manager for the county. The FKAA is responsible for the Duck Key, Layton, Big Coppitt and Cudjoe facilities. The Duck Key project is complete. Wastewater in the Cudjoe area is progressing; the plant is being built and pipes are being installed.

The total number of connections in the Keys, 72%, hasn't changed that much in the last year. Village of Islamorada is making significant progress, but until the transmission line is fully complete to Key Largo, no connections can be made in that area. The same is true for Cudjoe;

the plant won't be complete until 2015. Big Coppitt is making progress, too, and most other areas are making connections, too. Where connections are available, they are seeking compliance from everyone.

Billy Causey commented that he was impressed with the boring operation that the Village of Islamorada is carrying out to take the transmission lines under the seafloor between bridges. This is new technology being used here and elsewhere. Sandy Walters added that she has a full time environmental inspector on duty to ensure compliance on the Islamorada project and things have gone very smoothly with no environmental issues. She is grateful for the support they have received by the sanctuary, Army Corps and FDEP on using this technology. The longest underwater drill that she knows of was underneath Biscayne Bay in Miami built by Florida Power and Light.

Florida Department of Environmental Protection Annual Award Presentation

Gus Rios, FDEP Environmental Administrator, recognized the following Keys wastewater treatment plants for receiving the FDEP annual Plant Operations Excellence Award: Key Largo Wastewater District for the largest facility category; Big Coppitt received it for intermediate sized facility and City of Layton for the small sized plant. All meet the Advanced Wastewater Treatment Standards. Kevin Wilson complimented FKAA officials and employees for their progress on wastewater and for being good partners with the county. Jon Iglehart added that there will be an official ceremony in Punta Gorda where the Secretary of FDEP will present the award. In this south District for FDEP, Monroe County took three awards and is the shining star this year.

Jon reminded everyone that the subcommittee was changed from an information gathering one to one that is advisory and can make recommendations on funding projects. They operate under the state sunshine laws.

III. Canal Restoration Advisory Subcommittee (Wendy Blondin, Gus Rios)

Wendy Blondin and Gus Rios presented a slide program that can be viewed by visiting http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html. Gus noted that FDEP and EPA provided funds for some of the tasks identified in the Canal Management Master Plan. He recognized the hard work of subcommittee members and thanked them for their participation. He thanked Annie McGreenery, FWC FWRI, for taking the subcommittee notes.

Wendy Blondin explained that she and her team worked closely with the producer *Waterways* is an educational television series sponsored by the sanctuary, EPA and the National Park Service. The *Waterways* episode on canal restoration was recently completed and is available on YouTube and by visiting <http://floridakeys.noaa.gov/whatsnew/around/2013/waterwayscanals.html>.

Wendy stated that AMEC has completed the Canal Management Master Plan, CMMP, which is also available on the county's canal restoration web page. According to the scoring criteria used, 131 canals were ranked as having poor water quality, 188 were in fair condition and 171 had poor water quality. The poor canals are the actual target for the rollout of early restoration. The plan calls for implementation of a canal restoration pilot study to test different restoration

methodologies to see how well they work to improve water quality. Water quality monitoring (done by FIU) will be used to measure and monitor effectiveness of the different restoration technologies being tested in the canal pilot project. Information on canal restoration is being maintained on the county's website by the sustainability coordinator, Rhonda Haag and can be found at <http://www.monroecounty-fl.gov/index.aspx?NID=598>.

Monroe County committed \$5 million for this canal restoration pilot project in which five technologies are being applied to seven selected canals and evaluated. The Village of Islamorada provided 100k. To select canals for the demonstration, they used data from the master plan and applied criteria that included aspects such as which projects could be permitted quickly. The canals subcommittee reviewed this work and approved it. The county and Village also approved the selection process. The entire county was considered, but Layton, Key Colony Beach and City of Key West do not have any poor water canals per the master plan ranking process. Marathon may be joining when they get funding. Monroe County and the Village have selected canals for the program. The technologies include weed barriers, removal of organics, culvert connections, pump systems and backfilling one deep canal in Key Largo.

Outreach to canal homeowners is ongoing and the county is taking the lead. Over 700 letters were sent to canal homeowners to get their approval to accept funds for this program. Additional canals were identified in this process for future funding. One Big Pine Key canal is getting a combination technology—weed barrier and organic removal. Treasure Harbor is has been selected in the demonstration project in the Village of Islamorada.

The final design and permitting work for the demonstration projects will be taking place soon. Rhonda Haag is getting approval from the board to negotiate the contract for AMEC to do the design permitting. Permitting may take four months and the process needs to be expedited to keep up with the schedule and make use of available EPA funding. Geiger Key project is a culvert project and is ahead of other projects. She is meeting with Water Management District, NOAA Fisheries and the Army Corps next week on this project. Monitoring will start at the end of February or March and will track the process as restoration takes place.

Gus Rios noted that construction work on submerged lands in the sanctuary requires permits. Several months ago, the letter were sent to the permitting agencies requesting that they assign one or two knowledgeable staff to work on permits and coordinate with one another as an informal interagency permitting team. A recent meeting was held in January and the permit agencies were in attendance. The FKNMS has already issued permits for benthic sampling protocol that will be taking place by as part of the before and after monitoring. Gus thanked Joanne Delaney for her assistance in this matter. The next step will be to get Environmental Resource Permits (ERPs) from the state. In Florida, there is a joint application process with the Army Corps of Engineers, but separate permits are issued from each agency. Both FDEP and South Florida Water Management District (SFWMD) can issue permits, but in this case, the district will be taking the lead since FDEP is on the canal subcommittee.

Two SFWMD staffers will be working with the subcommittee to issue ERP permits and have provided comments to facilitate the process. General permits can be given for restoration projects and typically don't require mitigation. Conceptual permits with construction authorizations

could also be applied for and allow permits are grouped together. The applicant for the permit should be a land owner or government entities, depending on the circumstances and long term operations plans.

The federal permits are being handled by Ivan Fanning, USACOE, and Brandon Howard NOAA, NMFS. The biggest hurdle is the consultation with NOAA Fisheries and Fish and Wildlife Service on endangered species. Some review periods take 4 to 6 months. They are examining how to expedite this process while still providing protection for listed species (manatees, smalltooth sawfish). Listed corals are not thought to be an issue in the canals. It would be useful if the applicants could begin the consultation process before the application is submitted. Fisheries recommended approving the projects according to the technology used. Billy Causey has committed to helping expedite the process in terms of permitting and has contacted Roy Crabtree, regional administrator for NOAA Fisheries and Stu Santos, Army Corps, Jacksonville. Billy has been informed that there is quite a backlog at fisheries on consultations and may be able to provide NOAA staff to help with consultations. NOAA understands the importance of water quality and of protecting species. If NOAA fisheries had an agreement with the Army Corps, they could use a nationwide permit, but an agreement does not exist at this time.

Gus announced the next canal subcommittee meeting is here on February 28. They will continue working on permitting and on the monitoring program with FIU.

Wendy noted that the goal of the subcommittee is ultimately to help homeowners get permits to carry out their own projects. Permits have been a stumbling block even when private funds are available and will be needed in the future. Most everyone realizes that the governments are not going to be paying for all of these restorations that are called for the canal master plan.

Wendy provided an update on the current FDEP grant, which is the design permit for the culvert at Geiger Key, a prescreened and selected project. Field work began before holidays. AMEC completed site condition survey, modeling and benthic surveys. A pre-application meeting is taking place soon to meet timeline to have permits completed by June 16. (FDEP money has to be spent by June 30.)

To update the FDEP sediment sampling data, they collected additional sediment samples in each canal and conducted laboratory testing. The report was submitted in January. Because of the poor quality of some sediments, they may have to find some land disposal options for sediments.

The next steps include evaluating the effectiveness of different restoration technologies, seeking additional funds, implementing Best Management Practices in canals and other tasks.

A grant application was submitted by University of Florida, Monroe County Extension Florida Sea Grant to EPA for two educational programs: Florida Keys Water Watch and Canal Master Plan Education Program.

Discussion

Sandy Walters works in the area of permitting and notes that sometimes permits are batched and processed together. It may be an advantage to batch those projects together. She understands

from the Corps that the draft biological opinion to reestablish the relationship between the Army Corps and NOAA Fisheries has been complete and is currently being reviewed. Moving this process along will be a benefit to these projects and to the state in general. In terms of pre-qualification, this group has an advantage because it is hard to even get meetings with staff at times as they are overwhelmed. They are concerned about construction methodologies and their effects on the sawfish. Very specific construction techniques are known and acceptable in the permit. One area of concern is noise and the disturbance that it causes.

Charlie Causey stated that as a layman on the subcommittee he is impressed with efficiency and coordination of AMEC and the county in their handling of this project. Wendy Blondin and Rhonda Haag have done a great job putting everything together. Gus has done a great job overseeing it all from FDEP. They received a strong round of applause in recognition of their work.

Sandy Walters complimented everyone on the job that people are doing on canal restoration. She wonders if it would be possible to establish a general permit for implementing the specific methodologies in the master plan. This is the case already for dock permitting when certain conditions are met. This is the same as the general permits that the state has in place. The subcommittee can look into this possibility. Sandy is willing to help the subcommittee with suggestions regarding expediting permitting.

Members of the audience asked how many polluted canals exist in the county and how many are deeper than 8 feet (the deepest where good water quality can still be maintained according to EPA). Wendy explained that information on each canal can be obtained from the database on the county's website. There are approximately 131 poor water quality canals.

The chair recognized a question from Barry Wray, Florida Keys Environmental Coalition. The Florida Keys National Marine Sanctuary Management Plan 2007 has a management strategy W10 that specifically states that canal water that is displaced has to be treated. Back-pumping displaces water and that is against the strategy for canal restoration. He doesn't necessarily object to the technologies being used, just the fact that there is no filtration or treatment being applied to the water. He is concerned about water quality impacts. EPA has routinely designed stormwater treatment that has allowed for natural filtering for canal waterways, etc. He wants to know if the subcommittee is going to consider treatment prior to displacement. Another question is whether or not the Technical Advisory Committee (TAC) of the WQPP would be revised. He wants to know if the steering committee will examine water cleansing technologies as part of the canal restoration projects.

Jon Iglehart answered that the authority to evaluate methods was given by the steering committee to the subcommittee to determine the suitable restoration projects. He recommends that Mr. Wray continue to participate at subcommittee meetings where decisions are made and as before ask Steve for an opportunity to present before the steering committee in the future. The TAC is not really a technical committee in the true sense. It is an informational gathering body with no decision making authority. He is not sure when the TAC will meet again in the future, but it will be announced. Steve Blackburn added that traditionally the TAC was involved in selecting

special studies projects and that hasn't been done recently because of lack of funding in recent years.

Charles Causey recognized that while he can't speak for the whole subcommittee, they are familiar with Mr. Wray's filtering technology. There may be some impasses in terms of funding because of data considerations.

IV. FKNMS Marine Zoning Working Group Updates

Sanctuary Superintendent Sean Morton gave an update of the —update management plan review and zoning update. One of the three working groups, the Ecosystem Protection: Ecological Reserves, Preservation Areas and Wildlife Working Group wanted to take more time and so we arranged to take more public comment in September in meetings throughout the Keys. The other two groups finished up in April 2013. This change in Ecosystem Protection Working Group delayed the time line. Additionally, he and John Hunt, FWC, are now nonvoting co-chairs of the group. The working group is charged with providing advice to the Sanctuary Advisory Council on ecological reserves needed to achieve adequate protection for flora and fauna and spawning aggregations. There is significant interest and public comment for this group. They will be examining more related science over the next few months and wrapping up their recommendations in July. In the fall, everything will be reviewed and evaluated. The draft EIS will most likely be released at the end of the year or early into the next year and will have various alternatives with an agency preferred alternatives. The advisory council will provide direction in regards to the selection of the agency alternative. The sanctuary's website will have the timeline and all pertinent information regarding this process under the advisory council tab on the home page (floridakeys.noaa.gov).

Outreach -- Waterways Television Series and Water Quality Outreach Product

Superintendent Morton announced that a new episode of Waterways has been released and is available on the Waterways YouTube Channel and through a link on the sanctuary's home page. This episode showcases spawning aggregations and highlights the Tropical Connections book. Outreach continues on Tropical Connections and the Waterways YouTube channel is a great outreach tool with 70 episodes. He also announced that the sanctuary has developed and released a one pages on the sanctuary's Marine Sanitation Device regulation and pumpout facilities and another product that summarizes information regarding the disposal of pharmaceuticals, pesticides, hazardous wastes and includes ways to reduce runoff and the accumulation of nutrients and marine debris in sanctuary waters, including canals. *What You Can Do to Improve Water Quality* will be available on the sanctuary's website and distributed locally.

Break

V. FIU Canal Monitoring Update (Henry Briceño and Jim Fourqurean)

Canal Water Quality Monitoring Proposal

Dr. Briceño gave a presentation on his proposed monitoring plan for tracking water quality changes in canals in association with the pilot demonstration projects. To view this presentation, visit http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html. Based on input received at the canal subcommittee meeting in January, the methodology has been revised. The

new approach still involves sampling before remediation and three years after that to track changes in nutrients and dissolved oxygen levels. Ten canals will receive some restoration treatment and are paired with five control canals. Dissolved oxygen will be measured in the field and Total Phosphorus and Total Nitrogen will be determined through lab analysis. Profiles of the water column will be taken because parameters change with depth. Twenty-four hour cycles tied to the tides will be captured in the diel sampling protocol. Some canals have worrisome pH levels, which could affect the limestone substrate. Other canals have zero dissolved oxygen and therefore no fish in contrast to canals without problems.

For each restoration methodology, he conducted an analysis to determine the probable changes and the parameters needed to detect those changes. The approach he is taking is somewhat adaptive in nature as this experiment has not been done before and how fast the system will respond in terms of nutrients and dissolved oxygen is uncertain. While the plan is to adhere to the proposal as closely as possible, the monitoring program may need to be adapted to select those parameters that are giving the right information to make the evaluations that are being sought. Parameters that are not helpful could be eliminated or reduced. From the Little Venice project, they know that it takes a while for nutrients to respond, but dissolved oxygen changes are detected relatively quickly. For each canal, a monthly report with a scorecard rating will be made. Canals will receive a long term, short term rating in relation to their target goal.

Discussion

Charlie Causey suggested extending the nutrient monitoring beyond three years using an extra 50k from the extra EPA funds. It is important to know what is happening with nutrients during this process from the end of the canals out into the nearshore waters. Adding this extra level of nutrient monitoring would allow the committee to get the most information benefit out of the project.

Jon Iglehart suggested that another way to use those funds was to demonstrate or not there are positive or detrimental effects on species that might expedite future permitting through NOAA Fisheries and other agencies.

WQPP Monitoring – Canal and Benthic

Dr. Fourqurean provided a presentation on benthic monitoring in canals in the demonstration project. To view this presentation, visit http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html. In the past, residents in the Keys were used to having fish and lobster in their canals, but due to water quality changes, some canals no longer have marine life. In conjunction with the canal water quality monitoring and using the knowledge learned from Little Venice project, they will be measuring changes in species composition of marine life in canals.

The addition of nutrients makes the environment favorable to fast growing species such as bacteria and micro-algae. Lower nutrients favor slower growing seagrass plants. Seagrass plants incorporate nutrients from their environment in their tissues and are indicators of the nutrient conditions. Nutrient content of plants inside and outside of canals will be measured. Light conditions are also important for plants conducting photosynthesis. The isotopic indicators in seagrass indicate the light conditions under which they are growing; carbon 12 isotope increases

in low light conditions. Polluted canals have a heavy nitrogen isotope signature which should improve in time with remediation. The sampling method involves running transects from the end of the canals out to the 250 meters offshore for each treated and control canal. They will examine the benthic community found along the transect lines. Over time, they expect slower growing things to become more dominant as water quality improves. His PhD candidate will be leading the field team. The scientists will also count lobsters and fish they encounter along the way to track changes in these organisms with treatment. Funding from the water quality protection program benthic monitoring makes the logistics of conducting this field sampling protocol possible.

Discussion

Dr. Fourqurean expects that changes will take place in the canals relatively quickly as compared to areas outside, but near, the canal mouths. Extra funding to extend this monitoring for a longer period of time could detect those adjacent area changes.

Gus Rios asked if this benthic and species sampling could be used to satisfy some of the permit requirements related to listed species. The approach could really help. Dr. Fourqurean stated that the field survey team could make sure those requirements were satisfied. It is relatively easy to get the information needed on manatees and sea turtles, but more difficult to get that information on the sawfish.

VI. EPA Budget Update/Biennial Report

Steve Blackburn gave an update on the EPA budget and Biennial report to Congress. To view his budget table, visit http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html.

Steve provided copies of the WQPP 2012 Biennial Report. They were printed at a cost of \$5 per copy. The report provides an overview of the program and background information. He has already begun working on the next version, which will be shorter in length.

Steve reviewed the EPA budget for the WQPP during the past few years. In 2011, the monitoring program took a budget cut down to 1.6 million. In 2012, 300k was allotted for Everglades REMAP program. In 2013, they put 20k toward Waterways Television programs. Steve reviewed the budget items such as salaries, agreements with other agencies, vehicles, etc. In 2014, budget was cut and salaries increased, the net loss was about one half million. EPA staff at the regional level petitioned headquarters for money to make up the loss. Now, they have an extra 150k that has to be spent very soon before the grants end in June, July. Waterways Television is already funded for this year. He is seeking input as to how to spend this extra 150k.

Discussion

Charlie Causey would like to see a commitment made today as to how these funds are spent. Billy Causey suggested increasing the monitoring.

Steve mentioned a few special studies including the endocrine disruptor studies. There are priorities identified in the FKNMS management plan and that might help give direction. Billy Causey noted that the priorities in the plan were put together with peer review and that is

important. Things do change and it might be wise at this time to increasing the monitoring associated with canal restoration. Priorities could be used at the next level of the process. Jon noted that the second half of the culvert project is already written and was based on two years of 100k funding from FDEP. The second phase is almost developed and this project is an off the shelf project that could be ready to go. Paperwork could be provided to EPA within a month. Steve clarified that these funds are usually not for turn dirt projects, but for water quality planning. They usually go toward monitoring and outreach, but it this idea is not completely out of the question.

Steve noted that these funds might be used for an additional year of monitoring. He noted that the canal master plan was done and he complimented Rhonda Haag for her work on that document.

Sean Morton provided an idea related to the WQPP website maintained by FWC as part of the monitoring program. He doesn't think it would use up the money, but thought that the website could use an overhaul. The website has a lot of reports and good information, but it is not as user friendly as it could be. Information on this topic is found on several websites (county, FKNMS, Waterways TV) and if there was one place where all this information was available, then this could give more attention to the program and make it easier for people to learn about it.

Susan Sprunt expressed her support for extending the monitoring in the demonstration project within the Village of Islamorada. Wastewater is not installed yet, so going past three years will give lots of helpful data.

Steve noted that EPA's legal department has determined that the monitoring programs are excluded from the competitive process after 20 years of conducting the monitoring program.

Motion (passed)

Charlie Causey made a motion to allocate up to 75k of the 150k for additional monitoring of nutrients by FIU in the canal demonstration pilot project. The subcommittee will have authority to approve Dr. Briceño's plan for additional nutrient sampling within the original timeframe of the project. Billy Causey seconded the motion. This motion is to increase the nutrient monitoring that is done as part of the program.

Jon called for public comment and there were no comments offered.

Jon clarified that in this motion the subcommittee will have the authority to approve the spending of these funds on nutrient sampling. The steering committee doesn't meet until next August and that will be too late for spending this money.

Rob Ruzicka asked whether this money could be used in the annual monitoring programs. Coral reef monitoring lost all of their hardbottom stations due to budget reductions and because they added patch reefs instead. With extra funds, these stations could be added back. Steve noted that the monitoring programs have been flat for the past three years and these funds can be used for monitoring. Monitoring is automatic because of the agreements in place, but it would be a competitive process for special studies.

Jon wondered how much risk of not being accepted did an outreach project have. Jennifer clarified that an RFP would need to be issued for outreach and that may not be that feasible for such a small amount of funding. EPA has an Interagency Agreement (IAG) in place with the National Park Service, so monies could go there very easily and could be used for outreach.

Jon called for a vote. The motion carried unanimously.

Lunch

Discussion—EPA money

Steve Blackburn noted that bacterial tracking in the canals has been important in the past and doesn't cost that much money. He is concerned that after all of the money spent, that a statement about how safe the canals are for people to swim in cannot be made because bacterial sampling wasn't done. This would make the canal demonstration studies comparable to Little Venice.

Charlie Causey asked about the sanctuary's liability when the canal is pronounced clean and bacteria free. Jon clarified that the state classifies canals as class 3, which means they should be fishable and swimmable. If there are bacterial issues, FDEP could find out the source. Gus Rios noted that these canals are on wastewater treatment so might not expect the reduction in fecal bacteria. He does agree that monitoring fecal bacteria could be helpful. There have been studies that have demonstrated fecal pollution in canals from poor wastewater treatment. Dr. Briceño added that what is sampled depends on the question being asked. He doesn't think fecal coliform really shows that a canal is safe because it comes from so many sources. EPA is moving away from this an indicator and uses *Enterococci* instead. The state rule uses *Enterococci* and that is not that expensive and is a sort of screening tool. Andrea Leal added that this approach could help show how well the wastewater system is working. Both pre- and post-data will be collected in relation to the Cudjoe Treatment Plant.

Charlie thinks it would be great if it could be said that the canals meet class 3 fishable and swimmable standards and that will mean a lot to people and give attention to the program. Sandy noted that this is an opportunity to educate canal homeowners about the other sources that add to poor water quality in canals. If people keep adding fish scraps, etc., then the canal won't respond as quickly and that will be reflected in the data. It is good time to outreach on this topic.

Gus indicated that the idea of sampling for *Enterococci* as part of the canal demonstration project could be put forth at the next subcommittee meeting as part of the process of spending the 75k provided in the earlier motion today. He will put that in the agenda for the subcommittee meeting and committee members can participate in that discussion. That will allow them to consider the ideas thoroughly. Gus also noted that in an earlier conversation with FDEP, FDEP offered to help with testing some samples for nutrients to make up for losing this parameter because of recent changes in the monitoring plan. Now, the added 75k will be very helpful.

Sandy noted that there are no true special studies that are feasible at this time. Therefore, the 150k is available for use determined by this group, including using funds for monitoring. She feels that there is no real value served to limiting the action of the subcommittee up to 75k. She suggests discussing changing the motion to further the goals of the program and seal the budget at 150k, not 75k. Charlie suggested that the other 75k might be spent on monitoring bacteria, etc. and maybe up to one third should go toward public outreach and public relations. Steve clarified that he doesn't have the exact number for the funds at this time. Jennifer pointed out that the rest of the agenda hasn't been heard yet and there may be other considerations for funding such as the nearshore hardbottom monitoring.

Jon approves of Sandy's idea of letting the subcommittee work out how to spend the money. The steering committee doesn't have to have approval to authorize the expenditure by the subcommittee, but the subcommittee could make a recommendation. The final decision could be made on a noticed phone call. Sandy would like to see a component of the money be spent on outreach, roughly 25%. She does want to hear the rest of the agenda first as well.

VII. Clean Vessel Act/Clean Marina Program (Rich Jones, Monroe County and Edward Russell, FDEP)

Edward Fussel and Rich Jones gave a presentation about the Clean Marina program and the Clean Vessel Act. To view this presentation, visit http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html.

Ed explained that the Clean Marina, Clean Vessel Grant Act and Florida Green Lodging programs are based out of the Office of Sustainability Initiative in FDEP. They are non-regulatory volunteer programs designed to safeguard Florida's natural resources. Clean Marina is a multi-faceted program composed of the following: Clean Boatyard, Clean Boater, Clean Marine Retailer programs. The Clean Boating Partnership oversees everything. Clean Marina program meets with FDEP Secretary Vinyard's priority of "getting the water right". The partnership is between FDEP, Marine Industries Association of Florida, Florida Sea Grant, US Coast Guard, Fish and Wildlife Conservation Commission and others. In Monroe County, 23 Clean Marinas, one Clean Boatyard and 2 Clean Retailers meet the criteria for designation and are recognized. This program is a partnership between industry and government dedicated to clean water and pollution prevention with education as a key component. A Best Management Practices booklet is available to help the facility meet the requirements that are above and beyond the regulatory requirements.

The Clean Vessel Act grant provides funding for pumpouts and pumpout repair. Grants can provide up to 75% reimbursement for costs of projects and no work can be reimbursed unless an agreement is reached in advance. Ed reviewed the status of grants within the county and municipalities. Money is available for installing and maintaining pumpouts.

Rich Jones noted that the county has continuous grants from the Clean Vessel Act funds for the past eight years. In 2013, the county privatized the pumpout service. Monroe County works with pumpout provider, Pumpout USA, in the Clean Vessel Act program to have a mobile service throughout the county. This is probably the first of its kind. It works well because it is free.

Two funding sources exist for Pumpout USA. The county provides 330k for the service and the Clean Vessel Act provides about 700 to 800k per year. All three entities have contract with each other. Pumpout USA has 6 boats to service the unincorporated Monroe County. They are not currently working with the cities, but that may come in the future. A lot of manpower and resources are put toward the Key West area where about 60 to 80 % of the liveaboards reside. Pumpout USA issues a sticker that shows that a boat is getting regular pumpouts.

Monroe County is also participating in FWC's Pilot Program for Managed Mooring and Anchoring. The purpose of this program is to create and test anchoring regulations in Florida state waters. In Monroe, managed anchoring zones and no anchoring buffer zones were created. Managed anchoring zones require all anchored vessels to have routine pumpouts. A sticker is issued that indicates regular pumpouts are taking place. Boats in this program may not exhibit pre-derelict conditions as specified by the program. Proof of pumpout is working extremely well, although there was some reluctance to comply in the beginning. The Clean Vessel Act grant program makes it easy to apply and there is no reason for a marina not to apply for pumpout money. Key West's comprehensive plan is now requiring all marinas with more than 10 slips to have a pumpout station within the next few years.

VIII. Key West's Clean Marina program (Alison Higgins, Key West)

Alison Higgins provided a presentation about the Clean Marina program in Key West. To view this presentation, visit http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html. The city updated its comprehensive plan last year. Included in the new proposed plan that all marinas within the city limits will become Clean Marinas by 2015 and all boatyards will become Clean Boatyards by 2020. The city is committed to making progress on water quality. Key West is interested in finding out if there is anything they missed that needs to be in the plan and they are seeking input from experts on this committee on what further can be done to protect water quality. The city has had a no discharge ordinance in place for over a decade or not. In the next phase, the ordinance is requiring a pumpout for every slip. They are also examining greenhouse gases and other sustainability issues. She is very interested in getting input from a small group of professionals as to what additional things the city can do (ordinances) to protect and improve its water quality. She is looking for research based information from this group and will look to this group to provide input in the future. She wants any actions taken to be based on solid information.

A suggestion was made to Alison to work with the community college to develop related projects. Another suggestion was to work with the sanctuary staff using some of the information provided in the one-pagers. Jon stated that FDEP can participate with Gus as the contact on that group. He recommends that Steve reach out to the membership and express what is being asked so that they can respond. Outreach is a critical positive step. Billy suggested that Sean Morton be contacted; she has done that. The sanctuary has provided input, but she wants input from others as well. She works with a Keys-wide planner group. The city of Marathon is examining Florida friendly landscaping practices that might affect use of fertilizers.

IX. Monitoring Program Updates

Coral Reef Evaluation and Monitoring Program (CREMP), Rob Ruzicka, FWC

Rob Ruzicka gave a presentation on the CREMP program. To view this presentation, visit http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html. Rob reviewed the methods briefly and showed the changes in benthic cover from 2011 to 2012. Sponge cover increased while macroalgal cover decreased during this time. He also reviewed the long term trends for macroalgae, octocorals, sponges, stony corals and zoanthids. The drop in 2010 was a result of the cold event that year, which was followed by a macroalgae bloom until this most recent downturn of macroalage. A spike in macroalgae has also been seen in the Dry Tortugas since 2008; these values are relatively high, too, and the cause is not known. The species of coral that is declining the most is the boulder star coral complex formerly known as *Montastrea annularis*, now called *Orbicella annularis*. They are now counting colonies and getting condition information, not just percent cover. These data show that octocorals are more dominant than stony corals in the Keys and an increasing trend in stony corals, but they are smaller weedier species that prefer disturbed environments. They have seen recruitment of small corals in some locations and that helps indicate what these communities will look like in the future.

The CREMP team is beginning a new spatial study on coral recruitment that is funded by the Coral Reef Conservation Program. They will be tracking recruits across the reef tract (except the Tortugas) and this kind of project has not been done before in the Caribbean. It will include the southeast portion of Florida's reef tract and the Keys. They will deploy tiles and monitor them to help create an annual index of recruitment for both stony and octocorals. This will help determine potential recovery and possible limiting factors. He also mentioned about the Endangered Species Act listing for certain coral species and their three year study funded by NOAA Species Conservation Grant. From this study, they have learned that the individual corals have experienced a net loss of tissues. Numerically, the population is staying the same. Some sites in Biscayne National Park are doing well, but not sure why. Overall, there is less survival than growth. Another study is a targeted study on pillar coral, *Dendrogyra cylindrus*, examines genetic diversity and distribution. Snail predation may play a big role in tissue loss in *Acropora* and may be affecting corals in some areas more than others, thus explaining the patchy distributions.

Billy Causey stated that octocorals are a real indicator in the Keys where the Gulf and Caribbean waters meet. Tracking them is good for hind and forecasting purposes. Rob added that sponges and octocorals are preferable to macroalgae. At some point in the future, octocorals may be replaced by stony corals. Macroalgal increases are seen after mass coral mortality events because the decaying corals provide a nutrient source.

X. Public Comment

Walter Drabinski

Mr. Drabinski respects what the sanctuary advisory council does. He used to be on the council for six years and now is active on the Mote Marine advisory board and has been involved in other air and water projects. In 2013, he was shocked to discover the kinds of systems that were going to be installed in the Lower Keys. He is now concerned about the long term environmental impacts of the wastewater system being proposed. The Cudjoe system is the last to go in and is the most complex. He provided a handout on this topic that has his analysis. He is concerned

that the end result is 300 miles of plastic pipe carrying sewage. This system is made by man and it will fail over time eventually for many reasons. The problem with a low pressure system is that it is almost impossible to tell when there is a leak and where that leak exists. Monitoring funds need to be increased, not decreased because the slow leaks that will eventually occur will slowly degrade the water quality. The advisory council has a voice to get to the people in Washington and Tallahassee could come up with funds. This project was developed without any risk assessment and had to be done as soon as possible. In terms of compliance and hookups, the people who have not hooked up do not have the money to do so; they are nearly broke. He estimates 5% foreclosure due to the wastewater system costs.

Sloan Bashinsky

Mr. Bashinsky now lives in Key West, but he used to live on Big Coppitt Key. The place where he used to live was going to get grinder pumps because it was sparsely populated. He has only become involved recently, but the whole system in Cudjoe has been re-engineered to address money considerations. The FKAA didn't want a grinder pump system; they wanted gravity flow. He recalls that from public meetings. He has been to the county commission meetings. Everything has been about money and nothing else. If they really believed in grinder pumps, then everyone would be on one. When some subdivisions complained, they changed it to gravity. No one except the county really believes grinders are equal or better than gravity flow. He realizes that it is very expensive for some of the folks who live in rural areas and are not rich.

In terms of water quality there are a few areas of concern. He understands that the chemical runoff from the glades is going to be put back in the Everglades where it will flow south. If you believe Brian LaPoint, PhD, that is what killed the reefs to begin with. This water used to run through the east-west canal where it killed manatees. He hopes the committee will listen to Brian and not people who are selling something. The committee should also know that cruise ships that come out of Port Everglades are dumping their so-called treated water on the inside current coming down and it is reaching the reefs and the Keys and has been for years. It didn't work to run the wastewater from ships through the City of Key West's state of the art treatment plant. It didn't work because the plant couldn't handle it. The reef is what is at risk from the cruise ships, canals and other sources.

There were no other public comments.

XI. Monitoring Program Reports Continued

Seagrass Monitoring, Dr. Jim Fourqurean, FIU

Dr. Jim Fourqurean gave a presentation on benthic monitoring in the sanctuary. To view this presentation, visit http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html. Dr. Fourqurean reminded everyone that the sanctuary is largely a seagrass sanctuary. The original monitoring program in 1995 was set up to look at the effects of water quality on the seagrass community. The program has been adapted over time to meet the needs. Mapping has been dropped out of the program due to budget cuts. Two full sets of maps were produced. He is hoping for a third map survey in the future. Two years ago, they redesigned the program and added sites close to shore at the request of the committee. Data from this program have detected changes in seagrass communities across the sanctuary since 1996. Some sites on the outer reef

were nitrogen limited and some sites were phosphorus limited and many of these sites have long term trends toward no nutrient limitations (consistent with poor water quality). According to the stable carbon isotopes, sites throughout the sanctuary are becoming more light-limited over time. Several sites remained stable; only two sites trended toward better light conditions and they were affected by 2005 hurricanes. The site-specific indicator summary from 1995 through 2011 gives a summary of the indicators for each site and shows the places in the sanctuary where declines in water quality are occurring. The Elemental Indicator is calculated each year and is an indicator of how closely the N:P ratio comes to being nutrient replete. There was a positive uptick in the EI from 2011 to 2012 and that is good. They have changed their sampling frequency and he is not sure if this affected the positive outcome. The Species Composition Indicator (SCI) indicates the predominance of slow growing species (low nutrient indicators). There is a slight increase this past year after years of decline. In 2012, ten new nearshore sites were added to detect nearshore changes (not in the current analyses). About five years ago, he was reporting that macroalgae were co-dominant with seagrass and was increasing in abundance. In 2008, that trend turned around and that might indicate that the money spent to clean up the water is working. The data collection system is in place and will tell the story.

Water Quality Monitoring Update, Dr. Briceño, FIU

Dr. Henry Briceño gave a presentation on water quality monitoring in the sanctuary. To view this presentation, visit http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html. Dr. Briceño reviewed the objectives of the program. Due to budget cuts, they have reduced their sampling sites and do not cover the same larger geographic area. EPA developed strategic targets that cover dissolved inorganic nitrogen (DIN), total phosphorus, chlorophyll-a, light attenuation. Each year's value is compared with the baseline values for these parameters (for reef stations and for all stations) to see if the targets are being met. There were some times in 2010 and 2011 when chlorophyll-a target was not met, but the light attenuation target has been met consistently. DIN has been out of compliance since 2010 and is due to human impacts. TP was out of compliance in earlier years but has had three years of good values recently. Nutrient cycles are more important than the secular trends. Cycles are influenced by climatic conditions and Gulf current and are not tied to what is going on in the Keys. When close to shore, though, the signature from the islands becomes very important. Total Organic Carbon (TOC) has been declining regionally, including in the sanctuary, for several years. (Most carbon comes from everglades from degradation of organic matter and its oxidation is affected by climate changes and precipitation.) The past 12 years have had relatively low precipitation and that might be tied to lower chlorophyll-a levels in recent years. Wind affects turbidity by disturbing the sediments, which affects the K_d (light coefficient) data. This wind related change is not because there are changes in water chemistry. Trend analysis was also conducted on the long-term data for each parameter to determine the direction (slope) of change over time. Overall, water quality has not changed that much in the sanctuary since sampling began (cycles do exist). More details will be provided in the annual report, which will be issued next month.

FIU is conducting more outreach in the Keys. They recently published a new paper, *Biogeochemical Segmentation of South Florida Coastal and Estuarine Waters*, in Marine Pollution Bulletin.

Data Integration, Daniel Kiermaier, FWC Florida Wildlife Research Institute (FWRI)

Daniel Kiermaier gave a presentation on the data integration program, website status and future plans. To view this presentation, visit

http://ocean.floridamarine.org/fknms_wqpp/pages/wqpp_minutes.html. Daniel discussed the EPA's STORET (data storage) mechanism. FWRI is continuing to upload monitoring data to Florida DEP and STORET. He is working on a manual describing how to use STORET, but is waiting on the most recent seagrass and CREMP data to finish it. CREMP is considered up to date in STORET through 2012 (usually a year in arrears). NASA data from ROSES project can be found in the Special Projects data area. The website URL is http://ocean.floridamarine.org/FKNMS_WQPP/. Google Earth KMZ files and ESRI's shapefile were created for the current monitoring project data and are available on the website and CD-ROM. Daniel uses google statistics to see which areas of the site are visited the most (coral data). He will continue to develop online GIS tools for viewing and querying monitoring data.

XII. Florida Keys Citizen Monitoring, Shelly Krueger, Monroe County/Florida Sea Grant

Shelly Krueger provided information regarding the grant application for environmental education funds submitted by Monroe County to EPA. She is working with Rhonda Haag and Wendy Blondin on this grant. The proposal has two main components. One aspect would be to provide outreach to canal residents in accordance with the Best Management Practices provided in the county's Canal Master Plan. The second part would be to begin a citizen science program, Florida Keys Water Watch, which is modeled on the Adopt a Stream program she coordinated in her last position in Georgia. In this program, citizens conduct water quality sampling. The grant application went to EPA headquarters. They will be informed in 60 days whether or not the proposal will be funded. Other partners in the grant are City of Marathon, the sanctuary, Village of Islamorada and Monroe County school board.

In the discussion following Shelly's presentation, it was noted that The Nature Conservancy managed two citizen based water sampling programs in the past. One was focused on the canals and the other (Florida Keys Bay Watch) sampled bay waters. Both were very successful and the data are stored in STORET.

Discussion/Motion

In terms of how to spend the rest of the extra EPA funds, a suggestion was made to have the subcommittee vet the options and then have a phone call to hear their recommendations and make a determination, but was dropped because of time frame issues. Each of the PIs has stated that they need some funding, so perhaps money can go toward additional sanctuary-wide monitoring.

Sandy made a motion that this funding be kept internal and that the advisory subcommittee make its recommendations in terms of monitoring with the caveat that a significant percentage be, 20 to 25% earmarked for the education program to make the whole thing work. Concerns were expressed about having the monitoring program scientists handle the education part of things. Sandy withdrew her proposal as stated; she thought that funds could go internally toward education.

Time is really tight and the monitoring is the most feasible. Steve explained that EPA has an IAG with the National Park Service and these funds can go toward outreach to fund the Waterways program through the park. Jim Fourqurean pointed out that FIU has a community outreach coordinator in the Keys who is conducting programs now.

Charlie would like to see half spent on nutrient monitoring; 30% spent on canal bacterial monitoring and the 20% spent on education and public relations, but is not sure if this last part is feasible. Jennifer noted that an educational piece about the findings of the pilot study would probably be something for the future because the results are not known yet. Sandy noted that there would be no trouble getting responses from an RFP for outreach because several outreach organizations would be interested.

Motion (passed)

Billy Causey made a motion to have the subcommittee determine how the remaining money (up to 75k) is spent on monitoring projects and with up to one third of the balance earmarked for a public information project if one is identified that doesn't require an RFP. Jon Iglehart seconded this motion.

Charlie Causey added that at the meeting on the 28th, that the committee members know how those extra monitoring funds and possibly education funds could be spent. Monitoring PIs can provide what the benefits will be forthcoming for them. Gus Rios understands that this motion is asking the subcommittee to determine what type of additional monitoring will be included. What isn't expended in Henry's proposal will go toward monitoring with up to 30% going to a non-RFP outreach program and the remaining balance will be subdivided among the monitoring program and does include data integration. This applies to anything that is already currently funded and could include monitoring related to the permitting process. One of the outreach ideas is to look at FIU, but Jennifer wonders if there had been an RFP whether or not there would be a universe of entities applying for these funds. In that case, other partners might be brought on board to formulate a work group to put an outreach program together. Partners could be part of the process and even receive small sub-grants.

There was no public comment on the motion. The motion passed unanimously.

XI. Closing Remarks and Next Meeting

Jon asked whether the committee thought it would be beneficial to have a two day meeting with the first day devoted to field trip. The second day could be an abbreviated business day. Billy Causey likes that idea and this is an opportunity for outreach. This next meeting might be a time to bring down the new EPA administrator and other key administrators. The field trip could be the morning of the first day. FIU would be happy to help with field arrangements. The business meeting could be a half day. Steve suggested putting a group together to discuss this and determine what is needed. Lots of people are in Tallahassee today, but attendance has been dropping gradually. Jon suggested thinking about outreach planning at the next meeting and forming a related committee.

Billy Causey noted that the Everglades Coalition is having their next meeting in January 2015 at the Hilton and this is also an opportunity for the WQPP to plan something. Billy also announced

that colleagues from Tasmania and from University of Washington have been evaluating marine protected areas around the world. They evaluated 87 MPAs and determined nine were being effectively managed. Everyone should share in the celebration that the FKNMS was one of the nine and the only one in the United States. Billy will send links to Steve to send out to everyone.

Steve will reach out to new members where replacements are sought. It would be good to have the Army Corps here.

Meeting adjourned.