



Water Quality Working Group

Meeting Minutes

Date: 08/18/11

Start Time: 12:00 pm

End Time: 1:35 pm

Meeting Method: Go-To-Meeting/Conference Call at island-specific sanctuary offices.

Meeting Objective: Presentation on the Florida Keys National Marine Sanctuary Water Quality Programs and Developing Recommendations for the Hawaiian Islands Humpback Whale National Marine Sanctuary Advisory Council

Attendance: Leader Robin Newbold (Chair); Micki Ream, Judy Lemus, Gordon LaBedz, Suzanne Shriner, Lucienne DeNaie, Mary Jorgensen, Larry Stevens, Malie Carpio, Mike Moran, Jay Carpio, Patty Miller, Sarah Courbis, Elia Herman, Jean Souza, Joe Paulin, Malia Chow, Brenda Asuncion, Paul Wong, and Scott Donahue

Agenda

I Roll (see above)

II Presentation: Scott Donahue, Science Coordinator, FKNMS

Thank you for the opportunity to share some of the success of water quality program down in the Florida Keys, Some technical information (on items such as costs, infrastructure) was sent beforehand to Joe and not going to be covered during this presentation, which will focus on the core monitoring programs that are in place.

But first, much of the legal authority to act lies in the Florida Keys National Marine Sanctuary and Protection Act passed in 1990. This legislation had a number of firsts for the Office of National Marine Sanctuaries, including the first water quality protection program. It established a co-trustee situation for management of resources with the State of Florida (60% is also state waters) authorized EPA and the governor, in consultation with NOAA, to develop program to identify water quality problems and advise solutions and established a technical advisory committee to assist the steering committee. This has served to keep all interested parties at the table. Historically, wastewater treatment in this region has been poor: cesspools and septic tanks, although a recent state mandate will require all (homes, businesses, hotels, etc) to be connected to centralized wastewater treatment by 2015.



Water Quality Working Group

Meeting Minutes

There are three major programs: Water quality monitoring, seagrass monitoring and coral reef evaluation and monitoring. This next section will explain what the program does, its scope and duration:

- *Water Quality Monitoring Program:* 150 sites are sampled quarterly for 18 variables; the purpose is to collect data on long-term water quality trends. For example, nitrogen and nitrate (found in fertilizer) levels have been elevated in nearshore environment for last decade. In fact, four variables have been shown a trend from land to ocean or reef, suggesting there may be a potential source in nearshore that could be a target for management. This program also serves to give categorical proof of known trends such as total phosphorous drives biomass. The variables tend to be consistent from year to year, with some seasonal excursions, but are influenced by regional conditions outside boundaries which means it is especially important that FKNMS has the authority to go into communities with our partners and resolve issue effecting sanctuary waters
- *Seagrass Monitoring Program:* 30 sampling stations have been sampled annually since 1995 in order to evaluate the status and trends caused by nutrient enrichment. The species composition of seagrass beds can be shown to be related to nutrient availability. While there has been no significant overall loss of seagrass coverage in the sanctuary, significant changes in composition of community has occurred with a shift in dominate species. However, it is still difficult to determine if nutrients enter inside or outside sanctuary and if they originate from natural processes or human induced activities.
- *Coral Reef Evaluation and Monitoring Plan:* 34 sites are sampled every year, each has 4 stations, to provide data on the status of coral reef resources of the FKNMS and document changes in status over time since 1996. All areas have shown declines in coral cover, some more than others likely to multiple recurring stressors (hurricanes, El Nino, disease outbreak). There has been criticism of the study design being biased toward healthy reef, of high use as numerous unmapped and uncharacterized patch reef may contribute significantly to overall stony coral cover. Additionally, the complete or partial mortality of a single boulder star coral colony represents a large decrease in coral cover and ultimately habitat structure. Therefore, results may not give a comprehensive picture.

Continued monitoring is critical to understanding the effects changing environmental factors on habitats of Florida Keys. Since its establishment in 1990, improvements in wastewater treatment and better land management in the keys have resulted in overall better water quality. By monitoring the system, managers are provided with best available science to inform decisions.

III Discuss FKNMS Water Quality Programs: Q & A with Scott Donahue

Are there regulations from the sanctuary regarding water quality? Yes. As of December 2010, a “no discharge zone” went into effect in federal waters, adding to an already established no discharge zone in state waters, where marine sanitation devises are not to be emptied within sanctuary boundaries. Initially this was proposed by the City of Key West. The State of Florida petitioned the EPA to make state waters a no discharge area (marine-based discharge). In



Water Quality Working Group

Meeting Minutes

December 2010, the remaining 40% of federal waters in the sanctuaries now have those same regulations as part of a federal rule.

How does this impact boaters? In order to be in compliance with the marine sanitation rule, boats with a working head must ensure the outside valve is locked shut while transiting through sanctuary. In order to make this work, the sanctuary made sure that adequate solutions for proper disposal were in place prior to the rule going into effect. There are numerous pump out stations (approximately 28) along the 120 mile corridor, including two mobile stations. The maximum fee charged for this service is \$5 to individuals.

Are the steering committee and technical advisory committee under the advisory council? No. Groups communicate regularly but one doesn't oversee another (have members who sit on both groups). Steering Committee can advise both the advisory council and also the sanctuary directly. DEP, EPA are the drivers of the management committee.

Has this program made a difference? Yes, the economy of the Florida Keys area is dependent on a healthy coral reef. If presented with a management opportunity to improve and don't do it, the economy suffers. Therefore, it is important to have the monitoring and science data and interpretation available to managers.

How was the program funded? Money came from a variety of sources: the United States Army Corp of Engineers, State EPA, EPA, and some was shared by residences (fee varies about where you are, how far). In cases of unfunded mandate, did go out with message to potential funding sources with message about the close links to environments and economy.

Was there community pushback? In 1990, the government declared the Florida Keys would have zoning and would involve the public; initially not taken kindly by locals, but worked through differences by having user groups at the table; consensus building not agreement over time (1990-1995 development). The level of compliance has changed over time, lots of marinas show tremendous results (3 years); some still don't know the rules or do know and don't care. There are penalties; people do get charged if non-compliant.

Do you have education and outreach programs? Yes. Education and outreach are integral to this effort; pamphlets, brochure, lesson plans K-12 and on water "Team Ocean" volunteer based program who provide information on the water (from 'here is the nearest pump station' to 'do you know you are in particular zone')

Have you done anything with reverse osmosis or addressing human bacteria shown to cause coral disease? Don't have the technical background within sanctuary, rely on our partners and from that info can then change our management plan to reduce that threat.

How far does your jurisdiction go? Any jurisdiction on land? Have a limited potential, in that if can identify a particular point source (stream input), go to partners to regulate.



Water Quality Working Group

Meeting Minutes

Monitoring effect of injection wells? No, although identified as a research need.

What are your priorities for the future? Try to use best available science in upcoming management plan and revision. Need help on issues such as climate change and ocean acidification from outside peers to identify those critical things we need as resources managers to maintain. Don't want to operate in a box, but involve science and research peers and public input.

Was there Native American Indian involvement? Not direct relationship, as there is not a prominent nation in Monroe County where the sanctuary is located. However, upstream in nearby Dade County which includes the Everglades, the Mesusuki Tribe are involved all aspects of the Comprehensive Everglades Restoration Program.

What is role of sanctuary? The sanctuary is an agency that is an advocate for improvement of resources. For water quality, this means partnering. The Environmental Protection Agency and the State of Florida have taken the lead on these efforts. Two major accomplishments: state of Florida mandate hotel, home, business, etc; advanced wastewater treatment 2015 (based on EPA-set numeric criteria for wastewater treatment, seven centralized collection points to accommodated increased processing and an outfall injection well 300(0) ft)

IV Report on August 11th Working Group Chairs Meeting

The theme of the meeting was identifying where overlap occurs between working groups and identifying opportunities for collaboration. Each working group reported out and then the group had time to discuss overlap. Sanctuary staff created two handouts to jumpstart the resulting discussion, drawn from their notes during working group meetings (1. listed who the working group might want to consult (**pink sheet**), 2. identified which other groups might consult with them on what subject (**green sheet**)). Information to include in the recommendations reports to the full advisory council was discussed and the working group chairs requested a template.

For next meeting: get copies of those handouts, discuss overlap and overarching consideration

V Discuss developing recommendations for HIHWNMS Advisory Council

Write in recommendations and review. The group will work a lot by email to update the spreadsheet to include any additional potential recommendations and will discuss the recommendations at the next meeting.

VI Template for the Recommendations Report and Volunteers to Work on Report

The working group chairs requested that a report template be developed and forwarded to the working groups upon completion.

VII Updates for the Threats Matrix

Robin Knox has worked on updating the matrix and will forward the changes to Joe.



Water Quality Working Group

Meeting Minutes

VIII Public Comment – (none)

IV Pau

Task for Working Group Members: Please send additional recommendations to Joe by Thursday, September 1st, so the group has time to review prior to the next meeting.

Next Meeting: Thursday, September 29st, 2011 at noon

For additional information contact Joseph Paulin at 808-397-2651 x 257 or joseph.paulin@noaa.gov