FLORIDA KEYS NATIONAL MARINE SANCTUARY ADVISORY COUNCIL

Hyatt Place
1996 Overseas Highway
Marathon, FL 33050
Tuesday, October 16, 2018

DRAFT MINUTES

SANCTUARY ADVISORY COUNCIL MISSION STATEMENT
(adopted unanimously, December 6, 2005)

Council Members
Boating Industry: Bruce Popham (Co-Chair)
Tourism – Lower Keys: Clint Barras (Co-Chair)
Citizen at Large – Lower Keys: Mimi Stafford
Citizen at Large – Middle Keys: George Garrett
Citizen at Large – Upper Keys: David Makepeace
Conservation and Environment: Ken Nedimyer
Conservation and Environment: Chris Bergh
Diving – Lower Keys: Joe Weatherby (absent)
Diving – Upper Keys: Elena Rodriguez
Education and Outreach: Jessica Dockery
Elected County Official: George R. Neugent (absent)
Fishing – Charter Fishing Flats Guide: Will Benson
Fishing – Charter Sports Fishing: Steven Leopold
Fishing – Commercial – Marine/Tropical: Ben Daughtry
Fishing – Commercial – Shell/Scale: Justin Bruland (absent)
Fishing – Recreational: Ken Reda
Research and Monitoring: David Vaughan (absent)
South Florida Ecosystem Restoration: Jerry Lorenz
Submerged Cultural Resources: Corey Malcom
Tourism – Upper Keys: Andy Newman

Council alternates (present)
Citizen at Large – Lower Keys: Stephen Patten
Citizen at Large – Middle Keys: Rachel Bowman
Citizen at Large – Upper Keys: Suzy Roebling
Conservation and Environment: Tracy Allen
Conservation and Environment: Caroline McLaughlin
Diving – Upper Keys: Daniel Dawson
Research and Monitoring: Shelly Krueger
Submerged Cultural Resources: Diane Silva
Tourism – Upper Keys: Lisa Mongelia

Agency Representatives (present)

Florida Department of Environmental Protection: Joanna Walczak
FWC Division of Law Enforcement: Capt. Dave Dipre
FWC Fish and Wildlife Research Institute: John Hunt
National Park Service, Everglades National Park: Chris Kavanagh
National Park Service, Dry Tortugas National Park: Meaghan Johnson
U.S. Coast Guard (USCG): Phil Goodman
U.S. Navy Naval Air Station Key West: Ed Barham

I. CALL TO ORDER, ROLL CALL, AND MEETING MINUTES APPROVAL OF JUNE DRAFT MEETING NOTES

Vice Chair Clint Barras called the meeting to order and asked Beth Dieveney to read the mission statement for the Sanctuary Advisory Council to remind everyone about the purpose of the council.

The Florida Keys National Marine Sanctuary Advisory Council is an interactive liaison between the residents and visitors of the Florida Keys and the staff and management of the FKNMS. In this role, and with the understanding that a healthy ecosystem is essential to the economy and quality of life in the Florida Keys, the SAC will promote restoration and maintenance of biodiversity and ecological resiliency in the South Florida environment. We will strive to achieve a vibrant, ecologically sustainable ecosystem and economy through application of the best available science and balanced, conservation-based management.

MOTION (passed)
A motion to approve the June 2018 minutes was made by Ken Nedimyer and seconded by Will Benson. The minutes were approved. A motion to adopt the agenda was made by Ken Nedimyer and seconded by Mimi Stafford. The agenda was adopted without change.

Chairperson's Comments
Vice Chair Barras announced that the advisory council selection committee has forwarded names of candidates for vacant council positions to the Office of National Marine Sanctuaries for review. New and returning council members are expected to be in place for the December 4th council meeting.

A special working session will be held this afternoon after the meeting adjourns at 2:20pm. Advisory council members will be participating in this session to develop the advisory council outreach and engagement plan for the release of the DEIS. He encouraged council members to contribute to the plan. The public is also welcome to attend.

Public comment is an important part of the meeting and the council process. Public comment will be held at 2:00 today.

II. SANCTUARY ADVIOSRY COUNCIL CORE GROUP UPDATE
Bruce Popham, Sanctuary Advisory Council Co-Chair

Chair Popham introduced the Core Group, convened approximately five years ago and consisting of 10 members across various constituencies, who have been working on outreach plans for the marine zoning and regulatory review. The objectives of this core group included identifying topics for public outreach, the tools and mechanisms to engage the public, and identifying which council members

would best engage with various audiences.

The key messages which arose from this core group include:

- Our natural resources drive our economy, communities, and our way of life.
- The sanctuary will propose a Restoration Blueprint in 2019, which embodies lessons learned from the last 20 years of science, management achievements, technical experience, and local community involvement.
- Successful management of the Florida Keys depends on our valued partnerships.

In addition to these key messages, hearing from and interacting with the community will be critical to the success of this management plan review. Various constituents include businesses, local non-profits, boating organizations, and scientific communities, among many others. Each of these constituencies will be engaged prior to the release of the Draft Environmental Impact Statement (DEIS). Identifying the council members who will engage with these groups will be the goal of the afternoon working session for the council today.

Discussion

- Mr. Popham clarified that the DEIS will likely be released during spring or summer of 2019.

III. SANCTUARY RESOURUCE STATUS: ONE YEAR AFTER IRMA

Mangroves

Florida Fish and Wildlife Research Institute (FWRI) Scientist Kara Radabaugh introduced the various mangroves species in the Florida Keys, including the red mangroves with large prop roots, the black mangroves with pneumatophores, and the white mangroves. FWRI has been monitoring sites in the lower Florida Keys and within the Ten Thousand Islands, which were both impacted by the eye of Hurricane Irma, since two months post-storm. The most common damage observed after the storm was canopy damage from high winds. Black and white mangoes are able to regrow stems and leaves directly from their trunk, which allowed canopy cover to be 60% restored four months after the storm, and growth is expected to continue.

The majority of the mangroves in the study sites are small red mangroves, which experienced less severe damage and lower delayed mortality compared to large trees. Additionally, the understory growth in most sites exploded after the storm, as the seedlings had access to light and resources. However, in some sites, storm surge deposited a thick layer of carbonate mud, which smothered the soil/roots and did not for allow oxygen exchange. The trees in these sites experienced much higher post-storm mortality. Despite this, storm surge deposits can also be healthy for mangroves forests as the deposits increase the elevation of the forest and help the forest keep pace with sea level rise. Additional impacts of hurricanes can include coastal erosion and altered hydrology. Erosion can cause decreases in elevation, which can cause a phase shift from a mangrove forest to a mudflat. Hydrology can be altered to the extent that both excess water (trapped in with the trees) and lack of water can kill mangroves. Hydrological flow can restored. Many forests can recover from a storm, especially if they have appropriate elevation, hydrology, and source of propagules.

Hardbottom

Florida Fish and Wildlife Research Institute (FWRI) Research Administrator John Hunt introduced previous impacts to sponges of the Florida Reef Tract, including the algal blooms in the 1990s, which prompted initial efforts to restore the sponge community. During this time, FWRI identified sites which experienced little impact from those algal blooms, and established sponge nurseries in those areas in partnership with agencies such as The Nature Conservancy and Bonefish Tarpon Trust. Those nurseries held more than 8,000 sponges before Hurricane Irma, with reference sites nearby naturally containing 7,000 sponges/hectare.

After the storm, survival rate decreased from 84% to 40%, specifically at the Burnt Point nursery near Marathon, FL. This site was the shallowest nursery and was let without water for long periods of time during the storm. Without any restoration efforts, sponge communities can take up to 15 years to regrow. To speed up this timeline to restore the sponge nurseries back to the former biomass, FWRI will begin out-planting 5,000 sponges/hectare in Burnt Point to mimic natural recovery in the reference sites.

Seagrass and Water Quality

Director of Florida International University's Center for Coastal Ocean Research Dr. James Fourqurean described the conditions in Florida Bay before, during, and after Hurricane Irma using satellite images of chlorophyll content which visualizes algal concentrations. Before the storm, there were very low levels of chlorophyll in the area. One month post hurricane, the average chlorophyll content jumped significantly until it slowly started dissipating.

There are approximately 60 sites within the Florida Keys which are monitored for seagrass abundance and macro-algae cover annually. Following Hurricane Irma, many of these sites were eroded or buried in sand; however, new growth was observed by early 2018. Seagrass recovery after large storm events has previously been demonstrated to take approximately 15 years according to data after Hurricane George.

When observing the loss of seagrass, the data show spatial patterns where the lower Florida Keys lost much of its seagrass, while Florida Bay lost very little. This change may be contributed to the seasonality of leaf loss, which allows the leafs to fall while maintaining root structure. When accounting for that variance, the lower Florida Keys and multiple sites within Florida Bay showed uniform loss of seagrass abundance due to Hurricane Irma. In the lower Florida Keys, biomass after the storm was observed about 2.5 times lower than the predicted levels based on historical data, demonstrating the power of the storm.

Discussion

- A question was posed as to why mangroves on one side of a channel may look drastically different than the other side. Ms. Radabaugh suggested poor hydrology can cause a location specific die-off.
- In mangrove sites with good elevation and proper hydrology, would restoration be performed after a storm? Ms. Radabaugh responded that annual seasonality plays a large part in these cycles, as the mangroves had just propagated before the storm, and will start propagating now. If that isn't the case, the site may not have proper hydrology or elevation, and those are the properties that would need be to restored.
- Storm deposits can be beneficial to increase elevation of mangrove forests, but may not affect

growth rates until the trees are larger. Phosphorous is the limiting nutrient in this area, so if the storm brings additional phosphorous there can be additional growth, but that can cause cascading impacts to the algae in the area.

- In response to how sea level rise affects mangrove growth, Ms. Radabaugh noted the rate of accretion varies by location, but the trees are currently keeping pace. If sea level rise continues, mangroves may be able to increase their growth rate, however some studies suggest otherwise.
- In response to the percentage of sponge mortality caused by burial compared to erosion, Mr. Hunt explained that on the bayside, many did not move, which suggested air exposure caused the mortality. Sponges that were moved may have died due to shearing and storm surge.
- In response as to whether certain sponge species that had greater resilience rate than others, Mr. Hunt explained that was possible, but all sponges were impacted.
- In response regarding the origin of additional phosphorous from the storm, Dr. Fourqurean guessed it was from internal loading due to resuspension of sediments.

Break

IV. CORAL DISEASE IN THE FLORIDA REEF TRACT: UPDATE ON STATUS AND RESPONSE

FKNMS Research Coordinator Dr. Andy Bruckner provided an update on behalf of the many partners that are working together to respond to this coral disease event. The purpose of the presentation was to provide background information and response activities regarding Scleractinian Tissue Loss Disease (SCTLD), which was first noticed off of Virginia Key in Miami in 2014. Prior to this time, about eight different diseases had been described for Caribbean corals since the 1970s/1980s.

By 2017, the disease had spread north to Martin County and south to the Middle Keys. SCTLD is different from other coral diseases in that it affects a large number of different species. At least 22 different taxa are affected, including rare species and important reef building species. In their regular monitoring surveys, the Coral Reef Evaluation and Monitoring Program (CREMP) detected a significant increase in the number of corals affected by disease in 2017.

There are several enabling factors and/or causes that can contribute to disease in corals, including dredging and other coastal activities, which lowers water visibility, creates sedimentation and may release pathogens into the water column. This disease is thought to be caused by be a water-born pathogen that can be transported through the system by the ocean currents. In the Keys (and South Florida), reefs experienced a significant cold-water event in 2010, followed by extremely warm years of 2014 and 2015. Bleaching was evident in 2014 and 2015; bleaching often precedes disease outbreaks. Extremes in temperatures could have made corals more susceptible to disease. Hurricanes can also cause impacts that stress corals and may affect disease.

One of the outcomes of a recent coral disease workshop was to create a series of response teams to address different aspects of the disease and to develop different mitigation actions. The response to this disease event was quite large and involved many, many partners that came together to form several response teams. This is really the first time around the world that there has been such a collaboration to address this disease.

Recently, scientists have made progress tracking the disease and have identified zones along the reef that describe the disease conditions (presence/absence, etc.). In April of 2018, disease was first observed south of the 7-mile bridge at Looe Key. Even though the disease is continuing to spread to the west, the rate of spread has dramatically slowed in recent times (from about 5- 7 miles per month to about 1 mile per month). At this time, in the Lower Keys, the highest prevalence is on the outer reefs; it has not affected the mid-shelf and inner reefs.

Corals species have been identified as early susceptible species and intermediate susceptible species. The intermediate species, which tend to be the large reef-building corals (star corals), tend to respond slowly to the disease; lesions are seen to spread in a much slower fashion. They can continue to show signs of disease for several years. Four sentinel sites (with no signs of disease at the time) were set up by FWC at reefs in the Middle Keys area to see how the disease is spreading. Scientists monitored these sites as the disease moved in. Recently, there have been positive signs: the rate of spreading and tissue loss seems to have slowed down, and not all diseased corals actually died.

Several intervention approaches have been taken to treat diseased corals. One method involves applying chlorine (mixed with epoxy) to diseased tissue and then outside of that creating a "fire break" or trench in the coral colony to stop the spread of disease. In certain species of coral, this method has been effective. Broad spectrum antibiotics have been used to successfully treat the disease in certain corals in aquarium situations. FWC is scaling up interventions at the permanent plots within the reef once disease is observed. They will proceed with caution. The idea is to prevent it from moving out from these plots. Other interventions are being undertaken by FDEP and Force Blue to respond to disease on patch reefs. High value larger corals will also be treated. Coral rescue is also taking place to preserve genetic and species diversity.

Restoration using outplanting nursery grown corals is being undertaken in a very careful way so as to avoid inadvertently make the outbreak worse. Where and when to outplant are important considerations. Small scale studies are taking place with elkhorn and staghorn coral to make sure they aren't carriers or susceptible to the disease.

Citizen engagement is also very important and that includes using a protocol to decontaminate dive gear and educating people on how to recognize and report the disease they encounter when diving. Sea Grant has been involved in developing these trainings. For more information, visit https://floridakeys.noaa.gov/coral-disease/. The website is regularly updated. People who observe disease should report it to SEAFAN https://floridadep.gov/fco/coral/content/seafan. Everyone is encouraged to become involved in addressing this disease.

Questions/Discussion/Comments

- The Reef Futures Conference, which is one of the largest gatherings of reef experts, is being held in December in Key Largo. One section of the conference is dedicated to coral disease and how to proceed with restoration which reduces risks.
- In response to a question about disease, Dr. Bruckner explained that even after the first wave of disease has moved through an area, incidents of disease can still occur, but usually at a slower rate. The reefs aren't really decimated by the disease because all corals in an affected

area are not dying. With regards to resistance, scientists are working to identify which corals have the right characteristics to survive for propagation purposes. This includes investigating the simple immune systems of corals.

V. HARMFUL ALGAL BLOOMS AND IMPLICATIONS FOR FLORIDA KEYS

Florida Fish and Wildlife Conservation Commission Research Scientist Dr. Kate Hubbard gave a presentation about harmful algal blooms, including red tide.

Dr. Hubbard reviewed the characteristics of marine phytoplankton, including species considered to cause Harmful Algal Blooms (HABs). About 50 Harmful Algal Bloom species have been identified in Florida waters. Monitoring and research is conducted on HABs by Florida Department of Agriculture and Consumer Services (FDACS) and FWC-Florida Wildlife Research Institute. FDACS oversees the seafood industry; FWC works with many partners and volunteers to serve in its role of providing technical support, monitoring, and biotoxin testing. This presentation will concentrate on cyanobacterial blooms in Florida Bay, red tide in Monroe County and ongoing research.

Flow patterns from land to sea are complex and vary from year to year, depending on precipitation and water management actions. Freshwater can transport nutrients and freshwater species to estuaries and lagoons. This can result in cyanobacterial blooms, such as those in the St. Lucie/Caloosahatchee Rivers and estuaries. High salinities occur when water flows to estuaries are low and can be associated with cyanobacterial blooms such as *Synechococcus* blooms in Florida Bay.

Florida Bay has experienced several significant cyanobacterial blooms. The first widespread bloom began in the early 1990s and was dominated by *Synechococcus*. This bloom, which followed extensive seagrass die-off in the bay in the late 1980s, caused widespread sponge mortality. From 2005 to 2008, Barnes and Blackwater Sounds also experienced a *Synechococcus* bloom. In 2013, a *Synechococcus* bloom was detected in Central Florida Bay. Both blooms were associated with sponge and seagrass mortality.

Cyanobacterial blooms are difficult to quantify so scientists use flow cytometry to obtain a cell count (measure of concentration). Satellite imagery that reflects high chlorophyll concentrations is used to detect and track blooms, including the bloom event in 2016 – 2017. The FWC FWRI scientists based in Marathon are embarking on a new sponge project designed to learn more about sponge feeding in wild and cultivated sponges.

HABs, including red tide, produce toxins and cause low dissolved oxygen in the water. Toxins kill fish, birds, manatees, turtles and dolphins. The presence of the red tide toxin (a brevotoxin) causes beach closures and shellfish closures because it can cause respiratory stress in people. The longest lasting red tide bloom initiated in November 2017 on Florida's west coast and is still taking place. Currents can carry bloomy water to the east coast. Only 8 blooms had been observed on the east coasts prior to the current long lasting one.

Typically, blooms begin offshore at depth on Florida's west/southwest coast. Upwelling near the coast brings cells to the surface. The red tide organism, *Karenia brevis,* has a broad tolerance for salinity and temperature. Fish kills caused by red tide toxin were reported on Florida's southwest

coast from November 2017 to September 2018. The Florida Keys experienced numerous fish kills that affected many species from January to February 2018.

For the present bloom, they use aerial surveys and satellite imagery to assess bloom extent. A new red tide product, a daily sample map, has been developed and can be accessed by visiting http://myfwc.com/research/redtide/statewide/. NOAA issues respiratory irritation forecasts that help predict conditions, https://tidesandcurrents.noaa.gov/gomx.html. The brevetoxin produced by red tide organisms can be aerosolized. Prediction of red tide movements and their impacts is carried out by USF (ocean circulation group) and FWC and involves using surface and bottom current information to develop 3 to 5 day bloom transport forecasts.

Chairperson Barras introduced Kennard "Chip" Kasper from the National Weather Service. Chip explained that experts from many fields are involved in red tide research and response. Red tide seems to occur in Monroe County about every four years. When concentrations of red tide are high, the weather service will issue Beach Hazard statement. NOAA Tides and Currents forecasts incorporate the wind forecast from the weather service into their products https://oceanservice.noaa.gov/news/redtide-florida/.

Questions/Comments

- It was noted that these HAB reports are very important for the entire State of Florida, including the Florida Keys. As to when an advisory of sorts is issued by the county, Dr. Hubbard explained that each county handles red tide public health warnings in their own way. (Information is made available through the variety of products.) Department of Health has also issued guidelines.
- Another question concerned the long-term effects of red tide on humans that eat fish/shellfish, including stone crabs. Dr. Hubbard stated that a person should not eat fish caught from a known red tide bloom and added that toxin does not accumulate in the edible portions (filet) of the fish. Fish can accumulate toxins in some of the non-edible parts. To her knowledge, toxins do not accumulate in stone crab tissue. A new study by the Center for Disease Control (CDC) will be looking at air quality and toxins in the air using a system of air sensors.

- It was stated that misinformation exists regarding red tide blooms and other kinds of blooms. People want to learn more about the different kinds and understand them better. Dr. Hubbard explained that several online resources exist that can offer information, for example, red tide web page on the MyFWC.com. Dr. Lorenz inquired about the bloom in Florida Bay that occurred after Hurricane Irma and is ongoing today. Dr. Hubbard did not have updated information. FWC initiated monitoring in the summer of 2016 and extended into 2017, but monitoring has been limited since Hurricane Irma passed through.

FKNMS Announcement

Superintendent Fangman announced that a new acting deputy superintendent, Michael Carver, has joined the team. Michael hails from the West Coast where he is the deputy superintendent for Cordell Bank National Marine Sanctuary. Lisa Symons, who had been serving as the deputy superintendent, has assumed a new role as the Regional Response Coordinator. Lisa will remain in the Keys to work with FKNMS, but will also be supporting the other sanctuaries in the region.

Lunch

VI. EVERGLADES RESTORATION

Caroline McLaughlin, Sanctuary Advisory Council Conservation and Environment
Jerry Lorenz, Sanctuary Advisory Council South Florida Ecosystem Restoration

Florida Audubon Society Director Dr. Jerry Lorenz reminded the council of the historic flow of water through the Everglades and into Florida Bay, compared to the present flow through various canals and pumps. A system of pumps was completed in 1984 to route the water around the Everglades Agricultural Area and then back into Everglades National Park through a human managed system. The park is only receiving about 25% of the water that used to flow south. Water used to be maintained in Taylor Slough, where it could become filtered and stored for freshwater shortages, but currently the water is routed elsewhere.

Drought conditions in the late 1980's resulted in an ecological collapse of Florida Bay when massive amounts of seagrass and mangroves died-off due to the increased salinity. Additional impacts to Florida Bay such as fish kills, algal blooms, and sponge mortality continued and were exacerbated by Hurricane Andrew. In 2007, these impacts began to spread throughout the Florida Reef Tract, demonstrating the connectivity between Florida Bay and the coral reef.

In 2014, a study was published documenting declines in vertebrate populations after the various algal blooms in Florida Bay, including manatees, crocodiles, seabirds, and many fish species.

In 2006, the minimum flow level (MFL) for water reaching Florida Bay was established, and called for salinities in the bay to not exceed 30 psi. Over the next ten years, this salinity was exceeded twice, and resulted in the seagrass mortality event in 2015-2016. When hurricane Irma came through in 2017, the seagrass within the bay was mixed with algae from other areas, and the result is the algal blooms we see today.

The solution to these issues is Everglades Restoration, a multi-billion dollar project which is currently underway. The Southern Everglades Projects (including the C-11 canal) were started over 30 years ago, and have since cost over one billion dollars. The agencies responsible for these projects are the US Army Corps of Engineers and the South Florida Water Management District, who are working to develop a Combined Operational Plan (COP). The COP will suggest alternatives to maximize restoration benefits to Florida Bay concerning these projects. There will be a public meeting in December in Islamorada, FL and this council has the opportunity to vote on a resolution to be presented at that meeting.

Discussion

- Local groups suggested a different alternative, including increasing water in Everglades National Park, which was not adopted by the agencies operating the COP. The majority of the impacts of the various COP alternatives examine impacts to agriculture, but not necessarily the environment or economy.
- Superintendent Sarah Fangman confirmed that the council has expressed support for issues outside of the sanctuary boundary, and this resolution is the result of the council and will be

supported as such.

- With regards to the resolution and whether it includes socioeconomic data about the benefits of a healthy ecosystem in Florida Bay and the Florida Keys, it was explained that the resolution doesn't contain exact figures, but edits can be discussed.

Resolution (action)
Bruce Popham made a motion to approve the resolution with the edits that the council suggested. David Makepeace seconded. Resolution was accepted unanimously with minor edits. To view this resolution, visit: https://nmsfloridakeys.blob.core.windows.net/floridakeys-prod/media/docs/20181016-finalcopmotion.pdf.

VII. PUBLIC COMMENT

McKenna Anderson, Graduate Student, Rosenstiel School of Marine and Atmospheric Science
Ms. Anderson is affiliated with RSMAS, MOTE and Florida Sea Base Brinton Environmental Center. She would like to take this comment opportunity to spread awareness about a new project and gather support for citizen science aspect of that project. She has partnered with Kim Hull at Mote Marine Lab to establish the first spotted eagle ray project. Eagle rays have been listed as near-threatened and have been in decline for the past 10 years. Mote has done research in the Gulf of Mexico, Cuba and Mexican Caribbean and has successfully used photo-identification to track individuals and obtain information on their movements and site fidelity. They are starting this project here as well as a citizen science project. She is leaving cards containing the reporting information (www.mote.org/eagleray) and if anyone wants to discuss further, please contact her. She was a marine STEM educator who also taught conservation at the Brinton Environmental Center. As one person, she can only gather so much information, so she is looking for input. The idea is to get enough information about the species. When enough data are gathered to make it statistically significant, she will use GIS to map out temporal data and benthic habitat preferences. Not much is known about spotted eagle rays, even though they are known to people. She thanked everyone.

Gary Jennings, American Sportfishing Association
Mr. Jennings noted that at the last advisory council meeting limited entry for the snapper-grouper fishery was brought up. He wanted everyone to know that after reviewing the scoping comments, the South Atlantic Fisheries Council voted not to go forward with limited entry or making changes to the for hire permit.

About two weeks ago, he attended the lionfish summit hosted by FWC. It was super interesting. They helped to sponsor the summit, along with the Fish and Wildlife Foundation of Florida. Amazing information about lionfish was shared at the event.

Keep Florida Fishing is a campaign by the American Sportfishing Association. New short videos have been produced and shared to let everyone know that the Keys have places to fish and to stay. These videos have been sent to the Keep America Fishing list, which has about 800,000 people on it and to Visit Florida and other agencies that want to promote it. Mr. Jennings showed two brief fishing videos focused on the Florida Keys. He added that economics are important, not only to the guides, but to the tackle shops, restaurants, etc. and they are trying to do their part to let people know the Keys are open for business.

CiCi Ward, We the Island
Ms. Ward explained that she grew up in the Keys and fishing is her family's business. The people in the video (just shown by Mr. Jennings) are speaking for the people who really care about the Keys. Recently, she started a non-profit, *We the Island*, to speak for us — the people who really, really love this place. She started to pay attention to red tide about two months ago because she realized how toxins work. She has learned that the red tide toxin accumulates in bivalves and can become part of the food chain. In this way, a red tide bloom can affect an area much larger than the area of the bloom itself. That's why she starting paying attention. October 1st was the first time red tide came around the Florida Keys from the west to the east coast. On October 6th the first dead dolphin was found in five-mile creek. She hasn't wanted to use scare tactics or cry wolf to get people interested. This may be a sign of things to come. She has never seen a dead dolphin in that area before. She heard back from Blair Mase, who is with NOAA's marine mammal health and stranding response program. They weren't sure if the dead dolphin was a baby dolphin or a stillborn. Ms. Ward asked her some very specific questions about toxins. In response to whether or not toxins would show up in the fetus of a female dolphin that was exposed to red tide, Ms. Mase indicated she did not know. Ms. Ward also asked, "If it were a calf and not a stillborn, could the toxins affect the mother without being present in the calf?" and the answer was yes. They simple don't know if it is related to the tide.

Ms. Ward stated that there is a delay in the red tide information provided by FWC. As of this morning the most current report was from October 11. Today is October 16th and since this meeting began a yellow dot indicating that there was red tide present at Fort Zachary Taylor beach appeared. She was at the waterfront park yesterday with her child and young cousin. It is where a lot of Key West local children go to play. They can send out beautiful pictures, but there are going to be a lot of really, really upset tourists coming down here after being told that the Keys doesn't have red tide. They saw what happened on the southwest coast when the hotels and restaurants didn't acknowledge it and people got sick and dogs died. She cares very much about the environmental aspect of this and we have to be very careful how we present this to our very valuable tourists. It's not just at Fort Zachary Taylor, but at Looe Key and we know that these are popular tourist destinations and we have low concentrations there. If anyone is interested in talking to her about this, the organization is *We the Island*. This organization is trying to make this information accessible and understandable for people. The really scary thing….is that Dr. Tracy Fanara, Mote Marine Laboratory Staff Scientist in the Environmental Health Program, does not know how long the brevotoxin will stay in pinfish. They don't have this information so we can't simply say it's ok. In regards as to whether it is or is not safe to eat fish such as yellowtail, there is not a definitive answer. The fish could have been removed from a red tide area and be cooked whole. It's possible that the toxin could be stored in the eyeball. At Sugarloaf Lodge, they say yes it's (red tide) here and explain the consequences. They are honest about the situation. If not, they are putting people and their families at risk.

VIII. UPCOMING MEETING REMARKS AND CLOSING REMARKS
Superintendent Fangman announced that the next advisory council meeting will be held on December 4th, not the 11th as previously scheduled. This is being done because December 11th posed some conflicts for some advisory council members who are attending the Reef Futures Conference in Key Largo. At this next meeting, which may or may not be a full day meeting, discussions about the release of the DEIS will continue. She encouraged people to participate in the meeting and the Reef Futures conference.

Vice Chair Barras called attention to the screening of the film, *A Plastic Ocean* that took place in Key West in October. The event was sponsored by the sanctuary and held at the Florida Keys Eco-Discovery Center. It was very well attended and the movie was very moving and sad. He applauded NOAA's efforts in bringing this issue to the forefront. FKNMS Education/Outreach Specialist Marlies Tumulo added that there are plans for a showing in Key Largo and Marathon of this movie.

Meeting adjourned.

Note: The following agency reports were printed and distributed at the meeting.

VI. AGENCY REPORTS: SUPERINTENDENT'S REPORT AND AGENCY REPORT HIGHLIGHTS:: DEP, FWC-FWRI, FWC-LE, NOAA NMFS SOUTHEAST REGION, NOAA OGCES, NOAA OLE, EPA, NPS, USCG, USEPA,USFWS, and U.S. NAVY

USFWS Florida Keys Refuge Complex, Dan Clark

- Refuge infrastructure [quarters (5 houses), Administrative Office on Big Pine Key, floating dock and bunkhouse] damaged or destroyed by Hurricane Irma remain in that condition as a result of federal contracting. It is expected contracts to repair damages will be awarded the first quarter of FY19 and destroyed bunkhouse replacement will take years to complete. The lower Keys refuges has little to no housing for volunteers and interns with the exception of 2 RV pads used for seasonal volunteers.
- The new Refuges Complex Nature Center at 30587 Overseas Highway (Big Pine Key) is expected to make a "soft" opening this fall. Refuge staff and the Refuges official Friends group (the "Wildlife Society of the Florida Keys") will be preparing the temporary exhibits and new bookstore spaces to host the public. Additional fundraising is needed to finish the parking area and new, professional internal exhibits. Information about the Nature Center can be found on the Refuges website and Facebook page (http://www.fws.gov/refuge/National_Key_Deer_Refuge/About_the_Complex.html, http://www.facebook.com/floridakeysrefuges).
- The Refuges Complex remains significantly short staffed with chronic vacant positions in the biological program and administrative program (both programs currently not staffed). Current Complex staff for all the four Keys Refuges includes: 2 Maintenance workers, 2 Law Enforcement Officers, 1 Park Ranger, 1 Site Manager at Crocodile Lake NWR in Key Largo and 2 managers. Hiring authority has not been granted to fill any positions at the Refuges Complex since early 2017 and refuge administrative support has been absent since the New World Screwworm incident.
- The Refuges Complex expects to receive some Hurricane Irma supplemental funding appropriated by Congress in 2018 for debris removal and repair and replacement of damaged or destroyed infrastructure, fleet and equipment.
- Ongoing projects on Florida Keys Refuges include: restoration of Castillo Pit on Big Pine Key to facilitate rare shorebird nesting habitat, interagency coordination for management/restoration of pine rockland habitats, invasive species and predator control such as pythons on Key Largo, Key deer herd monitoring, public outreach/education, listed species monitoring and management,

support of NOAA FKNMS DEIS as Cooperating Agency, law enforcement, volunteer support/administration and overall refuge administration.

Florida Department of Environmental Protection (FDEP), Joanna Walczak

Florida Coastal Office:

- **Coral Disease Workshop:** In July, Florida Coastal Office Southeast Region, the Florida Keys National Marine Sanctuary, and the NOAA Coral Reef Conservation Program hosted a 3-day coral disease workshop to develop a response plan for the ongoing coral disease outbreak in Florida. The focus on this workshop was to develop an intervention action plan to facilitate adaptive decision making regarding when and where proposed intervention techniques can be implemented to help slow the continued spread of disease and save priority corals. Surveillance and monitoring, research needs, potential restoration activities, and opportunities for community engagement were also identified, along with the personnel and financial resources needed to enact the recommended intervention actions. The outcomes of this workshop have helped shape the next phase of coral disease response efforts in Florida, but will also be critical for helping inform and support new disease investigations elsewhere in the Caribbean and potentially worldwide.
- **Coral Disease Leadership Meetings:**
    - DEP Secretary Valenstein – In June and September, DEP Secretary Valenstein reconvened agency and disease partner leadership to discuss updates on coral disease response efforts, consensus on priority needs and opportunities to collaborate moving forward.
    - Regional Tourism Development Council Workshop – Local tourism and business representatives attended a briefing to learn more about the economic importance of Florida's coral reefs, and the disease outbreak and response efforts. Discussion focused on coral disease communications efforts, and brainstorming opportunities to engage broader tourism and business communities in developing a statewide call to action marketing campaign.
    - Regulatory Programs and State Parks Leadership Briefing – In October, DEP leadership from the Florida Coastal Office, regulatory programs and state parks met to discuss opportunities for additional agency support for and protection of Florida's coral reefs. This conversation will be ongoing.
- **Regional Planning Councils; WQ/Wastewater**
    - A recent joint meeting of the South Florida and Treasure Coastal Regional Planning Councils led to another resolution being passed that supports DEP (and partner) efforts and capacity for responding to the ongoing coral disease outbreak. The resolution also highlighted the need for significant action on upgrading the urban wastewater infrastructure in SE FL to begin addressing nearshore water quality that is impeding recovery of the coral reefs.
- **Red Tide/Blue-Green Algae:**
    - DEP, the five state water management districts, the Florida Department of Health (DOH), the Florida Fish and Wildlife Conservation Commission (FWC) and the Florida

Department of Agriculture and Consumer Services (DACS) all work together to respond to algal blooms.
  - In August, Governor Scott declared a state of emergency due to the impacts of red tide.
  - Red tide is naturally-occurring algae that has been documented along Florida's Gulf Coast since the 1840's and occurs nearly every year. Since 1957, Florida scientists have documented red tide on Florida's Atlantic Coast nine times.
  - Since July, Governor Scott and DEP directed a total of $16 million in grant funding to support communities impacted by red tide and blue-green algal blooms
  - For more information on updated monitoring and response activities and current conditions and visit: https://floridadep.gov/AlgalBloom.

- **U.S. Coral Reef Task Force Update:**
  - At the last meeting of the USCRTF, a national Coral Reef Restoration working group was established in order to ensure that each of the 7 US coral reef jurisdictions has the infrastructure and resources to begin coral propagation and restoration activities. Working closely with the Coral Restoration Consortium, the USCRTF Restoration working group will focus on the management side of restoration – the what and where to restore to maintain important ecosystem services like shoreline protection, fisheries habitat, etc. Since Florida has an already established network of in-water nurseries, the local discussions will focus on how and when to restore when faced with endemic levels of coral disease. Information and lessons learned from the local level will be collected at the national level and distributed to the other US coral reef jurisdictions.

Florida Park Service:

- **Pennekamp Vessel Grounding:** The vessel that ran aground at Cannon Patch Reef in John Pennekamp Coral Reef State Park in late July has been successfully removed. Resource Trustees from Florida Park Service and Coastal Office will conduct an assessment to inform enforcement action under Florida's Coral Reef Protection Act.

NOAA National Marine Fisheries Service, Heather Blough

- In September, the U.S. District Court for the Eastern District of Louisiana concluded NOAA Fisheries does not have authority to regulate aquaculture under the Magnuson-Stevens Fishery Conservation and Management Act, and vacated our rule implementing the Gulf of Mexico Fishery Management Council's Offshore Aquaculture Fishery Management Plan. We are currently considering whether to appeal the finding. For our statement on the opinion, visit https://www.fisheries.noaa.gov/media-release/statement-recent-court-ruling-aquaculture.
- The South Atlantic Fishery Management Council initiated a 3-phase project exploring innovative approaches to managing private recreational anglers targeting snapper-grouper species by hosting a workshop with the American Sportfishing Association, Coastal Conservation Association, and Yamaha Marine Group prior to the October Council meeting. Workshop participants included Council members, Snapper-Grouper Advisory Panel members, and recreational fishing representatives. Subsequent regional meetings will be open to the public.
- At its October meeting, the South Atlantic Council approved for NOAA Fisheries' review and implementation proposals to:
  - Align federal and state spiny lobster bully net and dive possession limit regulations; and
  - Establish, modify, or remove commercial split fishing seasons, trip limits, and/or minimum size limits for certain snapper grouper species.

NOAA Fisheries will request additional public input on those proposals before the end of the year.

- Also at the October meeting, the South Atlantic Council voted to stop work on a for-hire snapper grouper permit moratorium (the November 8 Key West hearing on that subject has been cancelled) and continued developing proposals to:
  - Redefine snapper-grouper complexes, and modify recreational aggregate bag limits and minimum size limits for certain species (final action scheduled for December);
  - Revise the red grouper rebuilding plan and establish a commercial trip limit for that species (final action scheduled for December);
  - Modify the way yellowtail snapper catch limits are managed to extend the commercial fishing season length (final action scheduled for December); and
  - Require venting tools and/or descending devices onboard commercial and/or recreational snapper grouper vessels and, potentially, eliminate the circle hook requirement or expand the requirement to new areas.

  For additional information on these and other South Atlantic Council actions under development http://safmc.net/amendments-under-development/. The Council's Snapper Grouper Advisory Panel will meet October 17-19 and the Habitat Protection & Ecosystem-Based Management Advisory Panel will meet November 6-8. For information on how to join those meetings via webinar, visit http://safmc.net/safmc-meetings/current-advisory-panel-meetings/.
- At its October meeting, the Gulf Council is tentatively scheduled to finalize a proposal to reduce cobia harvest by decreasing the bag limit and increasing the minimum size limit. Also, the Council will continue developing proposals to:
  - Reduce gray snapper catch limits; and
  - Convert historical for-hire captain endorsements to fully transferable federal for-hire permits without the captain on board restriction (and potentially modify the passenger capacity associated with the endorsement).

  For information on these and other Gulf Council actions under development, visit http://gulfcouncil.org/fishery-management/proposed-amendments/.
- The Gulf Council is transitioning its federal fishing regulations from the current Gulf of Mexico Fishing Regulations mobile application to the Fish Rules mobile application. Fishermen who use the current Gulf of Mexico Fishing Regulations mobile application should uninstall that application and download Fish Rules (https://itunes.apple.com/; https://play.google.com/store/apps) before the end of the year. The Council will discontinue updates to the Gulf of Mexico Fishing Regulations application on January 1, 2019.
- Through December 3, NOAA Fisheries is requesting public comments on the Gulf Council's proposal to increase the number of sea turtle release gear devices approved for use in the reef fish fishery, simplify and clarify the specifications for other release devices, and streamline the process for making future changes and updates. For frequently asked questions and other information about that proposal, visit https://www.fisheries.noaa.gov/bulletin/request-comments-proposed-modifications-sea-turtle-release-gear-reef-fish-fishery.
- Data through October 9 indicate ~89% of the South Florida hogfish catch limit has been landed.

Please contact Heather Blough at (727) 551-5795 or heather.blough@noaa.gov with any questions.

Naval Air Station Key West, Edward Barham

- NAS Key West hosted the Department of Defense (DoD) Partners in Flight (PIF) annual meeting in August. PIF consists of a cooperative network of natural resources personnel from military installations across the United States. Established in 1991, PIF works collaboratively with partners throughout the Americas to conserve migratory and resident birds and their habitats on DoD lands (https://www.partnersinflight.org/working_groups/dod-pif/). NAS Key West had an opportunity during the meeting to highlight our natural resources program.

Dry Tortugas National Park, Meaghan Johnson

- DRTO 2018 Artists in Residence, American photographer and filmmaker Denesa Chan and New Zealand-born wind flight engineer, environmental activist and extreme conditions trekker Gavin Mulvay reflected on their work during a presentation in Key West at the Florida Keys Eco-Discovery Center on October 2nd. They spent the month of September immersed in their artistic and environmental endeavors at the remote Loggerhead Key. Their work showcased the unique natural and cultural resources of the park at different times and revealed turtle hatchlings, coral reefs and marine resources of the Dry Tortugas in ways that visitors seldom see.
- From September 25-27th, volunteers and NPS staff participated in both underwater and beach debris cleanups. A total of 2,030 lbs. of debris was removed from the beaches of Garden, Bush, Long and Loggerhead Keys as well as from select coral reef sites. This project was funded by the South Florida National Parks Trust.
- Four interns from the University of Miami Master of Professional Science Program ended their 5-month internship at DRTO on September 30th. Two interns focused on sea turtle monitoring on Loggerhead Key, where they followed state Index Nesting Beach Survey standards. The additional two interns focused on lionfish management, and removed 175 lionfish from park waters during their internship.
- The three South Florida marine National Park Service units (BISC, EVER, DRTO) along with the South Florida Caribbean Network (SFCN) will be hosting three representatives of the Indonesian MPA network for six weeks beginning in late October. This trip is sponsored by the DOI International Technical Assistance Program (ITAP) and is funded through US/AID. DRTO will host the first site visit from November 5-13th, where they will meet with local partners and interact with NPS staff.