FLORIDA KEYS NATIONAL MARINE SANCTUARY ADVISORY COUNCIL

Hyatt Place
1996 Overseas Highway
Marathon, FL 33050
Tuesday, June 18, 2019

FINAL MINUTES

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

Council Members
Boating Industry: Bruce Popham (Chair; absent)
Tourism – Lower Keys: Clint Barras (Vice-Chair)
Citizen at Large – Lower Keys: Mimi Stafford (absent)
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
Diving – Upper Keys: Elena Rodriguez
Education and Outreach: Jessica Dockery (absent)
Elected County Official: Michelle Coldiron
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
Fishing – Recreational: Ken Reda
Research and Monitoring: David Vaughan (absent)
South Florida Ecosystem Restoration: Jerry Lorenz (absent)
Submerged Cultural Resources: Corey Malcom
Tourism – Upper Keys: Andy Newman

Council alternates (present)
Boating Industry: Karen Thurman
Citizen at Large – Lower Keys: Stephen Patten
Citizen at Large – Upper Keys: Suzy Roebling
Conservation and Environment: Tracy Allen
Conservation and Environment: Caroline McLaughlin
Fishing – Charter Fishing Flats Guide: Dale Bishop
Research and Monitoring: Shelly Krueger
Submerged Cultural Resources: Diane Silva
Tourism – Lower Keys: John O'Leary
Tourism – Upper Keys: Lisa Mongelia

Agency Representatives (present)
Florida Department of Environmental Protection: Joanna Walczak
FWC Division of Law Enforcement: Captain Dave Dipre
FWC Fish and Wildlife Research Institute: John Hunt

NOAA's National Marine Fisheries Service: Heather Blough
NOAA's Office of Law Enforcement: Kenny Blackburn, Mitchell Robb
National Park Service, Dry Tortugas: Meaghan Johnson
U.S. Coast Guard (USCG): Phil Goodman (Auxiliary)

Municipalities
City of Key West: Allison Higgins
City of Layton: Cindy Lewis

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

MOTION (passed)
A motion to approve the April 16th, 2019 minutes was made by Michelle Coldiron and seconded by David Makepeace. The minutes were approved. A motion to adopt the agenda was made by Ken Nedimyer and seconded by Michelle Coldiron. The agenda was adopted without change.

Chairperson's Comments
Chairperson Barras acknowledged sanctuary staff for putting together this agenda, and noted that this meeting is designed to prepare advisory council members for the release of the Restoration Blueprint this year.

To view the presentations given by speakers at this meeting, visit https://floridakeys.noaa.gov/sac/meetings.html?s=sac.

II. ONMS DIRECTOR WELCOME REMARKS
John Armor, Office of National Marine Sanctuaries

Mr. Armor remarked about his time with the Florida Keys National Marine Sanctuary (FKNMS) mooring buoy team, helping to maintain the buoy system in the Tortugas Ecological Reserve North. He was able to see first-hand the value of this infrastructure, and the significance of the buoy system to the local community.

Mr. Armor also addressed the sacrifice and diligence of the advisory council in relation to the Restoration Blueprint. The amount of experience and advice that this body has contributed to this process is invaluable.

Nationally, the Office of National Marine Sanctuaries (ONMS) is weeks away from designating a new sanctuary, Mallows Bay in the Potomac River. This will be the first sanctuary designated in almost 20 years. Possibly related to this new designation, the current budget request for the sanctuary system is higher than previous years, which speaks to the relevance and importance of sanctuaries to our current administration.

Sanctuary Superintendent Report -- FKNMS Volunteer of the Year
Sanctuary Superintendent Sarah Fangman presented Stephen Patten as the FKNMS Volunteer of the Year for 2018 for the extraordinary amount of time he has given in service to the sanctuary. Mr. Patten has dedicated time serving on the advisory council, as a docent at the Florida Keys Eco-Discovery Center, and as a valuable member of Team Ocean since 2017.

III. TOURISM DEVELOPMENT COUNCIL FLORIDA KEYS SUSTAINABILITY CAMPAIGN

Stacey Mitchell, Tourism Development Council Director, John Underwood, Tinsley Advertising, and Andy Newman, Newman PR and Upper Keys Advisory Council Tourism member

Ms. Mitchell explained that funding for the Tourist Development Council (TDC) comes from a variety of sources, including a 4% tourist tax from lodging. Half of this tax (2%) is earmarked for advertising and promotion and the other half is dedicated to capital projects within the county. At current time, almost four million TDC dollars have been granted to non-profits and coral restoration.

Sustainability efforts at the TDC are focused on "Connect and Protect" and are included in every aspect of the agency including advertising, sales, and public relations. For example, on the diving and snorkeling web page, the TDC promotes proper etiquette for divers and snorkelers, the Blue Star program, and the boater education course.

Mr. Underwood of Tinsley Advertising described the television advertising campaign specific to the dive umbrella called "Learn to Dive" which specifically promotes the sanctuary. Additionally, the "Wreck Trek" advertisement promotes diving in each district of the Florida Keys. In addition to these ecological focused advertisements, Tinsley has been focused on sustainable tourism advertising including a recently produced public service announcement "Better Than You Found It" which included a 30 second radio advertisement, digital billboards, and print advertisements. The sustainability page is easily accessed through the homepage of fla-keys.com, and includes best practices for sustainable tourism, as well as ways to get involved in volunteering in the Florida Keys.

Tinsley worked on a pro-bono campaign for Coral Restoration Foundation that focused on a robust social media campaign with various messages, products focused on children, and a series of PSA's that raise awareness of the issues of declining reefs, and solutions to become involved by supporting the Foundation.

Finally, Mr. Newman described the public relations campaign, including "Sustainable Sunday" on social media, which has reached over 3 million people. In addition, the glossy magazine Keys Traveler was 90% dedicated to sustainability on the most recent run, and sustainable messaging was included in every email sent to the over 100,000 people on the tourism listserv. Mr. Newman also showcased a variety of news agency spots including features on diving in the sanctuary, art installations on the Vandenberg, and a syndicated show called "How to Do Florida" focused on catch and release fishing, coral restoration, and sustainable seafood.

IV. SOCIO-ECONOMICS OF THE FLORIDA KEYS

Danielle Schwarzmann, Office of National Marine Sanctuaries

Ms. Schwarzmann introduced the socioeconomic program throughout the National Marine Sanctuary System which works with the natural science departments to inform resource managers on regulation, policy, and education in each site. One example of work produced by these teams include the Condition Reports, which examine the state of natural resources and the impact of these conditions. In addition, management plans of the sanctuary sites include socioeconomic data that provide information to managers about local communities.

Past work done within FKNMS include a 10 year comprehensive study of users and visitors to the Florida Keys, and a knowledge, attitudes and perceptions survey focusing on commercial fishermen, divers, and visitors. The team is trying to understand the value of tourism within FKNMS on Monroe

County, but one major challenge is estimating visitation which can be difficult considering there are no roads or gates into the sanctuary.

Currently, the Restoration Blueprint comprises the most recent socioeconomic data. In the future, developing spatial use characterization heat maps will allow managers to visualize the highest areas of use within the sanctuary, and examine overlapping areas of competing use. In addition, a new condition report, valuation reports of programs such as Blue Star or citizen science, and a willingness to pay study could be a focus of future work.

Discussion/Questions (Council)

- There is currently no time frame for an updated 10 year study, but scoping work is being completed to understand new methodology.

Break

V. FLORIDA KEYS INTEFRATED ECOSYSTEM ASSESSMENT HUMAN USE INDICATORS

Chris Kelble, NOAA Atmospheric and Oceanographic Meteorological Laboratory

Dr. Kelble gave a presentation on human use indicators that were developed as part of the Florida Keys Integrated Ecosystem (IEA) Assessment program. This approach employs conceptual models and scoping efforts to frame the issues and is designed to determine status and trends and assess ecosystem vulnerabilities. Ecosystem indicators are also used in condition reports for the marine sanctuaries in the system, including FKNMS. The selection of indicators is based on criteria identified in advance. To determine a set of indicators for FKNMS, indicators were scored by experts and the top scoring ones were selected for use. Indicators are binned by category in the condition report framework: habitat condition, water quality, key species/living resources and ecosystem services.

The following indicators were selected to assess human activities: resident population trends, tourism population trends, land cover change, boater use, wastewater management actions, commercial fishing trip numbers, landings, recreational effort and fecal indicators. Trends for each indicator were presented and a summary of those trends was provided. More recreational fishing data is needed to make the analysis more meaningful.

Discussion/Questions (Council)

- In response to a question as to whether or not the project was monitoring cruise ship waste practices, Dr. Kelble explained that they are not conducting that kind of monitoring, which would require a targeted approach.
- A question was asked regarding monitoring related to the completion of wastewater upgrades. Dr. Kelble explained that after 100% hookup in the Keys, they would expect the system to respond with reduced nitrogen and phosphorus levels, reduced fecal indicators and less beach closures.
- An observation was shared about sediment coverage and water quality in the western part of the sanctuary near the Gulf of Mexico. The sediments are very fine and are suspended and as they slowly settle out, they cover the coral and block the light. Maybe this is something that should be examined. This was traditionally hard-bottom and had some larger corals. It could be impacting areas to the south, too. This ooze seems to be getting worse over time and may not be entirely the result of Hurricane Irma. Dr. Kelble wants to hear more about these observations.

- A question was asked about the red tide and how it might be affected by the dead zone at the mouth of the Mississippi River. Dr. Kelble commented that he doesn't know of a connection between the two phenomena. The dead zone is not well connected physically, but scientists did document a hypoxic zone in the vicinity of the red tide in Southwest Florida last year.
- Dr. Kelble confirmed that the fecal indicator was affected by Hurricane Irma. Otherwise, it might have shown more improvement over time.
- An observation was shared that some of the fisheries data and trends noted may be related to other fisheries management practices/regulations and that fact should be considered in the analyses.
- Day tripper use is needed to assess the impacts especially in the Upper regions of the Keys. Danielle Schwarzmann explained that topic is one that will be addressed by the work conducted by the University of West Virginia, which will involve having an expert workshop and developing a plan to capture how to count the recreational private boater use.
- An observation about water clarity was shared. The color and clarity of the water has degraded over the years and this should be examined.

VI. SANCTUARY RESOURCE CONDITION: MARINE LIFE AND HABITAT INDICATORS

Andy Bruckner, Florida Keys National Marine Sanctuary

Dr. Bruckner gave a presentation (remotely) on marine life and habitat condition with a focus on the changes that have occurred over the last decade. Factors that affect the sanctuary include direct impacts to the environment and stressors that originate outside of the sanctuary such as regional water quality and climate change. A timeline was presented that illustrated impacts to water quality over the last decade, including drought and salinity, Florida Bay seagrass die-off, Harmful Algal Blooms (HABs), sponge die-off, Hurricane Irma and *Sargassum* strandings. The sanctuary contains five primary habitats: mangroves, shallow hardbottom, seagrass, sand flats and coral reefs. The decline of any one habitat can impact the others.

Sargassum seaweed, which is natural, but not in the high abundances seen in recent years, has impacted beaches and coastal environments. The drought in 2015 in Florida Bay caused high salinities and resulted in a seagrass die-off and cyanobacterial blooms. When bay water was transported out of the bay, it impacted hardbottom communities and caused sponge die-offs. Hurricane Irma caused physical impacts to seagrass communities, sponges, mangroves and other marine life/habitats. A positive effect of the hurricane was that it brought down salinities and helped curb HABs. Seagrass communities have also been impacted by nutrients, prop scars and Hurricane Irma. Mangroves, which protect the shoreline from hurricane and storm impacts, were significantly impacted by the hurricane. Full recovery mangroves in affected areas may take as much as two decades.

Coral decline was first documented throughout the Caribbean, including the Florida Keys, in the late 1970s. Elkhorn and staghorn coral experienced mortality due to white band disease. This loss was followed by a long-spined sea urchin die-off. In the late 1980s and early 1990s, widespread coral bleaching occurred. These ecological changes preceded the implementation of the FKNMS regulations and zoning strategy.

Temperature extremes have been stressors on the coral reefs. In 2010, temperatures in nearshore waters dropped to levels not experienced since 1977. This caused rapid mortality and mass bleaching, especially in patch reefs and areas near shore. In 2014-2015, an El Nino caused higher

than normal temperatures and caused worldwide bleaching two years in a row. In 2017, Hurricane Irma caused impacts. It was the first hurricane to directly affect the Keys since Hurricane Donna.

The most devastating event for corals has been the outbreak of Stoney Coral Tissue Loss Disease (SCTLD), which has been affecting many species of hard corals for the past five years. This disease is unusual in many ways, including that it tends to result in mortality. Species shifts have taken place in areas where stony corals have died. In areas formerly dominated by elkhorn coral, colonial sea anemones and sea fans now grow in place of elkhorn. The result of this species shift is a loss of habitat for certain fish and invertebrates and a lack of open space on which new stony corals can settle. Without stony corals, growth of the reef will halt and that will accelerate erosion. Even though many areas have been affected, there are some spots of hope throughout the reef tract. Things can be done to protect the corals. Significant progress toward the restoration of reefs have been made and significant effort to outplant corals in the sanctuary will continue.

Discussion/Questions (Council)

- In relation to the 2011 condition report, have things gotten worse than that. Dr. Bruckner explained that some areas are worse, but in the last decade, large events that are global or regional that have affected the reef. A lot of important steps have been taken such as sewage treatment. Some species affected by the hurricane have begun to rebound. In some areas in the Upper Keys, the disease has run its course and new colonies are appearing. Some of the strategies and regulatory management actions proposed (as part of Restoration Blueprint) can help to reverse the trends.
- The point was made that the reef may not be what it was before, but the area will still have fish, etc. and can still support a good economy. Dr. Bruckner noted that was a good point and things such as Everglades restoration should be followed because it can affect conditions downstream in the Florida Keys.

VII. ECOLOGICAL EARLY WARNING TOOLS AND APPLICATIONS FOR FKNMS MANAGEMENT

Matthieu Le Hénaff, University of Miami

Mr. Le Hénaff and his colleagues from various institutions have developed a tool to monitor and envision the different events/impacts that affect the marine ecosystem of the Florida Keys. These episodic phenomena include harmful algal blooms, coral bleaching, coral disease, hypersaline waters, sediment resuspension and cold temperatures. The tool may be accessed by visiting http://grafana.marine.usf.edu:3000/dashboard/db/fk-nms-early-alert-dashboard?orgId=2. It includes a location selector that allows one to see the satellite data for a selected time period and to see how it deviates from the norm. The presentation included examples of data/visualization products for HABs, the hurricane and cold water event of 2010. This easy to use tool provides a way to monitor ocean processes and water quality and will help answer condition report questions. Mr. Le Hénaff welcomes feedback for improving the tool and plans to define and test alert thresholds, and to provide email alerts to managers telling of anomalous conditions.

The Loop Current, which can be tracked through a different satellite product, carries water from the coast near the Mississippi River to the Florida Keys every year for a few weeks at a time. The Loop Current could be folded into this tool. This research is part of a larger effort: the Marine Biodiversity Observation Network MBON and NOAA's Integrated Ecosystem Assessment Program (presented on by Chris Kelble).

Discussion/Questions (Council)

- An observation was made that one of the limitations of the analysis is that it uses satellite data, which do not measure temperatures, for example, beneath the surface of the sea. This was evident in the data during the 2010 cold snap. Hypersaline waters on the bottom can't be measured either. Mr. Le Hénaff recognized this limitation.
- An inquiry was made about the sustainability of the tool created. Mr. Le Hénaff explained that the tool will need to be maintained and updated over time.

Lunch

VIII. PULLEY RIDGE AND FLORIDA KEYS CONNECTIVITY

Peter Ortner, University of Miami

Dr. Peter Ortner gave a presentation on Pulley Ridge, a mesophotic coral ecosystem (MCE) located 50 km northwest of the Dry Tortugas. This report is based on the results from a multi-year, multi-agency project focused on studying the connectivity between Pulley Ridge and the Florida Keys. MCEs are light-dependent coral ecosystems that occur at depths of 30 to 40 meters to over 100 meters. MCEs (in the Atlantic Ocean) are found in tropical and subtropical regions and are dominated by coral, algae and sponge species. MCEs are important because they appear healthier than shallow water reefs and are a possible source of coral and fish larvae for recruitment in downstream areas, including the Dry Tortugas and Florida Keys. Pulley Ridge, which is 300 km long by 15km wide, is the deepest MCE off the continental U.S. In 2005, the area became a Habitat Area of Particular Concern (HAPC), which has prohibitions against bottom fishing gear and anchoring. Because of its importance as a habitat, Gulf of Mexico Fisheries Management Council expanded the HAPC to include additional areas of the ridge. (Long-lining is permitted, but anchoring and other bottom gear are not.)

Two main objectives of the Coral Ecosystem Connectivity Project involve assessing community structure and understanding population connectivity. An ROV was used to conduct transects to quantify the benthic habitat/organisms at the ridge. High tech divers were used to collect samples for genetic analysis. Each of the three areas of the ridge have different dominant species. Red grouper pits, which provided rugosity on the seafloor, were evident. Lionfish appeared to get more numerous as the study progressed. In 2003, high coral cover was evident compared with cover in 2015. The cause of decline is not really known. In 2014 and 2015 vast fields of plate coral were found outside of the protected area and formed the basis for expansion. The majority of plate corals outside the HAPC were new recruits.

Physical connectivity was demonstrated using trajectories from drifters, which showed how passive larvae can be transported downstream to the oceanside of the Keys. The Loop Current also physically connects the ridge to the Keys and Dry Tortugas. Bicolor damselfish were used as an example of a fish that could produce larvae on Pulley Ridge that are carried downstream. Using population densities and other factors, they estimated that 9% of the total regional egg production in the Florida Keys area is from Pulley Ridge. Biophysical modeling indicates that Pulley Ridge red grouper recruits reach the Dry Tortugas/Florida Keys. Genetic studies showed connectivity between the two areas for bicolor damselfish, red grouper and lionfish. Each species formed single population across the entire area. The great star coral shows some connectivity between the ridge and the Florida Keys and showed connectivity with Flower Garden Banks upstream. Pulley Ridge giant barrel sponges showed a connection with the Dry Tortugas, but populations were distinct in other areas. In summary, mobile species of fish with long planktonic larval stages showed high connectivity. In conclusion, the robust populations of Pulley Ridge are physically connected to the Florida Keys and

fish species and giant star coral are ecologically connected. The ridge increases the resilience of reefs in the Keys by providing an upstream source of larvae.

IX. MARINE ZONING AND REGULATORY REVIEW: PLAN FOR RESTOARTION BLUEPRINT PUBLIC RELEASE

Sarah Fangman, Florida Keys National Marine Sanctuary

Superintendent Fangman recognized the sobering challenges presented to this council today, and recognized the Restoration Blueprint will not be able to address each of these challenges. However, this plan will present a roadmap of options moving forward to ensure we maintain a healthy Florida Keys.

The intention of sanctuary management is to release the Restoration Blueprint in August of 2019. While we cannot guarantee this release date, we are hopeful to present this information to the council at that time. Once the draft is released, sanctuary staff will hold informational meetings for the public, and a comment period will last for at least 120 days. Once those comments are compiled, draft regulations would be released for another round of public comment. Finally, the new management plan and zoning scheme would be released.

Discussion

- There will be a concurrent congressional and state review of any proposed regulation changes. For the state of Florida, the Department of Environmental Protection will be working to educate state leadership before the release of possible draft regulations. Simultaneously, NOAA leadership will be ensuring congressional representatives are appropriately briefed on the process before release of the Restoration Blueprint.

Break

X. PUBLIC COMMENT

Captain Bill Kelly, Florida Keys Commercial Fisherman's Association
Captain Bill Kelly gave an update on the Chinese lobster tariffs. The Chinese did purchase at high levels, but purchased at 2 dollars less per pound. This resulted in 8.5 million in lost wages for the fishermen. The University of Florida has documented the turnover at x6, so this resulted in a loss of 51 million dollars from the county economy. They hope this trade war gets resolved soon. The Chinese have the option of purchasing lobster from other parts of the Caribbean etc. If this situation results in a collapsed fishery, it will be devastating to the county's economy. About 4500 jobs are directly related to this industry. The value of the fishery overall is 55 million dollars. With turnover, that makes the value to Monroe County 330 million dollars. The commercial lobster industry is working with Senator Rubio, Senator Scott and the Secretary of Commerce on this issue.

Red tides have been devastating from the middle Keys up to Clearwater, Florida and this has affected stone crab harvest. The low levels of dissolved oxygen that occurred with the red tides caused stone crabs to flee to other areas, which resulted in higher than normal catches in these areas. Commercial lobstermen are working with stone crab scientists at FWRI and Mote Marine Lab. A meeting will be held to discuss these issues. They are considering traps with O-rings that allow small crabs to escape and would like to make these mandatory by 2025. This saves smaller crabs from becoming lunch for larger crabs. The stone crab fishery is the second most valuable in the state.

Pulley Ridge is an important source for red grouper harvest. Lionfish catches as by-catch have been going up and are creating a problem for the grouper. Commercial fishermen are harvesting more lionfish as by-catch per year than all the lionfish derbies combined. They have been working with FWRI on a lionfish trap.

Commercial fishermen have been involved in the general management plan (for FKNMS) since its inception. They participated in developing new Sanctuary Preservation Areas and were involved in the development of the 60 no lobster trap sites. In the near future, they are looking forward to working with Superintendent Fangman and the entire team.

Devin Tibor, National Parks Conservation Association
Ms. Tibor is a fellow for the National Parks Conservation Association (NPCA). Marine conservation is a focus of the NPCA and that includes restoration of fish populations. In 2014, the national park service adopted a fisheries management plan for Biscayne National Park. The goal of the plan was to increase average size and population of target fish species by at least 20%. NPCA is working with FWC to create regulations to achieve that goal and expect the draft regulations to be rolled out in July in Stuart, Florida. This will kick off a month-long public comment period for members of the public to give input. This is an excellent opportunity to learn more and get involved.

Stacie Shulman, Marine Zoning Works for Me
Ms. Shulman is representing *Marine Zoning Works for Me*, a collaboration of nonprofit organizations that focuses on engaging people in the Restoration Blueprint for the sanctuary. The organizations include: The Nature Conservancy, National Parks Conservation Association, Last Stand, Florida Keys Environmental Fund, Audubon and Isaac Walton League of America. Marine zoning is an important management tool that helps us protect marine ecosystems by allowing people to use them within the sanctuary. It determines regulations within these boundaries. Regulations balance the needs of the ecosystem with access for recreation and commerce. Some examples of marine zones in the sanctuary include: ecological reserves, sanctuary preservation areas, wildlife management areas, special use areas and existing management areas. One great example of a marine zone is Tortugas Ecological Reserve where overfished species such as mutton snapper and red and black grouper increased in size and abundance in the reserve. Even the mutton snapper spawning aggregation was allowed to recover in the reserve. We believe that in order to rebuild our damaged and threatened ecosystem in the Keys, Restoration Blueprint needs to thoroughly analyze current marine zones and change boundaries or add more zones to improve the condition of natural resources to provide for sustainable use. We also encourage people to get involved in the comment process in order to create the best Restoration Blueprint. If you would like any more information, check out our website at marinezoningworksforme.com.

Lad Akins, **Sara Rankin**, Florida Keys National Marine Sanctuary Foundation
Mr. Akins introduced himself and Sara Rankin, the new leadership of the Florida Keys Chapter of the National Marine Sanctuary Foundation. The National Marine Sanctuary Foundation is a Washington D.C. based foundation that supports goals and work of all 14 marine sanctuaries. Four of the sanctuaries have local chapters. The Florida Keys chapter is a rebirth of what was the Sanctuary Friends Foundation, which was around for many years and involved great people. Sarah is based in the lower Keys and he is based in the Upper Keys. As a longtime resident of the Keys, he has conducted research and enjoyed the Keys for many years. He has known Sarah and Joanna a long time and is very exciting to work to support the goals of the sanctuary and council in a way that a nonprofit can. They just came on board recently. It is an opportune time since the Restoration Blueprint is about to come out. Some of the national programs will continue and new programs will

be developed. They are looking forward to meeting with Sarah and Joanna to see what the priorities and needs are and support these needs and goals.

Ms. Rankin addressed the council. She is very glad to be here during such an exciting time. In her lifetime, she hasn't seen things coming together like this before. She is looking forward to working with everyone.

FWC Lobster Information Booth:
A question was asked about whether or not there will be a lobster information booth this year. Gena Parsons explained that while she could not speak for FWC, it is her understanding that there will be an effort on the water, and booths in Key Largo and Islamorada. They are also starting a campaign for the Florida Coral Crew—an opportunity to build pride and ownership in the Florida reef tract. They will sharing information on lobsters as well as on corals and how to decontaminate dive gear. Marlies Tumolo added that the sanctuary distributes lobster brochures to businesses throughout the Keys.

XI. NANCY FOSTER SCHOLARS AND FLORIDA KEYS NATIONAL MARINE SANCTAURY PROJECT HIGHLIGHTS

Grace Casselberry – Predator / Prey Dynamics: Sharks and Atlantic Tarpon

Ms. Casselberry introduced tarpon fishing within FKNMS, which is a popular recreational sport for the fight and grace of the fish, including the acrobatics when a fish is hooked. Tarpon congregate in the Florida Keys by the thousands before heading off shore to spawn, and due to the geographic nature of Bahia Honda, there is a hotspot for tarpon fishing in that channel.

Because this fishery is mainly catch and release, loss of tarpon is not generally due to harvest but to depredation and post-release mortality. The motion of a fish struggling against the line attracts sharks to the area and leads to an increase in depredation. Because the fishery generally targets the largest fish, and the largest fish produce the greatest number of young, the loss of a large tarpon can have cascading impacts on the tarpon population. In addition, shark-angler tension has the potential to create issues for shark populations, and anglers consistently losing fish may have an economic impact on fishing guides in the Florida Keys.

Some research questions that can be answered include spatial surveys to understand the migration patterns of the tarpon and the sharks. This can be done utilizing acoustic tags and receivers in a grid system, or visual surveys from a fixed location. Current efforts are focused on tagging hammerhead sharks in the Bahia Honda area with both acoustic and visual cattle tags.

Discussion

- Most of the observations and guide knowledge in the specific study area have been greater hammerheads predating on tarpon, although bull sharks may also play a role especially in other areas of Florida.
- There is a distinct signature between depredation and natural predation, as the fish would swim down in a natural event but are forced to the surface during a fishing event.

XII. MEMBER UPDATES OF NOTE

Chris Bergh brought attention to a recent study published by U.S. Geological Survey, University of California at Santa Cruz, and The Nature Conservancy which describes the value of the coral reefs for coastal protection and natural shoreline resilience. According to this study, coral reefs provide

$1.8 billion per year in direct avoided losses from flooding, with over $700 million of that estimate in Florida.

Alison Higgins, sustainability coordinator for the City of Key West, is standing in for Mayor Terry Johnson. Tonight the city council is voting on whether to write a policy on banning disposables from city properties, including parks, beaches, etc. This would apply to all city festivals, street fairs and vendors. The policy would be the basis for a new regulation. Key West is the first city to ban the sale of sunscreen with oxybenzone and octinoxate, two ingredients considered harmful to marine life. The city has tasked Alison with writing up information on the bad products and good products and identifying anything the city can do on other policy levels to help the reef. She could use some help with this effort and might be approaching the Water Quality Protection Program.

XIII. AGENCY REPORTS

Superintendent's Report, Sarah Fangman, Florida Keys National Marine Sanctuary

- Michael Carver, who was acting Deputy Superintendent, had to return to his job at Cordell Bank NMS in California. Bridget Hoover, who is based at the Monterey Bay NMS, is now acting deputy superintendent of the Florida Keys. At Monterey, she is manages of their Water Quality Protection Program. She brings her experience and will be here for four months.
- Amanda Netburn, Oceanographer and National Presidential Fellow, is on detail with the Florida Keys NMS. She is based in the Key West office and will be helping with Restoration Blueprint.
- Tori Barker, a coral fellow with the National Coral Program, is based at the Key West office and will be here for at least a year working on coral related issues.
- The Eco-Discovery Center in Key West is getting an update. This includes refreshing the exterior and interior. Funds were provided by the Tourist Development Council. The Key West facility is also receiving some updates, including landscaping and recovering from the hurricane.
- In terms of coral restoration, the work is continuing on an ambitious restoration plan, which involves careful ground-truthing. This process is moving forward to the next level. Intervention and work on the coral disease continues and another workshop will be held in August.
- It is a busy field season. FKNMS is trying to accommodate requests for boats, etc. from partners, but because the season is so busy, regrettably, the sanctuary may not always be able to help.

Florida Department of Environmental Protection, Joanna Walczack

Office of Resilience and Coastal Protection:

- Coral Disease Intervention: The Coral Disease Intervention Strike Teams composed of researchers at Nova Southeastern University and former special operations divers from FORCE BLUE have completed their current mission to treat priority coral colonies across key sites within FKNMS. In total, they treated 5556 lesions across 1153 colonies, the majority of which (~60%) were at Looe Key.
    - Scientists from NSU will continue priority disease intervention in the coming months. There is also a new push in the coral disease response effort to identify and test more effective whole colony treatments (e.g., probiotics), that may also help prevent colonies from becoming infected.

    - Currently, two experimental treatments were being applied: mixtures of chlorine or amoxicillin. Preliminary data show that success rates 2 months after treatment were much higher with the amoxicillin (~79% success) vs. chlorine (~25% success).
    - Sites treated range from SPAs in the Upper Keys to Looe Key.
    - Treated colonies have yellow cattle tags marking them. Members of the community can assist with monitoring coral treatments by taking photos of tags and the adjacent treated coral colonies. More information is available at https://floridakeys.noaa.gov/coral-disease/citizen-participation.html. Visit www.seafan.net/tags to submit photos.
- NFL Coral Reef Restoration Project: In 2020, Miami will be hosting Super Bowl LIV, which also marks the 100th anniversary of the NFL. In honor of this event and as part of the environmental initiatives the NFL pursues in each Super Bowl host city, the Super Bowl Host Committee (SBHC) has launched the "Ocean to Everglades" (O2E) initiative to promote sustainability and improve the resilience of South Florida's communities.
    - Last week, as one of the O2E activities, the NFL helped sponsor a reef restoration project. On June 13th, DEP and partners from the SBHC, NFL Green, FORCE BLUE, the UDT-SEAL Association, University of Miami, Frost Museum of Science, and Verizon out-planted 100 staghorn corals on a reef offshore of Key Biscayne. The site will be monitored over the next several months, and with progress "unveiled" in conjunction with the Super Bowl next February. There is also a hope that the convening power of the NFL can be further leveraged to allow for a more robust restoration effort at this site. A news clip about the project is available here: https://www.nbcmiami.com/on-air/as-seen-on/Super-Bowl-Committee-Announces-Coral-Reef-Restoration_Miami-511265152.html.
    - Overall, this project will help raise awareness of coral reef issues globally and in Florida especially among the large audience of NFL followers.
- South Florida Ecosystem Restoration Task Force. At the end of April, DEP and FKNMS presented to the South Florida Ecosystem Restoration Task Force. The presentation was intended to remind the Task Force about the important connection between the Everglades and Florida Reef Tract.
- FWC Commission Meeting – A multi-partner team also spent 2 hours briefing the FWC Commission. Chairman Spottswood is particularly interested in learning more about coral reef issues.
- The National Academy of Science committee on coral reef interventions released a final report on "A Decision Framework for Interventions to Increase the Persistence and Resilience of Coral Reefs." This report was designed to help guide coral reef managers in preserving corals in a changing climate and rapidly degrading environmental conditions and provides a decisions framework to help managers assess and implement interventions that are suitable for various regions and management goals.
    - A first report, released in November 2018, reviewed the science – including feasibility, potential scale, risks, limitations, and infrastructure needs – for 23 novel approaches.
    - A video overview is available at: https://www.youtube.com/watch?v=rxVD2I31RCQ&t=3s; the final report can be downloaded at: https://www.nap.edu/download/25424.

Florida Park Service

- The Bureau of Design and Construction, though the contractor Coastal Systems International, recently completed a coastal alternatives study regarding the beach erosion at Ft. Zachary Taylor State Park and the effects of the breakwaters on the beach. There are currently no specific plans, funding or permits to implement any of the suggested recommendations.
    - Any questions should be directed to Janice Duquesnel, District Biologist (Janice.Duquesnel@dep.state.fl.us).

Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, John Hunt

The process for implementing the Biscayne National Park Fishery Management Plan (FMP) has been mapped out:

- A review and discussion will be held with the FWC Commissioners at the July 2019 meeting held in Stuart. The dates are July 17 and 18. At this time, we do not know which day will contain this agenda item. At this meeting, staff will present the background and history, introduce the science plan, and outline a suite of ideas for Commissioner approval. Public Comment, as always, will be taken. We will request Approval from the Commissioners to take these ideas and concepts out to public workshops and work to receive comments in other ways (website, etc.)
- Public workshops on the ideas and concepts that the Commissioners approve are scheduled for:
    - August 6 – Miami
    - August 7 – Florida City
    - August 8 – Key Largo
- Information for the Commission meeting will be posted on the Commission website soon. The link is: https://myfwc.com/about/commission/commission-meetings/july-2019/
- The FMP Implementation is tentatively scheduled for the October (possible draft rule) and December (possible final rule) Commission meetings. Florida Bay Presentations and a discussion are also being planned for the July meeting. This agenda item is expected to occur on the same day as the Biscayne agenda item. Again, check the website for advance materials.
- FWRI just hired C.J. Sweetman, who earned a PhD from Virginia Institute of Marine Science, where he has a lot of experience with the Chesapeake Bay Sampling Program. C.J. was hired as the representative in the Florida Keys FWC Division of Marine Fisheries Management.
- FWRI was successful in receiving a grant from NOAA Section 6 program, which is the endangered species section. This grant is in partnership with FKNMS and Reef Renewal, a new organization started by Ken Nedimyer. This grant will fund two new restoration nurseries and developing in situ techniques for listed species not yet propagated.
- The Biscayne National Park's Fishery Management Plan, which involved members of the advisory council, was completed. The science plan has been finalized; all internal reviewers have signed off on it. FWC has been meeting with BNP staff and have a suite of regulations to take to the commissioners. At this meeting in Stuart (July 17-18). This item will be heard on the 18th and FWC staff will present background and history of park's science plan and outline of suite of regulations and ideas for approval to take out to public workshops. It won't be draft rules at this meeting, but simply ideas.

Florida Fish and Wildlife Conservation Commission, Law Enforcement, David Dipre

- FWC just completed its review by Florida Keys National Marine Sanctuary and NOAA Marine Fisheries Law Enforcement. They received a good review, but need to improve on

some administrative tasks. FWC and NOAA Marine Fisheries/FKNMS entered into a Joint Enforcement Agreement (JEA) to facilitate more effective enforcement while on the water. FWC officers are deputized federally and can make cases in FKNMS and/or federal waters. In the review, it was noted that FWC is not taking credit for everything that the officers do while on the job. Sometimes, it difficult to quantify the actions taken. Each year, FWC receives a sum of money to cover the federal enforcement actions they take.

- FWC and other state and local agencies will be at an upcoming meeting to discuss the issues related to Indian Key fill. Some of the overcrowding issues can be resolved. Signage is needed to have enforcement. This problem is not just at Indian Key fill. Every space down to Marathon is occupied and contributes to so much trash entering the water. Everyone should have the phone number for FWC on their phones. People should call in when they see something. Enforcement doesn't always involve making an arrest. Education is a big part of it.
- FWC is putting in overtime to keep a check on environmental crimes.

Note: NOAA OLE is expected to station some new law enforcement officers in the Florida Keys. NOAA OLE will be providing extra enforcement for lobster sport season this July.

NOAA's National Marine Fisheries Service Southeast Region, Heather Blough

- NOAA Fisheries has announced July 1 as the start date for the $44 million fishery disaster award Florida received to address Hurricane Irma-related impacts.
- The agency is currently requesting public comments on the South Atlantic Fishery Management Council's proposal to allow new types of sea turtle release gear to be used in the snapper-grouper fishery. The comment period ends August 12. The same allowances took effect in the Gulf of Mexico in early June.
- NOAA Fisheries is opening the South Atlantic red snapper fishery to commercial fishing July 8 and to recreational fishing July 12-14 (Fri-Sun) and July 19-20 (Fri-Sat). At its June meeting, the South Atlantic Council voted to hold public hearings on new options to set those opening dates in future years. The schedule for those hearings will be posted on the Council website.
- Also at its June meeting, the South Atlantic Council approved for NOAA Fisheries review and implementation a new red grouper rebuilding plan that would extend the spawning season closure through May off the Carolinas and establish a 200-lb gutted weight commercial trip limit region-wide, and discussed potential changes to dolphin regulations, including revised sector allocations and a reduced recreational vessel limit off Florida. The Council continues to evaluate various circle hook options, which they intend to approve at their September meeting. Those include an option to extend the requirement to the Keys but that is not their current preferred alternative.
- At the Gulf of Mexico Fishery Management Council's June meeting, they approved for NOAA Fisheries review and implementation a proposal to reduce the greater amberjack commercial trip limit, began looking at regulatory changes to help ensure the recreational fishery has both a spring and fall season, and approved new gray snapper reference points and catch levels for public hearings. Also, the Council is considering changing conditions of the 2-day bag limit allowance on multi-day for-hire trips for reef fish and mackerels.
- In March, NOAA Fisheries declined a petition to list the Cuvier's beaked whale in the Gulf of Mexico.
- In April, the agency listed Bryde's whale in the Gulf of Mexico as endangered, citing vessel strikes, ocean noise, energy activities, oil spills and responses, and fishing gear entanglement as primary threats.

National Park Service, Dry Tortugas National Park, Meaghan Johnson

- The private seaplane that crashed at Dry Tortugas National Park on April 23rd, 2019 and sank in 50ft of water, was recovered on May 15th by contractor Baltimore Crane. The seaplane is currently on the barge waiting to transport through the Sanctuary to Key West.
- Staff and volunteers collected over 1,100lbs of marine debris from park islands last week, helping to clear the beaches for continued turtle nesting. There have been a total of 182 nests park-wide since May, and those numbers are increasing daily.
- The park will be conducting a coral rescue effort with TNC, FWC and Florida DEP July 1-July 5th, following the recent collections in the Marquesas. We will be collecting 480 corals of 15 priority species which will be transported to the University of Miami RSMAS. This will be completed as a management action by the park.
- A number of coral monitoring groups will be in the park over the next few months. These include FWC's CREMP (coral reef evaluation monitoring program) and DRM (disturbance response monitoring) programs as well as the park service Inventory and Monitoring group from the South Florida Caribbean Network, which will be looking for coral disease as part of annual monitoring.

NOAA's Office of Law Enforcement, Kenny Blackburn

- Investigator Blackburn reported that NOAA Office of Law Enforcement, in partnership with other federal agencies, charged Terri Gordon-Sellers, with making false statements to federal investigators regarding her part-time employment with federal contractors, which constituted a conflict of interest. This is part of an ongoing investigation involving the Port of Miami expansion project, a dredge project that took place in 2014 through 2016 to accommodate the larger Panamax freighters.
- Officer Robb reported that they now have a 30 foot patrol vessel in operation, based out of the sanctuary office in Key West.
- A number of sanctuary related cases were made since late January: four actively fishing in the North Tortugas Ecological Reserve (TER); four actively fishing in South TER; three violations of the Area To Be Avoided (ATBA); a shrimp boat trawling in the North TER, a shrimp boat in possession of lobsters with no federal permit and three grounding cases. They also seized a maritime historic anchor that was recovered by a lobster boat.

U.S. Navy, Ed Barnum

- Least tern nesting has been moderate this year. Least terns are using the nesting platform installed by the Navy on Big Coppitt. No Roseate tern nesting has been documented.
- Sea turtle activity has been moderate on Truman Annex with false crawls and one confirmed nest. No nesting activity has been documented on the Boca Chica southern shoreline.
- Contract awarded to conduct crocodile population and nesting surveys and develop an American Crocodile Management Plan for the Naval Air Station.

XIV. UPCOMING MEETING AND CLOSING REMARKS

The next advisory council meeting will be held August 20th, 2019.

Adjourn.