

FLORIDA KEYS NATIONAL MARINE SANCTUARY ADVISORY COUNCIL

**Hyatt Place
1996 Overseas Highway
Marathon, FL 33050
Tuesday, June 19, 2018**

FINAL MINUTES

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

Council Members

Boating Industry: Bruce Popham (Chair)
Tourism – Lower Keys: Clint Barras (Co-Chair) (absent)
Citizen at Large – Lower Keys: Mimi Stafford
Citizen at Large – Middle Keys: George Garrett
Citizen at Large – Upper Keys: David Makepeace (absent)
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 (absent)
Fishing – Commercial – Marine/Tropical: Ben Daughtry (absent)
Fishing – Commercial – Shell/Scale: Justin Bruland
Fishing – Recreational: Ken Reda
Research and Monitoring: David Vaughan (absent)
South Florida Ecosystem Restoration: Jerry Lorenz
Submerged Cultural Resources: Corey Malcom (absent)
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
Fishing – Charter Sports Fishing: Richie Gomez
Fishing – Commercial – Marine/Tropical: Kara Rauch
Fishing – Recreational: Bruce Frerer
Research and Monitoring: Shelly Krueger
Submerged Cultural Resources: Diane Silva

Agency Representatives (present)

Florida Department of Environmental Protection: Mark Knowles

FWC Division of Law Enforcement: Capt. Dave Dipre

National Park Service, Everglades and Dry Tortugas: Christopher Kavanagh and Meaghan Johnson

U.S. Coast Guard (USCG): LT. Quentin Long and Captain Francisco Rego

U.S. Navy Naval Air Station Key West: Matt Martin

US Fish and Wildlife Service, Florida Keys National Wildlife Refuges Complex: Christine Ogura

NOAA National Marine Fisheries Service: Heather Blough

Local Municipalities (present)

City of Key Colony Beach: Hon. John DeNeale

City of Marathon: Hon. Michelle Coldiron

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

Pledge of Allegiance

Roll Call

MOTION (passed)

A motion to approve the April 2018 minutes was made by Ken Reda and seconded by Ken Nedimyer. The minutes were approved. A motion to adopt the agenda was made by Chris Bergh and seconded by Mimi Stafford. The agenda was adopted without change.

To view the presentations and video from the meeting, please visit the sanctuary's website advisory council meeting page at <https://floridakeys.noaa.gov/sac/meetings.html?s=sac>.

Chairperson's Comments

Chairperson Bruce Popham thanked Clint Barras and twooceansdigital.com for providing the leadership and technical support to film and live-stream these meetings, and to sanctuary staff for supporting these meetings. Chairperson Popham reminded council members that there is a new standing agenda item—Member Updates of Note. If anyone has an update, please let Clint, Beth or him know. Additionally, there are two public comment periods today.

Superintendent Sarah Fangman introduced Florida Keys National Marine Sanctuary's new research coordinator, Dr. Andy Bruckner, a coral reef ecologist that has conducted research, monitoring, restoration and conservation projects on coral reefs worldwide. Dr. Bruckner expressed his excitement and enthusiasm for joining the sanctuary team in the Florida Keys, and looks forward to working with the council on various research topics.

FKNMS Advisory Council Coordinator Beth Dieveney announced that South Florida Ecosystem Restoration member Pete Frezza will be stepping down from his role at the council due to a change in job position. Alternate Jerry Lorenz will be acting in the member role until a recruitment process can begin.

II. REPORT OUT FROM CAPITOL HILL OCEANS WEEK

Captain Will Benson, Charter Fishing Flats Guide member, provided a report from Capitol Hill Oceans Week.

Will Benson, who is *Volunteer of the Year* for FKNMS, was recognized as the national *Volunteer of the Year* while attending Capitol Hill Ocean Week (CHOW) in June. Captain Benson was honored for his work with the Blue Star Fishing Guide program.

Captain Benson accepted this award with acknowledgement of the entire council for their role in community relations and sanctuary management, noting that he is proud to be part of an incredibly high-functioning council that serves as a model for the advisory councils across the system.

Aside from accepting this award, Captain Benson also worked throughout CHOW meeting with senators and staffers to request increased consideration and funding toward coral reef ecosystem health, specifically water quality and disease events. He noted that many on Capitol Hill seemed updated on these issues, and that the value of the marine ecosystem is understood to those in Washington D.C. as well as by those in the Keys. He received many questions regarding marine debris issues, coral reef assessments, and community health, and is looking forward to reconnecting with those congressional staff members to continue the dialogue relating to these issues to accomplish shared priorities.

Superintendent Fangman echoed Captain Benson's regards, and commented on his leadership and participation during the conference and panels. He was a great ambassador to not only the fishing community and the Florida Keys, but to the National Marine Sanctuary System as a whole.

III. ADVISORY COUNCIL SUB-COMMITTEE AND WORKING GROUP UPDATES

Core Group Subcommittee

Sanctuary Advisory Council Coordinator Beth Dieveney gave an update on the work of the Advisory Council Core Group.

The Advisory Council Core Group convened to help shape the outreach and engagement process leading up to and following the release of the Draft Environmental Impact Statement (DEIS) for the on-going marine zoning and regulatory review effort. The objectives of this nine member group are to identify specific audiences, and topics for targeted public outreach, identify opportunities to inform and engage the public in this process, identify specific opportunities for council members to engage the public, and provide input for how to engage and inform the public when the DEIS is released. Following a call last month, the core group created a list of topics and audiences for public outreach.

The group identified that the overarching goal for this outreach is to convey "why" an updated management plan is needed including conveying to the public the current condition of the sanctuary, the science of marine protected areas, and the economic effects of healthy habitats. Communicating these examples to the public will be integral to inform the public before the release of the DEIS. Various consistencies such as charter boat associations, rotary clubs, dive shops, and industry representatives were identified as target audiences for these outreach topics. If members have additional stakeholders that they believe would benefit from these topics, please help us identify

those audiences.

The next steps in this process will include an in-person meeting in July to focus on providing input on crafting those messages, opportunities for public engagement, and how the council can be involved as individual members and as a whole.

Discussion

- Council members brought up additional outreach audiences and locations such as: local city and county government, property owners associations, recreational boaters, school groups and classrooms, hotels, magazines, and restaurants. SAC coordinator Beth Dieveney encouraged council members to identify ways to reach these individuals in their communities, where they can represent the council and provide that outreach.
- Members discussed cultural differences that would need to be addressed, either by addressing language barriers or increasing diversity in outreach campaigns.
- Timing, focus, and evaluation are all important components of this process. For example, increasing messaging during lobster season when visitor numbers increase. Additionally, ensuring messages are targeted, but wide-spread, will assist with focusing the message.
- Educational messages need to be marketed correctly. The Tourism Development Council (TDC) recognizes this concept, and plans to roll out sustainability campaigns domestically this year.

Superintendent Sarah Fangman Comments

Superintendent Fangman provided an update on the release timing of the DEIS. The sanctuary is still finalizing alternatives to include the most recent scientific reports, the economic and ecological impacts of the proposed alternatives, and working with our state and federal partners to ensure consistent language throughout the alternatives. The DEIS process is recognized as the blueprint of the future of the Florida Keys, and is a top priority for sanctuary managers. The document is estimated to be finalized by fall 2018, where it will then be relayed to leadership from NOAA and USFWS for approval, and finally to the State of Florida. The current public release goal is spring 2019, which will provide ample time to begin the communications process prior to this release. These communications include tools such as interactive maps, targeted messages and materials, and outreach so the public can fully understand the alternatives proposed and provide thoughtful, informed comments on the draft.

Blue Star Fishing Guide Working group and Program Launch

*Working group chair: Will Benson, Charter Fishing Flats Guide member
Nicole Uibel, Florida Keys National Marine Sanctuary*

Blue Star Fishing Guides, sponsored by Florida Keys National Marine Sanctuary (FKNMS) and the National Marine Sanctuary Foundation, was launched in May 2018. Since launch, 15 operators have begun the process of certification which includes agreeing to program criteria, participating in an initial training, and completing a Blue Star evaluation. Operators are certified based on calendar year, and will be required to complete refresher training and evaluations each year to continue to be recognized as a Blue Star Fishing Guide.

To date, three operators have completed the recognition process, including World Angling, Forever

Young Charter Company, and First Choice Charters. In addition, there are multiple operators who are in the process of completing their certification.

This program will be published/promoted through traditional and social media marketing, as well as presented to various captains meetings and charter associations to recruit operators. If any charter fishing operators are interested in becoming certified, please visit www.sanctuarybluestar.org or contact Bluestar.Fishing@noaa.gov.

Discussion

- It was noted that some of the Blue Star Fishing Guide practices may exclude certain charters, including a specific note to avoid targeting fish during a spawn. Program coordinator Nicole Uibel clarified that this program is designed to be adaptive, and that specific practice can be revisited during the annual framework review process. The program is not designed to exclude captains who are responsible stewards of the resource, but to elevate those captains for visiting anglers booking a charter.

Marine Debris Working Group – Goal: Clean Seas Florida Keys

Marlies Tumolo, Florida Keys National Marine Sanctuary, gave an update on the working group's progress on Goal: Clean Seas Florida Keys.

Ms. Tumolo explained that Goal: Clean Seas Florida Keys launched with funding support from the National Marine Sanctuary Foundation and has held three trainings with over 40 participants from 14 dive shops. Of those shops, nine have completed the additional step of obtaining necessary permits from FKNMS and FWC, and two of those dive shops have applied for funding.

The sanctuary recognizes that marine debris disposal is another aspect of this program, and Monroe County has been an important partner in this effort. The solid waste transfer stations in Key Largo, Long Key, and Cudjoe Key have agreed to waive disposal fees for permitted dive shops conducting cleanups for Goal: Clean Seas Florida Keys.

In addition to these underwater cleanups, shoreline cleanups utilizing volunteers and non-profit partners will be conducted on a regular basis, beginning July 14th and continuing every second Saturday of each month. For more information about shoreline cleanups, contact FKNMS' acting Volunteer Coordinator Nicole.Uibel@noaa.gov.

If any dive shops are interested in applying for funding, or participating in this program, please visit www.marinesanctuary.org/GoalCleanSeasRFP or contact Marlies.Tumolo@noaa.gov.

Break

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

Dr. Karen Neely, NOVA Southeastern University, gave a presentation about coral disease in the Florida reef tract with an emphasis on pillar coral and treatment techniques.

Dr. Neely explained that in 2013-2014, they first began to see disease in pillar corals in the Upper Keys. At the time, scientists had determined that 750 colonies with 155 different genotypes were in

existence. Dr. Neely worked closely with Cindy Lewis from FWC FWRI lab in Marathon on this project to collect and classify genotypes of pillar coral colonies.

Some pillar coral colonies have been banked in both wild and gene banks, some in gene banks only, some are extinct and some exist in the wild only. Support for this project comes from partners with onshore and offshore nurseries at Mote Marine Lab, Coral Restoration Foundation, Keys Marine Lab and Florida Aquarium, NOAA Coral Health and Disease Center.

Over half of the coral species are susceptible to this disease, including 5 of the Endangered Species Act (ESA) listed and several reef-building species. Many colonies are dead or actively dying. Through field surveys with a variety of institutions/agencies and using pillar coral as a disease indicator, scientists were able to identify how far the disease has spread from the Upper toward the Lower Keys. It appears to be progressing at a rate of 10 to 20 km/month.

Scientists have experimented with a variety of treatment approaches, including creating trenches and other barriers and applying antibiotics. Some success was achieved with the application of antibiotics in the lab, but this method didn't work well in the field. While much has been learned, at this time no great single method has been identified yet. To be successful, they believe a trench of sorts is needed to break the barrier connection, along with the right kind of barrier and antiseptic/antibiotic treatment. A variety of field treatment experiments have been conducted and while progress has been made, they have not been able to halt the advance of the disease on infected colonies. Scientists have been working with USDA and other agencies regarding the use of antibiotics on the reef.

Discussion:

- A suggestion was made to look into using human bone cement (with antibiotics) as a barrier.
- Interest was expressed in learning what may have been the environmental trigger behind the outbreak. Dr. Neely explained that multiple factors may have contributed, including land based pollution and thermal stress. But, no one factor has been identified and it will be difficult, if not impossible, to do so. It has also been difficult to identify the pathogen. In many cases, it is a suite of pathogens working together to cause disease in corals.
- In response to whether this disease has been seen in other pillar corals in the Caribbean, they have had a report from Jamaica, but it has not been confirmed.
- Concerns were expressed regarding people spreading the disease from one place to another and about the long-term and secondary ecological impacts from this loss of habitat.
- It's not known whether pillar corals outplanted to replace lost corals will succumb to the disease themselves. A variety of corals are being cultivated in nurseries that could be outplanted, if desired.

Superintendent Fangman announced that the sanctuary, NOAA's Coral Program and FDEP are hosting a coral disease workshop in July. Experts from different agencies/institutions have been invited to participate. The purpose of the workshop is to develop a response plan that addresses a variety of goals, including research and monitoring questions, intervention options and restoration approaches. Additional goals include identifying ways to engage citizens in increasing the knowledge base and ways to communicate effectively to the variety of interested parties on this very important topic.

V. FLORIDA KEYS HABITAT MAPPING: PROGRESS AND PRIORITIES

Chris Taylor, NOAA National Center for Coastal and Ocean Science (NCCOS), gave a presentation on habitat mapping in the Keys.

Habitat maps are an essential piece of information for effectively managing the resources of the sanctuary. Knowing the types and distribution of habitats informs research activities, placement of marine zones, and mooring buoys, among other things. The sanctuary has been working with partners in NOAA to compile all the known habitat maps and prioritize mapping efforts including pre- and post-hurricane assessments. A recent workshop with these partners was held to identify additional areas of interest for habitat mapping, demonstrate a new mapping atlas, understand post-hurricane changes, and prioritize planning for future mapping projects.

Beginning in 2015, multiple agencies converged mapping technologies, including satellite images, to create an integrated habitat map of FKNMS. Even with this data, only 39% of the sanctuary was completely mapped, with deeper and offshore areas lacking data. To fill in these gaps, NCCOS funded various cruises to begin mapping these areas. Although challenges arose, these cruises provided data for an additional 30% of the sanctuary habitat mapping project. Utilizing high resolution sonar, this data allowed identification of small scale reef features, which can be used to determine spawning sites, ground truth satellite data, and fine-tune habitat mapping. After this mapping effort, NCCOS solicited federal, state, and academic institutions to share benthic images to help further ground-truth this data. More than 1800 photos were collected, and can be linked to the data point that photo was taken.

NCCOS is working to continuously update these maps, using new technologies such as LIDAR, multi beam sonar, and additional crowdsourcing of photos. Additionally, NOAA's Office of Coast Survey is planning to increase habitat mapping in FKNMS by 20% in 2018, using technology such as multi-beam and drop cameras for validation, which can update both navigational mapping and habitat mapping objectives.

Discussion

- Rigidity, or seafloor complexity, can help shorelines become more resistant to storm impacts. This mapping data also allows managers to understand flattening of the reef over time, and the impacts that may cause.
- The outer reef is too deep (>60 feet) for the satellite to determine habitat types and additional technology such as multi beam sonar will be necessary to map these areas. Other areas are too turbid, and represent a gap in the data which NCCOS is working to cover.
- By overlapping previous images and data, researchers can track changes (gains or losses) of habitats over certain times or after specific events. While more difficult with satellite data, this is more easily accomplished with overflight images and sonar technologies. However, it is important to note that ground validation data is extremely important to verify these maps.

VI. PUBLIC COMMENT

Tim Birthisel – Terra SubAqua

Mr. Birthisel would like to share an idea with the group that stems from 22 years of doing aquaculture in the Keys. He hails from the North, about 1000 miles away from here, and many

people care about this environment, along with those who are local. The idea is to adopt a practice of aquaculture I have developed, called the commercial sanctuary, where none of the fish are targeted. He and others are working to develop coral and live rock sales mostly to zoos and some distributors. They prefer the zoos because they order big and do not quibble on price. The idea that they have used to implement this utilizes good marine biology research and results. He is a zoologist by education. They have a rugosity situation with our aquaculture site, and yet it is in a very flat and barren area, He has heard it called the sand flats, it is just outside the reef line down near Plantation Key, 5.5 miles offshore. They have been very successful in attracting copious populations of fish, many of which are growing up there. People can see juveniles and then they get bigger. He has seen several large fish aggregations which a person would be lucky to see at Looe Key or Molasses Reef. It's amazing what is going on with it, and he would be happy this afternoon if anyone would like to see visual evidence to show a few slides and videos. So the idea he and his team are developing is an aquaculture cooperative, which uses the commercial sanctuary as an M.O., and to cluster groups of these aquaculture cooperatives in areas that today are kind of useless, like sand flats. Build a marine environment there, such as what I have accomplished in 22 years, which doesn't take as long if ones fast forwards with the learning curve he has. Unfortunately, Irma wiped him out, but he will be back much bigger and better in a couple of years even if just part-time like he does. He has developed a way to rapidly deploy these modules which mimic patch reefs, spur and groove reefs, that kind of thing. He appreciates everyone's attention, and if it is of interest, he does believe you will find the fishing community would love this, or like this, because we are not taking away any valuable fishing resources, nobody fishing out there knows what they're doing because there's not much out there it is desolate. If a Sanctuary Preservation Area is put around it, he thinks the aquaculture would go better, and the fishermen would like it because they would be able to park around the border like the do all the other SPAs and have a pretty good catch without having to go too far offshore. This is just a proposal, he does plan to work with the Fisheries Management Council on this because he can visually demonstrate copious fish populations at his site, and thinks they can expand that. Do it in a SPA, help the whole ecology, because only part is taken. The substrate is planted and the substrate is removed, that is the product. He has great results and has transported a couple sizeable reefs to Toledo, Ohio. He sells coral reefs to a zoo. Everyone else has a shark tank, life is thrilling enough, how about a nice coral reef in your zoo. They have done it in Toledo, if you every get up there, two big displays, Florida Keys reefs live in Ohio. So they can do a lot of good things with it, he has done a lot of outreach to undergraduate students. In fact he is working with a group from Bowling Green State University for 20 years and they have grown to 100 people in their undergraduate program in marine biology in Bowling Green, Ohio. If there is further interest on this, he is wide open to explain further.

Lunch

VII. AERIAL OVERFLIGHT BOATER USE SURVEYS IN THE FLORIDA KEYS

Tom Matthews, FWC Fish and Wildlife Research Institute gave a presentation summarizing the results of boater use surveys in the Florida Keys.

Mr. Matthews explained that in the early 1990's, an initial aerial overflight study was conducted to determine boater use within FKNMS. At the request of the sanctuary, a team with Florida Fish and Wildlife Conservation Commission's (FWC) Fish and Wildlife Research Institute (FWRI) recently completed an updated aerial overflight boater use study to understand spatial and temporal variation

in boating patterns, compare these patterns between 2016 and 1992, and develop a database to support ongoing assessment of sanctuary resources.

KeysAir, FWC Law Enforcement, and NOAA aircraft were used to conduct these surveys at an altitude of approximately 500 feet, where vessels can be seen from about three miles away. Surveys were conducted in the morning and the afternoon. Survey effort was then stratified by holiday, weekday, weekend, and by season, the regions were stratified by latitude zones (lower keys, upper keys, etc.), and data included boat size, type, and boater activity.

Overall, approximately 550,000 boat days were observed over the study period. Lobster season had the highest level of boat use, the majority of which were participating in diving activities. Holiday weekends were the second highest level of boat use, peaking on Memorial Day. Additional patterns indicated high wind speeds decreased the number of boats observed, but concentrated boats in nearshore environments such as bridges.

Occupancy was determined on boat presence over the course of all 29 surveys. The highest use areas included the reef tract, nearshore environments, and bridges. On average, 65% of all boats were observed on the oceanside compared to the gulf side, and vessels were more concentrated in the Upper Keys. However, this trend flipped during lobster season, where data showed the gulf side of the Lower Keys had significantly more use than other areas.

Fishing was observed in nearly every area, particularly in the Biscayne region. At any time, 15-28% of vessels were hook and line fishing, roughly 350 vessels per day, concentrated in the Middle Keys on the oceanside. Occupancy for fishing was low, which suggests fishermen spread out. The main habitat types used when fishing was continuous reef and hardbottom, followed by bridges, and finally deep water.

Diving was observed in every area, with 19% of vessels participating in diving on any given day. A larger number of diving activities was observed on summer weekends, especially during lobster season. Occupancy was very concentrated, showing the opposite distribution of fishermen. Divers were concentrated in Sanctuary Preservation Areas (SPA), comprised of continuous reef habitat.

Sandbar concentrations (party zones) made up approximately 10% of all vessels counted, compared to <1% in the early 1990's. For example, on Memorial Day 2016, researchers observed 1200 boats at one sandbar. Data displayed the most popular sandbar occurs at Whale Harbor in the Upper Keys, and that this activity is most popular on weekends and during lobster season.

Commercial fishing activity made up 2% of vessels counted, which included trap boats, head boats, spongers, trawlers, and purse seines. Personal watercraft made up 4% of vessel use, kayaks and paddleboards made up 5%, watersports were 1% of use, and running/transit made up 30%. Overall, there were distinct differences, and new trends displayed, between 1992 and 2016, and FWRI researchers are in the process of preparing that report.

Discussion

- Concentrated uses at sandbars (party zones) are infringing on habitat used by shore birds, wading birds, turtles, etc. Data like these studies can assist managers in making resource protection regulations to protect those species.
- A member asked about consideration of drone technology. Mr. Matthews explained that drones would be useful to examine temporal changes in one area, but cannot fly the distances required in this study.
- Researchers determined commercial versus recreational dive vessels based on their size, approximately 32 feet, but did not feel confident separating the two sectors based on that distinction alone. For this data set, those vessels were combined.
- A member asked the difficulties in comparing the two studies. Mr. Matthews elaborated that in 1992, the sanctuary had not completed the zoning scheme, and that technology has greatly improved. It will be interesting to examine these trends based on that data, and make that report available to the public once it is finalized.

VIII. HURRICANE SEASON OUTLOOK 2018

Chip Kasper, National Weather Service, provided a presentation about the hurricane outlook for 2018.

Mr. Kasper gave an overview of National Weather Service (NWS), including the mission to protect life and property by providing decision making support to emergency management, government agencies, and the community. One of the main focuses of the NWS is to build a weather-ready nation, where society is prepared for and responds to weather-dependent events. Within the “weather enterprise” made up visually of internet, TV, and radio forecasts, the weather service provides the core information to those methods of broadcast.

The National Hurricane Center in Miami staffs hurricane specialists which can track, predict, and forecast hurricane tracks, intensity, and structure. The task of determining impacts, location, timing and trends falls to field offices. The field office in the Florida Keys operates 24/7/365 and provides aviation, marine, fire, and hurricane forecasting as well as data collection services including weather balloon releases twice a week. Partnerships and teamwork also allow local staff to provide education and outreach support within the community.

Hurricane Irma left a noticeable footprint on Florida, where hurricane force winds (>74 mph) were sustained through much of South Florida, and sustained tropical storm force winds (>39mph) were measured through the entire state. Additional impacts included storm surge flooding, tornadoes, and excessive rainfall. The highest measured sustained wind was on Big Pine Key at 120 mph, however the highest wind gust estimate was 150-160 mph.

The Saffir Simpson scale is based on the force of the wind, which grows exponentially with the square of the wind speed, meaning a Category 5 storm can have winds three times as strong as a Category 2 storm, even if winds are only 40mph faster. It is important to note, that the Category 4 hurricane passed through the Lower Keys at Big Pine Key; however, at the same time, Key West and Key Largo were experiencing the effects of a Category 1 hurricane.

History indicates the majority of storms occur between mid-August and mid-October. The current 2018 season outlook predicts a near-normal or above-normal hurricane season; however, vigilance

should not be measured based on these predictions. Residents should be prepared for major hurricanes any year and any month during hurricane season and be weather-ready.

Discussion

- The impacts of climate change on hurricanes is an active area of research and data are constantly being gathered.
- Storms can appear multiple years in a row, residents should always remain prepared for a storm, even if a major event happened the year prior.
- NWS Key West utilizes social media during hurricane season to ensure preparedness, and to send succinct updates relaying people to emergency managers during an event. During the slow season, the platform is used to send educational content. Increasing this outreach, as well as community lectures, briefings, etc. could help prevent loss of life during a storm.
- While tornadoes can appear in the outer bands, a vortex with tornadic wind speed can occur in the eyewall, and have similar impacts on property.

IX. HURRICANE SEASON LESSONS LEARNED AND PREPARATION

Jeff Manning, Monroe County Emergency Management gave a presentation about lessons learned in the Florida Keys from hurricanes.

Mr. Manning gave an overview of the Monroe County Emergency Management agency and the staffing structure, including a new position Senior Special Needs Planner. Emergency Management plans and executes training exercises, coordinates first responders and crisis communications and works to coordinate with partner agencies at the county, state, and federal levels.

There are four phases of emergency management: prepare, respond, recover, and mitigate. These phases are the responsibility of each individual person. At the county level, Hurricane Irma provided some positive outcomes and some opportunities for improvement during future storms. Some of these included:

Positive outcomes:

- Continuity of Operations Planning (COOP) in Ocean Reef
- Positive response of residents to the evacuation orders
- Presence of NWS meteorologist in the Emergency Operations Center (EOC)
- A scalable system for deployment of responders from around the country, ready to assist
- Ordering Disaster Medical Assistance Teams (DMAT) and satellite communications prior to landfall
- Conference calls with partner agencies to increase communication and relay information

Opportunities for Improvement:

- Designating and building a permanent EOC to provide adequate space for cooking, sleeping, feeding, hosting VIPS, etc. with dedicated fire, rescue, and 911 dispatch.
- Increase communications capacity by increasing satellite capability, increasing mobile cell towers, moving webEOC to a cloud server, utilizing mass notification systems such as Everbridge, and increasing relationships with radio operators to ensure accurate information is disseminated.
- Identifying additional re-entry options for essential, pre-identified personnel to eliminate

delays at checkpoints, deploying Community Emergency Response Team (CERT) trained personnel and essential businesses back into the area before the general public, adjusting staging areas to reduce congestion, and improving messaging for residents preparing for re-entry.

- Increasing training and clarification on roles and expectations of volunteers and donations, create scalable and flexible system where a standing committee of volunteer organizations which are active in disaster, CERT trained volunteers, and others can help allow for better communication and prioritize resources.
- Ensure debris removal in timely and organization manner.

In summary, the goal of any storm event is communication and cooperation. The county is working on the list of improvements above, and additional information can be found on our website.

Discussion

- Trainings for the CERT program have started, and if residents are interested in assisting as first responders after the storm, information can be found here: <http://www.monroecounty-fl.gov/volunteeronroe>. It is important to note, this is not a program for early reentry, but for those individuals qualified to act as first responders such as nurses, public servants, and teachers.

Break

X. MEMBER UPDATES OF NOTE

Chris Bergh: Florida Reef Resilience Program (FRRP)

Since 2005, FRRP has been an ongoing monitoring program for bleaching and disease events, with surveys conducted every August – October, and is coordinated by The Nature Conservancy. This year, FWC FWRI will be taking over the operation with support from NOAA and TNC. After the 2018 surveys are complete, we will be able to report out in November about disease and bleaching.

Richie Gomez, Member Snapper-Grouper Committee of the South Atlantic Fisheries Management Council (SAFMC)

Mr. Gomez has been fishing in the Florida Keys all his life, and has been a member of the commercial and recreational fishing community for many years. He has more recently become involved in the management side of fisheries and zoning decisions to try to bridge the gap between anglers and resource managers. Charter boat associations understand there are too many people fishing in our waters and taking too many fish. Because of this reality, he has become a member of the snapper-grouper committee on the SAFMC, where they recommended a reduction in federal snapper-grouper for-hire permit. This action moved forward, and will go to scoping meetings sometime in 2019. To continue that momentum, they will need support from the council, which may include a letter of support on this moratorium of snapper-grouper licenses.

XI. PUBLIC COMMENT

Gary Jennings, Director Keep Florida Fishing, American Sportfishing Association

Mr. Jennings runs the ASA's Keep Florida Fishing program and he just wanted to mention that ASA

is strongly against a limited entry because it has been proven to be a pre-cursor of sector separation, which has pitted segments of the recreational fishing community against each other. So people who are in the recreational fishing community include people who have their own boat and go fishing, but it also includes charter boats and fishing guides. What happens is, they divide each of those sectors, and each sector gets to keep a certain number of fish, which starts causing them to fight against each other, which is why they're against that. They are helping to push recreational folks using apps, including iAngler, which ensures recreational anglers are more accountable for their catch and everyone is going to see that when the South Atlantic red snapper season opens up in August that angler will have to report their catches. Anglers at one point were really against that, but they're finding out that it can actually work in their favor. For instance, last year they had a six day red snapper season, and of those days, both weekends were blown out so nobody got to go fishing. Because they were using the app, they were able to show NOAA that they weren't able to go fishing, so NOAA gave them additional days, which unfortunately were blown out too. But it did show the recreational anglers that yes, there are good reasons to report their catches, and he thinks that were going to see that in the future. They certainly don't want anglers to have to have a lottery system or something like that where someone may not get to go fishing. Again, they have seen what sector separation has done, and don't want that to happen here. Thank you.

XII. 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

US Coast Guard LT. Quentin Long, Sector Key West (report given earlier in the day)

- Since the April SAC meeting, the USCG has responded to 34 National Response Center report incidents, none of which were federalized.
- To date for the year, USCG has responded to 104 National Center Response reports and four have been federalized. This is more reports and fewer federalized reports compared to last year at this same time.
- USCG participated in a “worst-case discharge” drill with the Naval Air Station in Key West last week. This was a successful interagency exercise.
- The USCG and other agencies responded to the grounding of *Paradise*, which ran aground on Rock Key. It was estimated that this vessel released about 900 gallons of diesel into the environment.
- They received word from Sector Islamorada that FWC boarded a vessel and found shark fins. They found blacktip sharks bodies without fins, and one lemon shark.
- USCG is holding a tabletop oil spill drill in conjunction with FKNMS, FWC and other agencies in Islamorada on June 20.
- Captain Rego assumed commandership at Sector Key West. Captain Rego has experience with oil spills, hurricanes, sanctuaries/monuments and was previously stationed in New Orleans, Puerto Rico and Hawaii.

Florida Keys National Marine Sanctuary, Sarah Fangman

- FKNMS has received word that debris removal for the 55 foot vessel *Paradise* will be done by Key West Harbor Services. This vessel ran aground on Rock Key. FKNMS biologists

have completed their assessment of the damages and are writing up the report. Some of the corals were caged for later reattachment. After the report is released, FKNMS will be working with headquarters and with partners to determine what restoration steps will be taken.

- Sanctuary biologists recently conducted field injury assessments to determine damages to sanctuary resources at two additional grounding sites and three nearshore construction sites.
- On Friday June 15, DEP Secretary Noah Valenstein hosted a roundtable meeting with FKNMS, FWC and Mote Marine Lab and other partners to discuss the coral disease outbreak and next steps.
- The State of Florida will be presenting information to the FWC Commission meeting being held today and tomorrow. Sarah Fangman and Joanna Walczack will be participating on the panel convened at this meeting to discuss the disease. This issue is getting good attention.

Florida Department of Environmental Protection (FDEP) Florida Coastal Office, Karen Bohnsack (Beth Dieveney gave the report in Karen's absence.)

- Earlier this month, U.S. Congressional Representative Bordallo (Guam) introduced a bill to reauthorize and update the Coral Reef Conservation Act of 2000, which is responsible for creating NOAA's Coral Reef Conservation Program and funding coral reef conservation efforts across the U.S. coral reef jurisdictions. The new legislation focuses on maintaining healthy, resilient coral reefs and the ecosystem services they provide.

FWC Law Enforcement, Captain Dipre

- FWC and USCG were patrolling together when the shark fin case mentioned by LT. Long was made. More information can be found on Facebook.
- FWC has been making trips to the Tortugas where citations have been made.
- FWC has been conducting Sanctuary Preservation Area (SPA) patrols. This is a busy time of year for SPA activity. There may be an increase in the number of patrol hours for the upcoming fiscal year. This would mean more patrolling of the SPAs. FWC would like to see more staffing to meet the needs in the Keys.
- FWC will be helping out FWS in the Key Deer refuge.
- Hurricane preparation, oil spill planning are underway.
- FWC is almost fully staffed with only two vacant positions. They will have four vacant positions in the near future.

NOAA National Marine Fisheries Service, Heather Blough
Heather Blough

- NOAA Fisheries issued each Gulf Coast state an exempted fishing permit to pilot test state management strategies for private anglers targeting red snapper in state and federal waters of the Gulf in 2018 and 2019. Florida's season opened June 11 and will run through July 20. They also requested public comments on a South Atlantic Council proposal that would provide for a limited red snapper fishery in the South Atlantic later this year. If approved, that fishery could open in August.
- NOAA Fisheries approved the South Atlantic Council's proposal to require trip level weekly

electronic reporting for federally-permitted charter vessels. They will announce the effective date of that new requirement later this year. In the meantime, the Council will continue to offer charter captains training via both webinar and in-person sessions. They will soon notice the Gulf Council's electronic reporting proposal for public comment. Vessels that carry both South Atlantic and Gulf for-hire permits will be required to comply with the more restrictive requirements of the Gulf program if approved.

- Last week in Fort Lauderdale, the South Atlantic Council approved several draft amendments for public scoping, which include options to reduce the likelihood of in-season closures of the commercial yellowtail snapper fishery while that stock assessment is being completed; establish a moratorium on for-hire snapper grouper permits; create new private angler permit and electronic reporting requirements, and require the use of best management practices, like venting tools and descending devices onboard commercial and recreational snapper grouper vessels.
- The South Atlantic Council also reviewed public comments on their commercial and recreational Visioning Amendments, which would modify bag, trip, and size limits for a number of snapper-grouper species. They intend to take final action on the commercial amendment at their September meeting and on the recreational amendment at their December meeting. They are also tentatively scheduled to approve in September proposals to implement additional red grouper restrictions and to align federal and state spiny lobster bully net and dive possession limit regulations.
- The South Atlantic Council approved new golden tilefish catch limit reductions, which are slightly higher than those we implemented through interim rulemaking, and recommended we approve an exempted fishing permit application we received from FWC to test the effectiveness of alternative trap designs in harvesting lionfish with minimal environmental impact. They will soon request public comments on that project, which proposes to deploy standard and modified wire spiny lobster traps in 100-300 feet of water between Alligator and Looe Key Reef, twice a month over a 3-year period. The South Atlantic Council also moved to begin work on an Aquaculture Fishery Management Plan for federal waters of the South Atlantic
- The Gulf Council is meeting this week in Key West. They'll review the joint spiny lobster amendment and are tentatively scheduled to take final action on Coral Amendment 9, which would establish a new HAPC within the current Pulley Ridge HAPC and prohibit bottom fishing in that area, except for fishing with bottom longline gear.
- NOAA Fisheries has incorporated several new fishery permits into its online renewal system, so all of our for-hire permits are now renewable online, along with commercial dolphin/wahoo, and king and Spanish mackerel permits. The remaining permits should come online by the end of the year.
- Finally, through July 23, NOAA Fisheries is soliciting pre-proposals for the FY19 Saltonstall-Kennedy grant competition. The three priorities this cycle include: promotion, development and marketing; marine aquaculture; and science that maximizes fishing opportunities without compromising conservation goals.

National Park Service, Dry Tortugas National Park, Meaghan Johnson

- The contractor, Cinco Vega was awarded a contract to remove the wreckage of the sailboat vessel, *Etelka*, which went around on the north shore of Bush Key during Hurricane Irma. They successfully removed that vessel a few weeks ago.
- The first Tortugas leg of NOAA's NCRMP (National Coral Reef Monitoring Program) surveys were completed June 1-11th; they completed 146 survey sites. The trip was made up of divers from NPS, NOAA, FWC and University of Miami RSMAS.
- The Nature Conservancy is at the park this week conducting their annual staghorn outplanting trip. They will be outplanting nursery corals to various reef sites throughout the park.
- The South Florida Caribbean Network (SFCN) staff of the NPS will be conducting their fixed site benthic monitoring next week. All of these monitoring programs will be providing information on the current status of our corals, as well as if and where they may be seeing disease.
- Tom Iandimarino began his detail as Acting Park Manager for Dry Tortugas National Park on June 11th, while Glenn Simpson is at Everglades National Park serving as Acting Deputy Superintendent for ~60days.

National Park Service, Everglades National Park, Christopher Kavanagh

Florida Bay Report:

- Water quality has been monitored in Florida Bay in the nine months since the September 2017 hurricane, Irma, impacted the coastal waters of the Florida Keys and the Everglades.
- Maps of the water quality parameters of turbidity and chlorophyll-*a* (from phytoplankton) show the influence of the hurricane remained evident in the northern central and western basins of Florida Bay through March 2018, but subsided in June 2018.
- Some portions of Florida Bay continue to have high turbidity with strong wind events. The North Central basins and bights (Garfield Bight, Rankin Lake and North Whipray basins) continue to have elevated levels of chlorophyll-*a* (up to 15 µg/L), and associated green water.
- Wind events will continue to negatively impact water clarity until seagrass is able to regrow and anchor the large amount of unconsolidated and flocculent sediment in the Bay caused by hurricane disturbance.

US Fish and Wildlife Service, Florida Keys National Wildlife Refuges Complex (Crocodile Lake National Wildlife Refuge, Great White Heron National Wildlife Refuge, Key West National Wildlife Refuge, National Key Deer Refuge), Christine Ogura

- The refuge continues to conduct Key deer population surveys and the deer population is stable (after the New World screwworm, Hurricane Irma and recent brush fires). USFWS and State veterinarians recently visited the refuge to also check on Key deer and concluded they are healthy. The refuge appreciates working with FWC on these efforts since Key deer are also a state listed species.
- The Refuge Backcountry Management Plan agreement with the State of Florida, which is part of the DEIS, has been extended for the next ten years. This agreement, which allows for co-management of state waters/lands with the refuges, would otherwise expire before the DEIS process was complete.

- Along with other agencies, the refuges have been experiencing tighter budgets in recent years, a trend that is expected to continue. As a result, there are three vacant positions in refuges (administrative position and two biologists). Currently there are only eight staff to manage all four national wildlife refuges in the Florida Keys, which has a total acreage of a little more than half the size of Rhode Island. Refuge staff at all levels are working to identify priorities and ways to move forward using current resources and with partners. What this means is that current capacity will change how refuges can move forward with respect to initiative and efforts. Priorities moving forward are to continue with Irma recovery of both facilities (which were greatly impacted) and habitats (particularly Pine rocklands which support several listed species) and species monitoring.
- At this time, the refuges have no biologists on staff in the Keys. They are fortunate, though, to have partnerships with universities and institutions that help maintain biological priorities. Partners include FWC, Florida International University, Florida Atlantic University, University of Florida, North Carolina State, Texas A&M, Fairchild Tropical Botanic Gardens, Institute for Regional Conservation, Avian Research Conservation Institute, and others. The partnerships can be leveraged to focus on Lower Keys marsh rabbits and other species that may not have fared so well in the hurricane.
- Permits reviewed and issued by the refuges will probably take longer than usual because of the staffing limitations.
- The refuges system is sharing these impacts with everyone so people can understand the current capacity and welcomes discussion as they move forward of how to continue to work together to address important priorities for our habitats and species.

US Navy Naval Air Station Key West, Matt Martin

- Least and Roseate tern nesting has been marginal this year. Least terns are using the nesting platform installed on Big Copyist. No Roseate tern nesting has been documented.
- NAS Key West grant proposal for removal/control of invasive, exotic vegetation from natural areas on Fleming Key, Boca Chica, Geiger and Big Copyist Keys was accepted by FWC Invasive Plant Management Program.
- Sea turtle activity has been busy with crawls on the Boca Chica shoreline and Truman Annex. Mostly false crawls but potentially one nest on each beach.
- NAS Key West assisted the U.S. Coast Guard in the removal of hazardous materials from a Cuban chug that came ashore on a remote section of Boca Chica Beach. The hazardous materials removed included containers of diesel fuel, oil and a marine battery.

XIII. UPCOMING MEETING AND CLOSING REMARKS

Thank you everyone for participation and comments today. We'll see you in August.

Meeting Adjourned.