FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY

Sanctuary Advisory Council
Draft Meeting Minutes
February 13, 2020

Meeting Attendance Roster:

Sepp Haukebo	Recreational Diving	Present
Jesse Cancelmo	Recreational Diving	Present
Natalie Davis	Diving Operations	Present (webinar)
Frank Burek	Diving Operations	Present
Ruth Perry	Oil and Gas Industry	Present (webinar)
Vacant	Oil and Gas Industry	
Scott Hickman	Fishing - Recreational	Present
Robert Kirschner	Fishing - Recreational	Present
Shane Cantrell	Fishing - Commercial	Present
Buddy Guindon	Fishing - Commercial	Present
Adrienne Simoes Correa	Research	Absent
Michael Dance	Research	Present (webinar)
Brian Shmaefsky	Education	Present
Sharon Kamas	Education	Present
Joanie Steinhaus	Conservation	Present
Jake Emmert	Conservation	Absent
James Sinclair	BSEE (non-voting)	Present
Mark Belter	BOEM (non-voting)	Absent
Mark Zanowicz	U.S. Coast Guard (non-voting)	Present
Rusty Swafford	NOAA Fisheries (non-voting)	Absent
Charles Tyer	NOAA OLE (non-voting)	Present
Vacant	EPA (non-voting)	
Dave Shively	TPWD	Present (webinar)
G.P. Schmahl	Sanctuary Superintendent (non-	Present

Total voting member attendance: 13 of 16 of voting members; 9 votes needed for quorum
Others in Attendance:

9:20 Meeting called to order by Advisory Council Chair Scott Hickman.

9:20 Welcome and Announcements – G.P. Schmahl
Today's meeting is being run through a webinar, and with a sound system.

9:21 Administrative Business – Scott Hickman
Adoption of Agenda – motion from Frank Burek, second from Buddy Guindon. All in favor, motion approved.

Adoption of Minutes – Motion to approve with corrections from Frank Burek, second from Buddy Guindon. All in favor, motion approved.

9:27 Sanctuary Update – G.P. Schmahl
G.P. welcomed Dr. Michael Dance from Louisiana State University to the Flower Garden Banks National Marine Sanctuary (FGBNMS) Advisory Council as one of the Research seats. The vacancy in the Oil and Gas Industry seat will be advertised soon.

Frank Burek recommended that the selection of a Review Panel to assist with filling vacant SAC positions should be the responsibility of a SAC subcommittee, appointed and established by the SAC during its normal meeting.

Frank Burek made the following motion, seconded by Buddy Guindon:
The following procedure will establish a Review Panel Subcommittee:

1. Identify the names of all current SAC members.
2. Remove the names of members whose term are expiring and whose seats are being filled (incumbent wishing to re-apply).
3. Remove the names of the members who participated in the last candidate review process.
4. Randomize the remaining names and assign a unique number to each name, starting at 1 and up to the total number of qualified participants.
5. Those members with numbers from 1 to 4 and depending on member availability, are assigned to the Review Panel Subcommittee.

Discussion followed. **Motion passed unanimously.**

<u>ONMS updates:</u>

- NOAA's 50th anniversary: 1970-2020
- Florida Keys National Marine Sanctuary (FKNMS) released its "Mission: Iconic Reefs".
- NOAA and NASA reported 2019 was a record year for elevated ocean temperatures, as

supported by data. FGBNMS "Early Alert" Dashboard developed by Dr. Dan Otis, University of South Florida, to provide near real time satellite data (temperature, chlorophyll, etc.) for the Gulf of Mexico.

FGBNMS specific updates:

- In December 2019, FGBNMS R/V *Manta* retrieved an AUV (autonomous underwater vehicle) "Glider" that was deployed by TAMU.
- HIA389A Assessment:
    - Pre- and post-removal baseline ecological assessment; photo-monitoring
    - Historical report
    - Draft submitted to BSEE
- Lionfish:
    - "Precipitous declines in Northern Gulf of Mexico Invasive Lionfish Populations Following the Emergence of an Ulcerative Skin Disease" published by Holden E. Harris et al. in *Scientific Reports*.
    - Lionfish Program given to Oppe Elementary's third grade classroom in December 2019.
- Seaside Chats
    - February 5 – Undersea Robotics
    - February 12 – Mysteries of Black Corals
    - February 19 – R/V *Manta*, 11 Years of Service
    - February 26 – What's New in the Blue?
- The FGBNMS Expansion proposal has been in an interagency review process at the Office of Management and Budget since September 11, 2019. NOAA is responding to comments from DOI/BOEM, US Navy, Small Business Administration, and Department of State.
- Visitor Use permit program would be best addressed after the sanctuary expansion proposal is finalized and during the subsequent revision of the FGBNMS Management Plan.

10:35 Potential Impacts of Accelerating Sea-Level Rise and Expanding Mud Blanket on Texas Reefs – Dr. John Anderson

Impacts of climate change on Texas reefs:

- Sea-level rise and other climate influences on riverine sediment (nutrient) supply
- Changes in surface current circulation (suspended sediment pathways)
- Increasing surface water temperatures
- Acidification

Compelling evidence of climate change:

- The current carbon dioxide level has spiked to an unprecedented increase in the last 400,000 years.
- NASA currently has two satellite missions that measure ocean surface topography. Data from these two missions show recent sea level rise at a global rate of ~3 mm/year.

Causes of sea-level rise:

- Thermal expansion of ocean

- Melting glaciers. 87% of land-based glaciers are in retreat today.
- Mass balance of ice sheets
    - The areas where researchers detected the largest elevation changes were Jakobshavn Glacier in West Greenland and Pine Island Glacier in West Antarctica. The East Antarctica ice sheet is getting thicker at the pole, but up to 100,000 years would be needed to migrate the ice to the outer boundaries of the ice sheet.
    - Punctuated sea-level rise. Unprecedented rates of thinning, acceleration and flow are occurring on Thwaites Glacier in Pine Island Bay. In January 2019, scientists confirmed a dire prediction: The water underneath the glacier is currently two degrees above the freezing point.

How has the Texas coastline evolved over the last 120,000 years:

- Smith Point is 8mm higher than surrounding areas and represents the Ingleside Paleoshoreline.
- When sea level started to fall, it fell 120 millimeters (mm) slowly over 80,000 years. Rivers had much greater sediment loads and created large deltas. FGBNMS formed as fringing reefs 22,000 years ago.
- As sea-level began to rise again, the deltas that had been down-cut (created by rivers) underwent back-stepping (landward deposits), river valleys (i.e., Galveston Bay) filled in with water, and barriers/banks formed and moved seaward.
- On average, sea-level rise from Bolivar to Follet's Island is 1.5-2mm/yr. Louisiana loses a football field each day to sea-level rise.
- The Texas Mud Blanket (TMB) accumulation rates have increased substantially in the past 3.5 kilo-annum (thousand years). The main source of the mud was the Mississippi River with secondary input from the Brazos, Colorado, and Rio Grande rivers. Mud accumulation appears to now exceed reef growth. The TMB is currently burying central Texas reefs.
- Extreme weather events:
    - Warm season sea ice minimum has declined more than one-third, resulting in a weakening and greater sinuosity of the Gulf Stream and stalling of weather systems.

Discussion followed. Leslie asked about Coastal Spine Barrier. John responded his first questions is where will all the sediment come from. He also raised the question of the life expectancy of the structure and said engineering our way out of this problem is going to be complicated. Jesse asked about acidification rates. John responded the Poles are experiencing acidification faster due to colder water. Circulation rates have increased 5% in the last decade, thus distributing acidification increases. Five years ago we were at the saturation point for aragonite, but the planet is now over the threshold of 500 parts per million.

11:45 Reef Rescue Project at Moody Gardens – Ryan Hannum

In 2014, a coral disease (Stony Coral Tissue Loss Disease (SCTLD)) outbreak began in the Florida Reef Tract. Since then, more than 20 species have been affected by the disease (5 are on Endangered Species List). Mortality rates vary from 66-100%. Some species have sustained up to 90% reduction in abundance. This has led to complications with natural recruitment (e.g.,

Dendrogyra cylindrus (Pillar Coral)*)*. This last spawning season was most likely the last time *D. cylindrus* will be observed spawning in the wild. The exact origin of the disease is still unknown, but is likely bacterial and could be a combination of factors. SCTLD has a rapid onset. As an example, a 10-15 yr old coral [approximately 25 cm in diameter] in Florida lost 60% of its living tissue to SCTLD within approximately one month. Other areas now outside of Florida have observed SCTLD: Jamaica, Mexico, St. Maarten, US Virgin Islands, Lesser Antilles, Dominican Republic, Turks and Caicos, Belize, and St. Eustatius.

In 2018, the Florida Wildlife Commission contacted the American Zoo Association (AZA) for assistance with housing corals, assisting with maintenance, gene banking, propagation, and future restoration activities. The AZA Florida Reef Tract Rescue Project (FRTRP) was formed and corals were sent to the first institutions in April 2019, including Moody Gardens Aquarium which was the second facility to house rescued corals. Currently, 15 institutions are holding 1,623 corals from the Florida Reef Tract (FRT). Another 10 institutions have been approved. Currently, Moody Gardens Aquarium is currently holding 103 unique coral colonies. Each of the 3 tanks cost ~$7-10K for the system. Application of the antibiotic Amoxicillin has shown to be helpful. The project's goal is to have 5,000 corals housed for propagation and gene banking. Facilities will be identified for large scale holdings. The ultimate goal is to use corals (rescued and propagated) for transplantation to the reef as a conservation effort. Coral Rescue - Coral Monitoring Dashboard: https://myfwc.om/research/habitat/coral/disease/dashboard/ - includes current number of rescue sites, number and types of colonies under care, current housing facilities, etc.

Discussion followed. Moody Gardens is currently paying for all expenses. Deeper reefs in Florida did not have the same occurrence rate of disease as shallow reefs. Moody Gardens had 6 incidences of disease in the coral colonies received, but the disease line in the affected colonies halted since the application of amoxicillin. However, three weeks ago, a coral colony lapsed that had been in remission for 5 months. Sepp asked about the recently published literature suggesting ballast water is the culprit, and raised the question regarding adding a shipping representative to the FGBNMS Advisory Council.

12:20 Break for Lunch

12:30 Building Capacity of Local Educators to Increase Climate Literacy in their Community – Amanda Rinehart (ArtistBoat)

The partnership is a collaboration between FGBNMS, NOAA Planet Stewards Education Project, and ArtistBoat, a local non-profit organization based in Galveston. A teacher training workshop was conducted to identify priorities and the most pressing climate related impacts on the upper Texas coast. The first Climate Change 101 workshop with 40 teachers was held in June 2018. A second one was held in August 2019, and a third is scheduled for July 2020. The teacher training agenda included items such as ocean acidification, community resilience, an introduction to FGBNMS, sustainability, navigating the political nature of climate change, extreme weather, sea level rise, art activities, and field trips. Participants have primarily been high school science teachers. Teachers of all experience levels have attended the workshop, indicating the need for climate change information is needed throughout all levels. Each teacher

conducted a pre/post assessment to evaluate knowledge and confidence, as well as an informal test of confidence.

1:00 Public Comment and Q&A Period
Michael Scherer, Executive Director of "Fishing's Futures", spoke about the offer of free, family fish camps. The non-profit organization was started in 2007 by Shane Wilson, a first grade school teacher who saw families disconnected from the outdoors, and wanted to get families reconnected through fishing. To date, Fishing's Futures has serviced 1,000,000 participants, and they are looking for more partners for additional work.

1:15 Advisory Council letter regarding marine debris – Sepp Haukebo
Sepp presented the draft letter from the FGBNMS Advisory Council to Senator Larry Taylor and Representative Mayes Middleton regarding marine debris, House Bill 1628, and Jeep Weekend on Bolivar peninsula. Discussion followed. **Frank Burek made a motion to approve the letter for sending to intended recipients, seconded by Buddy Guindon.** Discussion followed. **Motion passed unanimously.**

1:25 Molecular and Morphological Mysteries of Black Corals – Dr. Mercer Brugler
Dr. Brugler teaches at New York City College of Technology (Brooklyn, NY), but he also has a research lab in the American Museum of Natural History. His academic mission is to change the face of marine science by incorporating the diversity reflected in the world we live in. Since 2005, Dr. Brugler's lab has been on seven cruises to FGBNMS, with one or two students each cruise. Afer each cruise, his students set up exhibits to showcase their findings, and give their presentations at the American Museum of Natural History.

Dr. Brugler gave a presentation on black corals which are historically understudied (75% of black coral species live below scuba depths), and other deep sea life such as glass sponges aged 17,000-18,000 years old. Recent findings of the longevity of some corals have turned Dr. Brugler's program around from collections to a non-invasive approach. Instead of harvesting specimens, his lab is using soft"linguini"robotic fingers to collect in situ (on site) genetic blueprints of corals. His lab is also working on an instrument that temporarily holds and scans a specimen at depth, sends the morphological information to the surface for a 3D printing of the animal, collects the genetic blueprint, and then releases it.

Other facts about black corals:

- There are 260 species of black corals currently identified.
- One black coral collected from California housed 2,554 invertebrates – a literal hotel.
- Oldest black coral: 4,265 years old.
- Deepest coral: 8,600 meters.
- Once the live tissue is removed, the skeleton is black.
- Spines on the skeleton are used to identify the species.
- Black coral mtDNA evolves 100x slower than all other multicelluar animals.
- The first tree of life (illustrates relationships) for black corals was published in 2013.
- Black corals will need reclassification as some genera are in multiple families, and some species were incorrectly classified originally.
- Black corals were historically harvested and ground up to prevent diseases.

2:18 Constituent & Working Group Updates
Mark Zanowicz – USCG patrolled FGBNMS recently and conducted overflights as well. The new USCG cutter was recently commissioned with Galveston as its home base. It will be transitioned to patrolling the Gulf of Mexico, including the FGBNMS, starting in 2021. This is Mark's last meeting.

Shane Cantrell – fishing tournaments will be beginning soon.

Brian Shmaefsky – Kelly Drinnen visited for the *Chasing Coral* documentary that Brian scheduled at Lone Star College.

James Sinclair – FGBNMS completed work on HIA389A and BSEE is reviewing reports. Stetson monitoring report for 2019 is complete, including historical report, and are moving through the publication process.

Sharon Kamas – is working in a new school district; she recently wrote a grant for a mobile STEM lab to include robotic arms.

Buddy Guindon – Gulf of Mexico Reef Fish Shareholders Alliance is developing a Young Fishermen's Education Program.

Jesse Cancelmo – visited Lunar Fins Dive Club in Clear Lake to give a presentation on diving and photographing FGBNMS; reminder of April 18-19, 2020 for the first Houston Underwater Film Festival; continues to educate divers on treating their dive gear as a measure against SCTLD.

Joanie Steinhaus – Florida reported its earliest record ever of a leatherback sea turtle nest. An early sea turtle nesting season in Texas is expected, related to climate change. Turtle Island Restoration Network (TIRN) is working with the Galveston Island Fishing Pier and school students on fish identification, fishing, and regulations. Joanie announced upcoming meetings (tonight and next Thursday) regarding the Texas Coastal Spine Barrier. Joanie recently gave a presentation to the Lakewood Yacht Club. TIRN continues to process microplastics from water samples collected from FGBNMS, and will be expanding sampling sites. TIRN has been working with several schools in the region on microplastics. Virginia is considering the ban of intentional release of balloons, and Joanie wants Texas to consider doing the same.

Charles Tyer – One of the two officers in Galveston moved (due to promotion) leaving only one left who is mostly focused on seafood regulation. NOAA's OLE will refill the vacant position. Officer Matt Roache participated in USCG patrol to FGBNMS. No vessels were seen at either bank, though they boarded 3 vessels in between the FGBNMS and found 19 violations. Roache is working with USCG to use Fast Response Cutter to increase patrols at FGBNMS, as well as flight patrols.

Brooke Shipley – Three decommissioned platforms are being towed to reefing site; 1,500 concrete railroad ties deployed near Corpus Christi; 150 artificial reef pyramids will be deployed soon in Corpus Christi area.

Frank Burek – discussed expansion efforts with dive club; wants to foster volunteer opportunities for the dive club; Jake gave a presentation to Houston Underwater Photographic Society on Moody Gardens' dive team.

Underwater Webcam Working Group – Jesse Cancelmo and Brian Shmaefsky
OPT (Ocean Power Technology) and Underwater Webcam at HIA389A:
The project's Phase 1 is moving forward with "testing" of OPT's hybrid buoy with View Into the Blue's (VITB) webcam at HIA389A. VITB is providing the camera at no cost. OPT is providing the hybrid buoy. Target installation is June 2020. The hybrid buoy will be towed out to FGBNMS using a NOAA vessel of opportunity. The existing buoy will be removed and replaced with the hybrid buoy. Attaching to HIA389A removes potential of impacting natural reef community. After completion of this test phase, the system will be made available for lease or purchase. If declined, the equipment will be removed. OPT's hybrid buoy is powered by a combination of solar panels and a Sterling engine (fueled by propane). The underwater camera will be secured to HIA389A at a maximum depth of 110 feet. An environmental data sensor is planned to be included as an addition. Minimal supplemental funding is needed for Phase 1.

On January 14, 2020, a meeting was held at FGBNMS offices and attended by all major participants including Nearshore Networks (T-Mobile). OPT has served as the Project Manager role for Phase 1. Agreements will be signed as needed by the major participants. TPWD is the official host. At this time, the Underwater Webcam Working Group will remain intact but will serve only as needed by the main participants of Phase 1, and also will continue to pursue funding sources for the next phase. Brian has been reviewing user groups of underwater webcams that could potentially promote this project.

Artificial Reef Working Group
Actively collecting goals and opinions from members and Sanctuary management. Meeting scheduled tentatively for September 2020.

Members of upcoming Review Panel Subcommittee
Sharon Kamas, Michael Dance, Buddy Guindon, Jesse Cancelmo

3:24 New Business

3:24 Meeting Adjourned – Charles motioned to adjourn, seconded by Buddy. All in favor. Approved.

Next SAC Meeting scheduled for Tuesday, May 12, 2020.