



GRAY'S REEF NATIONAL MARINE SANCTUARY ADVISORY COUNCIL MEETING – APRIL 30, 2019

Sanctuary Advisory Council (SAC) Attendees

Michael Denmark, Chair
Scott Noakes, Vice-chair
Peter Auster
Bob Crimian
LT Warren Fair
Carolyn Belcher
Tim Henkel
Warren Hupman
Mark Carson
Mark Padgett
Jene Nissen
Rick DeVictor
Paulita Bennett-Martin
Colby Harris

SAC Members Absent

Mona Behl, Secretary
Monique Gordon
Joseph Glenn
Suzanne VanParreren

Gray's Reef National Marine Sanctuary (GRNMS) Staff

Becky Shortland, Acting Superintendent
Marybeth Head
Jody Patterson
Kim Roberson
Elliott Lam
Elise Georgeff

Office of National Marine Sanctuaries (ONMS) Staff

Matt Kendall
Danielle Schwartzman
Jenni Stanley
Bethany Williams
Tim Rowell

GRNMS Foundation (GRNMSF) Staff

Luke Roberson

Public in Attendance

Tom Wright
Reed Bohne
George Sedberry
Robert Burns
Tim Newfell

Recording:

<https://skio.webex.com/webappng/sites/skio/recording/17e9889ccbdd4761a4d727b4d9ef1271>

Council Business

Welcome and Introductions – Acting Superintendent Becky Shortland welcomed everyone. Council Chair Michael Denmark called the Gray's Reef National Marine Sanctuary (GRNMS) Advisory Council meeting to order. He welcomed new members to the council, returning members, GRNMS/ONMS staff and public in attendance. Following group introductions, Michael reviewed the agenda and outlined the meeting objectives. The summary of the October 2018 SAC meeting minutes were unanimously approved with no changes.

SAC Seat Vacancies – Michael Denmark recognized outgoing members Jene Nissen (U.S. Navy), Tim Henkel (University Education seat) and LT Warren Fair (U.S. Coast Guard) for their outstanding service on the council. On behalf of GRNMS, each departing member was presented with a framed photograph of GRNMS. Becky Shortland offered that GRNMS will re-advertise open seats for charter/commercial fishing along with university education. .

Past Meeting Follow-up - Becky Shortland updated on the status of seismic testing and offshore oil and gas exploration. The Department of the Interior has slowed the leasing program to await decisions from the courts. Paulita Bennett-Martin updated that Oceana is awaiting a ruling on an injunction disallowing seismic surveys. Congressman Buddy Carter wrote a letter of support for the Georgia coast requesting not to participate in oil and gas exploration. Michael Denmark thanked the council for writing a letter of support for this cause and making a difference.

GRNMS superintendent update – Becky Shortland is the acting superintendent for GRNMS through May 1 followed by LTJG Marybeth Head. She updated that the Office of National Marine Sanctuaries conducted interviews for seven superintendent candidates and hopes to have a new hire in place by July 1. She offered thanks to all council members and staff for their patience during this process.

Elliott Lam offered an Advisory Council 101 orientation for new members or existing members in June. Two classes will be offered. Michael Denmark encouraged all members' attendance. Elliott also updated on the sanctuary's Rapid Management Plan Review process that was recently completed. Findings from the review will inform the developing SAC Action Plan. Elliott proposed subcommittee form to develop the plan. Michael Denmark asked for a role out plan and to identify ways the SAC can support staff in achieving Management Plan actions.

Becky Shortland provided that this request is in follow-up to a previous survey of council members who indicated that a SAC work plan would be helpful guidance. Michael Denmark requested that the executive committee participate on the SAC Action Plan Subcommittee. Elliott Lam offered that email and teleconference would be the meeting structure. Paulita Bennett-Martin, Colby Harris, Warren Fair and Mark Padgett offered their participation along with the executive committee.

Council Working Groups

Visitor Use Update –The impact of visitor use on GRNMS was initially discussed during the February 28, 2017 SAC meeting, where concern was expressed regarding the challenges inherent in identifying the degree of present and future human activity in GRNMS. John Armor, Director of ONMS, challenged GRNMS staff to determine if there is a mechanism for measuring visitor use that can deliver results with confidence and whether this tool or method could be applicable to other sanctuaries.

Pursuant to this challenge, The Office of National Marine Sanctuaries (ONMS) has contracted with University of West Virginia to explore and evaluate new methodologies for clearer and accurate visitor use information. The evaluation will consider consumptive vs. non-consumptive use as well as offsite visitation, such as visitors centers. Estimating visitation to GRNMS addresses the need to measure baselines and trends. The monitoring methodologies must be replicable and affordable. The data should help inform managers about visitor use and adaptive management along with economic models.

Rick DeVictor questioned if other agencies like the National Forest Service have any known tools for measuring offsite visitor use. Dr. Burns noted a Seattle metro-area study he was involved to collect data relative to a nearby popular wilderness area managed by the NFS. Dr. Schwartzman offered that partner exhibit locations are surveyed for visitor use with NOAA kiosks collecting offsite visitor content interests and search results.

Peter Auster noted that we need to evaluate how much visitation is too much and could impact sanctuary resources. First steps for this study will help determine appropriate technologies and methodologies. NOAA is interested in knowing how many visitors go to sanctuaries as it relates to the Blue Economy. Dr. Burns added that the NPS went thru this process 20 years ago with estimations of high visitation figures but the accurate count was way less. Paulita Bennett-Martin asked about the characteristics of next pilot site for this study. Dr. Schwartzman offered that there is a short list but a site similar to GRNMS with an onshore component or close to a NPS site. The NPS has offered matching funds to answer these questions. Bob Crimian with The Nature Conservancy offered data to share for this study.

GRNMS Research Coordinator Kimberly Roberson introduced Dr. Matt Kendall from NOAA's National Centers for Coastal Ocean Science (NCCOS). The National Marine Sanctuaries Foundation has funded a project with NCCOS to develop geospatial mapping and story maps of GRNMS visitation and statistics. Dr. Kendall's team will characterize visitation at GRNMS using satellite imagery, radar, passive acoustics, data buoy images and marine forecasts along with predictive models. The outcomes and products anticipated from this study include observed visitation patterns and predicted annual visitation projected through ESRI story map applications.

Reed Bohne, GRNMS Superintendent (retired), asked if overflights with the U.S. Coast Guard are still being conducted. Dr. Burns indicated interest in reaching out to the USCG Auxiliary for fly overs along with the use of drones. Concerns of right whales and the need for aerial surveys to access populations was noted by Jenni Stanley and an increase in these surveys are anticipated according to Mark Carson. He suggested reaching out to Barb Zoodsma with NOAA Fisheries Protected Resources for further information on overflights. Carolyn Belcher offered that Clay George with GA DNR is the contact for right whales studies on the GA coast and he has information on overflight transects to share. Other technologies were discussed for data sourcing including hi frequency radar but limitations from line-of-site to land is a deterrent. Marybeth Head indicated that a localized buoy on site with a satellite communications infrastructure may be a solution for real-time data sourcing.

Science Advisory Update - The Science Advisory Group is a working group of the council which meets annually to review research and monitoring results and plan future projects. The group met on April 29th and Dr. Peter Auster reported on the research and the results to the council. Peter provided that the GRNMS Research Area report is finished but awaiting NOAA clearance for publication to the ONMS Conservation Series. The Working Group has more bandwidth now with the completion of this report reflecting 10 years of science in the restricted area. Kim Roberson added that the final report will be housed on the GRNMS website and available for download.

Dr. Peter Auster summarized the Science Advisory Group discussions which reflected on studies completed this past year by a cadre of research partners. Bethany Williams and Matt Kendall's team have compiled a decade's worth of detections from the acoustic array in GRNMS to reflect the connectivity of our ocean ecosystem. Their study found 18 different species of approximately 150 individuals tagged with Vemco devices showed up in on our acoustic receivers with more than 7000 detections. Most of these species were tagged by researchers along the eastern seaboard and include 11 types of shark (Blacknose, Blacktip, Bonnethead, Bull, Great Hammerhead, Lemon, Sand, Sandbar, Sharpnose, Tiger and White), 6 fishes (Atlantic sturgeon, Bluefin Tuna, Cobia, Red Drum, Southern Flounder, Striped Bass) and a Loggerhead sea turtle. Recommendations are to keep listening through passive acoustics, stay active in collaborative committees, tag key species like Cobia and King Mackerel, and look at how GRNMS compares to other areas as a coastal hub for ecological connectivity.

Scott Noakes is conducting CO₂ monitoring at the GRNMS buoy as it relates to climate change and ocean acidification. CO₂ levels in seawater are increasing over time with temperature and declining ph. Peter reported that Scott installed another monitoring station in the Research Area last summer and the results are in step with the buoy station except for some interesting results after a weather disturbance where the CO₂ levels spiked. Peter attributed this spike to increased surface rain fall and possible ground water intrusion.

Tim Henkel and Samantha Gimbel are studying the response of common urchin species to lower pH conditions including metabolism, movement and reproductive output. Peter noted that the researchers were monitoring urchins in a lab for changes of O₂ consumption, tracking or movement, righting time and gonad growth as some of the stress responses from living in a lower pH environment. Due to the low sampling size the experiments didn't prove the stress affects however it didn't disprove them either.

A collaborative team made up of graduate student Erin Arneson, Scott Noakes, Brian Hopkinson and Daniel Gleason studied the in situ response of symbiotic coral *Oculina arbuscula* to ocean acidification. A collection of coral samples were installed on Scott Noakes monitoring station in GRNMS to evaluate symbiont density. The pH range and growth rates were compared in the lab and in the sanctuary with findings for slower growth of coral at the monitoring site and high variability in the natural environment with limited time for acclimation.

Novel collector systems that allow the capture and quantification of coral larvae was conducted by Daniel Gleason and Marc Frischer. A few collection proto-types were installed on the seafloor including a current-driven propeller pushing water into passive collection tubes, a current tracking plankton net and a cage full of water-filtering shrimp. Additionally, a vertical tow was deployed. The vertical and current-tracking plankton nets were the most effective systems however none resulted in collection of coral larvae.

The distribution and diversity of macro and microalgae were studied by Craig Aumack and Risa Cohen. Samples of macro algae were collected for identification. Some algal species dominated specific sites. Diatoms were collected from the sand. Chemical extractions from the algae will result in organic byproducts along with a study of spores that attract and repel other species.

Catherine Edwards is using AUV gliders to support acoustic tag detections in GRNMS. Oceanographic factors that affect acoustic detections are being investigated such as stratification, tidal mixing, temperature and currents. Her study shows that detection rates depend on instrument implementation, winds, tides, waves, water depth and relative position in the water column. Detection range varies on tidal, spring/neap, seasonal and event-driven time scales. Co-located CTD data can guide interpretation of telemetry data. Peter reported that Catherine's team plans to deploy a collaborative fleet of gliders and robotic fish to characterize and predict the environmental changes in signal detection.

Dr. Auster reported on Diane Fibrance's study of the physical movement of water over reef habitats as a driver for predator-prey distribution using sonar to measure current velocity and direction. Dr. Auster also reported on the status of an ongoing study of predator-prey interactions using virtual reality camera technology, addressing interactions of piscivores and prey around reef habitats. He and his colleagues recently published a paper on these interactions in the journal PLoS, combining acoustic and diver surveys from 2016 to discern how forage fish distributions are effected by time of day (sunlight), reef structure, and presence of predators. He also submitted a manuscript to a research journal based on data from time-lapse video cameras deployed during a 2017 cruise featuring 22 separately identifiable sea turtles.

Roldan Munoz along with Kim Roberson and Christine Buckel are investigating biodiversity 'hot spots' in GRNMS. They are targeting snapper/grouper species, schooling prey fishes and threatened sea turtle by way of diver observations. The structural habitats were measured followed by visual transects of conspicuous and prey fishes and a survey of edge plateaus. These data were compiled with past visual observations of fishes and sea turtles to identify areas of high biodiversity.

Michael Denmark asked about sea turtles ability to locate GRNMS as a feeding ground in the same way they return to nesting beaches. Peter Auster did not know of any study that answers this question. Kim Roberson stated that the data reflects turtle sightings where 'maintenance' of undercut ledges are found. Peter Auster's camera imaging

shows turtles returning to the location repeatedly. Reed Bohne asked if turtles tagged on nesting beaches have an identifiable external tag. Kim Roberson noted that tags would likely be visible but not readable. She added that resident turtles could possibly be identified by barnacle patterns. Jenny Stanley asked if cleaning stations have been observed. Kim Roberson offered that we haven't had time to specifically look for these interactions but did note a recent observation of a Sheepshead picking algae off of a Loggerhead sea turtle's neck near a hydrophone in GRNMS.

Law Enforcement Update – SGT. Mark Carson with GA DNR reported that their officers conducted two patrols last quarter with three vessel checks and 11 individuals on-board. A verbal warning was given to one vessel operator who had 14 undersized Black Sea Bass. NOAA Office of Law Enforcement Officer Ben Hughes was advised. Reed Bohne asked if the officers acknowledged that they were in GRNMS and Mark said that they did. The Joint Enforcement Agreement (JEA) between NOAA and GA DNR has 45 man hours remaining through June 30. More patrols are scheduled for this quarter. Becky Shortland asked if they planned to be at fishing tournaments and captains meetings which they will (June – Aug). Elliott Lam asked if GA DNR is collecting carcasses from tournaments and Carolyn Belcher noted they are collecting red snapper carcass. Dawn Franco is the contact at GA DNR according to Carolyn. Red Snapper from the Sapelo Sportfishing Club will be made available by Colby Harris.

LT Warren Fair updated that the USCG *Cormorant* transited through GRNMS with no vessels observed. The vessel is currently in Miami and will transit through GRNMS upon return. The *Pompano* will transit through as well. LT Fair offered a designated patrol during fishing tournaments. Warren also noted that he received information about fish aggregation devices (FADs) being used off Charleston giving anglers an unfair advantage during tournaments. He did not specify that this is taking place in GRNMS but suggested an overflight a week out could help identify this activity. Michael Denmark asked if these violations had occurred in GRNMS before but Warren stated this is not known to happen in the sanctuary. Rick DeVictor has spoken with this person as well and noted that this may be a SC gear violation but no known federal water violation beyond marine debris. Michael Denmark suggested that this topic of FADs should be brought up at captains meetings. Robert Burns with UWV asked for data relative to enforcement vessels (USCG, DNR, GRNMS, etc) in GRNMS. GA DNR has seven years of boarding data. The South Atlantic Fishery Management Council (SAFMC) has an app called [MyFishCount](#) for recreation and commercial fishing which can provide additional user data.

Ecological Connectivity Working Group Update – Peter Auster provided that this is the same working group responsible for the Research Area report. The group will have more bandwidth available after the field season to spin up this effort. Discussions to identify what has been done are now underway.

Council Member Reports

NOAA Fisheries Update – Rick DeVictor provided an update on the 2019 Red Snapper season. The season opens for the southeast on July 12-14 and July 19-20 with no minimum size but only 1 fish allowed per person. The species is overfished and a descending device regulation Amendment 29 proposes that a device is required onboard when you possess a snapper grouper species to reduce discard mortality and 'shall be rigged and ready'. Rick reported a decreasing trend in biomass for Black Sea Bass although no overfishing or over fished status but the SAFMC is reducing annual catch limit May 9th. Rick also notes that the MRIP survey for charter vessels is migrating to electronic weekly reporting.

Warren Hupman suggested that fishermen should take a daily go pro photo and upload to NMFS for processing all this data. He noted there are 3000 charter vessels in the southeast region. Warren volunteered to help with this MRIP survey but it's still in development. Warren noted that he takes data home and processes but many fishermen do not have time. He suggests they make the survey quick and easy. Peter Auster asked who has the responsibility to report. The responsibility lies with the licensed charter fishermen.

The Nature Conservancy (TNC) Project – Bob Crimian offered that the National Marine Sanctuary Foundation provided funding for a recreational angler engagement project. The angler outreach project is in alignment with the existing focus on snapper grouper barotrauma, the [FishSmart](#) program and dissemination of descending devices along with survey participation. TNC is also working with GRNMS, DNR and the SAFMC to promote citizen science. Workshops along the GA coast will be offered and TNC invites all anglers to participate.

GRNMS Report

GRNMS Soundscapes Study – Dr. Jenni Stanley presented on the ongoing project to characterize soundscapes in sanctuaries with an emphasis on the acoustic monitoring plan for GRNMS. In 2016/2017, the project was initiated at four ‘shallow’ sanctuaries including GRNMS, Flower Garden Bank, Florida Keys and Stellwagon Bank national marine sanctuaries. Sanctuaries are being passively monitored through hydrophones at two locations in GRNMS and during all lunar cycles. Jenny reported that the soundscape can inform managers about the biologics of the site and help to characterize and monitor changes among habitats. The two sites at GRNMS feature one hydrophone inside the research area and one hydrophone centrally located outside of the research area. Jenni noted that seasonal and moon phases reflect intensity changes in sound level. Variances between sanctuaries were also reported including sound from vessel traffic.

Dr. Tim Rowell presented on the projects developed through a Navy-NOAA settlement from Dec. 2016 where parties agreed to develop capacity to protect acoustic habitats, marine mammal density and distribution modeling, identification of areas of biological importance and density data collection. He reported that most of the settlement funding is being used for deployment of calibrated passive acoustic recording devices in sanctuaries along with holistic sampling of the soundscape and characterization. Michael Denmark asked if other sites at GRNMS would be chosen for additional hydrophones and Tim reported that the same two sites will be further monitored plus one additional site has been added. Acoustic telemetry receivers have also been deployed to contribute to the fisheries studies.

GRNMS Expo Event – Elliott Lam offered a quick teaser for an event coming up in 2020 led by Michelle Riley. Stay tuned for more details.

GRNMS Foundation Update – Luke Roberson offered information about the GRNMS Foundation’s ROV competition which has been supported by GRNMS since 2004. The National Marine Sanctuary Foundation agreed to host the education program and brought Luke on as regional coordinator for this competition season. Luke reported on the competition mission, student reach and community engagement for the STEM program, inviting council members to dive in with us on May 11th at the Chatham County Aquatic Center.

Next Meetings

Elliott Lam suggested a webinar for July to host the next SAC meeting and to review the draft SAC Action Plan. An in-person meeting was proposed for early fall.

Public Comment

Tom Wright commented on his time working for the Navy and in ship building. He stated that he loves the community of Savannah and had conversations today that support this community. He noted that he appreciates the work being done and that we are all in it together. Tim Newfell offered that he is here from MI and thanked the council for allowing him to attend. Reed Bohne commented that he remembers the first GRNMS SAC meeting and appreciates the cooperative relationships.

The meeting was adjourned at 4:25 p.m.