

FLOWER GARDEN BANKS NATIONAL MARINE SANCTUARY

Sanctuary Advisory Council Draft Meeting Minutes February 22, 2017

Meeting Attendance Roster:

Jimi Mack	Recreational Diving	Present
Jesse Cancelmo	Recreational Diving	Present
Natalie Hall	Diving Operations	Present
Randy Widaman	Diving Operations	Present
James Wiseman	Oil and Gas Industry	Present
Clint Moore	Oil and Gas Industry	Present
Scott Hickman	Fishing - Recreational	Present
John Blaha	Fishing - Recreational	Absent
Shane Cantrell	Fishing - Commercial	Present
Buddy Guindon	Fishing - Commercial	Absent
Adrienne Simoes Correa	Research	Present
Larry McKinney	Research	Absent
Brian Shmaefsky	Education	Present
Jacqui Stanley	Education	Present
Ellis Pickett	Conservation	Present
Jake Emmert	Conservation	Present
James Sinclair	BSEE (non-voting)	Present
Mark Belter	BOEM (non-voting)	Present
Leo Danaher	U.S. Coast Guard (non-voting)	Present
Rusty Swafford	NOAA Fisheries (non-voting)	Absent
Charles Tyer	NOAA OLE (non-voting)	Present
Barbara Keeler	EPA (non-voting)	Absent
G.P. Schmahl	Sanctuary Superintendent (non-voting)	Present

Total voting member attendance: 13 of 16

Others in Attendance:

Leslie Clift, Kelly Drinnen, Michelle Johnston, Shelley Du Puy, Emma Hickerson, Bill Kiene,

Frank Burek, Joanie Steinhaus, Janese Maricelli, Mark Mueller (BOEM), Don Bush, Gunnar Valdez, and Bill Jones.

9:15 Meeting called to order by Clint Moore.

9:15 Welcome and Announcements – G.P. Schmahl

Today's meeting is also running through a webinar.

9:19 Administrative Business – Clint Moore

Adoption of Agenda – motion from Randy Widaman, second from Brian Shmaefsky, no discussion, all in favor, motion approved.

Approval of November Minutes – motion from Randy Widaman, second from Brian Shmaefsky, no discussion, all in favor, motion approved.

9:23 Sanctuary Updates – G.P. Schmahl

G.P. shared the new look of the FGBNMS website, which is currently being updated and reformatted by FGBNMS staff Kelly Drinnen.

In 2017, FGBNMS is celebrating its 25th anniversary.

Three SAC seats are vacant: commercial fishing (Shane Cantrell), oil & gas industry (Clint Moore), and conservation (Ellis Pickett). The open period to submit applications is through February 28, 2017. Incumbent Council members must reapply to be considered for reappointment.

G.P. reminded Council members the logistics of electing new officers at the next SAC meeting in May, as term limits are 2 years for Chair and Vice-Chair.

Public comment period is open through March 31, 2017, for two proposed national marine sanctuaries (NMS): Mallows Bay–Potomac River NMS and Wisconsin–Lake Michigan NMS.

Offices of NMS (ONMS) recently proposed a 5-year strategic plan and it will be available for public review and comment soon. FGBNMS proposed expansion plan is one of the items identified in this strategic plan.

Okeanos Explorer is now live in American Samoa (February 16-March 2):
<http://oceanexplorer.noaa.gov/>.

ONMS held a recreational fishing summit in mid-December 2016. Scott Hickman will present information to the Council later in today's meeting agenda.

FGBNMS Advisory Council participated in SIT (Seawall Interpretive Trail), and donated a bench to this project which was created and organized by Artist Boat (former Council member Karla Klay; Executive Director). Clint Moore organized over 10 SAC members to fund the necessary \$ 3,000 for a SAC bench. This bench highlights the FGBNMS and its Manta Rays, and is located near 31st Street in Galveston along the seawall. Two other benches also highlight

FGBNMS (one at 22nd St by Patricia Hagstrom and one at 28th St. By KIPP School, Galveston). Jacqui Stanley and her classroom also donated a bench which highlights the sargassum communities in the Gulf of Mexico (GoM). An ArtWalk will be held on March 4th from 6-8pm along Galveston's seawall, to walk and view the benches. Council members inquired if monies were available/allocated towards maintenance of the benches.

Seaside Chats are ongoing (Feb 8 (Manta Rays & More), Feb 25 (Celebrating 25 Years), with the third and final one this evening (Feb 22) titled Reef Romance at 6:30pm at Sea Star Base Galveston. The *R/V Manta* may be at the dock and available for public tours after the presentation.

FGBNMS Staff Kelly Drinnen and Michele Johnston presented a talk titled "Love & Danger on the Reef" at Galveston Island Brewery. The topic of the presentation was Lionfish, which were featured also on the menu. Clint Moore suggested bringing a presentation up to Houston to one of the museums or the zoo. Jake Emmert shared the educational messages regarding FGBNMS that Moody Gardens currently has and additional ones coming soon in their renovated/new exhibits.

Events coming soon:

ONMS Invasive Species Week: February 27-March 3

Facebook Live: Lionfish Dissections: February 27, 2:30pm

Reddit Ask Us Anything: Lionfish: March 3, 12-2pm

Ocean Discovery Day: March 25, 9am-3pm

Twelve (Artwalk project featuring FGBNMS on film): Spring 2017

Clint asked how Council members could help with Ocean Discovery Day. G.P. responded volunteers are needed and much welcomed for helping with a wide range of activities.

State of the Gulf of Mexico 2017 Summit will be held March 26-28, 2017 at the Omni Houston Hotel. Gulf of Mexico Alliance All Hands Meeting will be held March 29-31, 2017.

A new artificial reef, the 371' ship *Kraken*, was recently sunk by Texas Parks and Wildlife Department in 141 feet of water (deck is at 100 feet below the surface, and the pilot house is at 60 feet), and is located 16.5 nm (nautical miles) north of Stetson Bank. Randy Widaman asked how close it is from Claypile Bank. G.P. responded approximately 6 miles. A mooring buoy may be installed soon.

Stetson Bank Long-Term Monitoring Report for 2015 has been completed and is now available.

A couple of banks included in the expansion (Elvers and Parker Banks) that did not have high resolution multibeam bathymetry, have been funded by National Marine Sanctuary Foundation, and a survey trip will be conducted soon.

G.P. and Emma Hickerson met in September 2016 in Charleston, South Carolina with the NOAA Deep Sea Coral Research & Technology Program's Regional Science Team. Included in this program is the Southeast Deep Coral Initiative, led by Daniel Wagner, Jennifer Schull, and Peter Etnoyer. Since 2009, several areas within U.S. waters have been surveyed. In 2016-2019, this initiative will focus on the GoM and the Caribbean. In 2017, this initiative will support exploration of areas included in the FGBNMS proposed expansion.

G.P. shared the FGBNMS expansion process timeline.

FGBNMS is waiting to see if/how Presidential Executive Order issued on January 25, 2017, titled "Reducing Regulation and Controlling Regulatory Costs" will affect the program.

Update on FGBNMS Expansion DEIS public comments:

Total public comments: 8,491

Comments by input mechanism:

6,324 received through regulations.gov (1,414 entries, 170 duplicates)*

2,135 received through hard copy letters**

32 received at public meetings

* = included petition and "campaign" entries

** = includes "campaign-style" letters

Comments by submission type

3,451 Petition

3,451 Sierra Club – general support

4,618 Campaign

1,459 GRN (Gulf Restoration Network) – support

2,023 API (American Petroleum Institute) – non support

83 CEA (Consumer Energy Alliance) – non support

1,053 "sea turtle" – support

421 Individual comments

29 non-campaign letters (industry, government agencies, non-government organizations, and individuals)

360 non-campaign/petition comments on regulations.gov

32 public meeting

Comments by "support" category

Support: 6,301

General support, no alternative specified: 205

Alternative 2: 9

Alternative 3: 1,501

Alternative 4: 7

Alternative 5: 4,579

Conditional support: 23

Unclear: 10

Non-support (i.e. Alternative 1): 2,129

Approximately one week after the DEIS public comment closed, Kathleen Sullivan (head of NOAA) received a Care2 Petition with 64,650 signers indicating their support of the FGBNMS expansion, some of which included a specific alternative.

Six acres of the East Flower Garden Bank (EFGB) were affected by the 2016 mortality event, the cause of which is still unknown, but most likely may be related to a large freshwater runoff event. Clint asked if there is an explanation of why the event sunk into the crevices, sandy sites, and over/under-hangs. G.P. responded current meters will be installed soon, in order to get information on micro-movements of water on the banks. Adrienne Simoes-Correa added multiple factors could have combined to create this mortality event. Mark Belter asked if any indicators have shown up in the data analyses. FGBNMS staff Emma Hickerson, Principle

Investigator, responded a large team is currently working on it, and she is hoping to hear more results within a couple of months. Scott Hickman shared his firsthand experience of seeing the freshwater runoff near the EFGB, and added that what happens on the land affects the GoM. As Scott Hickman saw and reported firsthand, Adrienne also expects to see data analyses indicate fish populations were affected. A freshwater runoff event earlier this month (February 2017) had a tendorf that reached EFGB again. Scott discussed land management practices. After Ellis Pickett asked for clarification how remote sensing works, G.P. responded chlorophyll is one of the major components tracked through an analysis of ocean color. A coral bleaching event also occurred at EFGB (46% shallow, 20% deep) beginning in late August 2016. Coral bleaching also occurred at West FGB but to a lesser extent (24% shallow, 15% deep). Sea surface temperatures were higher than 86 degrees (30C) for 85 days between June 1 and October 5, 2016 (information obtained from TABS Buoy V from EFGB). Reef crest temperatures measured over 30C at EFGB for 30 days and over 30C for 18 days at WFGB. Stetson Bank has experienced macroalgal blooms over the years, as it is closer to shore and experiences freshwater runoff events more frequently. Water quality instruments are located on the seafloor at all three banks to record temperature and salinity. Scott mentioned a mandatory visitors permitting program would help to report these events. Natalie suggested to boost the voluntary reporting form to get more information from visitors. G.P. added bleaching was not unique to FGBNMS, as many other reefs around the world experienced severe bleaching, such as the Great Barrier Reef (2016 was the warmest year of record). Bleaching events have received press attention, including two articles in November 2016 in the Galveston Daily News on FGBNMS. G.P. reported that as of early February, the FGB corals had significantly recovered from the bleaching event, and showed photographic examples from various monitoring stations. Mark mentioned that BOEM is interested in encouraging citizen science in the GoM, and he is open to suggestions to engage the public. Adrienne mentioned even though corals may recover from bleaching, the corals are still impacted because they have exhausted their energy reserves. Thus, there can be impacts in the future leading to things such as decreased spawning. The corals also may not remain resilient after repeated stressful events. Jake mentioned he has a large volunteer diver group willing to help monitor and contribute to citizen science, and that a discussion about how to incorporate more citizens would be welcome. Clint suggested Mark and Jake get together to discuss working together on citizen science with someone from FGBNMS, to which they agreed and gathered names of volunteers (Brian Shmaefsky, Scott Hickman, and Natalie Hall).

11:10 Action Item: Council Resolution Consideration – Joanie Steinhaus

Joanie Steinhaus (Turtle Island Restoration Network) and Janese Maricelli (Surfrider, Galveston Chapter) gave a brief history on their efforts, starting in January 2014, to reduce single-use plastic bags in Galveston, culminating in their introduction of a Galveston city ordinance. Joanie will be involved with a project, using citizen scientists, to monitor micro-plastics on Galveston beaches. Scott Hickman voiced his support of the resolution, and he shared his firsthand experience of plastic bags in the ocean and on the beaches, as well as his positive experience and feedback when he outreached to a local grocery market in Galveston. Jake Emmert noted education is needed and important, and he also supports the resolution. Scott asked about other local grocery stores on the island. Joanie will soon be visiting WalMart, Krogers, and Randalls to gauge their interest, and Randalls' management said they will support the initiative, even if Galveston city does not pass the ordinance. Krogers, Randalls, and Target have national green initiatives, but WalMart does not. Shane Cantrell indicated his support and asked how to access the proposed ordinance. Joanie Steinhaus will get the website information to FGBNMS staff Leslie Clift, who will distribute to the SAC. The ordinance may be reintroduced to Galveston city council in March or April. If the ordinance is passed, then it will

take a year to phase it in. Joanie introduced a letter for signature by the SAC Chair: a FGBNMS Advisory Council resolution regarding single-use plastic bags in Galveston, Texas. The letter affirms the support to: 1) local ordinances to ban the use and distribution of single-use plastic bags; 2) efforts of local businesses to transition away from single-use plastic bags; and 3) efforts to remove plastic bag litter from the beaches of Galveston Island.

Council action item: Shane Cantrell made a motion to approve the SAC Chair to sign the resolution letter. Ellis Pickett seconded. All in favor. Approved.

11:25 Action Item: Advisory Council Enforcement Discussion Panel – Leslie Cliff

Leslie reviewed the letter and discussion from the previous SAC meeting (November 22, 2016) when this item was on the agenda. Leslie also shared with the Council that FKNMS signed on to the letter at their Council meeting earlier this month (February 2017), bringing the total number of Advisory Councils that have signed on to eight.

Council action item: Randy Widaman made a motion to sign the letter, Jake Emmert seconded. All in favor. Approved.

11:30 GMFMC Coral Amendment – G.P. Schmahl

The Gulf of Mexico Fishery Management Council's (GMFMC) Coral Amendment 7 will be discussed at a scoping and public hearing meeting tomorrow evening (Thursday, February 23, 2017) in Galveston at the Hilton Hotel, starting at 6pm. In 2006, the reauthorization of the Magnuson-Stevens Act (MSA) identified the importance of deep-sea coral protection. It also created the Deep-sea Coral Research and Technology Program. G.P. outlined the GMFMC's responsibilities such as the designation of Habitat Areas of Particular Concern (HAPCs) which may have specific regulations and requires consultations/review with other agencies. Deep-sea corals are distributed worldwide, including the GoM and can form structures, provide habitat to other species, are hotspots of biological diversity, may be Essential Fish Habitat (EFH), are targets for biomedical research, and are vulnerable to human impacts. NOAA's Strategic Plan for Deep-Sea Coral and Sponge Ecosystems identified the need to protect these areas from impacts of bottom-tending fishing gear. MSA reauthorization directs NOAA to identify, locate, and map these areas, as well as monitor activity and protect these zones from fishing gear. GMFMC's Coral Amendment 7 will be reviewing the recommended coral areas identified as priority habitats for management consideration in the GoM. Forty-seven sites were originally identified in the GoM, but were narrowed down to twelve after the GMFMC's recommendation to reduce the scope. Sites identified as priorities on the west Florida slope include Pulley Ridge, Long Mound, North Reed Site, and Many Mounds. The South Reed site has been identified as a mid-priority area recommended as a HAPC without fishing regulations. Priority areas for HAPC consideration in the northeastern GoM include Viosca Knoll 826 and 862/906, Alabama Alps Reef, L&W Pinnacles and Scamp Reef, Rough Tongue Reef, and Mississippi Canyon 118. Deepwater coral areas in the northern GoM recommended for HAPC consideration include AT357, AT047, Mississippi Canyon 751, and Mississippi Canyon 885. Deepwater coral areas recommended to be HAPCs without regulations are Garden Bank 299, Green Canyon 354, GC 140 and 272, and GC 243 and 832. Sites in South Texas include Southern Bank and Unnamed Bank and have been identified as priority for HAPC designation. Octocorals (e.g., sea whips, sea fans) are being considered on whether or not they should be included in management. Currently, GMFMC does not have the authority to manage octocorals, after they ceded management to the state of Florida several years ago. James Wiseman mentioned the floating platform in Viosca Knoll area, and is interested in hearing more from GMFMC. James outlined

the process of permitting that oil & gas industry undertakes when proposing a project in the GoM. Scott Hickman asked if anything in the Amendment 7 could curtail the oil & gas industry. Mark Belter responded BOEM has a good working relationship with the oil & gas industry through Notice to Leasees (NTLs). HAPCs do not trigger any BOEM/BSEE regulations/management, but do trigger a flag for BOEM/BSEE to gather more information on those areas.

12:00 Break for lunch

12:10 BOEM Biological Review Methodology – Mark Belter

BOEM is currently in the process of collecting and evaluating data to determine if No Activity Zones (NAZ) should be revised to better reflect zones of greatest ecological importance and sensitivity to specific impact producing factors (IPFs). Existing NAZs are defined by isobaths that were intended to define an area sufficient to mitigate potentially adverse impacts to the most sensitive habitat and sessile benthic organisms. Other examples of protective measures include the lease stipulations that have been applied to specific blocks associated with biologically sensitive areas, such as topographic features, live bottom, and pinnacle trend areas.

Site specific reviews by biologists are triggered by bottom-disturbing activities. All plans that include bottom disturbing activities in water depths of 300 m depth or more are reviewed. Reviews are also triggered for activities proposed in blocks that include, or are adjacent to blocks that include, biologically sensitive seafloor features. Buffer zones are implemented to protect sensitive habitats. Mitigations sometimes applied to habitat areas without confirmation of sensitive sessile benthic communities, such as suspected hard bottom habitat near hydrocarbon seeps. In such cases industry can survey the suspected habitat to determine the nature of the seafloor and presence or absence of chemosynthetic or deepwater coral communities. Similar methods can be applied to shallow water reviews and mesophotic communities if needed. Although specific avoidance criteria are provided in the BOEM notices to lessees, biologists may tailor recommended mitigations according to the location or activity.

BOEM maintains a publicly available database of seismic anomalies. The database includes a wide range of anomalies and is accompanied by a detailed explanation of the various anomaly types and potential as sensitive benthic habitat. Confirmed communities are identified. The database is regularly updated with new information from surveys and biological reviews.

The evaluation of seismic anomalies for hard substrate and potential biological habitat is conducted by biologists and geophysicists. Data is acquired using a variety of survey methods, including 3D seismic, multibeam echosounder, sub-bottom profiler, and side scan sonar, each of which contributes to the information used to identify substrate types. Consultation with an operator is sometimes necessary to resolve data interpretations.

BOEM encourages interested individuals and organizations to review the information available online at <https://www.boem.gov/Seismic-Water-Bottom-Anomalies-Map-Gallery/>. If anyone has additional questions, BOEM has other resources that may be helpful.

12:35 Deepwater Benthics: Stakeholder Group Perspective – Clint Moore

Clint shared a map of BOEM's titled, Assessment of Undiscovered Technically Recoverable Oil and Gas Resources of the Nation's Outer Continental Shelf, 2016. Since the release of DEIS

and inclusion of Alternative 4 and 5, the oil & gas industry was alarmed and are asking questions regarding the end result of not only the current proposed expansion areas, but future ones as well. All areas except less than 10% of the outer continental shelf (OCS) are currently off-limits to the oil & gas industry, and are limited to the central and western GoM. No sales except for the GoM are predicted for the next 5 years. Clint shared the definition of “national significance”, as well as a map of highly rugose deepwater slope bathymetry for a section of the GoM. Since 1998, geoscientists at BOEM have identified and mapped nearly 35,000 water bottom (seafloor) acoustic amplitude anomalies in the deep water northern GoM using 3-D time-migrated seismic surveys. The purpose of this mapping program is to understand the distribution of natural hydrocarbon seeps and related benthic fauna in the GoM, and to characterize other seafloor features related to the geological framework of the seafloor. These areas show anomalously high or low acoustic amplitude response relative to typical background, with most areas having overlapping seismic coverage by two or more surveys. These results cover over 230,000 square kilometers of seismic data interpretation. A study conducted in 2003 estimated a minimum of 2,000 BOPD (barrels of oil per day) of natural oil seeps in the GoM basinwide. Oil seeps can support chemosynthetic communities, and are prolific in GC, WR, KC, and GB areas in the GoM. In 1910, 38 years before the first offshore well was drilled, a paper was published that documented significant oil seeps in the GoM, most likely the largest in the world. As these anomalies are groundtruthed and are found to be either chemosynthetic communities or deepwater coral communities, a broader discussion is needed about what is to be protected in the future and what is nationally significant, and which areas would be justified for national marine sanctuary status. Approximately two dozen sites in Alternative 5 are already identified on this map and the potential for future regulatory regimes for these areas is concerning for the oil & gas industry. Clint showed a few examples of proposed banks and shipwrecks proposed in Alternative 5, with their existing regulatory zones, proposed sanctuary boundaries, and existing infrastructure. The stakeholder concerns include: 1) What is the definition of “special national significance” (as it’s not defined in the NMS Act); 2) Do most of these benthic communities merit eventual NMS protection?; 3) Is BSEE/BOEM’s regulatory oversight sufficient to protect them without adding NOAA’s supremacy of regulatory control over BSSEE/BOEM?; and 4) How much governmental protection is warranted?

Discussion followed. Jesse Cancelmo questioned if the oil & gas industry sees any merit in the NMS program. Clint responded that the oil & gas industry helped to establish the FGBNMS. Jesse responded that what he has been hearing since the release of the DEIS seems to indicate otherwise, and that concerns by the oil & gas industry over Alternatives 4 and 5, and what may or may not happen in the future, is not a productive use of time. Clint expressed concern over the precedents set in the boundaries for the current proposed sanctuary expansion, and this area is of great interest to his industry. Jesse commented that many years of work have already been completed to get to the current boundary expansion review, and it would take at least more two years to come to fruition. Jesse asked Clint and James Wiseman if they support Alternative 1. Clint responded he does not support Alternative 1, but has consistently supported Alternative 2. James responded that the 2007 SAC recommended Alternative 2, but G.P. and his staff recommended Alternative 3, based on what they have learned in recent years. James said he continues to support Alternative 2. Clint said the oil & gas industry does not object to Alternative 2 provided boundary sizes and regulations are resolved to their satisfaction, but only supports Alternative 1 at this time. Clint added the August announcement of the boundary expansion of the Northern Hawaiian Island national monument in Hawai’i was alarming to his industry, because it drastically increased the size of the OCS covered. Jake Emmert noted it is not possible to quantify the value of areas that are “nationally significant”, and rhetorically asked how much is enough to protect? He leans towards protecting more because it is unknown how much is enough to protect (similar to rainforests). Shane

Cantrell said the issue of national significance needs deeper discussions, with a balance needed, considering issues such as their prevalence (e.g., are they everywhere in the GoM? Are these communities hundreds of years old?). Shane Cantrell said concerns over precedents and actions in the future need to be discussed. James Sinclair pointed out these datasets of seismic anomalies represent over 20,000 polygons, which is a lot of potential habitats. One groundtruthing project found 80% of the anomalies had seeps, some with seep communities. Many of these sites are beautiful and James would like to protect every one of them, but it's not realistic to do so. Ellis Pickett pointed out that more area of the GoM does NOT have anomalies and is available for stakeholder use, and asked if there was ever a case in GoM where the oil & gas industry was prohibited from drilling. James Wiseman responded no, but in one case, drilling was almost denied. Ellis said future concerns will be alleviated with advancing technologies within the oil & gas industry that could allow better access to resources. Ellis said what he would like to see is the oil & gas industry to look at what platforms could be saved in the future, and that the next steps should be looking at what federal regulations need to be changed so that platforms can be incorporated into the NMS program.

Discussion was halted for public comment.

1:25 Public Comment and Q&A Period

Taylor Borel runs a charter boat out of Galveston. He caught a 14 inch lionfish at one of the rigs offshore about 60 miles off of Galveston. He wants something to be done about the lionfish. Scott Hickman asked what Taylor thought about free diving spearfishing in the proposed sanctuary expansion areas. Taylor supports it. Charles asked if Taylor takes out scuba divers or spearfishers. Taylor has not, but would, if given the opportunity and if regulations supported it.

1:30 Continued discussion - Deepwater Benthics: Stakeholder Group Perspective – Clint Moore

Scott Hickman said he wanted to protect as much as he can, and that is why he supports Alternative 3. During his visit to Washington DC, he learned that if the SAC does not have a unified voice regarding the DEIS, Congress will not support any expansion. While although Scott supports Alternative 3, he does not think it will happen with the current administration. He urged fellow Council members to come together, have discussions, and come up with an agreement in order to move forward and not risk Alternative 1. Mark Belter said information is not available to characterize all of the deepwater communities. BOEM is very careful in their mitigation policies, and encourages the Council to talk to BOEM's regional management. Natalie Hall wants to find a balance with protection and stakeholder use for the proposed sanctuary expansion areas, and supports looking at future possibilities of actions and regulations and how they could impact stakeholder access/use.

1:38 Sanctuaries Recreational Fishing Summit – Scott Hickman

Scott attended the Sanctuaries Recreational Fishing Summit in December 2016 in Florida with 11 other representatives and a total of 30 attendees. Scott praised FGBNMS with its great working relationship with its SAC. He mentioned other SACs have a lack of trust with their administration, and want their votes to be legally binding. Some of the recommendations from this summit included a request for NMS superintendents to have annual meetings with their fisher stakeholders, and more education/outreach in the community. Summary statements and commitments were issued (distributed by email to Council members). An invitational

recreational fishing summit held by National Marine Fisheries Service will be held in Houston on March 31, 2017.

2:03 Boundary Expansion Working Group Update – Clint Moore & Shane Cantrell (co-chairs)

The overall goal of the BEWG (Boundary Expansion Working Group; created by SAC at April 2016 meeting and composed of 10 SAC members) is to review and to make a recommendation on the DEIS to the SAC. At the first BEWG meeting on July 28, 2016, the group reviewed the 2007 SAC & BEWG recommendations, reviewed the 2012 Federal Management Plan (FMP), reviewed 2016 DEIS Alternatives 1-5, reviewed specifics of Alternative 2 and Alternative 3 (e.g., polygons vs. rectangles), and discussed FGBNMS assessment matrix format used by 2007 BEWG and 2016 FGBNMS staff. Included in the boundary expansion ranking criteria were the following factors: resource significance, structural connectivity, biological connectivity, potential or perceived threat, and public and scientific priority. During the second BEWG meeting on August 25, 2016, the group began bank boundary outlining and discussion, discussed VMS data availability and utility, discussed commercial fishing endorsement program, and discussed public comments. At the third BEWG meeting on November 16, 2016, the group reviewed and discussed the GMFMC report, reviewed several ROV transect videos, discussed boundary adjustments, discussed boundary types (i.e., polygon vs. rectangles), and began discussion of regulations for areas. During the meeting on February 9, 2017, the BEWG discussed and reviewed the GMFMC Tier 1-2 areas for fishing regulatory boundaries, discussed regulations regarding spearfishing, fishing, and other stakeholder use, and reviewed the results of a boundary mapping exercise by Clint Moore that resulted in 3 sub-sets of maps (Plan 2a (NAZ areas only), Plan 2b (topographic-biological areas), and Plan 2c (combined Alternative 2 & 3, lesser of outlines)). The next (5th) BEWG meeting will be held in late March/early April 2017, with projected discussions on review/discussion of DEIS economic impact section, conducting an assessment matrix, finding consensus on boundaries & areas, finding consensus on regulations in each areas, and forming a formal recommendation that could be brought forth to the entire Council at the May 2017 SAC meeting. Clint shared the Petroleum Trade Group suggestion the BEWG consider BOEM's existing NAZ as expansion boundaries because they already protect large core biological areas down to 85 meters on all the Alternative 2 and Alternative 3 banks. Shane reviewed the GMFMC recommendations and their proposals for Tier 1, 2 and 3 type areas (Outlined in the BEWG meeting minutes and also available online through the GMFMC website), and for adding mooring buoys to the proposed sanctuary expansion areas in the DEIS. Jake Emmert asked about the maintenance of the mooring buoys. Shane responded it would fall under sanctuary management. Mark Belter mentioned the No Activity Zones (NAZs) could change, based upon incoming data. Shane Cantrell added a request for access to freediving spear fishers to proposed sanctuary expansion areas. G.P. also mentioned the request submitted for exemption for longline pelagic fisheries.

Clint shared a map boundary recommendation by a Petroleum Trade Group suggesting BEWG consider BOEM's existing NAZs as expansion boundaries, because they already protect large core biologic areas down to 85 meters on all banks contained within Alternatives 2 and 3. This suggestion led to a mapping exercise by Clint Moore, using guidance from NOAA's "Marine Managed Areas: Best Practices for Boundary Making" web publication. Clint explained the 3 Maps Plan, and showed examples of the 3 maps for several of the proposed banks. Natalie Hall asked about maintenance on existing infrastructure and what would be allowed within the sanctuary. G.P. responded that the grandfathering of infrastructures and existing, certified leases, including maintenance, would be allowed. Plan A follows BOEM's NAZ boundary lines, closely following the habitat outline. Plan B is similar to Alternative 2 boundaries, minus the 500

meter buffer zones. Charles Tyer pointed out that some of the narrow “tails” that extend from the banks and “cove indentions” are enforcement issues and need to be worked out. Natalie Hall asked if it was possible to have specific regulations for specific banks, and G.P. responded affirmatively. Natalie recommended the BEWG take a closer look at this topic. Sanctuary regulations allow for a variety of oil & gas operations to occur, outside of NAZs, according to BOEM regulations, but EPA’s regulations are also triggered regarding discharges. Plan C includes buffer zones, but the rectangular boundaries were morphed into polygons, allowing for some mud plain areas to be excluded, and some existing pipelines to be included. Scott Hickman mentioned some existing national marine sanctuaries allow non-scuba assisted spearfishing. Scott also added that when watching the random ROV clip Clint showed the BEWG, Scott was impressed with what he saw and wanted to drop his fish line in that area. While Scott considers that area in that video clip as nationally significant, he knows others do not. James Wiseman asked about the next steps. Clint responded he will share the 3 map plans with his trade group next, but he has not formed his own recommendation, nor is this a recommendation from the BEWG. Jake Emmert said the mapping exercise was a good way to look at alternatives, and requested to join the BEWG. G.P. explained action from the full SAC would be needed before additional members could join, with no limit for the number of SAC members on a working group. Scott Hickman made a motion to add Jake Emmert to the BEWG, seconded by Randy Widaman. All approved. Motion passed.

Clint shared information on the criteria matrix and boundary expansion ranking criteria that could serve as the framework for the BEWG. G.P. asked about the extent of geographic range considered for the ranking criteria, to which the answer was the GoM, but areas within logistically accessible areas by the *R/V Manta* ranked higher (northwestern GoM only). Clint asked the matrix used in the DEIS to be shared with the BEWG.

3:09 Government & Industry: Petroleum Reserves in Proposed Expansion Areas – Clint Moore

G.P. said one of the comments from BOEM was to include estimates on how the sanctuary boundary expansion would affect known reserves, undiscovered reserves, and contingent reserves. Just the known reserves were presented in the DEIS, and the impact to the oil & gas industry, as a whole, was determined to be less than significant. When a proposed boundary intersected into known reserves, that area was input into spreadsheet. All areas in the spreadsheet were then tabulated, and then compared to the number of known reserves in the entire GoM to known reserves impacted by proposed boundaries. The resulting computation was 0.25% would be affected by sanctuary boundary expansion, which equates to less than significant. At the time of the DEIS drafting, FGBNMS did not have information on undiscovered reserves and contingent reserves. BOEM has now provided information for undiscovered reserves, and BOEM will soon provide information for contingent reserves. This information will be included in the FEIS, and will be made public at its release to the public.

Clint Moore began his presentation by defining undiscovered reserves as undiscovered, technically recoverable oil & gas resources. He shared a BOEM 2016 map highlighting central GoM where 33.25 Bbo (billions barrels of oil) and 91.27 Tcf (trillions of cubic feet; natural gas) are estimated to be. After converting 91.27 Tcf to boe (billions of barrels equivalent), at least approximately 48 boe are left to be discovered within technical means, just in the central Gulf of Mexico area. Overall, with Western & Eastern Gulf areas added, total undiscovered oil & gas in the USGOM is 71 boe (billions of oil equivalent barrels).

The continental shelf out into the Sigsbee salt map area that includes GC, WR, GB, and KC areas is a very prolific producing province in the oil & gas industry. Exploration and discovery in the ultra deeper waters began in about 1997, so the oil & gas industry has about 20 years of fields on the deep continental slope, whereas exploration on the continental shelf dates back to 1948.

He showed a slide of a generic seismic section of a salt dome and how it pushed up the seafloor to the surface during the last glacial period (15,000 years ago) when the sea level was 300 feet lower than is it today, where it became a good area for carbonate bank creation. As the domes rise, they distort the bedding of rocks on either side of it. Concurring with deposition of layers, the domes turn up sandstones that become reservoir rock for oil and gas. Because salt is impermeable, oil and gas gets trapped in large quantities on the sides of the domes. An example was shown of this process (South Marsh Island 73 dome), and is presumed to be similar to banks included in the DEIS alternatives.

Known reserves (P1 or proved developed) are those oil & gas resources that are in producing wells that would not need any additional money to be spent to extract the resources, and are the opposite of undiscovered reserves. Clint said the 13 MMbl number used in Alternative 3 for the 15 banks in the DEIS is the most conservative category of reserves, and the potential is great for much, much more. None of the 15 Banks have had any wells ever drilled adjacent to them deeper than 10,000'. All of the banks could have significant to "giant" (100MMbl) reservoirs of oil and gas surrounding them, but industry will not know until they are drilled. There are multiple kinds of "reserves/resources" which describe techno-economic levels of recoverable oil & gas.

Society of Petroleum Engineers defines reserves as "quantities of petroleum which are anticipated to be commercially recovered from known (discovered) accumulations from a given date forward. All reserve estimates have a percentage risk level of uncertainty. The risk of uncertainty is conveyed by placing (discovered) reserves into one of two principal classifications, either proved or unproved. Unproved reserves are less certain to be recovered than proved reserves, are on existing platforms with existing wells, and would require additional capital spent to extract the resource. Unproved reserves may be further sub-classified as probable and possible reserves to denote progressively increasing uncertainty in their recoverability from a discovered field. Potential reserves are undiscovered reserves, not yet drilled, let alone ever discovered." Clint added again that the DEIS quantified only the most conservative of all reserves, that being the proved developed reserves from the old remaining platforms, which should continue to flow from existing producing wells without any further expenditures.

The 15 banks in Alt 3 all have salt dome flanks that could contain "giant" (100+ MMbl) fields, especially from 10,000' down to 30,000'. The salt dome flanks have never been drilled that deep, but are the subject of current industry exploration leasing around the 15 salt domes that contain the 15 banks on their crests. Even if there were only 2 giant fields to be found somewhere around the flanks of each of the salt domes (there could be more than 2 at each), that would add 1.2-2.4 Billion barrels of oil equivalent (boe) (50-100 billion gallons oil) to the discovered reserves of the GoM; not just the 13 MMbl identified in the DEIS that will someday be produced from existing platforms. That is a differential of 100+:1 potential economic impact. Clint stated his industry wants to drill on the flanks of salt dome banks (such as Bright Bank, Alderdice Bank, Parker Bank, and the 12 others in Alternative 3). The industry wants to pull in the boundaries close as possible to the flanks to maintain access.

Discussion followed Clint's presentation. G.P. restated the known reserves in the DEIS that

could be affected are 0.25%. However, when the contingent and undiscovered reserves are included in analyses, the amount is indeed larger, but the context (percentage) gets smaller, reducing to 0.087% of the undiscovered reserves that would be affected by sanctuary expansion. G.P. added the possible giant fields could be accessed using directional drilling or in other areas not within the sanctuary boundaries.

James Wiseman stated most wells drilled in the 1970s were drilling down to the Pleistocene trend, but today's wells are trying to access deeper trends in the Cretaceous and Lower Miocene. James does not agree with NOAA's assessment of less than significant to the oil & gas industry. He also added some reserves may be accessible or technically recoverable, but they may not be economically viable. James Sinclair asked about the industry accessing salt domes that have no surface expression (i.e., a bank), instead of accessing salt domes/banks that do have surface expressions and allow for biological growth. Clint responded all salt domes are potentially viably economic depending on their depth.

Clint referred to his company's relinquished lease block at Bryant Bank when the DEIS was released. FGBNMS staff Emma Hickerson asked why Clint did not have the discussion with FGBNMS after the DEIS release and ask, at that time, to pull in the boundaries of Bryant. Clint responded the DEIS was released on June 10 and he had to either pay the lease on June 30 or relinquish it. Clint requested BOEM a 1-yr suspension, but BOEM did not approve the suspension of payment. Clint assumed NOAA would not be able to respond in the 20 days before the lease payment was due. In the uncertainty, Clint's company chose to relinquish the lease. Emma suggested the new information FGBNMS has gained on these areas be taken into account by the oil & gas industry.

Mark Belter offered his help and his agency's help to get the figures/numbers needed for analyses. Charles Tyer summarized this entire discussion has centered on oil and gas being able to drill, yet drilling can occur within sanctuary boundaries, but just not in the NAZ. The oil and gas industry's concern is based on something that may or may not happen in the future. Clint referred to a company that dropped its lease on Parker Bank, and questioned the federal government's policy of "take". James Wiseman said the next stop is for agency consultations to continue, and to look at the significance (i.e., impacts), because the oil & gas industry does not agree with NOAA's assessment.

Bill Kiene asked if Clint's proposed boundaries are being based on ability to get access to unknown reserves. Clint confirmed yes. G.P. pointed out the 2007 maps, which Clint is using, is not the most current data. When Clint shared there are over a million potentially significant biological features (psbf) in the GoM, G.P. added that FGBNMS only wants 15 of those, but some coincide with some that Clint also wants.

Ellis Pickett said NOAA pared its preferred alternative down from 45 banks in Alternative 5 to 15 banks in Alternative 3. He asked if the salt domes are unique or if there are more out there that are similar. Clint responded 25 northwestern banks are on the outer continental shelf. He added from 10,000-30,000 feet on the flanks is where the potential is. Clint referenced the Santos Basin off of Brazil that drilled for 30 years in shallower depths (to top of salt at 15,000 feet) without finding any oil or gas, but when they pierced the salt and drilled down 5,000 feet deeper, they drilled out into many giant fields that will now likely produce a 100 billion barrels of oil equivalent (boe). Ellis asked if Clint's proposed boundaries would allow drilling to access those areas. Clint responded Plan A would, and potentially so would Plan B. Clint will be evaluating his 3 sets of maps before he makes his final recommendation. Mark Belter mentioned BOEM already has NAZ, shunting zones, site specific reviews, and will issue

conditions of approval, regardless of sanctuary expansion. Emma reminded the SAC that newer information since 2007 is available and was used to select NOAA's preferred alternative.

James Sinclair summarized that FGBNMS is waiting on contingent reserve numbers from BOEM to assess economic impact on the oil & gas industry, but also the request is for FGBNMS to assess economic impact on the oil & gas industry based on undiscovered reserves, and determine whether or not the impact is still considered insignificant or not. The Draft EIS only used proved known reserves intersecting with sanctuary boundaries. Also, the reserves around banks (i.e., salt domes) should be weighted more in worth than undiscovered reserves because those reserves around salt domes are more accessible, more economically viable, and more certain to have a financial return. G.P. pointed out the request to BOEM and FGBNMS for further analyses is intensive and takes a lot of resources to perform them. Also, modifying boundaries should be conducted first, before asking for new numbers from BOEM.

3:44 Ocean Acidification/Climate Change Program Review – Leslie Clift & Shelley Du Puy
Tabled, due to time constraints, until next SAC meeting.

3:45 Agency Reports

Leo Danaher (USCG) – USCG recently reinforced operations/support with a meeting with the Director of NOAA OLE, with a focus on the maritime boundary line. Subsequently, five interdictions occurred, as well as a new narcotics case.

The USCG Cutter *Dauntless* recently conducted law enforcement boardings in the FGBNMS. They were also involved in the rescue of crew from a 26' foot vessel that capsized about 20 miles from EFGB, and is still floating.

In January, USCG has a discussion with fixed wing branch out of Mobile, Alabama, in their interest in performing more missions in GoM. With expansion, USCG could use fixed wing assets to spot check new sanctuary areas randomly because they won't have enough at-sea assets to cover the area. USCG *Corpus Christi* is focusing on international boundaries. Emma mentioned making a presentation to them soon, and Leo will help facilitate that.

Barbara Keeler (EPA) – absent; no report

Rusty Swafford (NMFS) – absent; no report

Mark Belter (BOEM) – none

James Sinclair (BSEE) – Stetson Bank Long Term Monitoring is going great, and the 2015 report has been released. New monitoring on deep reefs will be conducted.

The artificial reef permit in ACOE for HIA389A is waiting to be processed. FGBNMS and TPWD are continuing to communicate. FGBNMS issued a Letter of No Objection.

Charles Tyer (OLE) – A new law enforcement officer has been hired for Galveston and will begin fulltime August 1, with patrols at FGBNMS.

4:24 New Business

No new business

4:25 Meeting Adjourned - Motion made by James Wiseman, seconded by Natalie Hall. All in favor. Approved.

Next SAC Meeting scheduled for May 17, 2017.