Standing, Coral, Socioeconomic, and Reef Fish SSC
Meeting Summary
Tampa, Florida
January 9-10, 2018

The meeting of the Standing, Coral, Socioeconomic, and Reef Fish SSC was convened at 9:00 am on January 9, 2018 with Vice-chair Joe Powers as the Acting Chair. The agenda was approved, and summary minutes of the March 8, 2012 Coral SSC meeting and the October 31, 2017 Standing and Reef Fish SSC webinar meeting were approved as written.

Kai Lorenzen agreed to serve as the SSC representative at the January 29 to February 1, 2018 Council meeting in New Orleans.

Standing and Coral SSC Session

Southeast Deep-sea Coral Initiative in the Gulf of Mexico

Dr. Daniel Wagner presented information on previous deep-sea coral initiatives and current work in the Gulf of Mexico. He provided a summary of existing and future data products that resulted from efforts in the Gulf. The 2017 research expedition data were provided directly to Council staff for inclusion in Coral Amendment 9. All areas surveyed had both stony and black corals present, and some fishing gear was observed. Dr. Wagner also provided information about upcoming research that can be useful for future management decisions on deep-sea coral, including two scheduled research expeditions in 2018.

Review of the Public Hearing Draft of Coral Amendment 9

Staff reviewed the history of Coral Amendment 9 and outlined the Council's preferred alternatives. Staff noted that there would be a Coral Amendment 10, which would address areas outlined as warranting protection that weren't included in this document. The SSC discussed the existing information on Pulley Ridge in Action 1. Based on the information provided by Dr. Wagner, the SSC discussed if there should be an alternative that encompasses only the 400 m to 600 m depth range within and between the Long Mounds, North Reed, and Many Mounds proposed HAPCs.

> **Motion: The Committee requests that in Coral Amendment 9, under Action 2: New Areas for HAPC Status in the Southeastern Gulf, Council staff draw an HAPC encompassing Long Mound to Many Mounds for the 400-600 meter depth range as an alternative HAPC.**
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> Motion carried with no opposition.

The SSC discussed the intent of the royal red shrimp endorsement exemption option for Action 3, Alternative 7. Staff highlighted that alternatives should be enforceable by law enforcement.

Motion: The Committee requests that the language in Coral Amendment 9, Action 3: New Areas for HAPC Status in the Northeastern Gulf,

> **Preferred Alternative 7: Establish a new HAPC named Viosca Knoll 862/906 bound by the following coordinates…**
>
> > **Option c: "Prohibit bottom tending gear in the Viosca Knoll 862/906 HAPC. Bottom tending gear is defined as: bottom longline, bottom trawl, buoy gear*, dredge, pot or trap, and bottom anchoring by fishing vessels. Provide an exemption to the bottom tending gear for fishermen possessing a royal red shrimp endorsement and is fishing with royal red shrimp fishing gear."**

be changed to read:

> **"Federal shrimp trawl permit holders with a royal red shrimp endorsement may transit through the HAPC while fishing for royal red shrimp, but with the trawl gear off the bottom."**

Motion carried with no opposition.

When the SSC reviewed Action 5, it requested clarification on the rationale for the Council selecting Option a. Staff noted that this area was important to the shrimp fishery and there did not seem to be much support for bottom tending gear regulations in these areas. However, there was not extensive discussion at the Council level because of time constraints.

Motion: The Committee requests that in Coral Amendment 9, Action 5: New Areas for HAPC Status in the Southwestern Gulf, that Option b for Alternative 2 and Alternative 3 be the Preferred Alternatives.

> **Alternative 2; Establish a new HAPC named Harte Bank bound by the following coordinates…**
>
> > **Option b: Prohibit bottom tending gear in the Harte Bank HAPC. Bottom tending gear is defined as: bottom longline, bottom trawl, buoy gear*, dredge, pot or trap, and bottom anchoring by fishing vessels.**
>
> **Alternative 3, Establish a new HAPC named Southern Bank bound by the following coordinates…**
>
> > **Option b: Prohibit bottom tending gear in the Southern Bank HAPC. Bottom tending gear is defined as: bottom longline, bottom trawl, buoy gear*, dredge, pot or trap, and bottom anchoring by fishing vessels.**

Motion carried 10-4.

Staff noted that Ms. Emma Hickerson, Research Coordinator at the Flower Garden Banks National Marine Sanctuary (FGBNMS), was on the webinar, and the SSC asked her for a brief update on the Flower Garden Banks expansion. Currently, the boundary expansion working group is reviewing areas outlined in Alternatives 2 and 3 of the Draft Environmental Impact Statement of

the FGBNMS Expansion document. The SSC was notified that public hearings are scheduled to take place before the April 2018 Council meeting.

Review of Management Strategy Evaluation Developed for the Coral Reef Conservation Program Grant

Council staff presented a Management Strategy Evaluation using the conservation planning software MARXAN to explore habitat area of particular concern designations. The advantage of using this methodology is that it requires identifying clear objectives to appropriately define model parameters and input data. The results of analysis should not be considered prescriptive management advice, but rather used as a support tool for decision making. Staff also explained the methodology to generate habitat suitability indices and the reason for using them rather than individual observations in the MARXAN models, and the advantages and disadvantages of observational versus modeled coral data. The SSC discussed how the cost surface (fishing effort) influences model output plus other metrics to include beyond fishing effort. The SSC felt that fishing effort should be one of the primary factors in determining boundaries.

Standing and Socioeconomic Session

Grouper/Tilefish IFQ Program 5-year Review

The IFQ program 5-year review will be discussed in more detail at the next SSC meeting. At this meeting, two presentations related to the review were presented.

Safety-at-Sea
Dr. Akbar Marvasti of the SEFSC gave a presentation on the impacts of individual fishing quota (IFQ) programs on the safety-at-sea of commercial fishermen in the Gulf of Mexico. Dr. Marvasti's study evaluated the safety effects of shifting from open-access management to IFQ programs for red snapper and grouper/tilefish. Dr. Marvasti discussed the data sources and modelling approach, and summarized the main findings of the study. Results of the study include:

- fishermen chose more favorable weather conditions to fish after the introduction of the IFQ programs;
- the implementation of the red snapper and grouper-tilefish IFQ programs lowered the chances of fatality; and
- the fatality rate dropped following the implementation of each IFQ program.

In response to questions on the relative magnitude of decreases in fatality rates between the IFQ programs, Dr. Marvasti indicated that a greater decline in fatality rate was measured following the introduction of the grouper/tilefish program. Dr. Marvasti also noted that the larger decline in fatality rate following the grouper/tilefish IFQ program has been confirmed by his subsequent studies.

Surveys
Dr. Larry Perruso of the SEFSC summarized three surveys of grouper/tilefish IFQ stakeholders. For the participants survey, Dr. Perruso discussed the response rate and the major areas included in the survey, i.e., attitudes and perceptions concerning the grouper/tilefish IFQ program, socioeconomic

assessment of the program, shares and allocation transfers, well-being and demographic information, and other issues (focused on grouper/tilefish IFQ program operations). SSC members discussed the survey's response rate and inquired about the characteristics of the non-respondents. Dr. Perruso indicated that the characteristics of non-respondents were not included in the survey report but he would follow up with the contractor. Dr. Perruso noted that variables such as levels of share ownership and grouper/tilefish landings could be used to characterize non-respondents.

Dr. Perruso then discussed the dealers/processors and labor (captain and crew) surveys. The dealers and processors survey evaluated the attitudes and perceptions about the grouper/tilefish IFQ program. Particular emphasis was placed on several issues, including changes in sources and costs of product, sales practices, relationships with fishermen, capital investment and disinvestment, future plans to participate in the program, and share and allocation transfer decisions.

The labor survey assessed captain and crew members' attitudes and perceptions relative to work availability, mobility and choice, income, and safety. Consistent with the findings of the study presented by Dr. Marvasti, most of the captains and crew members felt that safety-at-sea had improved. SSC members inquired about potential reasons for dealers' and captain and crew members' dissatisfaction with the program. For dealers, an inverse relationship between the amount of shares and allocation owned and satisfaction was suggested. For labor, dissatisfaction may be tied to perceptions of fairness and equity.

Standing and Reef Fish SSC Session

Review of Draft Status Determination Criteria/Optimum Yield Options Paper

Staff reviewed an options paper for an amendment to set or revise MSY proxies, MSST, MFMT, and OY for reef fish and red drum stocks. For MSY proxies (Action 1), staff noted that the alternatives included a range from the yield at F20% SPR to F30% SPR. However, a paper from the SEFSC currently undergoing in-house review[1] suggests that, when there is uncertainty about the stock-recruitment relationship, proxies that provide the strongest probabilities of achieving SPR are 40% SPR for gonochoristic species and 50% SPR for hermaphroditic species. As a result, the range of proxy alternatives will be increased in the next draft. An SSC member suggested that the MSY proxy decision should focus on growth overfishing rather than recruitment overfishing. Staff asked if it was possible to determine relative risk associated with various MSY proxies. Will Harford suggested that it might be possible to determine risk from the analysis, but it would require making assumptions about the stock-recruitment steepness.

For MSST (Action 2), one of the concerns stated by an SSC member was how long it would take to rebuild a stock from 50% of B_{MSY}. Staff noted that the SEFSC had done an analysis for Amendment 44 for a range of stocks with different life histories, and in all cases the stocks were projected to rebuild to B_{MSY} in 10 years or less if there was no fishing mortality.

[1] Harford, W.J., S.R. Sagarese, and M. Karnauskas. In progress. Selecting proxy fishing mortality reference points for grouper-snapper fisheries under uncertainty about stock-recruitment steepness.

For MFMT (Action 3), the SSC agreed that it made sense for the overfishing threshold of a rebuilding stock to be $F_{REBUILD}$ rather than F_{MSY}. Staff noted that this was consistent with the National Standard 1 guidelines.

For OY (Action 4), the SSC discussed using maximum economic yield (MEY) as the OY. However, this makes sense primarily for large-scale commercial fisheries. The use of a fixed buffer, e.g., yield at 75% of F_{MSY}, does not explicitly account for social and economic considerations, and could be an uncertain buffer given uncertainties about the stock. OY can be set as either an annual catch that changes from year-to-year, or a long-term OY. SSC members felt that an annual OY was unnecessary, but there was no economic basis for setting a long-term OY.

SEDAR Activities

Gulf Gray Triggerfish SEDAR 62

Dr. Julie Neer reviewed the Terms of References (TORs) and assessment schedule for the Gulf gray triggerfish SEDAR 62 standard assessment. Earlier in the week, Council staff emailed SSC recommendations from the September 2015 SSC meeting that came out of the last gray triggerfish standard assessment (SEDAR 43 2015). From the list, Council staff asked if sex specific growth curves could be used for a standard assessment because new sex specific information was available since the last assessment. A SSC member asked the same question during a review of the TORs. Dr. Neer responded that this was not possible in a standard assessment because all the indices (landings and fishery-independent data sets) would need to be separated into sex-specific growth curves. Dr. Jeff Isely, a staff member at the SEFSC concurred with this response. Thus, at this time the pooled growth curves for gray triggerfish should be maintained, but the updated sex specific information would be documented in working papers for the SEDAR 62 standard assessment.

Council staff also inquired about another item from the SSC report regarding the shrimp trawl bycatch estimates from the last assessment, which were assigned entirely to age-0 fish. However, based on the life history of the fish and depending on the time of year these fish are still in the pelagic environment. Thus, gray triggerfish caught in trawl bycatch are more likely age-1 fish. Based on this discussion, the SSC added the following item to the TORs: “Explore shrimp bycatch age-structure, if data are available, as a means to better estimate recruitment”.

> **Motion: The SSC moves to accept the Terms of Reference as amended for SEDAR 62.**
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> Motion carried with no opposition.

Mr. Dale Diaz reported that some interesting research had been funded regarding *Sargassum* spp. annual distribution and abundance as well as reef fish assemblages that are associated with the habitat. When this work is complete it is expected to provide additional information about gray triggerfish recruitment that may be useful in a future stock assessment. Next, Dr. Neer requested SSC representatives for the Data/Assessment Workshop that will be held October 16-18, 2018. The following members volunteered: Bob Gill; Will Patterson; Marcus Drymon; Mary Christman; Kai Lorenzen; and Jim Tolan.

Gulf Gray Snapper SEDAR 51 – Update

Dr. Neer reported that the stock assessment analyst needed additional time to prepare for the Gulf gray snapper SEDAR 51 review workshop. The dates were moved back to March 20-22, 2018 and will be held at the Gulf Council office.

Atlantic Cobia Stock ID SEDAR 58 – Update

Dr. Neer informed the SSC that Dr. Luiz Barbieri was going to serve as the Atlantic Cobia Stock ID workshop chair so another Gulf SSC member could also serve as a reviewer in addition to Dr. Nancy Brown-Peterson. Dr. Mary Christman volunteered to participate in this workshop in June.

Spawning Aggregations in the Gulf of Mexico

Dr. Brad Erisman gave a presentation summarizing work from a RESTORE Act Science Program project to identify and describe spawning aggregations of reef fishes in the Gulf of Mexico. He discussed that fish spawning aggregations are important for global fisheries and noted that many exploited species form or likely form spawning aggregations in the Gulf of Mexico. As part of this work they reviewed various levels of information and compiled both a report and comprehensive website (http://gcoos3.tamu.edu/restore) to share their findings. Dr. Erisman noted that both commercial and recreational anglers are likely to target species where and when they are in spawning aggregations. During this period, densities of fishes can be higher than non-spawning periods and their vulnerability to fishing mortality is increased. Next steps for this project include increasing visibility for this project and finding a long-term host for the online database and associated website.

Dr. Will Heyman gave a presentation on his work to characterize, monitor, and protect fish spawning aggregations in the Gulf of Mexico. His team has developed a protocol to monitor aggregations using methods developed in other regions. He described their process including how environmental and geomorphological data can be used to predict locations of spawning aggregations. These predictions can be verified and this process has been used to establish regulations protecting spawning stocks in other regions including the US South Atlantic. Mr. Dale Diaz asked if this information could be used to inform placement of artificial reefs in the rigs to reefs program. Dr. Heyman indicated that this work could be used to support science-based placement to enhance spawning success, and to evaluate the value of reefing platforms in place.

Evaluating Robustness of Harvest Control Rules to Future Red Tide Events

Dr. Bill Harford presented the result of a red grouper management strategy evaluation (MSE) that evaluated the performance of the Council's harvest control rule to events that cause variable rates of natural mortality such as the red tide that increased mortality of Gulf red grouper in 2005. To evaluate these scenarios, Dr. Harford developed a procedure to simulate the current management practices including the fishery data, associated analyses (stock assessment), and the stock assessment results that are used in a harvest control rule. The MSE evaluated the performance of fixed 5-year interval and reactive management (how the Council currently manages) strategies to severe events such as red tide. In terms of frequency of overfishing and likelihood of being overfished at the end of a 25-year simulation period, the reactive approach (Council status quo)

performed better than a fixed interval approach. Mr. Atran noted that the Council may modify their existing ABC control rule and suggested that Dr. Harford consider incorporating a revised ABC control rule in the future. The SSC also discussed that changes in size and selectivity have variable effects on the various sectors participating in the fishery and recommended that the results be evaluated for each sector in addition to the expected effect on the stock.

Analysis Relation to Draft Generic Amendment – Carryover Provisions and Framework Modifications

Staff reviewed the actions and alternatives in a draft Generic Amendment for Carryover Provisions and Framework Modifications. Science Center staff then gave two presentations describing the results of simulated underharvest scenarios.

King Mackerel Scenarios

Dr. Michael Schirripa presented a scenario where king mackerel were fished at alternating years of 20% for commercial and 50% for recreational relative to $F_{30\%\ SPR}$ vs. years when the full ACL was taken along with carryover from the underharvest years adjusted for natural mortality (carryover in numbers of fish=Underage in number of fish*e^-M). This sequence was repeated for 10 years. This resulted in a decrease in biomass over time because the stock is currently being fished at less than $F_{30\%\ SPR}$. However, SPR followed about the same track as if fishing occurred at a constant $F_{30\%\ SPR}$ each year. Similarly, catches also followed the same track as a baseline of a constant $F_{30\%\ SPR}$, except that the year-to-year landings alternated above and below the baseline. Based on the results, Dr. Schirripa's conclusions were:

- The methods used by the SEFSC to project the abundance and mortality of a stock implicitly account for the effects of natural mortality. Therefore, the SEFSC recommends against further use of the proposed method to decrement the carryover allowance.
- All other things equal, partial carryovers of underages will generally result in stock biomass trends that increase more rapidly than would have occurred if no underages had occurred.
- In the case of king mackerel, assuming that both the commercial and recreational sectors continue to land less than their ABC, the carryover of underages should have little to no effect on the future status of the Gulf king mackerel stock.

Red Snapper Scenarios

Dr. Matt Smith presented scenarios that modeled carryover of red snapper underharvest. Dr. Smith evaluated four carryover scenarios: with and without an adjustment for natural mortality, and with and without a cap that the resulting harvest from a carryover could not exceed 95% of the OFL (OFL cap). Underages ranged from 5% to 20%, and were applied separately by fleet. These were compared to fishing at a constant $F_{REBUILD}$ and a constant $F_{26\%\ SPR}$. The model runs indicated that adjusting for natural mortality had little effect on resulting yields, but the OFL cap had a major effect on the carryover yield. Under all scenarios tested the stock rebuilt prior to the 2032 target rebuilding date. Scenarios with underages and carryovers rebuilt slightly faster than the $F_{REBUILD}$ baseline, but none of the scenarios included overages. Dr. Smith's conclusions were:

- Results are expected to hold for underages <20% and/or fewer fleets with underages (still < 20%), but extreme underages (>20%) and their resulting carryover are untested and may demonstrate different dynamics.
- Results only hold if carryover is applied to the fleet for which the underage occurred. Differing selectivities by fleet imply that carryovers are non-transferable across fleets.
- The same approach is not expected to hold for an overage and subsequent underage.

In both presentations, the presenters cautioned that the analysis was for demonstration only, and not meant as the basis for management advice. A suggestion was made that, if there is an underage, the question should first be asked as to why there is an underage. Dr. Schirripa responded that if the CPUE is not going down, the underage is due to decreased effort.

Analysis of Red Grouper Indices of Abundance

Staff gave a presentation prepared by the SEFSC showing red grouper CPUE indices through 2016. This updated the indices from SEDAR 42, which used data through 2013. The updated indices included the headboat survey, MRFSS/MRIP, NMFS bottom longline survey, SEAMAP summer groundfish survey, and video survey. The results indicated that, after a reduction following the 2005 red tide event, catch indices peaked at about 2011 and have been declining since (Figure 1).

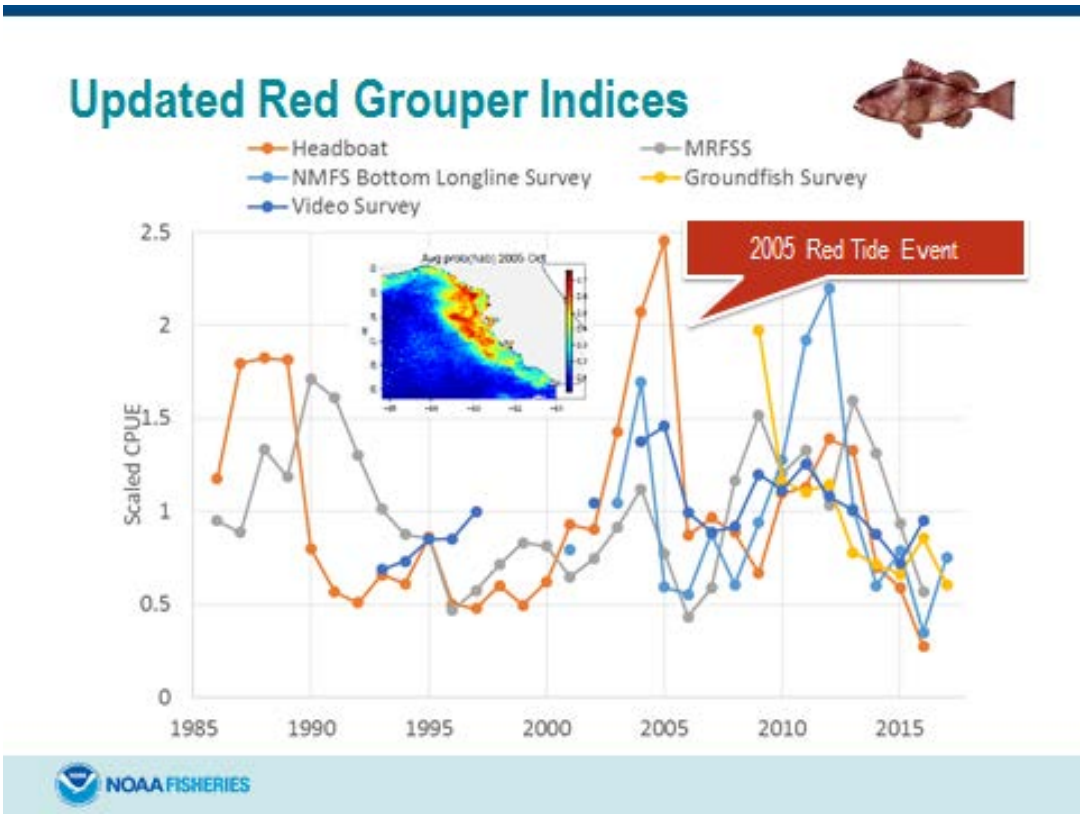

Figure 1. Updated red grouper indices 1985-2016.

The SSC agreed that the indices have been declining, but could not determine why without a stock assessment. Other factors besides fishing could be responsible, such as the 2010 oil spill, the invasive lionfish, or a long-term cycle. SSC members also noted that, even with the decline, the most recent indices were close to the historical levels. Without having more information from a stock assessment, the SSC felt that it had no basis for recommending a change in the ABC.

Discussion of an ABC Control Rule for Data-limited Stocks

The current ABC control rule does not provide a process for setting OFL and ABC based on methods in the data-limited methods toolkit (DLMToolkit) such as those used in SEDAR 49. Implementation of the DLMToolkit to produce management advice for OFL and ABC would require a new ABC control rule or a new tier to the existing ABC control rule. SSC members noted that the setting of ABC using data-limited methods had been discussed at the 2015 National SSC Workshop. Julie Neer added that the SEFSC is working on data-limited methods with the Caribbean Council since nearly all of their stocks are data-limited. SSC members felt that they did not have the information needed to discuss specific approaches at this meeting, but this should be part of the discussion when the SSC resumes discussion of revisions to the ABC control rule.

Other Business

Alternative SSC Organizational Structures for Council Consideration

Staff briefed the SSC on a document that proposes an alternative SSC organization for the Council to consider at its January 2018 meeting. After its meeting the Council will be advertising for the Standing and Special SSCs. Staff explained that like many regional Councils, the Gulf Council will likely be faced with level or reduced funding for the remaining proportion of our 5-year award and staff was looking for methods to save money where possible. Several SSC members were interested in the target percent reduction that staff was trying to achieve. Staff responded the goal was to hold meetings in the Council office that in itself will save the Council $10,000-$15,000 dollars a meeting compared to holding meetings offsite in a hotel. Staff also suggested that the purpose of revisiting the structure of these Committees was to maintain a productive and efficient group of experts to review Council materials. On some past occasions when the standing and three special SSC's have been convened, it required convening about 33-35 people plus staff, making the size of the meeting space larger and the discussion not as robust, which was perhaps due to the size of the group.

One member of a special SSC stated that it was sometimes difficult to follow the Council process and chain of events because she had not been as involved as the Standing SSC members. Others felt that they liked the structure of the socioeconomic members with the Standing SSC but could see going back to having a separate Special Socioeconomic SSC too. Some members like the idea of forming a new Special Ecosystem SSC for modeling expertise that may be needed for MSE in the coming years. Some members expressed concerns about having a referendum for voting if the Standing SSC were to be reduced to 13 people in size. Staff stated that in that case, the Special SSC's (3-5) people would be convened with the Standing SSC for voting so staff didn't anticipate that would be an issue. A member of the audience suggested that the Gulf Council could follow

what other regional Councils do, such as allowing a small group (e.g.., a special SSC) to review items and then report out the results to the larger Standing SSC.

SSC Members Present

Standing SSC

Joe Powers, V. Chair
Lee Anderson
Benjamin Blount
Mary Christman
David Griffith
Jack Isaacs
Jeff Isely[1]
Walter Keithly
Kai Lorenzen
Will Patterson
Sean Powers
Ken Roberts
Steven Scyphers
James Tolan

Socioeconomic SSC

Sherry Larkin[2]
Gabriela Stocks[2]

Reef Fish SSC

Jason Adriance
Marcus (James) Drymon[3]
Robert Ellis
Jennifer Herbig
John Mareska[3]

Coral SSC

Sandra Brooke[2]
Walter Jaap[2]
Judith Lang[2]
Paul Sammarco

1 – Attended via webinar, day 1 and 2
2 – Attended in-person, day 1 only
3 – Attended in-person, day 2 only

Council Staff

Steven Atran
Assane Diagne
Matt Freeman
John Froeschke
Morgan Kilgour
Ava Lasseter
Jessica Matos
Claire Roberts
Charlotte Schiaffo
Carrie Simmons

Others

Roy Crabtree, NMFS/SERO
Michael Drexler, Ocean Conservancy
Brad Erisman, Univ. of Texas Austin
Nick Farmer, NMFS/SERO
Thomas Frazer, Gulf Council
Sue Gerhart, NMFS/SERO
Chad Hanson, PEW
William Heyman, LGL
Peter Hood, NMFS/SERO
Michael Jepson, NMFS/SERO
Rich Malinowski, NMFS/SERO
Akbar Marvasti, NMFS/SEFSC
Julie Neer, SEDAR
Larry Peruso, NMFS/SEFSC
Michael Schirripa, NMFS/SEFSC[4]
Matt Smith, NMFS/SEFSC[4]
Jessica Stephen, NMFS/SERO
Michael Travis, NMFS/SERO
Daniel Wagner, NOAA/NOCCS
Lauren Waters, NMFS/SERO

4 – Presented via webinar

Council Representative

Dale Diaz