Standing, Reef Fish, Mackerel, Shrimp, and Socioeconomic SSC Meeting Summary
July 30-31, 2019

The meeting of the Standing, Reef Fish, Mackerel, and Socioeconomic Scientific and Statistical Committees (SSC) was convened at 8:30 a.m. on July 30, 2019. The agenda was approved after adding one item under Other Business. The minutes from the May 9, 2019 SSC webinar meeting were approved as written.

Dr. Luiz Barbieri agreed to serve as the SSC representative at the August 2019 Gulf of Mexico (Gulf) Fishery Management Council (Council) meeting in New Orleans, Louisiana.

Presentations:

Best Scientific Information Available – NOAA Policy Directive for Stock Status Determinations and Catch Specifications

Dr. Rick Methot discussed the steps to determine the best scientific information available (BSIA) that will in turn be used to develop management practices. National Standard 2 provides guidelines about the steps, roles and responsibilities of the different groups involved. Determining BSIA will vary by region, timeline, stocks being evaluated, and available scientific information. This in-depth peer-review process is carried out by scientific entities, such as the SSC and SEDAR in the Gulf. Based on the findings of the peer-review process, the SSC can request clarifications before offering recommendations to the Council and the National Marine Fisheries Service (NMFS), which will make stock status determinations and catch specifications based on the recommendations of the Council. The regions are being given three years to develop their own frameworks for determining BSIA.

National Standard 1 Guidance on Estimation of Fishing Mortality and Biomass Proxies

Dr. Rick Methot discussed the revised technical guidance for National Standard 1, and the technical guidance workgroup formed to support this effort. This workgroup was divided into three subgroups to individually address reference points, carryover and phase-in of catch, and approaches for additional flexibility in data-limited situations. Dr. Methot spent a majority of his presentation discussing the work on reference points based on the Council's focus on the status determination criteria document and potential modifications to the ABC Control Rule.

His presentation provided context for the current issues the reference points subgroup is discussing. Specifically, biomass assessments may generate maximum sustainable yield (MSY) reference points, but it can be difficult to estimate their accuracy. Age-structured assessments may fix some or all parameters needed for the estimation of MSY reference points, but at least they can be tested for accuracy using sensitivity analyses and diagnostics. Most stocks use a proxy for MSY reference points, such as spawning potential ratio (SPR) proxies in the Gulf; however, often times they do not result in MSY reference

points. Data-limited methods in development may allow for inferences of biomass levels, which may inform stock status when other MSY proxies are not appropriate. Better catch accounting, including best practices, have been in development to address retained and discarded catch and bycatch. Changes to stock status from "known" to "unknown" are rare, but do occur; thus, NMFS is developing technical guidance to assist in these situations. MSY proxies may be selected based on management goals, commensurate species, or on an interpretation of the data, and can vary widely by region. NMFS is aware that the technical guidance should not directly codify how or with what unit of measurement a reference point is established so that additional flexibility is still available to regional management entities.

The SSC noted that stock assessments are maturing, with more years of data in individual indices. Fishing effort likely cannot be treated uniformly throughout a time series, as the application of effort in an index likely changes through time. This topic is broached during the assessment process, and can be addressed by changing the treatment of selectivity and catchability within the model with time. However, it was noted that this method does require certain assumptions to be made; this process could be improved by the expansion of fishery-independent surveys.

Coping with Information Gaps in Stock Productivity for Rebuilding and Achieving Maximum Sustainable Yield for Grouper–Snapper Fisheries

Dr. Bill Harford discussed how to proceed with developing reference points when steepness is uncertain. The estimate of steepness can directly influence a selected proxy for MSY reference points, as a higher estimate of steepness may result in a more optimistic assumption of stock condition relative to MSY and a lower SPR proxy. The question becomes whether an F_{SPR} proxy can be identified in the absence of sufficient knowledge to determine steepness. This study examined gonochoristic and hermaphroditic reef fish assemblages in the Gulf and South Atlantic Councils jurisdictions. Individual species were selected based on data availability and the species having a completed SEDAR stock assessment. Simulations by species were conditional on the selected steepness value against the selected SPR proxy. A prior probability distribution for steepness priors then informs the degree to which a steepness value is supported; therefore, the results are not conditional on any specific value of steepness but rather reflect the uncertainty about steepness.

For gonochoristic stocks, a F_{MSY} proxy of $F_{40\%SPR}$ has the greatest probability mass centered on the long-term achievement of MSY, while also maintaining biomass close to B_{MSY}. Alternative priors can be specified, thereby reflecting the degree of uncertainty used in integrating the prior across states of nature. For hermaphroditic stocks, $F_{50\%SPR}$ has the greatest probability mass centered on the long-term achievement of MSY, while also maintaining biomass close to B_{MSY}.

The SSC questioned whether the previous 25 years of data, used to represent a "steady state" for the stocks included in the life history complexes, were informative to the rebuilding of the stock within the simulation. The fishing mortality rate necessary to

rebuild the stock ultimately influences the F_{MSY} proxy selected in those scenarios; however, the F_{SPR} proxies selected previous to the stock entering an overfished state are heavily influential.

The SSC asked about guidance for what to do when $F_{40\%SPR}$ appears equivalent to $F_{30\%SPR}$ in terms of the projections of total biomass. The recommendation is to consider biological risk, such as recruitment variability, episodic mortality events, and other pertinent factors. Biological risk must be considered when selecting any F_{MSY} proxy value.

The selection of the shape of the selectivity curve can also influence the ultimate F_{MSY} proxy selected. An asymptotic selectivity curve will yield a higher estimate of absolute fishing mortality, while a dome-shaped selectivity curve will yield a lower estimate. As such, the asymptotic curve used in the Harford analysis represents the higher bound of what the SEFSC considers plausible, while the dome-shaped curve used by the global SPR analysis method represents the lower bound. Dr. Shannon Cass-Calay noted that many of the stock assessments completed for Gulf species result in MSY proxies around $F_{30\%SPR}$ due to the dome-shaped selectivity patterns of the fishing fleets.

Establishing Stock Status Determination Criteria for Fisheries with High Discards and Uncertain Recruitment

Dr. Matt Smith reviewed a study on accounting for fleet complexity in the establishment of stock status determination criteria. One approach used by the SEFSC is global MSY, which depends only on growth, natural mortality (M), and the relationship between spawners and recruits. Global MSY is achieved by fishing at an optimal age where production is balanced against M. Conditional MSY allows for suboptimal selection patterns and bycatch under fixed or linked approaches with respect to discards. The fixed approach maximizes directed yield after bycatch and discards are removed from the stock, while the linked approach assumes that all fleets are equally scalable or linked.

Due to a lack of comprehensive understanding of a species' stock-recruitment relationship, SPR proxies are often used for Gulf stocks. These proxies are based on maximum age, M, and other factors, and do not directly account for the spawner-recruit relationship. The goal is to maintain safe biological limits on harvest while minimizing forgone yield. The present study demonstrated an alternative approach for determining an MSY proxy for red snapper. When fixing steepness at 1.0, the global SPR estimate and the linked MSY method produced similar equilibrium SPR values (with very different estimates of removals), while the fixed MSY method produced a much lower equilibrium SPR value. When bycatch for a stock increased, the fixed MSY method results in pessimistic estimates for retained catch, while the linked MSY method shows a somewhat opposite trend.

A "best proxy" for MSY is likely non-existent; every situation is unique. The global MSY approach results in unobtainable retained yields. The fixed MSY method may lead to unsustainable proxies if bycatch is high or productivity is overestimated. The linked MSY method relies on scaling fishing mortality proportionally across fleets. Ultimately, expert judgement and modeling can be applied to determine lower and upper bounds of plausible

F_{SPR} proxies for consideration when making catch recommendations. This can be done under an SPR_{MSY} global approach, which results in attainable spawning stock biomass levels, rebuilds biomass to levels which can sustain SSB_{MSY}, and provides a lower bound for an SPR proxy, especially when productivity is uncertain. For red snapper, the methods determined lower and upper bounds of $F_{24\%SPR}$ to $F_{38\%SPR}$, between which the current proxy of $F_{26\%SPR}$ falls. The SSC noted that the range presented was not equally probable, but within the range estimated. The SPR_{MSY} global approach has so far been applied to gray snapper and gray triggerfish; the latter is subject to considerable regulatory discards, which must be considered when evaluating the long-term sustainability of resultant harvest levels.

A Perspective on Steepness, Reference Points, and Stock Assessment

Dr. Marc Mangel gave a presentation comparing and contrasting approaches to quantifying reference points based on setting steepness for the stock-recruitment relationship. Integrating life history information can be used to inform estimates for steepness. However, fixing life history parameters, which is commonly done for natural mortality, and constraining the value of steepness can create model results that are divergent and cause inaccurate interpretations of stock reference points. Instead, Dr. Mangel posed an alternative approach based on surplus production models that allow for the direct calculation of MSY proxies from a steepness equation. Dr. Mangel then compared the similarity of results from his approach to several more complicated Stock Synthesis models. Simpler surplus production models were shown to be as effective in capturing stock reference estimates, because when more complicated stock assessment model inputs are fixed, they function similarly to surplus production models. Lastly, Dr. Mangel cautioned against setting steepness to 1.0. He argued that it is difficult to ascertain any relationship at lower recruitment levels and it is more conservative to assume a uniform distribution at lower recruitment. The SSC inquired as to whether he had investigated age-specific natural mortality in his models as natural mortality is often input to account for removals at older ages rather than fish in the larval stages. Dr. Mangel indicated the surplus production model could account for natural mortality before a fish is recruited to the fishery, but said he would have to investigate more how the model would perform with age-specific natural mortality.

Review of Status Determination Criteria Amendment: Revised Actions

Council staff presented a revised draft of the Status Determination Criteria Amendment. This amendment would define stock determinations (MSY or MSY proxy, MFMT, MSST, and OY) within the Gulf reef fish and red drum FMPs. Currently, the Council has not directly defined these criteria within its FMPs for several stocks, which is a requirement of the Magnuson-Stevens Act.

For setting an MSY proxy for assessed stocks (Sub-Action 1.1), the SSC decided that Alternative 3 was preferential and defined an MSY proxy ($F_{30\%SPR}$) for black grouper, yellowedge grouper, mutton snapper, and yellowtail snapper. Additionally, Alternative 3 allows for a streamlined process (plan amendment with no alternative analyses) to modify MSY proxies within the FMP based on the results of future assessments. The SSC thought that this streamlining provision should be added as an alternative to all actions:

Motion: For future assessments of reef fish stocks and red drum, the MSY or MSY_{PROXY} equals the yield produced by F_{MSY} or F_{PROXY} recommended by the Council's SSC and subject to approval by the Council through a plan amendment.

Motion carried unanimously.

For setting MSY proxies for stock complexes (Sub-Action 1.2), the SSC was hesitant to use black grouper as an indicator species for shallow-water groupers since recent examination of the landings data indicate that the previous assessment is not accurate. However, SEFSC staff advocated for the utility of stock complexes as the SEFSC does not have the resources to assess every individual species. Other SSC members questioned whether the assignment of an indicator species should be based on similar biology or the amount of data available for that species. The SSC acknowledged that assignments of an MSY proxy for these species at this stage would serve as a placeholder and could be modified should better data become available. The SSC made the following motion for Sub-Action 1.2:

Motion: The SSC recommends in Sub-Action 1.2, for Alternatives 2-8, an F_{MSY} proxy of 30% and for Alternative 9 an F_{MSY} proxy of 40%.

Motion carried unanimously.

For setting the MSY proxy for red drum (Sub-Action 1.3), the SSC recognized that the Gulf states have different methods for quantifying 30% juvenile escapement rate. The SSC noted that the original goal of setting juvenile escapement (to age 5, when red drum begin to show up in offshore populations) at 30% was to achieve an MSY proxy of $F_{20\%SPR}$, not $F_{30\%SPR}$. State regulations are generally designed to accommodate 30% juvenile escapement, with the exception of the allowances by some states for the retention of a single red drum above the slot limit per person (except Florida). Based on the discussion surrounding the uncertainty of standardization of escapement across the Gulf and how that directly translates to a MSY proxy, the SSC decided not to make a motion regarding Sub-Action 1.3.

For Action 2 (setting MFMT), discussion focused on the interpretation of $F_{Rebuild}$. SEFSC staff indicated that it was possible to fish above $F_{Rebuild}$ but delays in the timing of the rebuilding plan could occur if that were the case. Dr. Rick Methot noted that uncertainty is taken into account when calculating $F_{30\%SPR}$ and therefore estimation of ABC is not necessary, making Alternative 3 inappropriate. The SSC decided that language for Alternative 3 needed revision and the group could comment on this action at later date.

For Action 3 (setting MSST), Dr. Shannon Cass-Calay began the discussion informing the SSC of previous work examining appropriate determination of MSST. Based on simulations, fish stocks do not decline below 75% of B_{MSY} due to natural and environmental processes alone; therefore, the SEFSC does not advocate for any definition of MSST less than 75% of B_{MSY}. She reminded the SSC that setting a more conservative MSST actually leads to more consistent catches while high exploitation can drive populations below B_{MSY}, resulting in significant reductions to harvest in the future.

Motion: The SSC recommends that in Action 3 that Alternatives 4 and 5 not be the preferred alternatives.

Motion carried 18-4.

Discussion of Action 4 (setting OY) began with the SSC recognizing that OY is a long-term goal to achieve sustainability, which differs from ABC or ACT, which are more short-term and fluctuating measures to control harvest. However, OY is difficult to measure and quantify. For example, the SSC acknowledged that it would be difficult to account for the socioeconomic differences associated with assigning either an OY of 50% or 90% of MSY. Some SSC members even advocated for removing the OY consideration due to the difficultly in quantifying the criteria. Dr. Will Patterson pointed out that it could be possible for a future ABC or ACL value to be set larger than a previously defined OY, which would be a source of confusion. Dr. Luiz Barbieri stated that more direction from the Council was warranted on how to interpret the management goals for defining OY.

The meeting recessed at 5:00 pm for the first day, and resumed at 8:30 am on July 31, 2019.

Review of Status Determination Criteria Amendment: Revised Actions (continued)

The SSC reviewed Table 2.4.1, which details the OY specifications implemented by species in Council plan amendments. To evaluate the science underpinnings of OY, the SSC thought it should know more about the discussions had by the Council on the subject. The Council representative could not recall a specific instance or example, but thought some discussion on OY had been held for gray triggerfish. The Council representative welcomed the SSC's input on the topic, as scientific justification could bolster a Council decision on OY. OY is essentially a reduction from MSY, accounting for ecological, economic, and social considerations, to achieve the greatest long-term benefit to the nation.

Discussion of Alternative ABC Control Rule – SEFSC Staff

Consideration of alternatives to the present ABC Control Rule have been discussed at various times in the last several years by the SSC. The SEFSC has worked to develop suggested improvements to the present ABC Control Rule to better characterize uncertainty. The ABC Control Rule is an agreed procedure, which each Council must establish, and can account for many scenarios unique to a given stock (e.g., data limited, episodic mortality, other environmental covariates).

When considering catch recommendations relative to MFMT when the biomass of the stock drops below MSST, a question was posed asking at what level above the slope of the catch recommendation in a rebuilding scenario is overfishing occurring? The presumption is that the subject catch level at MFMT represents ABC during the rebuilding period. Given the Council's

recent modification of MSST for many stocks ($0.5*B_{MSY}$), the new MSST definition results in a steeper decline in recommended catch levels for those stocks when they enter a rebuilding period.

The SSC thought it would be prudent to use some harvest reduction method as MSST is approached to avoid falling into an overfished condition and subsequently a rebuilding period. The determination of the ABC should be based on the probability that a catch recommendation equal to the stock's ABC will not result in overfishing. The Council does not allow for a probability of overfishing greater than 50% for the OFL, and uses the P* approach to set the ABC at some level below the OFL, accounting for assessment factors and scientific uncertainty.

The present ABC Control rule uses three main "tiers" to categorize the assessed condition of individual stocks. Generally, OFL equals catch at MFMT, and the ABC is determined by the P* method, which is determined by a risk estimation table. This table considers the robustness of the assessment, characterization of uncertainty, the severity of retrospective patterns, and the consideration of environmental covariates. Options for improving how the ABC Control Rule handles uncertainty include estimating variance in the PDF within, or external to, the assessment process. Allowing variation in factors such as natural mortality, steepness and others could provide a more realistic perception of uncertainty. Another option would be to set the ABC at some arbitrary level below the OFL (e.g., ABC = 0.75*OFL); this method differs in that it is a reduction in harvest, as opposed to fishing mortality. Tier 1 should consider reducing F as stock size approaches MSST. Tiers 2 and 3 should be made more flexible to accommodate data-limited scientific advice. Further, the Council should determine the acceptable probability of overfishing, while the SSC determines the magnitude of scientific uncertainty criteria.

The SEFSC proposed modifying Tier 2 to apply to "data-moderate" scenarios, where two of the three time series (catch, age composition, and index of abundance) are deemed informative by the assessment process, and the assessment can provide OFL, ABC, MSST, and MFMT. Tier 3 would be modified to accommodate "data-limited" stock assessments, or assessments that are "out-of-date". This tier would still yield estimates of MFMT; however, MSST may be unknown, with OFL set equal to the yield at MFMT. The ABC under Tier 3 would be set at a value below OFL based on the probability of overfishing after accounting for scientific uncertainty. A new Tier 4 would have two levels: 4a and 4b. Tier 4a would apply to landings-only and/or ancillary information in the absence of an assessment, but the stock is unlikely to suffer overfishing if future landings remain similar to recent landings, and the ABC is set at some level below that OFL. Under Tier 4a, MSST, MFMT, and MSY are unknown, and the OFL is set equal to a scalar multiplied by the 75th percentile of the reference period landings. Tier 4b is used when no assessment is available, and the stock is likely to suffer overfishing if future landings remain similar to recent landings. Under Tier 4b, the OFL is set equal to a scalar multiplied by the mean of the reference period landings. Under both Tier 4a and 4b, the ABC is set at some value below OFL using a buffer.

SSC members discussed the merits of the existing and proposed approaches. It was acknowledged that all uncertainty was unlikely to be estimated; however, methods do exist to apply a more quantitative adjustment to the criteria within each tier to appropriately influence the resultant P* value. The SSC wanted to avoid evaluating uncertainty in ways that are inconsistent with one another. Further, there is inherent difficulty in making decisions based on what scientists think

they don't know. There may be merit in a simpler method; however, the opposite alternative of trying to develop a comprehensive rule accounting for as much uncertainty as possible may be feasible, with the caveat of not knowing all that is unknown about a stock. SSC members did caution about borrowing control rules from other areas, as those rules may have been developed in a manner more consistent with the managed species in that region.

Present PDFs coming out of Gulf stock assessments tend to be very narrow, given the parameters fixed within the assessment. Though possible to generate a PDF of OFL within an assessment, if more parameters are estimated than can be informed, the model may not converge.

A discussed method recommended ABC as the annualized realization of OY, with the buffer between OFL and ABC directly linked to the acknowledged uncertainty in, and the rugosity of, the stock assessment. By targeting OY, the ABC Control Rule would ultimately guide the stock towards the mandated goal of OY. The SSC ultimately acknowledged that this issue was complex, required further study, and should strongly consider the end-user which will be subject to the recommendations coming from the ABC Control Rule.

> **Motion: The SSC recommends that the ABC Control Rule Working Group be reconvened to evaluate the existing ABC Control Rule and propose improvements.**
>
> *Motion carried unanimously.*

The SSC expressed a desire to have this working group meet remotely via email and webinar, and present their findings to the SSC at a later date. SEFSC and Council staff will also participate to assist the working group.

Review MRIP and State Survey Data Collection and Calibration Efforts

Dr. Richard Cody (MRIP staff) gave a presentation to update the SSC about the latest improvements to the Marine Recreational Information Program (MRIP). MRIP will participate in workshops with the South Atlantic Council and the Florida Fish and Wildlife Conservation Commission (FWC) to better explain the calibration procedures and improve the understanding of the differences between various survey programs and their effects on management. These meetings will be held in August and September 2019 and could help the SSC and the Council to understand similar effects from MRIP calibrations in the Gulf.

Dr. Cody also stated that the statistical consultants are continuing to work on integration and calibration procedures for the state surveys used for Gulf red snapper. He briefly described some forthcoming pilot projects that could improve future data collection efforts as well as some MRIP related reviews that are occurring to comply with the Modern Fish Act. Finally, he stated that a white paper is being developed that will better describe how to the various calibration changes will be implemented in the southeast region, and this paper will be available for review at the upcoming SEDAR Steering Committee Meeting webinar on August 26th.

Discussion of SEDAR 62: Gray Triggerfish Progress

During the SEDAR 62 Data Workshop, some bias in ages of dorsal spines and otoliths was identified. The analytical team has since switched the model to a length-based assessment, using a growth curve from the Patterson Lab at the University of Florida. The SEFSC indicated that it still plans to maintain the planned schedule for the assessment; however, if a delay becomes necessary, it would only be for a couple months. SEFSC staff stated they would provide any updates to the Council schedule if necessary.

Discussion of Council Research and Monitoring Priorities for 2020 – 2024

The SSC reviewed the Council's proposed research and monitoring priorities for 2020 – 2024, and discussed the merits of new additions and priority codes assigned to each area. More, timelier data on the size composition of recreational discards will be very useful for stock assessments, along with characterization of the efficacy of improvements in release mortality reduction methods and their adoption by the recreational angling community. SSC members thought some of the species-specific recommendations were too specific, and that a separate repository of those recommendations, like the one currently curated by SEDAR, should monitor the progress made on those recommendations. The SSC will review these research and monitoring priorities again in September 2019.

Scope of Work: Gray Snapper Operational Assessment

The SEFSC expressed concern about the gray snapper scope of work, in that it was quite lengthy and at times overly prescriptive. As the SSC is the review body for all operational assessments, it is the SSC which will ultimately determine whether the terms of reference resulting from the development of the scope of work are met during the assessment process. The SSC clarified that items prefaced with "consider" do not need to be completed if not feasible; however, some justification as to why they were not completed should be provided as part of the stock assessment report. The SEFSC further cautioned that the introduction of new changes to the model may require re-parameterization, which could affect model performance. A tradeoff likely exists between throughput and detail in the proposed assessment, whereby a simpler assessment can be done more quickly at the sacrifice of addressing previously identified issues. Some SSC members preferred keeping operational assessments at an "update" level, while other SSC members wanted more flexibility, as is currently offered by the SEDAR process. Council staff will work closely with the SEFSC on this scope of work, and will bring it back to the SSC for consideration in September 2019.

Scope of Work: West Florida Shelf Hogfish Benchmark Assessment (FWC)

Staff consulted with FWC analytical staff prior to the SSC meeting. This collaborative effort yielded an agreed-upon set of items in the West Florida hogfish benchmark assessment scope of work. The SSC reviewed the hogfish scope of work and had no edits.

Discussion of the Gulf SEDAR Assessment Schedule

SEDAR staff clarified that the mutton snapper benchmark assessment, presently scheduled to begin at the end of 2020 and conducted by FWC, won't start until 2021. Council staff noted that black grouper, yellowedge grouper and tilefish have not been forgotten by the SEDAR Steering Committee; however, additional consideration is needed for these species to determine the best path forward for completing an assessment.

Explosive Removal of Structures: Fisheries Impact Assessment

Dr. Benny Gallaway presented a summary of ongoing research on the effects of explosive blasting to remove offshore oil rigs on reef fish mortality. Specifically, the study focused on red snapper, cobia, greater amberjack, gray triggerfish, and vermilion snapper on oil rigs mostly off of Louisiana. Fish abundance on rigs was estimated using hydroacoustic and mark-recapture methods while site fidelity to rigs was examined using acoustic telemetry techniques. Preliminary results estimated that as much as 5% of the total red snapper abundance and 45% of the total greater amberjack abundance are found on rigs, with high site fidelity to rigs for red snapper. Additionally, the abundance of fish on a rig was depth-dependent with rigs anchored in 31–90 meters having the largest abundances for both red snapper and greater amberjack. Dr. Gallaway indicated that mortality associated with the removal of these rigs may have an influence on local fisheries, e.g. in western Louisiana.

Dr. Gallaway stated that a final report should be made available in about a year. The SSC also noted that other studies had estimated less than 14% of total red snapper abundance was estimated to be associated with rigs, which was in agreement with the current study. The Council representative asked if techniques to remove rigs have been changed since the listing of several marine turtles and mammals to the Endangered Species List. Dr. Jim Nance indicated that observers will monitor the area for protected species around the rigs several days before the removal. Several SSC members indicated that the Council might have an interest in hearing an update on this ongoing study once the final results are available. The SSC encouraged Dr. Luiz Barbieri to convey the broader implications of the study in his summary report to the Council in August.

Discussion of Almaco Jack Life History and Landings

Dr. Natasha Mendez-Ferrer presented a summary of available information on the life history of almaco jack, applicable regulations in state and federal waters of the Gulf, and recent landings data (which may not yet be comparable to new state data collection programs). The South Atlantic Council and the State of Florida recently established a commercial minimum size limit of 20 inches fork length for almaco jack in the Atlantic. The SSC highlighted the results from the SEDAR 49 assessment for Data Limited Species, which summarized the limited information on almaco jack life history and maturity and the issues with species identification in fishery-dependent data sources. Insufficient information was available to develop a management recommendations for almaco jack based on size. Although almaco jack is a species of interest in aquaculture practices, there are not enough data to make a direct comparison to the life history of the wild population.

Other Business

Dr. Barbieri prefaced a discussion on Dr. Michael Drexler's work on the historical scientific uncertainty resulting from the Gulf stock assessment process. Specifically, the yield projections which are derived from some of these assessments create catch levels which often exceed recent landings, which can be counter-intuitive to the perceived condition of a stock.

> **Motion: The SSC request that the SEFSC analyze the assessment outputs of yield stream projections that result in a spike in yield in the first year(s) of the projection to determine the cause and evaluate potential solutions.**
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> *Motion carried unanimously.*

The meeting was adjourned at 3:30 pm on July 31, 2019.

Participants (*webinar*)

Standing SSC
Joe Powers, *Chair*
Kai Lorenzen, *Vice Chair*
Lee Anderson
Luiz Barbieri
Jeff Isely
Benny Gallaway
Bob Gill
Doug Gregory
Walter Keithly
Robert Leaf
Camp Matens
Ken Roberts
Steven Scyphers
James Tolan
David Chagaris
Harry Blanchet
Will Patterson
Jim Nance

Reef Fish SSC
Jason Adriance
Judson Curtis
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Ryan Rindone
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John Froeschke
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Charlotte Schiaffo
Natasha Mendez-Ferrer
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Presenters
Rick Methot, NMFS
Shannon Calay, NMFS
Matt Smith, NMFS
Richard Cody, NMFS
Marc Mangel, UCSB
Bill Harford, UM

Council Member
Paul Mickle

Others
Michael Drexler, OC
Mara Levy, NMFS
Catie Bruger, OC
Jeff Pulver, NMFS
Alisha DiLeone, NMFS
Rich Malinowski, NMFS
Peter Hood, NMFS
Roy Crabtree, NMFS
Mike Larkin, NMFS
Julie Neer, SEDAR
Lauren Gentry, FWC
Steven Atran