# SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

## SCIENTIFIC AND STATISTICAL COMMITTEE

**SSC Meeting Report**

**Oct 18-20, 2016**

**Charleston Marriott Hotel**
**Charleston, SC**

**VERSION**
**Final Report**
**November 29, 2016**

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# SAFMC PUBLIC COMMENT PROCESS

Written comment:

Written comment on SSC agenda topics is to be distributed to the Committee through the Council office, similar to all other Council briefing materials. Written comment to be considered by the SSC shall be provided to the Council office no later than one week prior to an SSC meeting. For this meeting, the deadline for submission of written comment is 12:00 pm Tuesday, October 11, 2016. Submit written comments to:

SAFMC – SSC Comments
4055 Faber Place Drive
Suite 201
North Charleston, SC 29405

Verbal comment:

Two opportunities for comment on agenda items will be provided during SSC meetings. The first will be at the beginning of the meeting, and the second near the conclusion, when the SSC reviews its recommendations. Those wishing to comment should indicate such in the manner requested by the Chair, which may be through a show of hands or a written list if the number of interested parties is extensive, who will then recognize individuals to come forward and provide comment. All comments are part of the record of the meeting.

The Council requests that the SSC consider providing an opportunity for comment each day, or for each agenda item.

# 1. INTRODUCTION

## 1.1. Documents

Agenda
Attachment 1. Minutes of the May 2016 meeting

## 1.2. Action

- Introductions
  - Voice recognition
  - Acknowledge new members
  - Talk about new Public Comment method being piloted
- Review and Approve Agenda
- Approve Minutes

# 2. PUBLIC COMMENT

The public will be provided an opportunity to comment on SSC agenda items on the afternoon of Tues, Oct 18 and the morning and afternoon of Thurs, Oct 20. The public will also be provided opportunities to comment after each agenda item on Wed, Oct 19. Those wishing to make comment should indicate their desire to do so to the Committee Chair. The SSC is trying several different options for public comment at this meeting per the guidance of the Council. The SSC will use the experience from this meeting to discuss changes to their public comment policy under agenda item 15.

# 3. STOCK ASSESSMENT PRIORITIZATION

## 3.1. Documents

Attachment 2. Prioritizing Fish Stock Assessments
Attachment 3. Stock Assessment Prioritization SAFMC
Attachment 4. Stock Prioritization - SAFMC Stocks
Attachment 5. South Atlantic Stock Info 2016
Attachment 6. Landings Trends 2016

## 3.2. Overview

The Committee was presented with the Stock Assessment Prioritization Tool at their May 2016 meeting. The process of prioritizing stocks using this method requires many decisions to be made regarding factors affecting the rank of individual stocks. Many of these decisions require expert judgement to be applied. The Committee felt it would be best to wait until experts from the fishing industry could be present to help better inform these decisions requiring expert judgement. At this meeting, a representative from each of the Council's Advisory Panels (AP) has been invited to help the SSC determine the appropriate weightings and scaling factors to be applied within the Prioritization Tool. A draft application of the Prioritization Tool has been prepared by Council and Science

Center staff to help illustrate how the process works. A brief description of the prioritization process is included below.

Stock assessment prioritization includes first-time assessments for previously unassessed stocks, updating existing assessments using established methods/data, and upgrading assessments to use new types of data/methods. All stocks managed under Federal Fishery Management Plans, as well as additional stocks that may be assessed using NMFS Science Center resources, are included in assessment prioritization. For stocks that have been previously assessed, the prioritization approach sets targets for assessment completeness (level) and frequency and then determines priorities relative to meeting those targets. For stocks that have only been previously assessed with data-poor methods, the system provides an opportunity to periodically examine: (1) fishery importance, (2) ecosystem importance, (3) biological vulnerability to overfishing, (4) preliminary information on fishery impact level (stock status) and (5) data availability to determine which of the stocks, if any, are both sufficiently at risk to warrant an assessment and have sufficient data to conduct a fuller assessment.

There are 14 prioritization factors in the five themes mentioned above. Many of these will require expert judgement and input in order to set them for each of the stocks being considered for prioritization. There are relative scores for each of the factors that weight each factor based on its importance to the region that will require expert opinion to help inform. There are also several factors, such as constituent demand and non-catch importance, which are directly informed by experts such as the AP members that will be in attendance.

There are some factors where scientific input is mostly required, such as the importance of unexpected changes in current model forecasts from previous projections and the importance of new data sources, which the SSC will be able to help inform. Then there are factors where the AP member, the SSC, and perhaps the Council members in attendance can help inform the weightings. These factors include ecosystem importance (where AP members can help fill in holes in existing knowledge) and target assessment frequency (where Council members can help inform the SSC on assessment needs).

All of these factors and their weightings have been filled out with preliminary values in attachment 4. This spreadsheet also explains what each factor is and easily calculates assessment rankings from the input factor weightings and metrics.

### 3.3. Action

- Provide recommendations for revisions or modifications to the draft application.
- Discuss and provide recommendations on initial inputs, particularly those requiring expert advice, including:
  - Value for ‘time since terminal year’ for unassessed stocks
  - Scoring range for factors (0-2 vs 1-5 vs 1-10)
  - Default values for unknown factors
- Identify stocks to be considered for a data limited SEDAR assessment project.

**SSC RECOMMENDATIONS:**

*The SSC much appreciated the input from the AP members in attendance (Ira Laks, Kenny Fex, and Robert Johnson) and the Council Liaison in the discussions.*

- Provide recommendations for revisions or modifications to the draft application.
- Discuss and provide recommendations on initial inputs, particularly those requiring expert advice, including:
  - Value for 'time since terminal year' for unassessed stocks
  - Scoring range for factors (0-2 vs 1-5 vs 1-10)
  - Default values for unknown factors
  - *The SSC provided scoring recommendations for a large number of values and factors. The values were entered in the spreadsheet prepared by Dr. Williams. The adjusted spreadsheet is attached to this report.*
  - *As this is an ongoing process, the SSC will continue to provide recommendations and adjustment to the scoring when and where needed.*
  - *Fisheries Management plans and Amendments contain a lot of information that can aid in providing value refinements for the scoring.*
  - *The availability of information (or even just a list) of recently funded research and project reports from the agencies (Federal and State) and academic institutions (e.g. MARFIN, CRP, S-K) will help with identifying new data and can guide scoring adjustments.*
  - *As a means to evaluate the prioritization, the prioritized species list based on the proposed scoring should be compared with the realized (SEDAR) assessment schedule. This can also be done retroactively.*
- Identify stocks to be considered for a data limited SEDAR assessment project.

  *The SSC will discuss stocks for a data limited SEDAR project at a future meeting.*

# 4. SEDAR ACTIVITIES

## 4.1. Documents

Attachment 7. Goliath Grouper Stock Assessment Report

Attachment 8. SEDAR 50 Assessment Schedule
Attachment 9. Blueline Tilefish Stock ID Workshop Report
Attachment 10. Draft Black Grouper ToRs
Attachment 11. SEDAR Steering Committee Draft report

### 4.2. Overview

SEDAR 47 was a benchmark assessment for Goliath Grouper with FL FWCC as the agency lead. The assessment has completed its SEDAR review and has now come before the SSC for final review. The lead assessment scientist will not be at the October meeting to present the assessment results due to the outcome of the SEDAR review. The Review Panel (RP) concluded that the assessment does not constitute best scientific information available. The RP had several areas of concern including the data that were available, the treatment of the available data, the high degree of uncertainty associated with the catch and indices of relative abundance, and the structure of the chosen assessment models. The RP recommended that this assessment was not adequate to support status determination and should not be used for management advice.

The SSC is asked to review the uncertainties and determine if the assessment can be used for management advice and support of fishing level recommendations. The list of action items pertaining to this assessment are the standard action items when reviewing a stock assessment. The SSC is asked to review the action items and consider how they may apply to Goliath Grouper.

SEDAR 50 will be a joint assessment with the Mid-Atlantic, South Atlantic, and Gulf of Mexico Fishery Management Councils with SEDAR/SEFSC/SAFMC having the lead. In late June 2016, a Blueline Tilefish ageing issue was identified. The Life History and Analytical teams determined that an Ageing Workshop was necessary to resolve the issue and the SEDAR 50 schedule was delayed approximately 3 months to accommodate this issue with the Data Workshop rescheduled for January 2017; the Assessment workshop for May 2017; and the Review Workshop for August 2017. The Ageing Workshop was held in late August 2016 and found that Blueline Tilefish cannot currently be reliably aged and recommended that ages not be used in SEDAR 50. A final Ageing Workshop report will be available in the upcoming weeks. Due to these recommendations, SEDAR 50 will not be an age based assessment.

A Stock ID work group meeting was held June 28-30, 2016 in Raleigh, NC. The Work Group recommended that Blueline Tilefish from the Gulf of Mexico and along the entire Atlantic seaboard be considered a single biological population unit and should be included in the SEDAR 50 assessment. The Work Group's final Stock ID recommendations are documented in SEDAR50-DW12 (Attachment 9).

SEDAR 48 will assess the Southeastern U.S. stock of black grouper. The assessment is being conducted by the State of Florida and will follow a benchmark-track approach consisting of a Data Workshop, an Assessment Workshop, as well as a series of webinars, and a Review Workshop. Terms of Reference are provided for your review and

comment. The Project schedule will be discussed and the SSC will be asked for volunteers for members to serve as Panelists for the various workshops and webinars.

The SEDAR Steering Committee met September 20-21 in Charleston SC. The Committee recommended moving forward with the proposed research track process for assessment development, and considering its use for all upcoming benchmarks rather than just Scamp as initially proposed. Approved SAFMC assessment projects are shown in the table below, through 2018. Details on projects approved for all SEDAR Cooperators are provided in the Steering Committee Meeting report.

The Steering Committee also considered the stock ID recommendations for Blueline Tilefish, particularly the overlap of the Atlantic stock with the Gulf of Mexico management unit. A special webinar meeting of SSC representatives of all 3 Councils now involved in this assessment – MAFMC, SAFMC, and GMFMC – will be convened on October 28 to review the stock id recommendations, the degree of overlap with the GMFMC management unit, and develop recommendations for SEDAR 50 TORs that will ensure management specification needs will be adequately addressed in the assessment. In preparation for the joint meeting, the SAFMC SSC is asked at this meeting to review the Stock ID Work Group report; provide advice on the level of overlap between the Atlantic Blueline Tilefish stock and the management jurisdictions of the GMFMC and SAFMC; and provide guidance on the risks associated with management based on the GMFMC boundary.

Table 1. SAFMC SEDAR Projects Oct 2016

| Plan Year | SEDAR # | Stocks | Approach | Terminal Data | Assessment Complete[1] | Lead Agency |
|---|---|---|---|---|---|---|
| 2016 | 47 | Goliath Grouper | Benchmark | 2014 | Jun 2016 | FL FWCC |
| | 48 | Black Grouper | Standard | 2014 | Dec 2017 | FL FWCC |
| | S | Red grouper | Standard | 2015 | Jan 2017 | SEFSC |
| 2017 | 50 | Blueline Tilefish | Benchmark | 2015 | June 2017 | SEFSC |
| | S | Vermilion Snapper | Standard | 2016 | April 2018 | SEFSC |
| | S | Black Sea Bass | Standard | 2016 | Oct, 2017 | SEFSC |
| | R | MRIP Revisions[2] | Revision | 2016 | June 2018 | SEFSC |
| 2018 | RT | Scamp, Gulf + SA | Research Track | 2016 | Mid-2019 | SEFSC |
| | RT | Atlantic Cobia | Research Track | 2016 | Mid-2019 | SEFSC |
| | S | Greater Amberjack | Standard | 2017 | Jan 2019 | SEFSC |
| | S | Red Porgy | Standard | 2017 | Jan 2019 | SEFSC |
| | B | Hogfish | Benchmark | 2016 | Spring 2019 | FL FWCC |
| | B | King Mackerel | Benchmark | 2016 | Mid 2019 | SEFSC |
| 2019 | S | Snowy Grouper | Standard | 2017 | Late 2019 | SEFSC |
| | S | Spanish Mackerel | Standard | 2017 | Late 2019 | SEFSC |
| | S | Gag | Standard | 2018 | Early 2020 | SEFSC |
| | B | Yellowtail Snapper | Benchmark | 2016 | Spring 2019 | FL FWCC |
| 2020 | O | Scamp, Gulf + SA | Operational | 2018 | Late 2020 | SEFSC |
| | O | Atlantic Cobia | Operational | 2019 | Late 2020 | SEFSC |

1. Completion dates for projects after 2017 are tentative.
2. Stocks to be included in the MRIP Revision assessments are Red Snapper, Red Grouper, Blueline Tilefish, and Black Sea Bass.

### 4.3. Action

- Goliath Grouper Assessment
  - Review the Goliath Grouper assessment
    - Does the assessment address the ToRs to the SSCs satisfaction?
    - Does the assessment represent Best Scientific Information Available?
    - Does the assessment provide an adequate basis for determining stock status and supporting fishing level recommendations?
  - Identify and discuss assessment uncertainties
    - Are key uncertainties identified, and if not, indicate additional uncertainties.
    - Are risks and consequences of uncertainties identified and evaluated?
    - Are methods of addressing uncertainty consistent with SSC expectations?

        - List and comment on the effects of those uncertainties that most contribute to risk and impact status determinations and future yield predictions.
    - Provide fishing level recommendations
        - Apply the ABC control rule and complete the fishing level recommendations table.
    - Provide advice on monitoring the stock until the next assessment
        - What indicators/metrics should the council monitor/SSC evaluate to keep tabs on the stock until the next assessment?
        - Is there a recommended trigger level for these metrics?
    - Provide research recommendations and guidance on the next assessment
        - Review the included research recommendations, and indicate those which are most likely to reduce risk and uncertainty in the next assessment.
        - Provide any additional research recommendations the SSC believes will improve future stock assessments.
        - Provide guidance on the next assessment, addressing its timing and type.
- Review the findings of the Blueline Tilefish Stock ID workshop and provide guidance on this topic for the Joint SSC review sub-committee representatives and SEDAR 50 Data Workshop representatives.
    - Participants for RW (Aug 29-31, 2017)
- Review and approve ToRs for the Black Grouper Assessment.
    - Participants
        - DW (week of March 13th, 2017)
        - AW (June 27-29, 2017)
        - RW (Nov 14-16, 2017)
- Participants for Black Sea Bass assessment.
- Provide guidance on future assessment priorities.

**SSC RECOMMENDATIONS:**

- Goliath Grouper Assessment
    - *The SSC accepted the recommendation of the Review Panel that the assessment is not best scientific information available (BSIA) and should not be used for management advice. As a result the SSC did not discuss the remaining action items.*
    - *The SSC agreed with the Review Panel's research recommendations, in particular relative to alternative assessment models and critical data needs, which will determine if the outcome of a future Goliath Grouper assessment is sufficient for management recommendations.*

- Review the findings of the Blueline Tilefish Stock ID workshop and provide guidance on this topic for the Joint SSC review sub-committee representatives and SEDAR 50 Data Workshop representatives.

  - *The SSC generally accepted the report findings, but the stock ID workshop report will be further reviewed by a subcommittee consisting of SSC representatives of the three SSC's involved (Gulf of Mexico, South Atlantic, and Mid-Atlantic) during a webinar on Oct. 28.*

  - *The information to support or refute the determination of a single stock was based on a combination of genetic and other information such as life history data. The genetic analysis of stock structure is essentially a one-way test. If genetic differences are found there is a solid basis for identifying distinct stocks with little gene flow. However, a small percentage of gene flow will result in a finding of homogeneity when the stocks or regions may still be quite distinct, meaning that the impact of fishing will be largely imposed on the fish in each region, making it necessary or prudent to manage fish in the regions as distinct stocks. A stronger scientific basis for identifying blueline tilefish stocks would be an analysis of variables that are meaningful on ecological timescales that are more directly relevant to fishery management, e.g., demographic rates such as recruitment and growth within regions and otolith micro-chemistry and shape analysis to estimate mixing rates between regions. Research recommendations should include these suggested additional analyses.*

  - *Recommended participants SEDAR50*
    - *DW (Jan 23-27, 2017): Anne Lange and Marcel Reichert.*
    - *AW (week of May 22, 2017): Alexei Sharov, Luiz Barbieri, and Robert Ahrens.*
    - *RW (Aug 29-31, 2017): Scott Crosson (recommended Chair), Laura Lee, and Churchill Grimes.*

- Review and approve ToRs for the Black Grouper Assessment.

  *SEDAR48 ToRs were approved as provided.*

  *Recommended participants for SEDAR 48 (St. Petersburg, FL)*
  - *DW (March 13-17, 2017): Carolyn Belcher and Robert Ahrens*
  - *AW (June 27-29, 2017): Marcel Reichert and Alexei Sharov.*
  - *RW (Nov 14-16, 2017): Fred Serchuk and Amy Schueller.*

- Participants for Black Sea Bass Standard Assessment (Feb-Aug Webinars)

  *Recommended participants for SEDAR 56*
  - *Anne Lange, George Sedberry, and Jeff Buckel.*

- Participants for SEDAR 51 Gray Snapper stock ID workshop (Webinars on November 14 and possibly in December, 2016)

  *Recommended participants for SEDAR 51*
  - *Anne Lange and George Sedberry.*

- Provide guidance on future assessment priorities.

  *The SSC expressed concerns with piloting the Research Track on 2 different species concurrently. Lessons learned from the first research track cannot be used to improve upon the concurrent second assessment, which can lead to mistakes being repeated to the detriment of that assessment.*

# 5. 2015-2016 LANDINGS AND ACLS

## 5.1. Documents

Attachment 12. Landings Report*

## 5.2. Presentation

Landings and ACLs: Mike Larkin, SERO, via Webinar

## 5.3. Overview

The SSC will be provided final 2015 and current 2016 landings, catch limits, and application of accountability measures.

## 5.4. Action

- Review and comment, with attention toward any ABC recommendation updates.
- Consider assessment schedule and research plan implications

**SSC RECOMMENDATIONS:**

- Review and comment, with attention toward any ABC recommendation updates.
- Consider assessment schedule and research plan implications

*The SSC had no specific ABC recommendation updates, but provided a number of comments:*

- *Stocks in which the ABC is exceeded by a large amount, in particular if this occurs in multiple years, should have an increased assessment priority.*

- *The SSC stresses the importance of considering interannual variability in landings and the uncertainty in estimates of those landings when evaluating landings against reference values of ABC and OFL.*
- *Development of a rumble strip approach (such as done in the Mid-Atlantic) that takes underages and overages into account could address the choice of possibly inappropriate ABC values and subsequent consideration of ABC adjustments.*
- *When underages or overages consistently occur (especially for unassessed and data poor stock), industry representatives (such as AP representatives) should be consulted to provide input as to whether these may be market or population driven signals, or both.*

# 6. TILEFISH UPDATE ASSESSMENT

## 6.1. Documents

Attachment 13. Tilefish Update Assessment Report
Attachment 14. SEDAR 25 Assessment Report for Tilefish
Attachment 15. Tilefish Update vs SEDAR 25
Attachment 16. Tilefish Data Update for the Mid-Atl 2014
Attachment 17. Tilefish Data Update for the Mid-Atl 2015
Attachment 18. Tilefish Market Grades

## 6.2. Presentation

Tilefish Update vs. SEDAR 25: Dr. Mike Errigo, SAFMC

## 6.3. Overview

An update of the SEDAR 25 assessment for Tilefish was provided for review during the May 2016 SSC meeting. The SSC determined that Tilefish was ~~not~~ (*note: Tilefish <u>are</u> undergoing overfishing. The "not" overfishing condition stated in the original SSC overview was incorrect and is revised here*) undergoing overfishing and not overfished. Using the ABC Control Rule, a probability of overfishing, or P-star (P*) value of 30% was used to determine the new Acceptable Biological Catch (ABC).

The resulting ABC for 2017 is an almost 62% decrease from the current ABC projected during SEDAR 25. The Maximum Sustainable Yield (MSY) value estimated from the update has gone down by 12% from the SEDAR 25 estimate. The update made some changes to the procedures outlined in SEDAR 25 and there were aspects of the new years of data that changed essential model estimates, both of which are reviewed in Attachment 15. The modeling change which had the most influence on the model output was the use of a robust multinomial distribution when fitting the age composition data. The additional years of data shifted the estimated selectivity of the commercial fleets towards older fish. These two changes, along with the additional age comps not supporting such a large recruitment event, resulted in the model no longer estimating an anomalously high recruitment spike in 2001. This subsequently reduced the estimate of $R_0$ and the estimate

of overall stock productivity. The shift in selectivity also resulted in assessment estimates suggesting that overfishing was more prevalent throughout the assessment time period than indicated in the earlier assessment.

After reviewing the SSC recommendations received in June 2016, and noting the drop in recommended future ABC values, the Council directed the SSC to provide further details and discussion on the Tilefish update to better explain the differences between estimates from SEDAR 25 and the current update.

The Council also raised questions about the size of the buffer between the Overfishing Level (OFL) and the ABC for Tilefish. It is higher than the buffer for any other recently assessed species. The Council directed the SSC to evaluate the buffer and consider to what extent it is related to a model configuration or the uncertainty and data used in the Tilefish assessments. Attachment 15 also addresses factors affecting the uncertainty and, therefore, the outcome of the MCB analysis and probabilistic projections.

Tilefish is also assessed in the Mid-Atlantic and Southern New England region. They had been using the ASPIC Surplus Production Model up until the most recent 2014 assessment, when they switched to the ASAP age structured model (Attachments 16 & 17). They also use market categories to help fill out the commercial size composition data and to track cohorts and recruitment events. The Council is interested in getting the SSC's advice on the feasibility of using market categories in this manner to help supplement data in South Atlantic assessments.

Table 2. Tilefish Recommendations from the May 2016 SSC Meeting

| **Criteria** | **Deterministic** |
|---|---|
| Overfished evaluation ($SSB_{2014}/SSB_{MSY}$) | 1.13 |
| Overfishing evaluation ($F_{12-14}/F_{MSY}$) | 1.22 |
| MFMT | 0.24 |
| $SSB_{MSY}$ (mature female gonad weight, lbs) | 48,347 |
| MSST (mature female gonad weight, lbs) | 36,266 |
| MSY (1000 lbs) | 560 |
| Y at 75% $F_{MSY}$ (1000 lbs) | 551 |
| ABC Control Rule Adjustment | 0.2 |
| P-Star | 0.3 |
| M | 0.1 |
| | |

| OFL RECOMMENDATIONS[1] (probabilistic projections) | | |
|---|---|---|
| Year | Landed lbs gw | Landed Number |
| 2017 | 377,000 | 48,000 |
| 2018 | 402,000 | 52,000 |
| 2019 | 426,000 | 55,000 |
| ABC RECOMMENDATIONS[1] (probabilistic projections) | | |
| Year | Landed lbs gw | Landed Number |
| 2017 | 233,000 | 30,000 |
| 2018 | 267,000 | 34,000 |
| 2019 | 302,000 | 38,000 |

1. Discards are not listed here as they are assumed to be negligible in the assessment and not handled separately.

### 6.4. Action

- Review estimates of productivity from past assessments and the current update
  - Identify uncertainties and factors that impact estimates of productivity.
  - Comment on how well stock productivity is estimated at this point in time.
  - Identify research or data needs that could improve future estimates of productivity.
- Review the application of the P* analysis to Tilefish for the update
  - Provide an explanation for the apparent unusually large difference in yield between the projections of OFL (P*=0.5) and those of ABC (P*=0.3).
  - Compare the buffer between OFL and ABC estimated for Tilefish with those of other species with similar P* values.
  - Identify which factors are most influential in determining the buffer between OFL and ABC.
  - Consider whether the P* analysis is appropriate for this assessment and whether basing the ABC on yield at 75% of $F_{MSY}$ and OFL on the yield at $F_{MSY}$ is a viable alternative.
- Review the performance and accuracy of projections from past Tilefish assessments
  - There is concern with the impact of the high age of the fishery selectivity, combined with the lack of fishery independent data for younger fish, on stock projections
  - Consider the use of market categories in tracking cohorts and recruitment events, as is done in the Mid-Atlantic.
- Comment on the biological risk and socio-economic impacts of a phased-in approach to implementing the reduced catch levels recommended by the SSC from the Tilefish update

- The ACL would be set equal to the OFL in the first year, and then the ABC in subsequent years.
- Also consider providing a constant ABC for later years, specified in 3-year blocks.

**SSC RECOMMENDATIONS:**

*Note that a correction was made in this version of the overview document paragraph 6.3: Tilefish was undergoing overfishing ("not" was deleted).*

*The update included several modifications, of which the application of the robust multinomial likelihood function and the age and length composition data had the greatest effect (see Update assessment report, SSC report, and attachment 15 of the SSC briefing book).*

- *Dr. Erik Williams provided an overview of the adjusted robust multinomial likelihood function. The robust multinomial likelihood function has been used in assessments since 2011. This method addresses influential 1-year anomalies in the data and is better able to treat small sample sizes. The model used in SEDAR 25 (without the adjusted robust multinomial likelihood function) estimated a substantial increase in recruitment for 2001. The robust multinomial likelihood fitting method is typically less influenced by data signals that result from such one-year anomalies. Note that if the data in subsequent years had been consistent with those that led the model to estimate the 2001 recruitment spike, the adjusted robust multinomial likelihood function would not likely have resulted in a change in the 2001 recruitment.*

- *The SSC raised concern that incorporating the robust multinomial likelihood resulted in assessments with higher F and lower SSB estimates than those incorporating other fitting approaches. Dr. Erik Williams indicated that there was no expectation the application of the adjusted robust multinomial likelihood function would result in a uni-directional change in assessment (e.g. lower SSB and higher F estimates) in comparison with the previously used likelihood method. Nonetheless, since a lot of species in our region are relatively data poor, and as a result, may show anomalous data spikes more often than data richer species, the SSC feels that the application of the adjusted robust multinomial likelihood function could more often than not result in lower SSB and higher F. Dr. Williams indicated that this is a rapidly evolving research area in the stock assessment field, but in general the newer methods are better at addressing errors in age sampling. The SSC is interested in being kept informed as to significant developments.*

- *Applying the adjusted robust multinomial likelihood function provides more robust results in the Tilefish assessment and is considered BSIA.*

- Review estimates of productivity from past assessments and the current update
  - Identify uncertainties and factors that impact estimates of productivity.
    - *Besides the use of the robust multinomial likelihood function, the age and length composition data added from the years following the terminal year of SEDAR25 contained information that affected the outcome of the assessment. Many other key parameters such natural mortality and steepness remained the same as in SEDAR 25.*
    - *The unusually strong year class close to the terminal year in SEDAR 25 was influential to the stock status, and the associated high uncertainty was extensively discussed at the various assessment workshops and the SSC review. The uncertainty was carried forward in the ABC control rule (see also below) and subsequently, the Council recognized this uncertainty and associated risk in selecting the ACL level after SEDAR 25.*
    - *Data from the years following the SEDAR25 terminal year (2012-2015) added to the data for the update assessment, but did not support this strong year class.*
    - *The addition of age data in the years since the terminal year of SEDAR 25 changed the selectivity of handline gears towards a greater selectivity for older fish. Given the increase in age sample size there is a greater degree of confidence in the selectivity estimates of the update assessment. Since it was assumed that selectivity remained constant across time, a shift in selectivity was applied throughout the entire assessment time period. The change in selectivity changed (increased) estimates of fishing mortality and model outputs including estimates of MSY and projected catch levels.*
    - *The distributions of $F_{MSY}$ produced by the MCB analysis for the SEDAR 25 and the update were very similar. Therefore, it is unlikely that the difference in the models was due to observation error and process error parameters included in the MCB analysis.*
    - *The SSC recommends considering observation error vs process error to help tease out some of the differences in the two models.*
    - *The model predicted a very high fishing mortality ($F/F_{MSY}$) in the early 1990s, from below 1 to over 8 (over 700% change), although the change in $SSB/SSB_{MSY}$ was not as great over that time (~30% change). It was noted that fishing mortality is reported as apical F (the highest F value across all ages in a given year) and that both apical F and abundance at age expanded in the early 1990s and then declined. The SSC suggested that the severity of overfishing experienced by the full stock (as represented by $F/F_{MSY}$*

*approaching 8) could be exaggerated by the use of apical F as the reference metric for fishing mortality. Therefore, the SSC recommends exploring multiple fishing mortality metrics, in addition to the apical F typically reported, in order to better characterize the level of fishing mortality experienced by the stock.*

- Comment on how well stock productivity is estimated at this point in time.

  *Given the acknowledged overall uncertainty in the assessment, the stock productivity is not well estimated.*

- Identify research or data needs that could improve future estimates of productivity.

  - *In spite of an increase in age sampling since the terminal year of SEDAR 25, the sample sizes for the age composition are still low and provided limited information for the assessment models. This sampling deficiency affects both the SEDAR 25 benchmark and the recent update assessment. Increased age sampling is necessary to improve estimates of catch age composition, especially given the recognized uncertainty in the age determination from otoliths for tilefish (tilefish otoliths are difficult to read).*
  - *Because selectivity may have changed over time, time blocks with different selectivity should be explored for the next assessment, rather than assuming a single fishery selectivity over the entire time series.*
  - *Models that do not rely on age, such as age aggregated or surplus production models, should be considered as viable alternatives to age structured models to assess this species. Multi-modelling approaches could be considered also for future assessments.*
  - *A comprehensive regional fishery independent survey is needed for tilefish (and other deep water species). Surveys should also collect age structures (e.g. otoliths) and other life history samples (e.g. gonad tissues, DNA).*
  - *Changes in the spatial distribution of the fleet with respect to the population distribution could be changing and causing some of the patterns observed in the relative abundance index and composition information, particularly if the fishery is targeting strong year classes that shift depth distribution as they age.*
  - *Recommend working toward a finer spatial scale for catch reporting, so that shifts in the distribution of effort could be accounted for when developing relative abundance trends and spatially averaging composition data.*

- Review the application of the P* analysis to Tilefish for the update

- Provide an explanation for the apparent unusually large difference in yield between the projections of OFL (P*=0.5) and those of ABC (P*=0.3).
  - *It is not surprising to see a larger buffer in an assessment with a large amount of uncertainty and very low sample size. High uncertainty should lead to a large buffer between OFL and ABC. The ABC control rule is doing what it was meant to do given the level of uncertainty in this assessment.*
  - *The magnitude of the buffer of the update is similar to that of SEDAR 25.*
  - *Tilefish do not appear to be significantly different from other species in the South Atlantic in any ways that may affect the buffer between OFL and ABC.*
- Compare the buffer between OFL and ABC estimated for Tilefish with those of other species with similar P* values.

  *In comparing the Tilefish buffer with those of other species, the species with lower buffers have larger sample sizes for ages and a more informative fisheries independent survey containing more samples and greater geographic coverage.*
- Identify which factors are most influential in determining the buffer between OFL and ABC.
  - *Comparing tilefish with several other species revealed that the number of age samples collected is one of the most influential factors in determining the size of the buffer between OFL and ABC.*
  - *A clear trend was observed where the higher the number of age samples the smaller the buffer between OFL and ABC.*
  - *Tilefish had the smallest number of age samples of all the species compared and the largest buffer between OFL and ABC.*
  - *The other factor which had some influence on the ABC buffer was the presence of an informative fishery independent survey of abundance.*
- Consider whether the P* analysis is appropriate for this assessment and whether basing the ABC on yield at 75% of $F_{MSY}$ and OFL on the yield at $F_{MSY}$ is a viable alternative.
  - *Being that the cause of the large buffer is due to a large amount of uncertainty, and the P* analysis was designed to increase the buffer when uncertainty is high, the SSC considers the P* approach appropriate for this assessment and found no compelling reason to change its previous recommendations.*

- *The P* approach is intended to reduce the probability of the stock declining to a level where a rebuilding plan is required and is therefore precautionary given the asymmetric fishery and management consequences when the stock is at target levels and when uncertainty in the assessment is high.*
- *Due to these factors, the Committee does not consider it necessary to base ABC on the yield at 75% of $F_{MSY}$ and OFL on the yield at $F_{MSY}$.*

- Review the performance and accuracy of projections from past Tilefish assessments
  - There is concern with the impact of the high age of the fishery selectivity, combined with the lack of fishery independent data for younger fish, on stock projections.
  - Consider the use of market categories in tracking cohorts and recruitment events, as is done in the Mid-Atlantic.
    - *Given the uncertainty in market category classifications over time, and between regions, along with the lack of historic data on categories, it may not be possible to use market categories across the entire stock. However, they may be informative in geographically localized areas.*
    - *Sufficient resolution might not be available historically, but if there is consistency and sufficient size resolution in the more recent data, cohorts could be tracked over time.*
    - *This information could be used as part of a rumble strip-like approach to formulate future recommendations for Tilefish.*
    - *The Mid-Atlantic Council and SSC are provided with annual updates (see attachments A16 and A17 in SSC briefing book), which assists in decision making and interpretation of data and formulation of recommendations. Similar information could aid in formulating recommendations in the SA region.*
- Comment on the biological risk and socio-economic impacts of a phased-in approach to implementing the reduced catch levels recommended by the SSC from the Tilefish update.
  - The ACL would be set equal to the OFL in the first year, and then the ABC in subsequent years.
    - *Drastic changes to the catch levels, as are being proposed for Tilefish, can have large economic consequences in the fishery, and a phase-in may moderate the impacts.*
    - *The revised National Standard 1 allows for a phased in approach over three years in cases where there is a high level of uncertainty, however, the SSC did not have a chance to review and discuss the*

*revised NS1 Guidelines. Mr. Shepherd Grimes (NOAA General Council) clarified that the phase in needs to be part of the fisheries management plan and the ABC control rule. The requirement that Councils cannot exceed the ABC recommendations of the SSC is not overruled by the flexibility allowance. The FMP and control rule would specify the conditions under which the phase-in would occur and how the ABC is developed when a phase-in is considered.*

- *A phase-in that reduces the buffer between the overfishing level and the allowable catch increases the risk of ending up in an overfished situation and a rebuilding plan, especially as overages have occurred in recent (3-4) years.*
- *If council chooses to phase-in the ACL, SSC recommends considering management uncertainty and recent overages. The SSC recommends that the ACL should not exceed 90% of the OFL in year one because the ACL was exceeded in recent years.*
- *In addition to revising the ABC control rule, new projection estimates will need to be provided if a phased-in approach is chosen.*

o Also consider providing a constant ABC for later years, specified in 3-year blocks.

*Consistency in the ACL will make it easier for holders of the tilefish endorsements to adjust their business models. However, the economic analysis in Amendment 18B that led to the restriction of tilefish access rights to a limited number of endorsement holders noted that both the ACL and average trip costs would have to remain static in order for the remaining operations to maintain profitability. The IFQ system in the Wreckfish fishery was able to adjust to a much sharper reduction in its ACL through the sale of shares to the members of the fleet that utilized them most profitably.*

# 7. SNAPPER GROUPER AMENDMENT 43 - RED SNAPPER

## 7.1. Documents

Attachment 19. SEDAR 41 SAR, Red Snapper
Attachment 20. SEDAR 41 Supplemental Projections Apr2016
Attachment 21. SEDAR 41 Proj Runs at $F_{MAX}$ and $F_{20\%SPR}$ Aug 2016
Attachment 22. SEDAR 41 Projection Overview Presentation
Attachment 23. Amendment 43 Options Paper
Attachment 24a. MRIP Int Reliability RS

### 7.2. Presentation

Projections Overview: Dr. Kate Siegfried, SEFSC
Amendment 43 ACT alternative: Chip Collier, SAFMC

### 7.3. Overview

The Committee reviewed the Red Snapper Benchmark assessment prepared through SEDAR 41 and provided fishing level recommendations at their May 2016 meeting. The base assessment run suggested that in the terminal year of 2014 the stock remained overfished. The SSC did not have confidence in the terminal fishing mortality estimates; however they recommended that the assessment results suggested overfishing was likely occurring in the terminal years of the assessment (2012-2014). , although the degree to which overfishing was occurring at that time could not be reliably quantified from the assessment results. Status determination and catch level recommendations provided by the SSC in May 2016 were based on the current $F_{MSY}$ proxy of $F_{30\%SPR}$.

SEDAR 41 estimated the long-term sustainable yield at MSY to be about 25% of what it was estimated to be in SEDAR 24, and projected catch levels from SEDAR 41 at $F_{Rebuild}$ were approximately 21% of the catch levels projected for 2017 based on SEDAR 24. Given the lack of an estimated stock recruitment relationship and the need to fix steepness in SEDAR 41 at a level different than that used for SEDAR 24, and considering the importance of the stock-recruit parameters to the reference point recommendations, the Council directed the SSC to recommend an appropriate $F_{MSY}$ proxy for red snapper that reflects the most recent assessment results. The Council requested additional projection runs and reference point criteria at $F_{MAX}$ and $F_{20\%SPR}$, for the SSC to consider.

There was also concern over the amount of uncertainty in the recreational landings and discard estimates used in SEDAR 41. Recent landings estimates have a high degree of error associated with them, which is partially due to the difficulties of generating estimates during the recent moratoriums and short mini-seasons. Discard estimates also exhibit high sampling error. Due to these recreational data uncertainties the Council requested that the SSC evaluate the current MRIP estimates (landings and discards) for Red Snapper to determine if they are reliable and adequate for management.

The Council has also begun work on Amendment 43 to address alternative management strategies for Red Snapper. Although the Amendment is still in the early stages, there are items the Council would like the SSC's feedback on, such as the MSY (Action 1 in Amendment 43), specifying ABC and Annual Catch Limit (ACL) in landings versus landings and discards (Action 3), and calculating the annual catch target (ACT; Action 4). Attachment 23 has the three actions highlighted here for SSC review copied to the front of the document after the purpose and need for the amendment for ease of SSC review. The full options paper is provided after the Actions 1, 3 and 4 to provide background information and all other proposed action and alternatives.

The Council requested the SSC discuss the risk associated with using different values of MSY (Action 1). The MSY alternatives in the options paper include $F_{MAX}$, $F_{20\%}$, $F_{26\%}$, $F_{30\%}$, and $F_{40\%}$. Projections are provided for $F_{MAX}$, $F_{20\%}$, $F_{27\%}$, and $F_{30\%}$ in Attachment 21.

There are slight differences between the alternatives and the projections because the alternatives in the amendment were developed after the request for projections was sent the SEFSC.

The Council requested the SSC comment on the risk of specifying the ABC and ACL in landings or landings + discards (Action 3). The current ABC is based on landings and dead discards and the ACL is based on landings only. The discards are not tracked for any other fish in the South Atlantic and compared to the ABC, which includes landings and dead discards. However, the largest component of fishing mortality for Red Snapper in the last five years came from the dead discards in the recreational fishery.

The calculation of the ACT (Action 5) includes a new method for review by the SSC (Alternative 4). The new method reduces the ACT from the ACL based on the average percentage the annual landings exceeded the ACL based on a selected timeframe. The timeframe for the ACT calculation was based on 2012 to 2014 when short seasons were opened for Red Snapper.

Table 3. Red Snapper Recommendations from the May 2016 SSC Meeting

| **Criteria** | **Deterministic** | **Probabilistic** |
|---|---|---|
| Overfished evaluation ($SSB_{2014}/SSB_{30\%}$) | 0.16 | 0.17 |
| Overfishing evaluation | $F_{12-14}/F_{30\%} > 1$ | $F_{12-14}/ F_{30\%}>1$ |
| MFMT ($F_{30\%}$) | 0.15 | 0.15 |
| $SSB_{30\%}$ (Eggs 1E8) | 328,552 | 294,166 |
| MSST (Eggs 1E8) | 246,414 | 220,624 |
| MSY (1000 lb) | 430 | 419 |
| Y at 75% $F_{30\%}$ (1000 lb) | 398 | 397 |
| ABC Control Rule Adjustment | Under Rebuilding | |
| P-Star | Under Rebuilding | |
| M | 0.134 | |

| Management starting in 2017 (probabilistic projection results) | | | | |
|---|---|---|---|---|
| OFL RECOMMENDATIONS | | | | |
| Year | Landed LBS | Discard LBS | Landed Number | Discard Number |
| 2017 | 174,000 | 189,000 | 18,000 | 35,000 |
| 2018 | 204,000 | 210,000 | 19,000 | 37,000 |
| 2019 | 230,000 | 227,000 | 21,000 | 39,000 |
| ABC RECOMMENDATIONS | | | | |
| Year | Landed LBS | Discard LBS | Landed Number | Discard Number |
| 2017 | 165,000 | 179,000 | 17,000 | 33,000 |
| 2018 | 195,000 | 200,000 | 18,000 | 35,000 |
| 2019 | 220,000 | 218,000 | 20,000 | 37,000 |

### 7.4. Action

- Evaluate the MRIP estimates for Red Snapper

- Determine if they are reliable and adequate for management, including quota monitoring and discard information.

- Consider alternative reference points
  - Comment on the risk of using alternative SPR metrics in lieu of $F_{30\%SPR}$ in determining stock status and running projections.
  - Review the projections at $F_{MAX}$ and $F_{20\%SPR}$.
  - Update or revise fishing level recommendations as appropriate.

- Amendment 43 ACT alternative (Action 4)
  - Discuss the pros and cons of the proposed alternative method for calculating the ACT.
  - What are the benefits to using the proposed methodology over the Council's current ACT rule of (1-PSE)*ACL?

**SSC RECOMMENDATIONS:**

- Evaluate the MRIP estimates for Red Snapper
  - Determine if they are reliable and adequate for management, including quota monitoring and discard information.
    - *The number of intercepts is relatively low and the expansion factors relatively high, with the highest number of intercepts in Florida.*
    - *The SSC realizes that these estimates are influential in assessments and management. By design, 90% of the effort is focused on "inshore" areas, while the remainder is focused "off-shore". Better data would be ideal, such as surveys focused on off-shore trips. The SSC realizes that while these estimates are influential in assessments and management, they are currently all there is. Uncertainties and use of data was discussed extensively at the SEDAR 41 Data Workshop and during the review.*
    - *The SSC agrees that all sources of mortality should be considered; therefore the ABC should be specified in total yield (landings + discards). Not accounting for dead discards in management increases the risk of overfishing ("a dead fish is a dead fish").*
    - *Discard mortality will remain one of the key issues. Assessment estimates and projections can be significantly improved if reliable estimates of discards and discard mortality are improved. As a result, efforts to better estimate and validate discards and discard mortality should be given a very high research and survey priority.*
    - *Similarly, the proportion of stock yield available for harvest can increase if discard mortality is reduced, e.g. by the use of descending devices or other descending techniques, or avoiding areas with high concentrations of red snapper. Release mortality*

*studies could improve discard mortality estimates, and should be given a high research priority. Such studies could include evaluation of existing devices and release methods, and development of alternative methods. It will be important to evaluate acceptance of these techniques by fishers.*

- *In addition, other data collection approaches should be studied, such as those in the GOM (stamp), as recommended in the new approach the Council put forth.*
- *The PSE could be informative in determining the adequacy of estimates. An ACCSP Workshop report (available on the ACCSP website) suggested PSEs higher than 40% to 60% may not be usable. However, higher levels were acceptable for short-lived species or those with low levels of recreational catch.*
- *Simulation evaluation could be used to determine the effect of differing PSE values on the resulting reference points.*
- *The incorporation of uncertainty in the catch data is dependent on the chosen method of assessment. We currently use catch-based assessments, which assume the catch is known with very little error. Moving to an effort-based assessment or a Bayesian framework would allow fitting to the catch and better incorporate the estimates of uncertainty (PSE) into the assessment.*

- Consider alternative reference points
  - Comment on the risk of using alternative SPR metrics in lieu of $F_{30\%SPR}$ in determining stock status and running projections.

    *By definition $F_{MAX}$ and $F_{20\%}$ have a higher risk of overfishing than $F_{30\%spr}$ or $F_{40\%spr}$. Furthermore, the analyses presented to the SSC indicated that the various alternatives ($F_{20\%}$, $F_{27\%}$, $F_{30\%}$, and $F_{max}$) showed very similar results and the changes in yield were minimal. It is the opinion of the SSC that there is no compelling reason to change the proxy based on the data presented, and even if a different metric is chosen (other than $F_{30\%}$), the status determination and yield will not change substantially. Scientific literature supports that longer lived species should have a higher percentage of SPR, which supports maintaining $F_{30\%}$ at a minimum.*

  - Review the projections at $F_{MAX}$, $F_{20\%SPR}$, and $F_{27\%SPR}$.

    *See above.*

  - Update or revise fishing level recommendations as appropriate.
    - *Previous SSC discussions and the RW reports discussed the MSY proxy issues. No new data have become available to justify a revision of the fishing level recommendations.*

- *A retrospective analysis would be useful to investigate the "overfishing uncertainty" between the proposed $F_{MSY}$ proxies.*

- Amendment 43 ACT alternative (Action 4)
  - Discuss the pros and cons of the proposed alternative method for calculating the ACT.
  - What are the benefits to using the proposed methodology over the Council's current ACT rule of (1-PSE)*ACL?
    - *The use of an ACT and chosen buffer is a management decision, but having an ACT is preferable over not having one because:*
      - *Provides buffer from the ACL. Using a percentage of the ACL recognizes that catches may not be known precisely.*
      - *Could be used for in-season monitoring, and can be adjusted as time progresses, management changes, and data collection improves.*
      - *It is consistent with Gulf methodology. ACT based on performance – evaluation of proportional overages over time, similar to alternative 6.*
    - *Does not consider uncertainty in the point estimates of the landings as Alt 2 does. Alt 2 accounts for the observed uncertainty in the catch estimates.*

# 8. ABC CONTROL RULE MODIFICATIONS

## 8.1. Documents

Attachment 25. ABC Control Rule Modifications DD
Attachment 26. ABC Control Rules from Other Jurisdictions
Attachment 27. ABC Control Rule Presentation
Attachment 28. ABC Control Rule Background Information

## 8.2. Presentation

Changes to the ABC Control Rule: John Carmichael, SAFMC

## 8.3. Overview

During the October 2014 ABC Workshop, several issues with the ABC Control Rule were identified, including the use of stock status, MRAG Productivity and Susceptibility Analysis scores and catch adequacy in determining the P* value for Tier 1 stocks . Other concerns include the overly prescriptive nature of Levels 2 and 3 that could be viewed as precluding consideration of newly developed data poor assessment methods and the lack of clarity on application of the ABC Control Rule in developing annual catch level recommendations for stocks in a rebuilding plan. The SSC created a sub-committee to develop recommendations for control rule revisions. At the May 2016 meeting, the SSC discussed the results of analyses that had been put together by the ABC Control Rule sub-

Committee. The sub-committee focused on evaluating ABC control rule performance in preventing overfishing, and determined that there hasn't been enough time and assessments of stock conditions based on management under the ABC Control rule to definitively evaluate its effectiveness. The sub-Committee was then charged with looking at different performance metrics for evaluating the success of ABC recommendations. The sub-Committee has not made any additional progress since the May 2016 SSC meeting.

Although the sub-Committee focused mainly on performance, it also noted that the 2014 workshop included a number of recommendations to improve the Control Rule that have yet to be acted upon. Recently, the Council requested the SSC reconsider eliminating stock status as a factor used in determining the P* for assessed stocks. This is largely based on the fact that NMFS makes the final determination of stock status and not the SSC.

Council staff prepared a document for SSC consideration that addresses the Council request regarding stock status determinations, suggestions from the 2014 workshop for refining the ABC Control Rule criteria, and a number of other issues and inconsistencies created by the multiple addenda to the original rule. The Committee is asked to consider this as a starting point for resolving issues with the ABC Control Rule.

### 8.4. Action

- Provide recommendations on control rule revisions, if appropriate and necessary.
  - See the ABC Control Rule Modifications Decision Document for specific suggestions on modifying the current ABC Control Rule.
- Provide guidance on next steps to be taken in considering revisions to the control rule.

**SSC RECOMMENDATIONS:**

- Provide recommendations on control rule revisions, if appropriate and necessary.
  - See the ABC Control Rule Modifications Decision Document for specific suggestions on modifying the current ABC Control Rule.
    - *Stock status is determined by NMFS, and is a factor that the SSC considers appropriate for the Council to consider when determining the acceptable risk of overfishing. As such, the SSC recommends removing stock status from the ABC control rule.*
    - *The Productivity and Susceptibility Assessment (PSA) information is also a factor that the SSC recommends the Council should consider when determining the acceptable risk of overfishing. The SSC recommends removing the PSA consideration from the ABC control rule. However, the SSC recommends that the current PSA*

*information should be updated and reviewed by the SSC if the Council wishes to use it to establish risk levels.*

- *Modifications to the ABC control rule as a result of the above recommendations will require changes to the overall scoring system. The SSC requests that staff work with the SSC leadership to develop some possible options for modifying scores to maintain the range of adjustments.*
- *The SSC recommends that P* values based on the existing ABC control rule be compared to recommendations based on the modified ABC control rule.*

- Provide guidance on next steps to be taken in considering revisions to the control rule.

  *The SSC will continue discussing changes to the ABC control rule at its next meeting. Topics will include further refinement of the ABC control rule, comparison of "old" and "new" P* recommendations, the potential use of economic and social indicators of stock abundance, and the recently published new National Standard Guidelines.*

# 9. BLACK SEA BASS POT MESH SIZE STUDY

## 9.1. Documents

Attachment 29. BSB Selectivity Study Presentation

## 9.2. Presentation

BSB Selectivity Study: Paul Rudershausen, NCSU

## 9.3. Overview

Paul Rudershausen, North Carolina State University, will present results of a study to explore the selectivity of different mesh sizes in commercial Black Sea Bass pot gear. The commercial Black Sea Bass minimum size in the South Atlantic was increased to 11 inches without a concurrent increase in the minimum size of trap mesh to harvest the species.

The researchers worked with a commercial fisherman out of Sneads Ferry, NC in cooperative research funded by a North Carolina Fisheries Resource Grant to determine whether larger mesh traps would optimize selectivity. The optimization was based on maximizing escape of sub-legal fish while maintaining catch of legal fish. Traps with uniform mesh sizes of 2, 2.25, and 2.5 inches were tested.

The study found that at the current minimum size limit of 11 inches the 2.25-inch mesh trap would optimize selectivity. The research also showed that the current minimum trap mesh configuration retains a higher number of sub-legal fish than traps of larger mesh sizes. Researchers developed a regression equation to predict approximate Black Sea

Bass sizes at first retention for larger trap mesh sizes; this is useful information given any future changes in the minimum size limit for this species.

### 9.4. Action

- Discuss the uncertainties associated with this study.
- Recommend whether this study is the Best Scientific Information Available and is appropriate for use in managing fisheries resources.

**SSC RECOMMENDATIONS:**

- Discuss the uncertainties associated with this study.
  - *The study was well designed and executed. All major sources of uncertainty are more than adequately addressed in the study.*
  - *A minor comment was that the model assumes the size composition of control trap habitats is representative across the range of the fishery, but as different traps were fished in the same general areas, this was not a major point of concern.*
  - *The model fits the observed data very well.*
- Recommend whether this study is the Best Scientific Information Available and is appropriate for use in managing fisheries resources.

  *This study was considered BSIA and appropriate for use in managing fisheries resources.*

## 10. MANAGEMENT ANALYSIS REVIEW PROCESS

### 10.1. Documents

Attachment 30. SAFMC SSC Peer Review Process

### 10.2. Presentation

SAFMC SSC Peer Review Process: John Carmichael, SAMFC

### 10.3. Overview

At the June 2016 meeting, the Council directed staff to develop a proposal for conducting SSC peer review of complex analyses used in amendments and management decisions. The proposed SSC peer review process, presented in attachment 29, outlines an SSC working group process that would take a greater role in evaluating complex analyses while they are developed. Working groups would work closely with those conducting the analyses to provide an SSC perspective while reporting regularly to the SSC. Efforts of the workgroup would not replace review by the SSC, as final analytical products would still be presented to the entire SSC for review. The SSC is asked to review and comment on the proposed peer review process before it is presented to the Council in December 2016 and possibly adopted.

### 10.4. Action

- Comment on the proposed peer review process for evaluating complex analyses.

**SSC RECOMMENDATIONS:**

- Comment on the proposed peer review process for evaluating complex analyses.

  *SSC recommendations:*

  - *Consult with the SEP chair for socioeconomic analyses and include SEP as possible workgroup members.*
  - *Open workgroups to outside experts with the appropriate expertise as indicated by the SSC.*
  - *Extreme care must be given to the time needed for a thorough review.*
  - *Concerns with increased SSC workload.*
  - *The SSC recommends that the Council approve this process in December and implement it as soon as it is appropriate.*
  - *Public comment should be taken at the SSC meetings, not during the workgroup informal meetings.*

## 11. SPINY LOBSTER REVIEW

### 11.1. Documents

Attachment 31. Spiny Lobster Overview

### 11.2. Presentation

Spiny Lobster Overview: Dr. Kari MacLauchlin, SAFMC

### 11.3. Overview

The Council requests that the SSC review the OFL and ABC for Spiny Lobster, and determine if the OFL and ABC values can be updated based on current conditions of the fishery and changes over the past few years. Amendment 10 to the Spiny Lobster FMP (2011) established the ACL for Spiny Lobster at 7.32 million pounds (mp, ACL=ABC) and an annual catch target (ACT) at 6.59 mp. The overfishing threshold was specified as the overfishing level (OFL) and was designated at 7.9 mp.

When the SSCs reviewed Spiny Lobster to make recommendations to the Councils for the OFL and ABC for Amendment 10, the MSY was unknown. The Gulf Council proposed using the Gulf SSC recommendations for the overfishing limit in Amendment 10. The MSY proxy, also designated as the OFL recommended by the Gulf SSC (at their January 2010 meeting), was derived in the following manner: Using Tier 3a of the Gulf ABC Control Rule, the Gulf SSC recommended an OFL be set as the mean of the most

recent landings in the last 10 years (i.e., fishing years 2000/2001-2009/2010) plus two standard deviations from the mean. These years were selected because they represented a period of at least ten years that reflected the most recent conditions of the fishery, and were also relatively stable. Both Councils approved the OFL and ABC recommended by the Gulf SSC in Spiny Lobster Amendment 10.

The OFL, ABC, ACL, and ACT for Spiny Lobster went into effect on January 3, 2012, and below are the landings in the years following implementation (the fishing year is August 6 through March 31).
- 2012/2013: 5,623,212 lbs
- 2013/2014: 7,956,947 lbs (exceeded the ACT, ABC/ACL and OFL)
- 2014/2015: 7,032,422 lbs (exceeded the ACT)
- 2015/2016: 7,577,550 lbs (exceeded the ACT and ABC/ACL)

The Accountability Measure (AM) for Spiny Lobster is to convene a Review Panel if the landings exceed the ACT in any given year. Following notification of the 2013/2014 landings, the Spiny Lobster Review Panel was convened in February 2015. The Review Panel made the following recommendations:

- The Panel does not recommend that a new stock assessment be conducted.
- The Panel discussed and concluded that the ACL is the wrong methodology to manage this fishery. It recommended that Spiny Lobster be considered as having a unique life history to be exempted from having an ACL.
- The Panel recommends that the OFL be redefined as MFMT.

The 2015 report is available here:
http://safmc.net/sites/default/files/meetings/pdf/Council/2015/03-2015/splobster/Att3_SpinyLobReviewPanelReport_Feb2015.pdf.

Following notification of the 2014/2015 overage, the Councils convened the Review Panel again via webinar in January 2016. The 2016 Review Panel reviewed landings and other factors that may affect Spiny Lobster catch, and viewed possible catch limits based on different time periods using a tool developed by Gulf Council staff (available here: http://portal.gulfcouncil.org/SpinyLobster/)

The 2016 Review Panel made the following recommendations:

- Calculate the ABC/ACL based on the landings from 1991 through the most recent landings (2015-2016).
- Examine setting the annual catch limit based on a rolling average.
- Examine setting the ACL trigger based on landings and the landings to effort index.

Note that the recommendations are from motions, which were not unanimously approved. The 2016 Review Panel report is available here: http://blog.safmc.net/download/BriefingBookJune2016/SpinyLobster/Att2_SpinyLobReviewPanelReport_032816.pdf

Additionally, the South Atlantic and Gulf Spiny Lobster Advisory Panels met jointly on April 25, 2016. The Joint APs recommended the following relevant to the ABC/ACL:

- To recommend that the Council accept the recommendation of the review panel "to calculate the ACL based on landings from 1991 through the most recent landings (2015-2016)"
- To recommend that there be a lower landing trigger based on the average of the three low landings years (2001-2002, 2002-2003, 2003-2004) that would initiate a review panel, if below this average for two consecutive years (5.3 mp total catch)

The 2016 Joint AP report is available here: http://blog.safmc.net/download/BriefingBookJune2016/SpinyLobster/Att3_SpinyLobJointAPReportApr2016_FINAL.pdf

The Gulf Council's Spiny Lobster SSC met in June 2016, and made a recommendation to use the time series of 1991-2015/2016 for an ABC/OFL calculation for Spiny Lobster. The meeting summary is available here: http://gulfcouncil.org/council_meetings/BriefingMaterials/BB-06-2016/SSCmeetingsummary06-2016.pdf

In June 2016, the NMFS Southeast Regional Administrator sent a letter notifying the South Atlantic Council that 2015/2016 Spiny Lobster landings had exceeded the ACT for the third year in a row. The letter outlined the recommendations from the Review Panel, Joint Advisory Panels, and the Gulf Spiny Lobster SSC, and specified that if the South Atlantic SSC concurred with those recommendations, that the Councils could revise the ACL for Spiny Lobster.

The South Atlantic Council will be reviewing an options paper at the December 2016 meeting, which will include actions to revise the OFL, ABC and ACL for Spiny Lobster based on the SSC recommendations. The Gulf Council will review the options paper at their January 2017 meeting.

### 11.4. Action

- Provide recommendations for ABC and OFL for Spiny Lobster.

**SSC RECOMMENDATIONS:**

- Provide recommendations for ABC and OFL for Spiny Lobster.
  - *The SSC had a lengthy discussion about the data and stock dynamics. Major points of discussion were:*
    - *Choice of new period over which ABC recommendation is made (i.e., the landings reference period).*
    - *Proper metrics of effort for the Spiny Lobster fishery are still being developed. Complicating effort estimates is the relative ease of entering the fishery, causing participation in the fishery to change. This may have affected landings, uncoupling landings and population trends. In addition, the recently developed live lobster market to China affected landings and as a result of the method used, the population size estimates.*

- *The SSC recognizes that the assumption that the dynamics of the fishery reflects the dynamics of the stock is not supported.*
- *Further, the Florida landings make up a very small portion of Western Hemisphere landings and may not reflect stock population trends. Furthermore, the stock dynamics are poorly understood. Genetic studies have shown that Florida population seems to be a sink with Central American and Caribbean populations as a source. Self- recruitment seems to be small.*
- *A lack of reliable fishery independent data for Spiny Lobster hampers efforts to estimate population abundance trends and compare landings trends with independent measures of population condition.*
- *Landed lengths have not changed much over time due to regulations and market demand, and as such do not provide meaningful additional information as to population trends.*

➢ *The SSC was unable to make consensus recommendation and decided to hold a webinar to review available relevant materials and data that were reviewed by the Spiny Lobster Review Panel. The Webinar will be held on November 21, 2016 (9:00am-noon) and chaired by Dr. Luiz Barbieri. Please see the report from the webinar for the final statements and decisions from the SSC.*

# 12. SNAPPER GROUPER AMENDMENT 41

## 12.1. Documents

Attachment 32. Amendment 41 (Mutton Snapper) Analyses

## 12.2. Overview

The Council is considering the following actions in Amendment 41:

- Specifying MSY and MSST for Mutton Snapper.
- Setting ABCs, ACLs, and a recreational ACT for Mutton Snapper.
- Designating "spawning months" during which stricter management measures would apply.
- Modifying commercial trip limit and minimum size limit.
- Modifying recreational bag limit and minimum size limit.

The Council is scheduled to take final action on the amendment at their December 2016 meeting. Appendices K and L of the draft amendment, detailing the analyses and methodology, are included as Attachment 20 along with the list of proposed actions and alternatives. The Committee is asked to review the analyses and comment on their utility and appropriateness.

### 12.3. Action

- Review and comment on any actions as necessary.

**SSC RECOMMENDATIONS:**

- Review and comment on any actions as necessary.

  *The SSC had no additional comments.*

## 13. NATIONAL SSC AGENDA

### 13.1. Documents

None.

### 13.2. Overview

The next National SSC meeting will be held sometime in late 2017 or early 2018 and hosted by the Pacific Fishery Management Council. Since it is very early in the planning stage, the SSC has the opportunity to weigh in on what topics will be addressed at the meeting. At this early stage, the Science Coordination Subcommittee (SCS) thinks it would be very helpful for each region to assign a score of 1-3 for each of the proposed topics: 1 represents a priority topic for your region and one the SSC would be happy with if the NSSC were organized around, 2 is neutral/acceptable, and 3 means the SSC considers it a bad idea to organize the meeting around a particular theme. It is also not too late to add potential topics to the list.

Topics identified to date, in alphabetical order:

- Dealing explicitly with model uncertainty
- **Defining Optimum Yield in a way that integrates ecosystem, climate change, social, and economic considerations - 1**
- Discussion about "Best Available Scientific Information" and the consequences of applying this
- Effective communication and coordination among SSCs, Councils, and stakeholders
- Estimating uncertainty in the OFL and its components (stock biomass and fishing mortality)
- How to adjust Harvest Control Rules in a changing environment and/or otherwise deal with the concept of non-static MSY
- Identifying representative fishery pathways for climate and fishery impacts analyses
- Improved processes for setting spex
- **Management Strategy Evaluations (MSEs) and their use in evaluating and modifying harvest control rules - 1**
- Managing "choke" species
- Protected species
- Re-evaluation of the performance of ABC control rules

- Recreational fisheries management

The SCS felt it would also be helpful to point out items that could sensibly be combined, for example there have already been suggestions to pair "Defining OY in a way that integrates ecosystem, climate change, social, and economic considerations" with "Identifying representative fishery pathways for climate and fishery impacts analyses"; or grouping together "Re-evaluation of the performance of ABC control rules", "Dealing explicitly with model uncertainty", and "Estimating uncertainty in the OFL and its components (stock biomass and fishing mortality)".

### 13.3. Action

- Discuss and recommend topics and rankings for the next National SSC meeting.

**SSC RECOMMENDATIONS:**

- Discuss and recommend topics and rankings for the next National SSC meeting.

  *"Management Strategy Evaluations" and "Defining Optimum Yield" were the SSC's preferred topics.*

## 14. COUNCIL WORKPLAN UPDATE

### 14.1. Documents

Attachment 33. SAFMC Work Plan, Sept 2016
Attachment 34. SAFMC Amendments Overview, Oct 2016

### 14.2. Overview

The Committee is provided these documents at each meeting to stay informed of Council activities. Regular detailed reviews of each amendment are no longer requested of the SSC as amendments are developed; instead the Committee is asked to comment on specific technical items that may arise. However, members are welcome to review any ongoing amendments and to provide comments and suggestions directly to staff. Current versions of each amendment are included in the Council Briefing Books distributed to SSC members. Questions or comments about specific items should be addressed to the staff assigned to each FMP, as summarized below.

- Coastal Migratory Pelagic - Kari MacLauchlin
- Corals – Chip Collier
- Fishery Ecosystem Plan - Roger Pugliese
- Snapper Grouper - Myra Brouwer
- Snapper Grouper Amendment 43 (Red Snapper) – Chip Collier
- Spiny Lobster - Kari MacLauchlin
- Golden Crab - Brian Cheuvront
- Dolphin-Wahoo - Brian Cheuvront & John Hadley

- South Atlantic For-Hire Reporting Amendment – John Carmichael

### 14.3. Action

- No specific actions required

## 15. SSC PUBLIC COMMENT POLICY

### 15.1. Documents

Attachment 35. SSC Job Description
Attachment 36. SSC Policy

### 15.2. Overview

During their Sept 2016 meeting, the Council discussed and approved changes to their public comment policy. There were some concerns expressed about the current SSC public comment policy, which allows for public comment at the beginning and end of the meeting. Those interested in making comment may find it difficult to attend the SSC meeting during both the public comment period and the deliberation of a topic they are interested in that is held on another day. The Council directed the SSC to consider taking comment daily or during each agenda topic, so that comments may be more useful to the SSC and their deliberations. The Council requested that the SSC consider revisions to the public comment policy that would, for example, allow the public to comment on a specific agenda item when that item is being addressed by the SSC. The Council will consider changes to the SSC public comment policy at the December meeting. SSC input on the topic is requested during this meeting, and additional comment opportunities were added to the agenda for this meeting to gather some direct experience.

### 15.3. Action

- Discuss and consider revisions to the public comment policy.

**SSC RECOMMENDATIONS:**

- Discuss and consider revisions to the public comment policy.
  - *The SSC has a history of inviting attending public to the table to provide relevant input.*
  - *The format followed during this meeting was beneficial to SSC discussions.*
  - *The SSC supports taking public comment on each agenda topic as it is discussed. Taking comment at the start of consideration of a topic is not ideal, as important information is often provided in presentations on the topic. On the other hand, waiting until the SSC has fully discussed a topic can reduce the relevancy of comments and not afford the SSC an opportunity to consider comments before reaching conclusions. Therefore, the SSC recommends that comment be taken*

*after any initial presentations and questions on the presentations, but before the SSC develops its final consensus recommendations.*

- *Keep a general comment period at beginning for those that cannot attend the entire meeting.*

## 16. PUBLIC COMMENT

The public is provided an additional opportunity to comment on SSC recommendations and agenda items.

## 17. REPORT AND RECOMMENDATIONS REVIEW

The Committee is provided an opportunity to review its report and final recommendations.

The Final SSC report will be provided to the Council by 9 am on Tuesday, November 1, 2016 for inclusion in the first briefing book for the December Council meeting.

## 18. NEXT MEETINGS

### 18.1. SAFMC SSC MEETINGS

2017 Meeting Dates (Tentative)

April 25 – 27 in Charleston, SC
October 24 – 26 in Charleston, SC

### 18.2. SAFMC Meetings

2016-2017 Council Meetings

December 5-9, 2016 in Atlantic Beach, NC
March 6-10, 2017 in Jekyll Island, GA
June 12-16, 2017 in Ponte Vedra Beach, FL
September 11-15, 2017 in Charleston, SC
December 4-8, 2017 in Atlantic Beach, NC

**ADJOURN**