# SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

## SCIENTIFIC AND STATISTICAL COMMITTEE



**SSC Meeting Report**

**May 1-3, 2018**

**Town & Country Inn**
**Charleston, SC**

**VERSION**
**FINAL, Revised**

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Revisions: Tables 2 and 3 had the values for the top part of the tables shifted, showing the incorrect values for each of the parameters. This error has been corrected.

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# PLEASE NOTE

***The text in italics constitutes the SSC report. The text in regular font is from the Briefing Book overview and is included for context, but is NOT based on the SSC discussions and recommendations.***

# 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, April 24, 2018.  Submit written comments to:

<div align="center">

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

</div>

Verbal comment:
Two opportunities for comment on agenda items will be provided at set times during SSC meetings. The first will be at the beginning of the meeting, and the second near the conclusion. Those wishing to comment should indicate such in the manner requested by the Chair, who will then recognize individuals to provide comment.

An opportunity for comment on specific agenda items will also be provided as each item come up for discussion. Comments will be taken after all the initial presentations are given and before the SSC starts the discussion of the agenda topic. As before, those wishing to comment should indicate such in the manner requested by the Chair, who will then recognize individuals to provide comment. All comments are part of the record of the meeting.

# 1.  INTRODUCTION

## 1.1   Documents

Agenda
Attachment 1. Minutes of the October 2017 meeting

## 1.2   Action

- Introductions
- Review and Approve Agenda
  - *The committee agreed to move ABC CR discussion (agenda item 7) to Thursday and the SEDAR discussion (agenda item 13) to Wednesday to accommodate Shepherd Grimes' schedule.*
- Approve Minutes

# 2.  PUBLIC COMMENT

The public will be provided an opportunity to comment on SSC agenda items as they are being discussed during the meeting. Comments will be taken after any initial presentations are given on a particular topic, but before the SSC begins their discussion of the topic. There will also be an opportunity for comment at the start and end of the meeting. Those wishing to make comment should indicate their desire to do so to the Committee Chair.

# 3.  BLUELINE TILEFISH ABC WORKGROUP

## 3.1   Documents

Attachment 2. BLT Workgroup presentation
Attachment 3. BLT Workgroup Report
Attachment 4. MAFMC SSC March 13-14, 2018 Meeting Report
Attachment 5. BLT Workgroup Reference Documents

## 3.2   Presentation

Workgroup progress and recommendations: Dr. Scott Crosson, SEFSC

## 3.3   Overview

The SSC reviewed the SEDAR 50 assessment for Blueline Tilefish at their October 2017 meeting in Charleston, SC. Due to issues encountered at the SEDAR 50 Data Workshop, the Blueline Tilefish stock was unable to be assessed as a single unit. Therefore, the area south of Hatteras was assessed separately from the area Hatteras and north. The south of Hatteras component was able to be assessed using an age-aggregated Production model, which gave estimates of the overfished and overfishing status of that portion of the stock.

The portion of the stock north of Hatteras had issues with data availability and the spatio-temporal development of the fishery, which hindered the use of traditional assessment methods. Data limited methods from the DLMToolkit were used to develop catch level estimates for the

entire stock from Hatteras north. Both the South Atlantic and Mid-Atlantic Fishery Management Councils have expressed their desire to manage Blueline Tilefish separately within their respective jurisdictions. One of the terms of reference for SEDAR 50 read "Consider spatially explicit modeling approaches to address potential stock overlap of the management jurisdictions of the MAFMC-SAFMC." However, SEDAR 50 was unable to produce separate estimates for each jurisdiction, nor were they able to determine a viable scientific way of splitting the catch estimates between the two jurisdictions.

Due to the limitations of the current ABC Control Rule, the SSC was unable to give an ABC recommendation for the portion of the stock north of Hatteras. Therefore, they decided to form a workgroup comprised of South Atlantic and Mid-Atlantic SSC members, as well as analysts from SEDAR 50, to look into methods of deriving a viable ABC estimate and scientific methods for splitting that ABC between the two Council jurisdictions. See the excerpt from the October 2017 SSC meeting below:

- ❖ **The SSC is struggling with the use of the current ABC CR for the stock north of Cape Hatteras with issues that have been pointed out by the Committee.**

- ❖ **The SSC recommends that a joint working group be created of members from the SAFMC's and the MAFMC's SSCs. Task of this working group should include:**
    - ▪ **Determine data upon which a split of the ABC between the Council jurisdictions for the area north of Hatteras can be based.**
    - ▪ **Confirm or refine the ABC recommendation from the SAFMC's SSC.**

## 3.4   Action

- • Review the workgroup recommendations for determining the ABC for the portion of the Blueline Tilefish stock north of Cape Hatteras.

    - ➢ *John Boreman, chair of the MAFMC SSC, gave a summary of the DLMTool Analysis for north of Cape Hatteras, that came up with MSY=OFL, which included high uncertainty in the data, the biology of the species, the models used, and the one-time fishery-independent survey. He also briefly discussed the Mid-Atlantic ABC control rule approach as it was applied to Blueline Tilefish. The Mid-Atlantic SSC felt the calculated CV did not fully incorporate all the uncertainty in the analysis, therefore their control rule expanded upon that calculated CV.*

    - ➢ *The SSC agrees with the Mid-Atlantic SSC that the output of the DLMTool Analysis is an estimate of OFL, not ABC.*

    - ➢ *The SSC agrees with the research recommendations proposed by the workgroup, the Mid-Atlantic SSC, and SEDAR; especially the need to resolve aging problems and research to determine the operational basis for the unit stock north and south of Cape Hatteras (i.e., larval transport and/ or adult movement).*

    - ○ Discuss the uncertainties associated with the proposed approach.

        - ➢ *Life history parameters were taken from a meta-analysis.*

> *Landings trends are unreliable due to changes in management and the fishery over time.*

- o Does the SSC consider the proposed ABC BSIA and usable for management?

  > *The SSC has decided to split the OFL that came from the DLMTool Analysis using the allocation derived from the fishery-independent longline survey and then apply their ABC CR to derive the ABC for the portion from Cape Hatteras to the NC/VA border.*

  > *The SSC recommends this ABC remain in place for 3 years and be re-evaluated at that time.*

  > *ABC Control Rule*

    − *Dimension I Assessment Information: Tier 5 (10%)*

    − *Dimension II Uncertainty Characterization: Tier 4 (7.5%)*

    − *Dimension III Stock Status: Tier 5 (10%)*

    − *Dimension IV Risk Analysis: Tier 3 (10%)*

    − *Correction Factor: 37.5%*

    − *P\* = 12.5%*

    − *ABC = 55,968 lbs.*

- o If not, can the SSC recommend an ABC for this portion of the Blueline Tilefish stock at this time?

- • Review the workgroup recommendations for determining the jurisdictional allocation for the portion of the Blueline Tilefish stock north of Cape Hatteras.

  - o Discuss the uncertainties associated with the proposed approach.

    > *The independent survey used to allocate the ABC between Council jurisdictions had a small sample size caught over a large area and was only conducted in a single year.*

    > *This survey can be revisited as data are gathered for additional years.*

    > *The SSC recommends continuing this survey into the future and coordinate with surveys (to be) conducted in the SA to increase utility of the data for regional stock assessments.*

  - o Does the SSC consider the proposed method BSIA and usable for management?

    > *The SSC considers this proposed method BSIA and usable for management.*

    > *Given all the uncertainties, the SSC accepts the 56%:44% MAFMC:SAFMC split that was calculated using the independent survey. This method should be used for 3 years and then should be re-evaluated at that time.*

      o   If not, can the SSC recommend another method of determining a jurisdictional allocation for this portion of the Blueline Tilefish stock at this time?

- Provide a recommendation for stock status of the portion of the stock North of Cape Hatteras.

      ➢  *The SSC is unable to determine status of the portion of the Blueline Tilefish stock north of Cape Hatteras due to lack of data and means to estimate benchmarks.*

      ➢  *In addition, status determinations are relevant for complete stocks, not portions of stocks.*

# 4. RED SNAPPER ABC WORKGROUP

## 4.1 Documents

      Attachment 6. RS Workgroup Presentation
      Attachment 7. RS Workgroup Report
      Attachment 8. RS Workgroup Supplementary Documents

## 4.2 Presentation

      Workgroup progress and recommendations: Dr. Amy Schueller, SEFSC

## 4.3 Overview

Red Snapper was last assessed during SEDAR 41, with a terminal year of 2014. The SSC reviewed this assessment at their May 2016 meeting. They determined that the stock was still overfished and that overfishing was occurring. However, due to the amount of uncertainty in the catch data in the last 5 years (mostly comprised of discards), the SSC felt they could not determine the extent of overfishing that was occurring. The Committee recommended an ABC value of the yield at $F_{Rebuild}$ from the stochastic projections.

At their April 2017 meeting, the issue of the ABC for Red Snapper was brought back before the SSC for consideration. The Council had requested revised projections; however, they were informed by the SEFSC that those projections could not be provided on the grounds that they could not be considered best scientific information available (BSIA). The full reasoning is laid out in Attachment 8, Supplementary Document S10, but a clarification of that memo was given at the April 2017 meeting and is excerpted below.

    ❖  **Clarification was provided by NMFS to the SSC that the assessment is still considered BSIA. However, the data available to monitor the landings and discards**

**are too uncertain to track any projected ABC. Therefore, an index-based approach is being proposed to track and monitor the condition of Red Snapper.**

❖ **The current projected yield streams are still considered BSIA, but are not useful for management and monitoring because of the uncertainty in the catch data (as most of the catch is discarded).**

The SSC acknowledged that they were unable to provide an ABC for Red Snapper at this time and supported SEFSC efforts to use data-limited methods and index-based methods to develop an ABC recommendation.

The SSC discussed the progress being made on the index-based approach being worked on by the SEFSC at their September 2017 webinar under Other Business. The Committee was informed that research activity of the SEFSC regarding an approach to use fishery independent index information to evaluate and monitor Red Snapper was not proceeding.

At their October 2017 meeting, the SSC decided to form a working group comprised of SSC members working together with members of the SEFSC to review all available data and methodologies for setting an ABC and evaluating their potential use for setting an ABC for Red Snapper in the South Atlantic. The ToRs can be found in Attachment 8, Reference Document S1. According to their proposed timeline, the working group has addressed their ToRs and will be presenting their recommendations to the Committee.

## 4.4   Action

- Review the workgroup recommendations for determining an ABC for Red Snapper.
    - Discuss the uncertainties associated with the proposed approach.
        - *The SEFSC Interim Analysis (IA) is preferred by the workgroup and is a type of projection analysis that uses updated landings, age composition data from the Chevron traps, and an independent survey index of abundance.*
        - *The IA uses flat-topped selectivity for the CVID index, but uses age and length composition data from the Chevron trap index.*
        - *New information (unavailable to the workgroup or the SSC prior to the meeting) from an FWRI study indicates Chevron trap selectivity may not be flat-topped, which may lead the IA to give different values for ABC.*
            - *However, the results of this study were not available to the Working group and the analytical team at time of conducting the IA. Also, this study has not been reviewed and the Committee is unable to deem the FWRI study as BSIA at this time.*
        - *The IA still uses MRIP landings and discards, which have a high degree of uncertainty.*

o Does the SSC consider the proposed approach for determining an ABC BSIA and usable for management?

➢ *The SSC concurs with the SSC ABC Workgroup's recommendation to use the IA to derive the ABC for Red Snapper at this time.*

➢ *This ABC should be in place for 3 years, 2019-2021.*

➢ *The SSC recommends reviewing the FWRI study as soon as possible and investigating the implications of this study for the Interim Analysis and the upcoming assessment.*

➢ *The SSC recommends waiting until the new MRIP data are available and have been incorporated into a revised assessment for Red Snapper before running any additional analyses, including updating the IA.*

➢ *It should be noted that none of the ABC approaches presented by the Workgroup address the issue of the uncertainty in the MRIP landings and discards, and the impact that has on the ability to track the ACL. Even with the uncertainty regarding these landings and discards, the data are still BSIA. The SSC recommends that the Council work with NMFS to help the MRIP program improve its sampling in order to improve the quality of the data time series and the ability to track the ACL. In addition, the Council could consider using a larger buffer to account for the uncertainty in tracking the ACL.*

Table 1. Red Snapper ABC recommendations using the SEFSC Interim Analysis as recommended by the SSC.

| Year | Landed Number | Discard Number | ABC Number | Landed lbs. | Discard lbs. | ABC lbs. |
|------|---------------|----------------|------------|-------------|--------------|----------|
| 2019 | 26,000 | 43,000 | 69,000 | 280,000 | 275,000 | 555,000 |
| 2020 | 27,000 | 42,000 | 69,000 | 306,000 | 280,000 | 586,000 |
| 2021 | 27,000 | 42,000 | 69,000 | 322,000 | 281,000 | 603,000 |

o If not, can the SSC recommend another approach for determining the ABC for Red Snapper at this time?

# 5. UPDATE ON SEFSC RESEARCH EFFORTS

## 5.1 Documents

None.

## 5.2 Overview

The Committee will be updated on research projects currently ongoing within the SEFSC, with a particular focus on those directly affecting stock assessments.

5.3   Action

- No specific actions required.

  ➢ *The SSC was updated on the SEFSC's efforts to develop Ecosystem Status Reports, which are a way to look at the ecosystem more holistically using a vcariety of environmental and biological factors. These reports are part of NOAA's initiative to promote Ecosystem Based Fishery Management. The SSC requests that it be provided an opportunity to provide feedback on the Ecosystem Status Report.*

# 6.  SEDAR 56 BLACK SEA BASS ASSESSMENT REVIEW

## 6.1  Documents

Attachment 9. SEDAR 56 SAR, Black Sea Bass
Attachment 10. Assessment Overview Presentation

## 6.2  Presentation

Assessment Overview: Dr. Katie Siegfried, SEFSC

## 6.3  Overview

The Committee is asked to review the Black Sea Bass Standard assessment prepared through SEDAR 56 and provide fishing level recommendations (Attachment 9). Black Sea Bass was last assessed in the 2013 Update to SEDAR 25, where the stock was found to have been recovered from a previously determined overfished state and not undergoing overfishing. The major reasons for performing a Standard assessment were to consider using a new distribution for fitting age and length comps, known as the Dirichlet Multinomial, to incorporate new information on discard mortality, and to include the new SERFS video fishery independent index of abundance.

## 6.4  Action

- Review assessment

  o Does the assessment address the ToRs to the SSCs satisfaction?

    ➢ *The SSC agrees that the SEDAR 56 assessment addresses the ToRs to its satisfaction.*

  o Does the assessment represent Best Scientific Information Available?

    ➢ *The SSC agrees that the SEDAR 56 assessment represents BSIA and is useable for management.*

  o Does the assessment provide an adequate basis for determining stock status and supporting fishing level recommendations?

➤ *The SSC agrees that the SEDAR 56 assessment provides an adequate basis for determining stock status and for supporting fishing level recommendations.*

- Identify, summarize, and discuss assessment uncertainties
  o Review, summarize, and discuss the factors of this assessment that affect the reliability of estimates of stock status and fishing level recommendations.

    ➤ *The steepness profile was flat; therefore, steepness was fixed in base run.*

    ➤ *Using the estimated recruitment (R) from the Stock-Recruitment (S-R) relationship in the projections, rather than using an average of recruitment in recent years, increases uncertainty. The estimated recruitment from the S-R relationship is considerably higher than estimated annual recruitment in the last several years.*

    ➤ *The SSC advises that future stock biomass and landings projections will not be realized Need to caveat if the current trend of low recruitment continues.*

    ➤ *The SSC requested additional projections using (1) the R pattern from 1991 to the terminal year and (2) the R pattern in the last 4 years of the assessment (2013-2016).*

      − *Scenario 1 will be used for the ABC recommendation.*

      − *Scenario 2 will be used to investigate the effect of low near-term recruitment levels on stock biomass and stock status.*

    ➤ *There is increased concern regarding the trend in estimated R and the R used in projections because SSB in the terminal year of the assessment was only slightly above MSST.*

    ➤ *Low R could be caused by emigration or species interactions, such as increased predation on young individuals by species such as Lionfish and Red Snapper.*

    ➤ *In the most recent year (2016), the total fishing mortality of all fleets had a selectivity pattern that differed from all other years in the time series with apical F at age 3. This is a significantly lower age at apical F than any other year in the time series.*

      − *Looking at a different F metric, other than apical F, may give a very different picture of what is happening in this fishery. Apical F changes to different ages as selectivity changes through time. An F metric that is insensitive to changes in selectivity may show a different pattern in the exploitation history of this fishery than what is seen by using Apical F.*

    ➤ *The stock is apparently responding strongly to recruitment trends observed over the past 10-15 years. This is suggested by the conflicting trends in stock size and fishing mortality.*

- *Trends in natural mortality (M) could also explain the conflicting trends in stock size and fishing mortality. Increased M, due to higher predation, especially on recruits, could also create this pattern.*

➢ *All fishery-dependent indices are absent during the last part of the time series where the fishery-independent index indicates that the largest changes have occurred in population size.*

- *Fishery dependent indices could indicate whether these large changes were accompanied by changes in fishing effort, which may account for some of the change, or if the dependent indices corroborate the trend seen in the independent index.*

➢ *The selectivity of the Chevron trap vs. the video index may differ, especially under situations of high R.*

➢ *Recent observations from winter tagging off of NC confirm the CVID index in the last several years.*

o Describe the risks and consequences of the assessment uncertainties with regard to status and fishing level recommendations.

➢ *See bullets above.*

o Are methods of addressing uncertainty consistent with SSC expectations and the available information?

➢ *Yes.*

o List (in order of the greatest contribution to risk and overall assessment uncertainty) and comment on the effects of those assessment factors that most contribute to risk and impact status determinations and future yield predictions.

➢ *The bullets above describe the Committee's assessment of risk and uncertainty.*

- Provide fishing level recommendations

o Apply the ABC control rule and complete the fishing level recommendations table.

➢ *ABC Control Rule*

- *Dimension I Assessment Information: Tier 2 (2.5%)*

- *Dimension II Uncertainty Characterization: Tier 2 (2.5%)*

- *Dimension III Stock Status: Tier 2 (2.5%)*

- *Dimension IV Risk Analysis: Tier 2 (5%)*

- *Correction Factor: 12.5%*

- *P\* = 37.5%*

- These projections should use the estimated recruitment time series from 1991 to the terminal year of the assessment. See the discussion above.

- Projections should be run for 3 years (to 2021).

➢ *Although BSB is not under rebuilding, the MCB phase plot shows that ~25% of runs indicate that the stock is overfished.*

➢ *There is also an overall negative trend in R that should be considered.*

➢ *The biomass is trending downward in recent years.*

➢ *These factors should be taken into account when determining the risk tolerance.*

o Comment on any difficulties encountered in applying the Control Rule, including any required information that is not available.

➢ *For Dimension III Stock Status, recommend Tier 2 given recent trend in estimated R.*

➢ *Dimension IV Risk Analysis – The SSC reviewed the PSA score and recommend using the same score that was used in previous ABC recommendations.*

o Is adequate rebuilding progress being made? Comment on reasons why progress differs from projections.

➢ *Black Sea Bass is not currently in a rebuilding plan.*

- Provide advice on monitoring the stock until the next assessment

o What indicators or metrics should the council monitor and could the SSC use to evaluate the stock until the next assessment?

➢ *Recruitment via age and length comps.*

➢ *CVID index.*

➢ *Monitor discards for spikes, possibly indicating a pulse of recruitment coming through fishery.*

➢ *Monitor the fishery to evaluate if catches continue to be well below the ACL.*

o Is there a recommended trigger level for these metrics? How should the Council respond if a trigger is activated?

➢ *Look for persistence in recruitment trend and CVID index.*

- Provide research recommendations and guidance on the next assessment

o Review the included research recommendations, and indicate those most likely to reduce risk and uncertainty in the next assessment.

o Provide any additional research recommendations the SSC believes will improve future stock assessments.

> ➤ *Investigate age and size dependent reproductive parameters.*

> ➤ *Study the feasibility of an empirical R index.*

> ➤ *Evaluate potential shifts in sex ratio.*

o Provide guidance on the next assessment, addressing its timing and type.

> ➤ *The SSC recommends a benchmark assessment in 3 years.*

## SSC RECOMMENDATION:

Table 2. Black Sea Bass Recommendations

| Criteria | Deterministic | | Probabilistic |
|---|---|---|---|
| $SSB/SSB_{MSY}$ | 0.71 | | 0.71 |
| Overfished evaluation (SSB/MSST) | 1.15 | | 1.16 |
| Overfishing evaluation | 0.64 | | 0.58 |
| MFMT ($F_{MSY}$) | 0.31 | | 0.34 |
| $SSB_{MSY}$ (Units) | 300 | | 304 |
| MSST (Units) | 186 | | 186 |
| MSY (1000 lbs.) | 935 | | 968 |
| Y at 75% $F_{MSY}$ (1000 lbs.) | 701.25 | | 943.10 |
| ABC Control Rule Adjustment | 12.5% | | |
| P-Star | 37.5% | | |
| M | 0.38 | | |
| OFL RECOMMENDATIONS | | | |
| Year | Landed LBS | Discard LBS | Landed Number | Discard Number |
| 2019 | 818,000 | 462,000 | 605,000 | 929,000 |
| 2020 | 718,000 | 612,000 | 573,000 | 1,178,000 |
| 2021 | 703,000 | 645,000 | 601,000 | 1,221,000 |
| ABC RECOMMENDATIONS | | | |
| Year | Landed LBS | Discard LBS | Landed Number | Discard Number |
| 2019 | 760,000 | 410,000 | 559,000 | 798,000 |
| 2020 | 669,000 | 486,000 | 523,000 | 925,000 |
| 2021 | 643,000 | 501,000 | 530,000 | 942,000 |

# 7.  MODIFICATIONS TO THE ABC CONTROL RULE

## 7.1   Documents

> Attachment 11. ABC Control Rule Options Paper

## 7.2   Presentation

> Overview and Update: John Carmichael, SAFMC Staff

## 7.3   Overview

The Council is developing a comprehensive amendment to revise the ABC Control Rule, to address flexibility allowed in the MSA and address issues raised over the last few years by the SSC with the existing rule. The purpose of the amendment is to revise the acceptable biological catch control rule; simplify incorporation of scientific uncertainty; modify the approach used to determine the acceptable risk of overfishing, and address flexibility in specifying catch levels. The need for this amendment is to ensure catch level recommendations are based on the best scientific information available, prevent overfishing while achieving optimum yield, and include flexibility in setting catch limits as allowed per recent changes to the Magnuson-Stevens Fishery Conservation and Management Act implementing regulations.

The Council has discussed the amendment and reviewed discussion documents at the last several meetings. An IPT has been formed and is working to develop language for actions and alternatives. The Council will be asked to review and approve the wording of actions and alternatives at its June 2018 meeting.

The SSC is asked to provide comments on the actions at this meeting. SSC recommendations on the actions are provided in the discussion of each action, and are highlighted in the document provided for review. These recommendations help the Council decide the range of feasible alternatives and select appropriate preferred recommendations.

## 7.4   Action

- Review and discuss Actions and alternatives.
  - ➤ *Action 1: Modify the Acceptable Biological Catch Control Rules*
    - *Recommend the Council develop an a priori rule for deciding when to ask for a constant ABC value.*
      - *Can use economic impacts, OFL distribution, uncertainty in landings*
    - *Socio-economic impacts might be considered in an ABC Control Rule.*
  - ➤ *Action 2: Specify an approach for determining the acceptable risk of overfishing*
    - *SSC recommends being able to update the risk rating regularly, perhaps at each assessment or when additional information is published.*

- *SSC would like to see how the proposed risk tolerance policy would work in practice on example stocks. The SSC requests that examples be provided for review at the next meeting.*

- *The SSC agrees with, and recommends setting the risk rating ahead of time.*

  - *Ratings may change based on new information, such as biological, socio-economic, and management changes.*

- *The SSC allowing consideration of biomass trends over a projection period, and using the biomass level at the end of the period, for determining the biomass level for risk tolerance. For instance, the risk tolerance could be different (higher) if there is an upward trend in the biomass in recent years, or lower when there is a downward trend.*

- *Should include changes in socio-economic factors when considering risk tolerance.*

  - *Can get input from SEP and FMP Advisory Panels.*

➢ *Action 3: Specify an approach for determining the probability of rebuilding success for overfished stocks*

- *The SSC has no additional comments on this Action.*

➢ *Action 4: Allow phase-in of acceptable biological catch changes*

- *Given the frequency of assessments, the longer phase-in approach may not leave much time between the end of the phase-in and the subsequent assessment.*

- *Need to consider the timing of the next assessment and the impacts on that assessment when deciding on whether to phase-in or not and how long the phase-in takes.*

- *Should look at the risks and benefits in both the short-term and long-term of using a phase-in.*

  - *For example, the International Pacific Halibut Commission (IPHC) uses a "Slow Up/Fast Down" (SUFD) policy that requires increases in ACL to be phased in by 33% per year over 3 years, and decreases in ACL to be phased by 50% per year over two years. (Hare and Clark 2008[i])*

- *MSE and economic analyses have shown phase-in to be an adaptive and flexible strategy. (Hillary et al. 2016[ii])*

- *Need to make sure that socioeconomic factors are not being double counted through their consideration when setting the risk tolerance and also in allowing a phase-in*

- *Consideration of phase-in should be included in the ToR's for the SSC review of stock assessments.*

> ➢ *Action 6: Allow carry-over of unharvested catch*
>> − *The projections assume the ABC is caught each year.*
>>> ▪ *Allowing carry-over may lead to complications if there have been overages in past years.*
>> − *The SSC would like to review MSE studies evaluating carry-over.*
>> − *The uncertainty in the catch will have an impact on carry-overs.*
>>> ▪ *This has consequences for the Rec sector.*
>>> ▪ *Recommend using the uncertainty in the landings to determine when to carry-over.*
>> − *Need to consider that not all fish that are left in the water in a given year will survive to the next year due to natural mortality.*
>> − *Recommend adding consideration of carry-over to the ToRs for the SSC review of stock assessments.*
>> − *Projection uncertainty should be considered when evaluating carry-over for stocks in a rebuilding plan. The distribution of estimated biomass should be evaluated to determine if the stock is above the mid-point between MSST and $B_{MSY}$.*

- Provide any further recommendations regarding actions and alternatives as necessary.

# 8. SEDAR 55 VERMILION SNAPPER ASSESSMENT REVIEW

## 8.1 Documents

Attachment 12. SEDAR 55 SAR, Vermilion Snapper
Attachment 13. Assessment Overview Presentation

## 8.2 Presentation

Assessment Overview: Dr. Kevin Craig, SEFSC

## 8.3 Overview

The Committee is asked to review the Vermilion Snapper Standard assessment prepared through SEDAR 55 and provide fishing level recommendations (Attachment 12). Vermilion Snapper was last assessed in the 2012 Update to SEDAR 17, where the stock was found to be not in an overfished state and not undergoing overfishing. The major reasons for performing a Standard assessment were to consider using a new distribution for fitting age and length comps, known as the Dirichlet Multinomial, and to include the new SERFS video fishery independent index of abundance.

## *8.4  Action*

- Review assessment
  - o Does the assessment address the ToRs to the SSCs satisfaction?
    - ➢ *The SSC agrees that the SEDAR 55 assessment addresses the ToRs to its satisfaction.*
  - o Does the assessment represent Best Scientific Information Available?
    - ➢ *The SSC agrees that the SEDAR 55 assessment represents BSIA and is usable for management.*
  - o Does the assessment provide an adequate basis for determining stock status and supporting fishing level recommendations?
    - ➢ *The SSC agrees that the SEDAR 55 assessment provides an adequate basis for determining stock status and for supporting fishing level recommendations.*
- Identify, summarize, and discuss assessment uncertainties
  - o Review, summarize, and discuss the factors of this assessment that affect the reliability of estimates of stock status and fishing level recommendations.
    - ➢ *The steepness profile was flat, so steepness was fixed in the base run at 0.69. This is nearly equal to the steepness value used in the prior assessment (steepness = 0.71).*
    - ➢ *Using the geometric mean fishing mortality estimate of the last 3 years may bias the results or remove the actual trend in fishing mortality.*
      - − *However, this is a convention that has been adopted by the SSC and is assumed to be more appropriate than the arithmetic mean, or the terminal year value given the reduced reliability in that terminal F value.*
    - ➢ *The headboat index drops dramatically in 1992, when there is a management change, and most likely does not track the population abundance as it did prior to that time.*
    - ➢ *There was an issue fitting the CVID index, especially at the end of the time series. However, it was determined this was most likely due to differing signals in the age comps vs. the index. As such, no upweighting of the CVID index was done, to make sure that recruitment signals captured by the age comps remained in the model. The SSC agreed that this was an appropriate approach.*
  - o Describe the risks and consequences of the assessment uncertainties with regard to status and fishing level recommendations.

- o Are methods of addressing uncertainty consistent with SSC expectations and the available information?

    - ➤ *Yes. Numerous sensitivity analyses were conducted addressing uncertainties.*

    - ➤ *An MCB analysis was also performed, encompassing uncertainty in key parameters and input data.*

  - o List (in order of the greatest contribution to risk and overall assessment uncertainty) and comment on the effects of those assessment factors that most contribute to risk and impact status determinations and future yield predictions.

- Provide fishing level recommendations

  - o Apply the ABC control rule and complete the fishing level recommendations table.

    - ➤ *ABC Control Rule*

        - − *Dimension I Assessment Information: Tier 2 (2.5%)*

        - − *Dimension II Uncertainty Characterization: Tier 2 (2.5%)*

        - − *Dimension III Stock Status: Tier 1 (0%)*

        - − *Dimension IV Risk Analysis: Tier 2 (5%)*

        - − *Correction Factor: 10%*

        - − *P\* = 40%*

        - − *Projections should be run for 5 years (to 2023).*

  - o Comment on any difficulties encountered in applying the Control Rule, including any required information that is not available.

    - ➤ *The SSC reviewed the PSA score and found the previously used value still appropriate to use in the ABC CR.*

- Provide advice on monitoring the stock until the next assessment

  - o What indicators or metrics should the council monitor and could the SSC use to evaluate the stock until the next assessment?

    - ➤ *Age/Length Comps in the landings and the fishery independent surveys.*

    - ➤ *Discards, specifically to monitor recruitment.*

    - ➤ *Relationship between landings and ACL (If ACL is consistently not met and landings are far below the ACL, there may be a problem with population abundance).*

  - o Is there a recommended trigger level for these metrics? How should the Council respond if a trigger is activated?

    - ➤ *If ACL is consistently not met and landings are far below the ACL, there may be a problem with population abundance or recruitment.*

➢ *Age and Length comps do not show evidence of R.*

- Provide research recommendations and guidance on the next assessment
    - Review the included research recommendations, and indicate those most likely to reduce risk and uncertainty in the next assessment.
        - ➢ *Because Vermillion Snapper is a schooling species that swims above the bottom, a sonar index could provide valuable information.*
    - Provide any additional research recommendations the SSC believes will improve future stock assessments.
        - ➢ *Try using video and trap data to look at changes in catchability. For instance, if Vermilion Snapper is seen on video, but not caught in the traps, are there environmental variables that may drive that process?*
        - ➢ *Consider dropping the HB index or truncating it at 1992 when the index changes suddenly in response to management changes.*
        - ➢ *Investigate the apparent disconnect between the CVID index and the chevron trap age compositions.*
        - ➢ *Investigate the feasibility of a juvenile index.*
        - ➢ *Examine reasons for the large disconnect between the signal coming from the age comps vs. the length comps.*
        - ➢ *Examine whether the size at age variability is a population phenomenon (high level of among individual variation in growth) or is being driven by spatial differences in size at age.*
    - Provide guidance on the next assessment, addressing its timing and type.
        - ➢ *The SSC recommendations should be in place for no more than 5 years until the next assessment.*
        - ➢ *The type of assessment will depend on what new data are available in 5 years.*

**SSC RECOMMENDATION:**

Table 3. Vermilion Snapper Recommendations

| Criteria | Deterministic | | Probabilistic |
|---|---|---|---|
| SSB/SSB$_{MSY}$ | 1.13 | | 1.16 |
| Overfished evaluation (SSB/MSST) | 1.51 | | 1.54 |
| Overfishing evaluation | 0.609 | | 0.564 |
| MFMT (F$_{MSY}$) | 0.41 | | 0.44 |
| SSB$_{MSY}$ (Units) | 18.3 | | 17.2 |
| MSST (Units) | 13.7 | | 12.9 |
| MSY (1000 lbs.) | 1,305.5 | | 1,339.6 |
| Y at 75% F$_{MSY}$ (1000 lbs.) | 1,288.2 | | 1,324.6 |
| ABC Control Rule Adjustment | 10% | | |
| P-Star | 40% | | |
| M | 0.22 | | |
| OFL RECOMMENDATIONS | | | |

| Year | Landed LBS | Discard LBS | Landed Number | Discard Number |
|---|---|---|---|---|
| 2019 | 1,810,000 | 163,000 | 1,788,000 | 232,000 |
| 2020 | 1,614,000 | 157,000 | 1,643,000 | 227,000 |
| 2021 | 1,486,000 | 154,000 | 1,563,000 | 225,000 |
| 2022 | 1,412,000 | 153,000 | 1,525,000 | 223,000 |
| 2023 | 1,371,000 | 152,000 | 1,497,000 | 222,000 |

ABC RECOMMENDATIONS

| Year | Landed LBS | Discard LBS | Landed Number | Discard Number |
|---|---|---|---|---|
| 2019 | 1,579,000 | 166,000 | 1,559,000 | 235,000 |
| 2020 | 1,478,000 | 163,000 | 1,492,000 | 233,000 |
| 2021 | 1,408,000 | 162,000 | 1,454,000 | 233,000 |
| 2022 | 1,362,000 | 161,000 | 1,433,000 | 232,000 |
| 2023 | 1,336,000 | 161,000 | 1,419,000 | 232,000 |

# 9. COUNCIL WORKPLAN UPDATE

## 9.1 Documents

>Attachment 14. SAFMC Work Plan, March 2018
>Attachment 15. SAFMC Amendments Overview, March 2018

## 9.2 Overview

These documents are provided at each meeting to keep the Committee 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.

- CMP Framework 6 (King Mack Trip Limits) – Christina Wiegand
- CMP Amendment 31 (Atl. Cobia Management) – Christina Wiegand
- Corals Amendment 10/Golden Crab Amendment 10/Shrimp Amendment 11 (Access Areas) – Chip Collier
- Fishery Ecosystem Plan – Roger Pugliese
- SG Amendments 43 & 46 (Red Snapper & Recreational Reporting) – Chip Collier
- SG Commercial and Recreational Visioning Amendments – Myra Brouwer
- SG Regulatory Amendment 32 (Yellowtail Snapper) – Myra Brouwer
- SG Amendment 38 (Blueline Tilefish) – Roger Pugliese
- SG Regulatory Amendment 29 (Best Fishing Practices) – Christina Wiegand
- SG Amendment 42 (Sea Turtle Release Gear) – Christina Wiegand
- SG Regulatory Amendment 30 (Red Grouper Rebuilding) – John Hadley
- SG Amendment 47 (For-Hire Permit Moratorium) – John Hadley
- SG Regulatory Amendment 28 (Golden Tilefish) – Brian Cheuvront
- Spiny Lobster Regulatory Amendment 4 (ACL and Rec Traps) – Christina Wiegand
- Spiny Lobster Amendment 13 (Coord Management w/FL) – Christina Wiegand
- Golden Crab – Brian Cheuvront
- Dolphin Wahoo – John Hadley
- Joint Commercial Logbook Amendment – John Carmichael
- Bycatch Reporting Amendment – Chip Collier
- Recreational AMs (SG Reg 31/CMP Framework 7/DW Reg 2) – Brian Cheuvront

## 9.3    Action

- No specific actions required

# 10. REGULATORY REFORM

## 10.1 Documents

Attachment 16. List of Regulations for Removal Consideration

## 10.2 Overview

On February 24, 2017 President Trump issued Executive Order 13777 as part of efforts to lower regulatory burdens on the American people by implementing and enforcing regulatory reform. The NMFS requested that each of the fishery management councils identify a process to review/evaluate existing regulations by the end of December 2017. Each Council is to conduct the review/evaluation and provide recommendations on rules to be removed by the end of June 2018. The Council is reaching out to all of its APs and its SSC to get recommendations they have. Attachment 16 is a document that contains the regulations identified thus far that could be considered for removal.

## *10.3 Action*

- Review regulations identified by the Council as being unneeded, outdated, or ineffective and that can be removed from the FMPs
  - o Will any of these have any significant impacts on the fisheries they are affecting?
    - ➢ *The SSC advises caution in moving to biannual permits due to the impacts on data collection.*
      - − *Renewal of permits is used as an enforcement tool for logbooks.*
  - o Recommend any regulations for removal from this list or new regulations to be added to this list.
    - ➢ *There is inconsistency in the definition of gear stowage during when GA has an emergency closure vs. when moving through a closed area.*
    - ➢ *There is a significant issue whereby incorporating allows someone to transfer their SG permit and bypass the 2 for 1 requirement; therefore, the Council may want to consider removing the 2 for 1 requirement.*
    - ➢ *The SSC recommends removing the suggested exemption of Spiny Lobster from the list.*

# 11. WRECKFISH ITQ REVIEW

## 11.1 Documents

Attachment 17. Outline Wreckfish ITQ Review

## 11.2 Presentation

Wreckfish ITQ Review methodology: Dr. Brian Cheuvront, SAFMC staff

## 11.3 <u>Overview</u>

In June of 2017 the Council directed staff to begin a review of the Wreckfish ITQ program.  This is the first review of the program.  In a review of this type, the Council does not consider actions to modify the program, but could consider actions through FMP amendments.  Staff met with shareholders in August 2017 to discuss their concerns about the program.  At the October 2017 meeting the SSC provided input on data and confidentiality issues the Wreckfish ITQ IPT was facing and referred review of the document to the SEP, which reviewed it in February 2018.  The SEP review is included as a part of Attachment 17.  Dr. Scott Crosson, SSC member and chair of the SEP will discuss the SEP's recommendations.

## 11.4 <u>Action</u>

- Review and discuss the SEP comments related to the Wreckfish ITQ review and provide guidance for use of the SEP recommendations.

  ➢ *The SSC endorses the recommendations of the SEP regarding the Wreckfish ITQ review.*

  ➢ *Have staff bring options to the SSC for consideration of evaluating the Wreckfish ABC at the October meeting, contingent on the Council approving the ITQ review.*

  ➢ *Coupons are unable to be transferred during the fishing season. This creates an unnecessary inefficiency.*

# 12. EVALUATION OF GOLDEN TILEFISH ABC

## 12.1 <u>Documents</u>

Attachment 18. Excerpt from March 2018 SG Comm Report
Attachment 19. Updated Tilefish Projections

## 12.2 <u>Presentation</u>

Overview and rationale for requesting a new ABC: John Carmichael, SAFMC staff

## 12.3 <u>Overview</u>

At their March 2018 meeting the Council reviewed Snapper Grouper Regulatory Amendment 28 (Reg 28), which modifies the ACL for the golden Tilefish fishery in South Atlantic waters. The Council considered fishing level alternatives currently in Reg 28 (including the current SSC recommendation at P*=30%) but did not consider them viable options due to the potential economic impact from steep ACL reduction.

The Council is asking the SSC to consider setting the ABC for golden Tilefish at 362,000 pounds whole weight for 2019 and 2020. This is the ABC level implemented by an interim rule for 2018. The Council is willing to accept the risk of overfishing associated with this level of harvest, which equates to approximately a P* value of 40%.

The Council's rationale for this request is articulated in Attachment 18. Several of those reasons are listed below.

❖ **The Council can accept a higher risk level. Based on prior discussions regarding ABC control rule modifications, both the Council and SSC agree that it is the Council's responsibility to set the accepted risk of overfishing. Revisions to the ABC control rule are currently under consideration by the Council that would allow the Council to specify the risk level, but such provision are not yet in effect.**

❖ **The SSC has the ability to deviate from the existing ABC control rule.**

❖ **The level of harvest proposed by the Council is in effect for 2018, and projections indicate it will result in a fishing mortality rate of 0.173, below the overfishing limit of $F_{MSY}=0.24$.** (See Attachment 19)

❖ **This ABC level would only be in effect until the next assessment is completed. A standard assessment is planned for 2019 to address issues noted by the SSC with the previous update.**

❖ **Current management actions successfully control the fishery to the ACL. From 2012 to 2017, cumulative commercial landings totaled 102% of the commercial ACL, and annual landings exceeded the ACL in only one of those 6 years.**

❖ **The P\* approach applied to golden Tilefish has resulted in an unusually large difference between OFL and ABC, creating the largest buffer of any SAFMC stock. This unusual buffer has been acknowledged by the SEFSC and discussed by the SSC on previous occasions, and no clear explanation for it is available.**

❖ **The Council is concerned by the considerable social and economic impacts resulting from current ABC recommendation.**

## 12.4 Action

- Review the updated Tilefish projections and rationale given for consideration of a new ABC recommendation.

  o Is the chosen risk tolerance level appropriate given the Council's rationale?

  ➢ *The SSC agrees that the Council rationale is sound.*

  o Discuss the potential risks and benefits of using the Council's chosen level of risk tolerance to set the ABC for Tilefish.

  ➢ *There is a risk of setting a precedent for sending ABC recommendations back to the SSC.*

  − *However, the Council did not know the economic impact of the ABC recommendation until it was made by the SSC.*

  − *Through the ABC Control rule amendment, the Council should consider addressing circumstances for remanding ABC recommendations.*

➢ *Given the amount of uncertainty in the update, there may be significant risk with accepting a higher risk tolerance. The uncertainties of primary concern to the committee have been documented in previous SSC reports.*

➢ *There is uncertainty in the update relative to the data inputs, including hyper-stability issues and localized changes that can mask population changes.*

➢ *However, it is primarily a commercial fishery and therefore it is relatively easy to control harvest. There is a good record of controlling the harvest and not exceeding the ACL.*

➢ *The SSC recommends evaluating the width of the distributions around the parameters used in the MCB analysis.*

  − *The bounds on the parameters in Golden Tilefish assessment may be wider compared to the bounds in other assessments.*

o Recommend a revised ABC for Tilefish.

➢ *The SSC agrees to the Council's request to use projections at F = 75% $F_{MSY}$ to set the ABC for Golden Tilefish, and setting the ABC at 362,000 pounds whole weight for 2019 and 2020.*

# 13. SEDAR ACTIVITIES

## 13.1 Documents

Attachment 20. SEDAR 58 Atlantic Cobia Assessment Schedule & ToRs
Attachment 21. SEDAR 64 Yellowtail Snapper Assessment Schedule & ToRs

## 13.2 Overview

SEDAR Projects statuses are summarized below. Specific action items are noted with each project.

### Update on Cobia Stock ID workshop

The Committee will receive an update on the status of the Cobia Stock ID workshop, which took place April 10-12.

### ACTION

• No specific actions required.

### SEDAR 58, Atlantic Cobia, Benchmark (Attachment 20)

Cobia were last assessed as a Benchmark through SEDAR 28, including data through 2011. Atlantic Cobia was originally scheduled as a Research Track assessment. However, at their May 2017 meeting, the SEDAR Steering Committee recommended conducting cobia as a Benchmark

assessment, including a Stock ID evaluation based on the process developed by the Steering Committee in September 2016. The SAFMC made workshop appointments for the Stock ID process at the December 2018 meeting. The Stock ID Workshop will be held April 10-12, 2018 and the Stock ID Review Workshop June 5-7, 2018, with the final Stock ID resolution complete by the end of August 2018. Planning for the remaining stages for this assessment (Data, Assessment and Review) are underway now. The SSC will be asked to review a schedule and Terms of Reference at its May 2018 meeting, and the SAFMC will be asked to make appointments and approvals at their June 2018 meeting. SEDAR staff would like to identify SSC representatives who are interested in participating in the remaining stages of this assessment. ACTION

- Review the ToRs and schedule for Atlantic Cobia and recommend changes or additions as appropriate.
  - ➢ *The SSC approves the ToRs and schedule as written.*
- Identify SSC representation for Atlantic Cobia.
  - ➢ *DW: George Sedberry, Marcel Reichert*
  - ➢ *AW: Jeff Buckel, Anne Lange*
  - ➢ *RW: Rob Ahrens, Jeff Buckel*

SEDAR 59, South Atlantic Greater Amberjack, Standard

Greater Amberjack was last assessed as a Benchmark, through SEDAR 15 using data through 2006. The upcoming assessment will be a standard, including data through 2016 and revised MRIP estimates, and will also consider new video index data, potential development of a headboat at sea observer index, and updates to data calculation methodologies. The Council made appointments and approved the schedule and terms of reference in December 2017. A Data Scoping webinar was held on March 30, 2018. An Assessment Scoping webinar is scheduled for late June and a series of Assessment webinars are scheduled from August 2018 – October 2018. The assessment is scheduled for completion in December 2018, and review by the SSC in Spring 2019.

On the Data Scoping webinar, there was discussion on the inclusion of the fully calibrated MRIP estimates into SEDAR 59. It was SEDAR's understanding that the newly calibrated MRIP data would be available July 1, 2018. On March 28, the SEFSC notified SEDAR that additional adjustments need to be done on the recalibrated data to account for the charter For-Hire Survey method change which would delay data availability. SEFSC indicated the fully calibrated MRIP data for SEDAR 59 could be provided August 17, 2018 which mean final recreational data would be available ~ 2 weeks later (methods to estimate headboat discards and recreational composition data are typically dependent on MRIP estimates). Including the fully calibrated

MRIP data would likely cause a delay in the assessment completion. SEDAR staff are following up with SAFMC regarding these latest developments.

ACTION

- No specific actions required.

SEDAR 60, South Atlantic Red Porgy, Standard

Red Porgy were last assessed as an update, including data through 2011.  The upcoming assessment will be a standard, to include data through 2017 and revised MRIP estimates and will consider new video index data and updates to data calculation methodologies. The Council made appointments and approved the schedule and terms of reference in December 2017. The assessment will get underway with a Data Scoping webinar in late June 2018. An Assessment Scoping webinar is scheduled for October 2018. Assessment webinars are scheduled for November 2018 and January 2019 and an in-person workshop is scheduled for December 10-12, 2018. The assessment is scheduled to be complete in March 2019 and reviewed by the SSC in Spring 2019.

It was SEDAR's understanding that the newly calibrated MRIP data would be available July 1, 2018. On March 28, the SEFSC notified SEDAR that additional adjustments need to be done on the recalibrated data to account for the charter For-Hire Survey method change which would delay data availability. SEFSC indicated the fully calibrated MRIP data for SEDAR 60 could be provided October 5, 2018 (original data deadline = August 10, 2018). Similar to SEDAR 59, including the fully calibrated MRIP data would likely cause a delay in the assessment completion.

ACTION

- No specific actions required.

SEDAR 64 Southeast Yellowtail Snapper, Benchmark (Attachment 21)

Yellowtail Snapper was last assessed as a benchmark, including data through 2010. The State of Florida is the lead analytical agency.  The Data Workshop will be held February 25-March 1, 2019, the assessment webinars will be held between April and July 2019, and the Review Workshop will be held September 10-12, 2019. Data scoping will begin in November 2018. The SSC will be asked to review a project schedule and TORs at its May 2018 meeting, and the Council asked to make appointments and approvals at its June 2018 meeting.

ACTION

- Review the ToRs and schedule for SEDAR 64 SE Yellowtail Snapper and recommend changes or additions as appropriate.

  ➢ *The SSC approves the ToRs and schedule as written.*

- Identify SSC representation for SEDAR 64 SE Yellowtail Snapper.

  ➢ *DW: Marcel Reichert, George Sedberry*

> ➤ *AW: Fred Serchuk, Anne Lange*
>
> ➤ *RW: Amy Schueller, Alexei Sharov*

## Gulf of Mexico and South Atlantic Scamp, Research Track

No prior scamp assessments have been completed through SEDAR. A Scamp Research Track assessment was preliminarily scheduled to start the first quarter of 2018. At their May 2017 meeting, the SEDAR Steering Committee delayed the start of the Scamp Research Track assessment until 2019 due to the Research Track process not being adequately described. Because the project statement of work, addressing the research track approach, has not yet been provided by the SEFSC, the timing of this project is currently unknown. Further discussion is anticipated at the Spring 2018 SEDAR Steering Committee meeting.

ACTION

- No specific action required.


## MRIP Revision Assessments

Requested stocks for MRIP Revision Assessments are Red Grouper, Blueline Tilefish, Black Seabass, and Vermilion Snapper. Revision Assessments will include an update of the MRIP data, based on calibrations applied to address the effort survey change. No additional changes or data will be considered, and the terminal year of the assessment will not be advanced. Revision assessments were initially scheduled for development in late 2017. The MRIP Transition Team recommended delaying assessment revisions until 2018, due to delays in the calibration processes and to include the full three-year side by side comparison. Revised MRIP data are scheduled to be available in July 2018. Exact timing for the revision assessments is TBD, however development will likely begin in late 2018. At their March 2018 meeting, the Council requested addressing Red Grouper through the first MRIP Revision Assessment.

ACTION

- No specific actions required.

## Gulf and South Atlantic King Mackerel, Standard

An assessment of King Mackerel is scheduled to begin in late 2018, with most work conducted in 2019. This assessment was initially planned as a benchmark, but the Steering Committee will be asked in May 2018 to consider an update or standard approach.

ACTION

- No specific actions required.

South Atlantic Golden Tilefish, Standard

Golden Tilefish was last assessed as an update, including data through 2014. A standard assessment is scheduled to occur in 2019. Planning for this project will get underway in the upcoming months.

ACTION

- No specific actions required.

SAFMC Future Assessment Priorities

Future priorities identified by the Council are shown in Table 5. The Council will review these with the SEDAR Steering Committee in May 2018.

❖ The standard approach is requested for future assessments of previously assessed stocks as suggested by the SSC to address potential issues arising from update MRIP data.

❖ Not all stocks scheduled in 2020 can be completed at once with the most recent data. The SSC can provide feedback for the Council to consider on balancing terminal year and assessment delivery.

❖ An additional slot is being held in reserve in 2021 to address unforeseen issues.

❖ In the Fall of 2018 the Steering Committee will consider priorities for 2023 and beyond.

ACTION

- What stocks does the SSC recommend for first time assessment or a new benchmark assessment in 2023?

  ➢ *Consider assessing Knobbed Porgy or a Porgy Complex.*

  ➢ *Vermilion Snapper*

  ➢ *Blueline Tilefish*

  ➢ *Recommend evaluating what species occur in the chevron traps and on the video survey and that have not been assessed.*

- Does the SSC recommend any stocks to consider for the additional 2021 slot?

- Does the SSC have any recommendations on balancing terminal years against assessment completion dates for the 2020 assessment priorities?

  ➢ *For Red Snapper, the delay between the terminal year and the assessment completion should be minimized.*

Table 4. SAFMC SEDAR Projects

| Plan Year | SEDAR # | Stocks | Approach | Terminal Data | Assessment Complete | Lead Agency |
|---|---|---|---|---|---|---|
| 2018 | 58 | Atlantic Cobia | Benchmark | 2017 | Late 2019 | SEFSC |
| | 59 | Greater Amberjack | Standard | 2016 | Dec 2018 | SEFSC |
| | 60 | Red Porgy | Standard | 2017 | Mar 2019 | SEFSC |
| | NA | MRIP Revisions[1] | Revision | varies | TBD | SEFSC |
| | TBD | King Mackerel | TBD | TBD | TBD | SEFSC |
| 2019 | 64 | Yellowtail Snapper | Benchmark | TBD | Fall 2019 | FL FWCC |
| | TBD | Snowy Grouper | Standard | TBD | TBD | SEFSC |
| | TBD | Golden Tilefish | Standard | TBD | TBD | SEFSC |
| | TBD | Scamp, Gulf + SA | Research Track | TBD | Mid-2020 | SEFSC |

Table 5. Currently identified future assessment priorities.

| Plan Year | SEDAR # | Stocks | Approach | Terminal Data | Assessment Complete | Lead Agency |
|---|---|---|---|---|---|---|
| 2020 | TBD | Red Snapper | Benchmark | TBD | TBD | SEFSC |
| | TBD | Spanish Mackerel | Standard | TBD | TBD | SEFSC |
| | TBD | Gag | Standard | TBD | TBD | SEFSC |
| | TBD | Scamp – Continued/Operational | Research Track | TBD | TBD | SEFSC |
| 2021 | TBD | Gray Triggerfish | Benchmark | TBD | TBD | SEFSC |
| | TBD | Black Sea Bass | Update | TBD | TBD | SEFSC |
| | TBD | Red Grouper | Standard | TBD | TBD | SEFSC |
| | TBD | Open – TBD Fall 2019 | TBD | TBD | TBD | TBD |
| 2022 | TBD | White Grunt | Benchmark | TBD | TBD | SEFSC |

# 14. KEY STOCKS PLAN

## 14.1 Documents

Attachment 22. Key Stocks Candidates

## 14.2 Presentation

Overview: John Carmichael, SAFMC staff

## 14.3 Overview

Council and SEFSC staff have been developing an alternative approach to assessment scheduling and information delivery. The intent is to provide more timely information on the primary or "Key" stocks in the fishery, a more measured and methodical approach to assessment

scheduling, and implement interim analyses that could address the 'rumble strip' and 'indicator' concepts discussed in recent years. The SEDAR Steering Committee will review a proposal by the SEFSC to provide either an interim analysis or an assessment update for key stocks on an annual basis.

We are interested in SSC feedback on the approach and potential indicator or key stocks. An example of the interim analysis, applied to red snapper, will be reviewed at this meeting. Candidate key stocks are reviewed in the attachment.

## 14.4 Action

- Identify candidate key stocks.
  - ➢ *The SSC agrees with the Key Stocks as they have been presented.*
  - ➢ *The SSC suggests that Gray Triggerfish should be a Key Stock when it is assessed.*
  - ➢ *Consider moving shrimp to the Special category.*
  - ➢ *Consider moving Black Grouper to the Secondary category due to the data issues encountered during the last SEDAR Data Workshop.*
  - ➢ *Yellowtail Snapper is a very important stock, but only to the FL Keys where most of the landings occur.*
- Review and comment on the data and information needed for this process.
  - ➢ *Needs to be evaluated on a case by case basis.*
  - ➢ *Include a ToR in the assessment, or modify some of the existing ToRs, to identify the key data that provide a signal in the assessment to be included in the Interim Analysis.*
    - − *Can also be addressed in the SSC Action items.*
  - ➢ *Need to consider the timeliness of the data availability.*
  - ➢ *Information on the management of each species.*
    - − *% of ABC caught*
    - − *Fishery Performance Reports*
    - − *Time series of closures*

# 15. SOCIO-ECONOMIC PANEL REPORT

## 15.1 Documents

Attachment 23. SEP Report

## 15.2 Overview

The SEP met on February 6-7, 2018. A general report will be given on the meeting, while specific recommendations will be discussed under the appropriate SSC agenda item. Any additional items from the SEP report not previously covered under other agenda items will be discussed here.

# 16. PUBLIC COMMENT

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

# 17. OTHER BUSINESS

➢ *Public Comment*

− *The SSC has always allowed public comment at any point during the meeting, at the discretion of the Chair.*

− *This new system of soliciting public comment during each agenda item seems a bit redundant and disruptive.*

➢ *Current Workgroups*

− *All current workgroups have now officially finished their work and are disbanded except for the Bag/Size Limit Analysis workgroup. Mike Errigo will report back to the SSC and this workgroup will resume review.*

− *A new Scope of Work has been written and will be distributed to the workgroup.*

➢ *The Committee would like to see landings trends at every meeting, even if this isn't an agenda item. The Committee would also like to continue the review of the fishery independent (snapper grouper) trends during the spring meeting (if the agenda allows).*

# 18. 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, May 22, 2018 for inclusion in the first briefing book for the June Council meeting.

# 19. ELECTIONS

➢ *George Sedberry was elected Chair of the SSC.*

➢ *Robert Ahrens was elected Vice Chair of the SSC.*

# 20. NEXT MEETINGS

## 20.1 <u>SAFMC SSC MEETINGS</u>

2018 Tentative Meeting Dates
October 23-25, 2018 in Charleston, SC

➢ *Next Meeting: The Next SSC meeting will be held Monday, October 15 – Wednesday, October 17. This will avoid overlap with the ASMFC Annual Meeting and the SAFMC Snapper Grouper AP meeting.*

## 20.2 <u>SAFMC Meetings</u>

2018 Council Meetings
June 11-15, 2018 in Fort Lauderdale, FL
September 17-21, 2018 in Charleston, SC
December 3-7, 2018 in Kitty Hawk, NC

**ADJOURN**

# 21. APPENDIX 1

## SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

### SOCIO-ECONOMIC PANEL OF THE
### SCIENTIFIC AND STATISTICAL COMMITTEE

**SEP Meeting Overview**

**February 6-7, 2018**

**Crowne Plaza Hotel**
**4831 Tanger Outlet Blvd.**
**North Charleston, SC**

# PURPOSE

This meeting is convened to discuss and provide input to the SSC and Council on:

- The Citizen Science Program

- Recent and developing Council actions

- Wreckfish Individual Transferable Quota Review

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## 21.1 Introduction

### 21.1.1        Documents

Agenda
Minutes, April 2017

### 21.1.2        ACTIONS

- Approve Agenda
- Approve April 2017 Minutes
- Introductions
- Opportunity for public comment


## 21.2 Update on the Citizen Science Program

### 21.2.1        Documents

**Attachment 1.**  SAFMC Citizen Science Action Team Progress Summary

*Additional reference for discussion*:
1) Details about the Citizen Science Program are available on the Council's website at:
   http://safmc.net/citizen-science-initiative/

### 21.2.2        Overview

For many years, the Council has grappled with the challenge of ensuring adequate and timely science to support management despite limited resources, a multitude of species to manage, and a complex and highly diverse ecosystem. Discussions of data shortcomings and the resulting scientific uncertainties often lead to offers from fishermen to provide their vessels as research platforms, collect samples and record their own observations to help increase scientific knowledge and 'fill the gaps'. The Council recognizes the desire of constituents to get involved and the need to have a well-designed program and accompanying sampling protocols to ensure that information collected through such efforts is useful. To meet this growing need, the Council is developing a comprehensive Fishery Citizen Science Program. Amber Von Harten, the SAFMC Citizen Science Program Manager, will brief the SEP on the recent actions of the SAFMC Citizen Science Program (*Attachment 1*).

### 21.2.3        Discussion

Amber Von Harten, SAFMC staff

### 21.2.4        ACTIONS

No specific action is being requested of the SEP, but interested SEP members are encouraged to become involved with the SAFMC Citizen Science Program.

**SEP RECOMMENDATIONS:**

*The SEP suggested, and received confirmation from Council staff, that the Citizen Science volunteers could be used for administering and collecting social and economic survey data, and that undergraduate students could participate in Citizen Science programs as part of their academic programs.*

## 21.3 Recent and Developing Council Actions

### 21.3.1        Document

**Attachment 2**. Recent and Developing SAFMC Amendments

### 21.3.2        Overview

Council staff will provide a briefing on recent and upcoming amendments and actions (*Attachment 2*). The briefing will go into specific details on the proposed Snapper Grouper for-hire permit moratorium (Amendment 47), the Snapper Grouper visioning amendments (Vision Blueprint Regulatory Amendments 26 and 27), recreational reporting amendment (Amendment 46).

### *Snapper Grouper Amendment 47 (For-Hire Permit Moratorium)*

At several recent meetings, the Council has discussed establishing a limited entry permit for the for-hire sector of the Snapper Grouper fishery. Currently, the for-hire permit is open access, with approximately 1,400 to 1,600 active permits. In June 2017, the Council instructed staff to begin work on an amendment that would explore a

moratorium on the for-hire component of the snapper grouper fishery.  The Council discussed an options paper at their December 2017 meeting and decided to revisit the topic at their March 2017 meeting.

## Snapper Grouper Vision Blueprint Regulatory Amendment 26 (Recreational Management Measures)

In June 2016, the Council directed staff to begin development of an amendment to address items identified in the Vision Blueprint addressing recreational management measures.  In September 2016 the Council reviewed an options paper and directed staff to prepare a scoping document. Scoping meetings were held in late January/early February 2017 and the Council reviewed public comments and gave direction to staff at their March 2017 meeting. In June 2017, the Council provided further guidance but did not approve the amendment for public hearings. Actions in the amendment include modification to the composition and limits of the recreational aggregates, measures to reduce discards, establishment or modification of recreational seasons, and gear restrictions/modifications.  During the September 2017 meeting, the Council approved an alternative approach for structuring the amendment that would better reflect the Council's Vision and how the fishery currently operates.  Because of this change, the Council also approved a revised timeline for amendment development with formal approval expected in September 2018. The Council revised actions and alternatives in the amendment at their December 2017 meeting. Actions being considered in this amendment are listed below:

1. Modify the species composition of the recreational aggregates
2. Specify recreational management measures for the deep-water species aggregate Specify seasonal prohibition for the deep-water species aggregate
    − Remove the recreational minimum size limits for certain deep-water species
    − Specify the aggregate bag limit for the deep-water species aggregate
    − Specify gear requirements for the deep-water species aggregate
3. Specify management measures for species in the shallow-water grouper aggregate
    − Modify the seasonal prohibition for red grouper in the Exclusive Economic Zone off South Carolina and North Carolina
    − Specify the aggregate bag limit for the shallow-water grouper aggregate
4. Specify management measures for the other shallow-water species aggregate
    − Reduce the recreational minimum size limit for gray triggerfish in the exclusive economic zone off east Florida
    − Specify the aggregate bag limit for the other shallow-water species aggregate
5. Specify the aggregate bag limit for the snapper grouper species aggregate

## Snapper Grouper Vision Blueprint Regulatory Amendment 27 (Commercial Management Measures)

In June 2016, the Council directed staff to begin development of an amendment to address items identified in the Vision Blueprint addressing commercial management measures.  In September 2016 the Council directed staff to prepare a scoping document and scoping meetings were held in late January/early February 2017. The Council reviewed public comments and gave direction to staff at their March 2017 and June 2017

meetings. Actions include commercial split seasons and/or trip limit adjustments for several species/complexes; re-evaluation of the shallow water grouper closure, and gear restrictions/modifications. The Council revised alternatives at their September 2017 meeting and approved the same timeline for development as that for the recreational amendment (see above). At their December 2017 meeting, the Council further revised actions and alternatives in the amendment. Actions being considered in this amendment are listed below:

1.  Establish a commercial split season and modify the commercial trip limit for blueline tilefish
2.  Establish a commercial split season for snowy grouper
3.  Establish a commercial split season and modify commercial trip limit for greater amberjack
4.  Establish a commercial split season and modify commercial trip limit for red porgy
5.  Modify the commercial trip limit for vermilion snapper
6.  Implement a minimum size limit for almaco jack for the commercial sector
7.  Implement a commercial trip limit for the Other Jacks Complex
8.  Modify the seasonal prohibition on commercial harvest and possession of red grouper in the Exclusive Economic Zone off South Carolina and North Carolina
9.  Remove the commercial minimum size limits for deep-water snapper species
10. Reduce the commercial minimum size limit for gray triggerfish in the Exclusive Economic Zone off east Florida

## *Snapper Grouper Amendment 46 (red snapper and recreational reporting)*

In June 2017, the Council instructed staff to move actions formerly in Amendment 43, except an action to specify a red snapper ACL in 2018, to Amendment 46. The amendment would specify OFL/ABC/ACL for red snapper, address recreational permitting and reporting for private recreational fishermen, best fishing practices (also include an option to remove circle hook requirements for snapper grouper fishing), and removing powerhead restrictions in special management zones off South Carolina (action formerly included in the Visioning amendments). OFL/ABC/ACL for red snapper based on SEDAR 41 (2017) have not been adopted through the amendment process; however, the SEFSC could not provide new projections due to the time since the last amendment, uncertainty in recreational landings and discards, and upcoming changes to recreational landings estimates. During their meeting in October 2017, the SSC formed a workgroup whose task is to determine an approach to obtain an ABC for red snapper. The Council reviewed an options paper for Amendment 46 at their December 2017 meeting and provided guidance on further developing the amendment.

## *South Atlantic For-Hire Electronic Reporting Amendment*

During the March 2015 meeting, the South Atlantic Council approved actions and alternatives to require weekly electronic reporting by charter vessels, patterned after headboat electronic reporting requirements. The South Atlantic and Gulf of Mexico Councils reviewed the amendment at the Joint Council meeting in Key West in June 2015. In September 2015, the South Atlantic Council directed staff and the IPT to revise the amendment to apply to charter vessels in South Atlantic fisheries only. In December

2015, the Council approved the amendment for public hearings, which were held in January/February 2016.  At the March 2016 meeting, the Council revised the expected timeline for the amendment, to allow time to develop core data elements. The Council reviewed the revised amendment in June 2016, developed a list of core variables and scheduled final approval for December 2016 to allow consideration of preliminary feedback from the SAFMC-ACCSP electronic reporting pilot study. In December 2016, the Council approved the amendment for formal review.  The Gulf Council approved the CMP portion of the amendment at their January/February 2017 meeting. The amendment was transmitted for formal review on March 4, 2017.

### 21.3.3        Presentation and Discussion

John Hadley, SAFMC staff

### 21.3.4        ACTIONS

Discuss and make recommendations as appropriate. In general, this agenda item is meant to brief the SEP on potential Council actions that may be presented to the group for review later in the meeting or at a future SEP meeting.

**SEP RECOMMENDATIONS:**

*The SEP recommendations for Snapper Grouper Amendment 46 are further below. The SEP had no other recommendations for these items.*

## 21.4 Wreckfish Individual Transferable Quota (ITQ) Review

### 21.4.1        Documents

**Attachment 3a**. Draft Wreckfish Individual Transferable Quota Program Review Report
**Attachment 3b**. Presentation slides for the Wreckfish Individual Transferable Quota
                Program Review
**Attachment 3c.** Wreckfish Individual Transferable Quota Program Review Report, 2009

*Additional reference for discussion:*
1) T. Yandle, S. Crosson. Whatever Happened to the Wreckfish Fishery? An Evaluation of the Oldest Finfish ITQ Program in the United States. Marine Resource Economics, Volume 30, Number 2 (2015) 193–217.

### 21.4.2        Overview

In May 2016 the NMFS issued draft guidance intended to ensure the reviews of Catch Share Programs are comprehensive, conducted in a coordinated and transparent fashion, and meet the statutory requirements. The Wreckfish Individual Transferable Quota (ITQ) Program is the only program implemented in the South Atlantic that will need to undergo review under the current guidance.  The wreckfish ITQ program has been in place for over two decades and has been examined multiple times throughout its existence (**Attachment 3c** and *additional reference material*).  The current review is ongoing, with

a draft report planned for the Council to review at the March 2018 and subsequent updated reports at the June 2018 and September 2018 meeting.

### 21.4.3    Presentation

Brian Cheuvront, SAFMC staff

### 21.4.4    ACTIONS

SAFMC staff will provide a presentation with background information on the Wreckfish ITQ program and the review (*Attachment 3a and 3b*).  The SEP will be asked to provide feedback on research and data going into the review process as well as how the review will be structured.

Discussion Questions:

1.  Does the SEP have input on the data and confidentiality issues beyond what the SSC has already discussed?

2.  If SERO is unable to obtain waivers from all past fishery participants (from the time series in consideration, does the SEP have suggestions for providing additional detail other than annual aggregates?

3.  Based on the draft review document in the briefing book, what recommendations does the SEP have for this Wreckfish ITQ Review regarding:
    a.  Eligibility and Participation
    b.  Sector Allocation
    c.  Share Transferability
    d.  Share Caps
    e.  Price Analysis
    f.  Catch and Sustainability
    g.  Safety at Sea
    h.  New Entrants into the Fishery
    i.  Monitoring and Enforcement
    j.  Privilege Duration & Subsequent Distribution

4.  Are there other topics the SEP recommends covering in the ITQ review?

5.  While the review is not yet complete, does the social and economic information provided in the outline review represent the best available information to profile the performance of the fishery?

**SEP RECOMMENDATIONS:**

*Council staff opened the discussion with a brief overview of the wreckfish fishery and its history of management.  Periodic reviews of the wreckfish ITQ program are mandated to ensure that management of the fishery is running efficiently.  This review will focus on the fishery and its management beginning with the 2009/2010 fishing year.  The first three fishing years, 2009/2010 through 2011/2012, will serve as a baseline period to be compared with more recent fishing years from 2012/2013 through 2016/2017.*

*There have been several important changes to the management program since 2009.  In 2011, the SSC reduced the ABC to 235,000 pounds, with 95% allocated to the commercial fishery and 5% to the recreational fishery.  In 2012, inactive shares were revoked and a 49% cap on share ownership was established.  In 2015, the SSC increased the ABC=ACL to 433,000 pounds, and specified that it should decline by about 2% per year until 2020 and then remain constant for subsequent years.  During the 2016/2017 fishing year, the fishery consisted of 6 shareholding entities, 6 vessels, and 5 dealers.*

## 1)  Does the SEP have input on the data and confidentiality issues beyond what the SSC has recommended?

*A comprehensive and quantitative review of the ITQ program is hampered by its small scale.  Hence, almost all data are confidential and cannot be revealed without obtaining special waivers from fishery participants.  Qualitative conclusions are possible without revealing confidential data, but the review would be less robust.*

## 2)   If SERO can't get waivers for all the past fishery participants, what suggestions does the SEP have that could help provide more detailed information?

*Discussion:   Why is confidentiality an issue?   What are the important management questions that are more difficult to answer because of confidentiality?*
*The SEP was informed that confidentiality waivers will not be obtained, so the inability to release confidential data is indeed an issue.  As a result, the wreckfish fishery can only be discussed in aggregate.   This means that important detail can be lost or not sufficiently analyzed.   For example, there is a geographic distribution of interests in the program/fishery, with the SC contingent of the fishery sometimes in disagreement with the FL contingent.  The ITQ review needs to provide the most accurate description and analysis of the fishery, but without the ability to report confidential data, the existence of the geographic sub-fisheries can be noted but not analyzed.*

*Discussion: Recommendations of strategies for dealing with confidentiality limitations*
*The SSC considered the value of using models to fill in missing data.   However, multiple SEP members have concerns that the number of participants is so limited that regression modeling along these lines would be meaningless.*

*The SEP instead recommends a strategy for dealing with confidentiality by combining qualitative information with a mix of annual fishery totals and ratios that do not violate confidentiality constraints.  For example, aggregate pounds landed, ex-vessel revenues, numbers of participating vessels, and numbers of trips and/or days fished do not appear to*

*violate confidentiality constraints.  The paper by Yandle and Crosson[1] used ratios such as catch per unit of effort to make inferences about fishery performance over time.  In addition, the distribution of owner share percentages apparently is not confidential and can be reported over time to make inferences about consolidation in the fishery.*

*The SEP also recommends that the ITQ review incorporate inferences about the financial state of the fishery that can be derived from analyses of ex-vessel prices, share prices per pound, and annual quota (coupon) prices per pound.  Most of the theoretical benefits of an ITQ program stem from economic incentives that are reflected in (permanent) share prices and (annual) quota prices.  With well-developed markets for shares and quota, share prices and quota prices provide market-based incentives for fishermen to operate in a manner consistent with management objectives.  Quota prices per pound should approximately equal the marginal cost per pound of harvesting wreckfish, and share prices per pound should reflect the fishery's optimism about profitability in the future.  Caveats are warranted because the markets for wreckfish shares and quota are not well-developed, which means that shares are not bought/sold often and that coupon purchases/sales usually are not recorded.*

### 3) Based on the draft review document in the briefing book, what recommendations have the SEP for this Wreckfish ITQ Review regarding:

*<u>Eligibility & Participation</u>*
*Greater participation in the wreckfish fishery would reduce concerns about the confidentiality of data and improve the quality and usefulness of market prices for shares and annual quota in future ITQ reviews.*

*Council staff reviewed the eligibility requirements to participate in the wreckfish fishery.  In particular, the requirement to own both a wreckfish permit and a snapper-grouper permit appears to constitute a significant barrier to enter the fishery, especially since new entrants must purchase two existing SG1 permits and retire one.  In a later discussion about the development of a socio-economic profile of the snapper-grouper fishery (agenda item 6), the SEP learned that current asking prices for SG1 permits range from $60,000 to $80,000, and asking prices for an annual lease of SG1 permits range from $6,000 to $8,000.  Thus, there is a significant financial barrier to enter the wreckfish fishery for boats that do not already own an SG1 permit, and the Council may wish to consider removing/changing permit requirements to encourage an increase in the number of active participants in the wreckfish fishery. The Council removed latent (excess) fishing capacity when it revoked inactive shares.*

*<u>Sector Allocation</u>*
*The current allocation is approximately 20,000 pounds for the recreational fishery.  If recreationally caught wreckfish weigh approximately 30-35 pounds each, this implies a recreational allocation of approximately 570 to 670 fish.*

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[1] Tracy Yandle and Scott Crosson.  2015.  "Whatever happened to the wreckfish fishery?  An evaluation of the oldest finfish ITQ program in the United States."  Marine Resource Economics 30(2):193-217.

*Council staff noted that landings of wreckfish by recreational fishermen are rare events in the recreational database. One suggestion to obtain an alternative count of recreational catches is to scan various social media for postings about wreckfish by recreational fishermen, with the caveat that duplicate postings and re-postings should be culled. Some of the recreational allocation could be re-allocated to the commercial fishery if the number of recreationally landed wreckfish falls far short of the current allocation of 5%.*

*Share Transferability*
*Two issues are discussed in conjunction here: share (permanent rights) transferability and annual catching rights (coupon) transferability.*

*With regard to share transferability, there was a major decline of share prices driven by Amendment 20A and the threat of latent shareholders losing shares. It forced a major sell-off at reduced prices. In the end, less than 5% ended up being forcibly reallocated. Since then the market has been extremely thin, to the point that it could be argued that there is not a truly functioning market for shares, perhaps partly due to stiff eligibility requirements that limit potential entrants. Reporting requirements for share transfers should include the percentage of shares transferred, and either the total sales value of the transaction or the price per pound calculated as total sales value divided by total pounds transferred.*
*With regard to annual catch (quota/coupon) transferability, more data and analysis are needed. The SEP discussion included questions about evidence of coupon prices since there is no reporting requirement, and the timing of coupon transactions. In particular, the SEP wondered if swap contracts were possible in which one fisherman might agree to sell some of his coupons for next year in exchange for the use of another's coupons this year. In general, the SEP recommends looking at how coupons change hands and pricing.*

*Share caps*
*If the Council increased the ACL, how would that affect the distribution of share ownership given the 49% cap? The distribution would not change if the increase in ACL were distributed proportionally to all existing shareholders.*

*Should the share cap be revised if the ACL is increased, particularly if it is not feasible for the largest shareholders to take the extra trips that would be required to land their increased annual quota? The Council's original rationale for the current cap of 49% for share ownership would not change if the Council decided to change the distribution of shares or the total allowable catch. Shareholders could sell shares or sell annual coupons if they were unable to fish for their full allotments.*

*Aside from the issue of majority control, the ITQ review should investigate if market power arises from the consolidation of shares. If so, the Council may wish to change the share cap to a level for which market power does not occur.*

*New Entrants*
*Should an increase in the ACL be distributed to new entrants into the fishery? Traditionally, the Council would determine a formula for distributing quota for free. But other mechanisms (such as an auction) could also be used, which would generate some cost recovery for the*

*ITQ program. In general, an increase in ACL would tend to encourage new entrants into the fishery, especially if established shareholders are already fishing at maximum levels.*

*The complex set of eligibility requirements to participate in the wreckfish fishery may serve as barriers to entry. If there is a desire to increase the number of participants in the fishery, then removing/changing permit requirements could encourage greater entry into fishery. New entrants might also be achieved by lowering the cap on share ownership, but this could create a forced divestiture since one shareholder owns close to the cap of 49%. Presumably, this would remove some of the current economic efficiency of the fishery.*

*Maximum entropy theory could provide a means to better estimates of geographic distributions of catch/landings in situations with missing/confidential data when data on totals/averages are available.* [2]

*Price Analysis*
*Whenever possible, tabulate or graph time series of average annual ex-vessel price per pound, share price per pound, and quota (coupon) price per pound. Also, calculate the ratio of share price per pound to ex-vessel price per pound, the ratio of quota price to ex-vessel price, and the ratio of share price per pound to quota price. Finally, graph annual average ex-vessel price against annual industry landings.*

*Catch & Sustainability*
*One theoretical benefit of ITQ programs is that fishermen have incentives to fish in a biologically sustainable way. The wreckfish stock is not currently overfished, there is no overfishing, and CPUE and size of caught fish have remained relatively constant over time. Nevertheless, anecdotally, the largest shareholder did not catch his entire quota last year, while other shareholders are not fishing and instead are leasing out. The ITQ review will not be able to analyze this type of information with no access to confidential data.*

*A decision to rescind or re-allocate unused shares might compel fishermen to fish for wreckfish even if moving to other fisheries would be economically justified. This would reduce incentives for biological conservation.*

*The TAC was reduced substantially in 2011, which was a reflection of a poor choice for TAC at the ITQ program's inception rather than a failure of the ITQ program to promote biological conservation and sustainability.*

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[2] Robinson, Sherman; Cattaneo, Andrea; El-Said, Moataz. Updating and Estimating a Social Accounting Matrix Using Cross Entropy Methods. *Economic Systems Research*. March 2001, v. 13, iss. 1, pp. 47-64
Golan, Amos; Judge, George; Perloff, Jeffrey M. Estimating the Size Distribution of Firms Using Government Summary Statistics. *Journal of Industrial Economics*, March 1996, v. 44, iss. 1, pp. 69-80
Quirino Paris, Richard E. Howitt. An Analysis of Ill-Posed Production Problems Using Maximum Entropy. *American Journal of Agricultural Economics*. Vol. 80, No. 1 (Feb., 1998), pp. 124-138

*Safety at Sea*
*ITQs encourage safety at sea by allowing fishermen to choose when they go out. There was a derby fishery prior to implementation of the ITQ program.  Now fishing occurs throughout the open season.  Hence, the ITQ program has successfully reduced/eliminated the race for fish, and by choosing when to fish it is inherently safer. The ITQ review should note if fatalities or losses of boats in the wreckfish fishery have occurred.*

*Monitoring & Enforcement*
*The SEP noted that the existing reporting system of paper coupons was not as efficient as digital reporting, and that fishermen sometimes bemoan the requirement to hand-cancel a large number of 100 lb. coupons after their 500 lb. coupons had been used.  A digital reporting system should be developed if the cost of development is not too great.*

*Originally, there were limited off-loading hours for the wreckfish fishery to facilitate OLE oversight of the new ITQ program.  This requirement may not be as urgent now because the program is established and less interaction with OLE is needed, there are fewer shareholders, and the limited hours affect ability to land.  Option to consider:  Notification of OLE of time of landing rather than reduced hours for offloading.  This issue should be considered in concert with electronic reporting since electronic reporting would address coupon issues and reduce the need for in-person OLE interaction.*

*Privilege Duration & Subsequent Distribution*
*There was significant discussion of methods for clawing back and redistributing unused shares.   While this can be a means of addressing an aging fishery, the SEP has significant concerns about the impacts of undermining the integrity of ITQ property rights, both to the market for ITQs and to the incentives to manage a resource sustainably for the long term.*

*Sunset provisions or use-it-or-lose-it provisions would adversely affect the development of markets for shares and annual quota, and hence limit the future achievement of theoretical benefits from the ITQ program.*

*Additional Issues:  Paper vs. Digital Coupons and Cost recovery:*
*Ordinarily, ITQ programs are required to assess a cost recovery fee of up to 3%, but the wreckfish ITQ program is exempt because it was established prior to this requirement. Currently, a cost recovery fee has not been implemented because the effort to collect the fee is not considered worth its cost.  However, a cost recovery system may be needed if the ITQ program switches from paper coupons to digital reporting.  The Council and Regional Office need to compare the costs of developing an electronic reporting system vs. the cost of the current paper-based system given the relatively small number of participants.*

## 21.5 Trip metrics used in estimating the economic impacts of recreational fishing

### 21.5.1        Documents

**Attachment 4a:**  Draft report on economic impacts of fisheries for SAFMC managed species
**Attachment 4b:**  Presentation slides for SEP discussion on economic impact report

### 21.5.2        Overview

As part of an ongoing effort to compile comprehensive information on SAFMC managed fisheries across species and throughout their range, a report has been drafted examining the economic impacts of fisheries for SAFMC managed species.  The report is attempting to respond to the research question of "what are the economic impacts of fisheries for SAFMC managed species (both recreational and commercial)?", specifically focusing on jobs, income, value added, and business sales.

Council staff will provide an overview of the report (*Attachment 4a*), the model used, and the type of recreational trip estimates provided by the Marine Recreational Information Program (*Attachment 4b*).

### 21.5.3        Presentation

John Hadley, SAFMC staff

### 21.5.4        ACTIONS

Discuss and provide feedback to staff on appropriate recreational trip metrics to use when examining the economic impacts of recreational fisheries for SAFMC managed species.

Discussion Questions:

1.  Given the various recreational trip estimates available, is there a specific metric that the SEP would recommend over what is currently used?  Would a range between two of the trip types be better than a point estimate using one trip type as is currently practiced?

2.  When presented with results of economic impact models, reactions often vary, with some reviewers feeling that numbers are inflated while others feeling that the numbers presented are too low.  Given your knowledge of previous experience with I/O models and economic impact estimates of recreational fishing, do you feel the results provided in the report are within reason given the data that are available?

**SEP RECOMMENDATIONS:**

1.  ***Given the nature of the various recreational trip estimates available, is there a specific metric that the SEP would recommend over what is currently used in the report ("directed trips"= targeted or harvested)? Would a range between two of the trip types be better than a point estimate using one trip type? Ex: Harvest and "Directed1" (targeted or harvested); Harvest and "Directed2" (targeted or harvested or released)***

*Any attempt to present ranges of estimates is supported; sensitivity analysis is a crucial component of any economic analysis. Confidence intervals for the impact estimates would strengthen the report (note that the MRIP trip estimates have both mean and standard errors).*

*Since this is the initial study, the validity of estimates is rather open. For example, one might compare impact to those reported in Fisheries Economics of the United States (FEUS) in the report. One validity test might be to check that South Atlantic impacts are less than the FEUS with the same trip estimates. Further, other regional council impacts could be estimated to determine if the sum of the regional impacts is equal to the national impacts.*

*There seems to be a possibility for double-counting of trips. For example, consider a situation where there are 3 trips (1, 2, 3) and 3 and 3 target species (A, B, C). Including trips where A, B and C are either the primary or secondary target species would result in 6 trips. This is illustrated by the 6 cells in the table:*

|           | *Trips* |     |     |
|-----------|-----|-----|-----|
| *Target*    | *1* | *2* | *3* |
| *Primary*   | *A* | *C* | *B* |
| *Secondary* | *B* | *A* | *C* |

*In addition to the potential for double counting with targeted trips, the study includes trips where a species is harvested and target plus harvested (directed). This seems to exacerbate the potential for double-counting. The report should make clear that trips are not double counted. Another potential for double-counting: if this study is also conducted by other councils, is the inclusion of impacts of South Atlantic species Northeast and Mid-Atlantic trips?*

*Solely using recreational trip expenditures to estimate the economic impacts for a specific species or group of species inherently underestimates the impacts generated by the fishing activity since durable goods expenditures are excluded, thus likely providing a lower bound estimate of the "true" economic impacts. Are there other methods or currently available data that the SEP would recommend to provide a more comprehensive economic impact assessment (jobs, income, etc.) of fishing activity specifically for SAFMC-managed species?*

*The report would be strengthened if (a) it includes definitions of the different impacts and what they mean and (b) the SERO economic impact tool is described. Dependent upon the*

*correspondence with (a) and (b), staff may want to add tax impacts (sales, property, income, corporate profits--and separate local/state and fed level tax impacts) to the types of impacts reported from the economic impact model.  IMPLAN can provide these tax results as a first-order approximation.*

2. ***When presented with results of economic impact models, reactions often vary, with some reviewers feeling that numbers are inflated while others feel that the numbers presented are too low. Given your knowledge and previous experience with I/O models and economic impact estimates of recreational fishing, do you feel the results provided in the report are within reason under the constraint of using data that are currently available?***

*There is some concern that impacts are overestimated. Staff may want to sort the angler trips fed into the economic impact model by whether the anglers are residents or non-residents of the study area region.  The impacts associated with non-residents represent "new money" to the study area region, whereas the impacts associated with regional residents might not be considered as net impacts by some readers/observers.  The staff may want to consider three levels of study area region:  (1) the SAFMC multi-state region, (2) the coastal counties of the SAFMC multi-state region, (3) each state individually, (4) the coastal counties of each state individually. Within IMPLAN, the analyst can specify any set of U.S.A. counties as the study region.*

*Also, staff may want to sort the angler trips fed into the economic impact model by the primary purpose of the trip: fishing or some other purpose.  The economic impacts of the trips for which fishing was not the primary purpose might not be considered by some as driven by fishing.  (These trips might have occurred even in the absence of fishing.  Examples of such trips would be trips to visit relatives at the coast which would have occurred even if fishing had not occurred.)*

## 21.6 Results from the socio-economic profile of the Snapper Grouper fishery

### 21.6.1      Document

**Attachment 5.** Presentation slides for findings from the Snapper Grouper Socio-Economic Profile Report

### 21.6.2      Overview

As part of Vision Blueprint Regulatory Amendment 27 (Commercial Management Measures), the public was asked to comment on management approaches that would meet the needs of "traditional bandit boats." In addition, the Council expressed the need for an in-depth characterization of the fishery before considering substantial changes to how the fishery is managed. Hence, in March 2017 the Council directed staff to begin work on a socio-economic characterization of the commercial Snapper Grouper (SG) fishery.  The SEP provided input on the work plan and outline for this project at their April 2017 meeting.  Due to constraints on staff time, this analysis was contracted to

former Council staff member, Dr. Kari MacLauchlin for completion by March 2018. Dr. MacLauchlin will provide the SEP with a presentation on results and findings from the report (***Attachment 5***).

### 21.6.3    Presentation

Kari MacLauchlin, report author and former SAFMC staff

### 21.6.4    ACTIONS

Discuss and provide feedback on the Snapper Grouper socio-economic characterization project. Additionally, this presentation will help provide background information for the next agenda item that seeks to expand on some of the work completed for this report.

**SEP RECOMMENDATIONS:**

*The SEP would like to have permit purchase prices recorded when licenses change hands, but note that this may be problematic because of tax implications, and made no formal requests or recommendations.  SEP members did express strong support for the project and considered the seasonal and geographic landings portfolios to be of very high value for describing the composition of the snapper-grouper fleets.*

## 21.7 Socio-economic profile of fisheries for species managed by the South Atlantic Fishery Management Council

### 21.7.1    Document

**Attachment 6a.** Outline for a socio-economic profile of fisheries for species managed by the South Atlantic Fishery Management Council
**Attachment 6b.** Presentation slides for SEP discussion of socio-economic profile outline

### 21.7.2    Overview

This report is being pursued as part of an effort to further extend the work completed for the Snapper Grouper Fishery Management Plan and to provide comprehensive information on South Atlantic Fishery Management Council (Council) managed fisheries. At their December 2017 meeting, the Council directed staff to begin work on a socio-economic characterization of fisheries for Council-managed species.  This report will include a description of fishing communities (demographics, engagement and reliance on fishing), fishing trends (effort, landings, fleet characteristics, seasonality of landings), competition from imported seafood, fishing infrastructure, and safety at sea.  Council staff will provide an overview of the work plan, and timing for the project (***Attachment 6a*** **and** ***6b***).

### 21.7.3       Presentation

Christina Wiegand, SAFMC staff

### 21.7.4       ACTIONS

Discuss and provide guidance to the staff on the outline for the SAFMC fisheries characterization project (discussion questions included in *Attachment 6a*).

 **SEP RECOMMENDATIONS:**

1. ***The intent of this report is to provide a "snapshot" of SAFMC managed fisheries that would be updated annually or biannually.   What sort of timeframe would be sufficient?  Is the most recent 5 years sufficient?***

*Use of the most recent 5 years of data is minimally sufficient.  While a "snapshot" of the fishery at a given point in time may be interesting, it lacks the context of the longer time period during which an evolution in the fishery might be detected.  It would be useful to include longer time series for data when available.*

2. ***Are there other readily available (i.e., no primary research required) data sources that could be used to show the distribution of fishing infrastructure?***

*The SEP discussed several methods to research fishing infrastructure, including an internet search for websites of different types of fishing-related businesses, contacts with Sea Grant for information about fishing-related infrastructure, and even a keyword search of real estate parcel data for property owned by businesses with names that indicate fish houses, fish dealers, etc.  One caveat mentioned was that coastal development and the associated rising property values tend to displace traditional types of fishing-related businesses such as fish dealers.  In some areas, boats now transfer their catches directly to trucks rather than at traditional fish houses.  The Science Center is also currently cataloging infrastructure such as locations of docks, photos, links to other fishing-related businesses, etc.*

3. ***Is there other readily available information not in the outline that could help better describe the social and economic characteristics of SAFMC managed fisheries?***

*Suggestions included collaborating with local extension agents and Sea Grant offices, and police/arrest reports (looking for problems on boats/at docks).*

4. ***Are there other analyses that could provide insight into the social and economic characteristics of SAFMC managed fisheries?***

*In addition to traditional variables such as pounds landed and ex-vessel revenues, measures of productivity calculated as pounds and dollars per boat per year or per trip for each portfolio can provide useful insights about changes over time in economic performance of the commercial fisheries.*

## 21.8 *Analysis methods used in Snapper Grouper Amendment 27*

### 21.8.1        Document

**Attachment 7a.** Excerpt from Regulatory Amendment 27 Impact Analysis
**Attachment 7b.** Excerpt from October 2017 SSC report
**Attachment 7c.** October 2017 SSC meeting minutes (see pages 233-236)

*Additional references for discussion:*
 1) N. Farmer, J. Froeschke. Forecasting for Recreational Fisheries Management: What's the Catch?. North American Journal of Fisheries Management, 35:4, (2015) 720-735

### 21.8.2        Overview

In June 2016, the Council directed staff to begin development of an amendment to address items identified in the Vision Blueprint addressing commercial management measures.  In September 2016 the Council directed staff to prepare a scoping document and scoping meetings were held in late January/early February 2017. The Council reviewed public comments and gave direction to staff at their March 2017 and June 2017 meetings.  Actions include commercial split seasons and/or trip limit adjustments for several species/complexes; re-evaluation of the shallow water grouper closure, and size limit modifications.  The Council revised alternatives at their September 2017 meeting and approved the same timeline for development as that for the recreational amendment. At their December 2017 meeting, the Council further revised actions and alternatives in the amendment.

Technical analyses conducted to date on the amendment would benefit from SEP and SSC review.  In particular, the SEP should comment on the appropriateness of the two models and methodologies used to predict landings under various scenarios.  Analyses were performed by NMFS SERO staff and a sub-set of the results are included in *Attachment 7a*.  At their October 2017 meeting, the SSC discussed the preliminary results from both models and suggested using the results from the "Last 3" model instead of the SARIMA model (*Attachment 7b*).  Despite this recommendation, the SSC did have some questions on the SARIMA model that could not be answered during the meeting, as the analyst was not available to comment (*Attachment 7c*).  Also, analyses have been revised and more analyses have been completed since the October 2017 SSC meeting.  As such, the SSC will be discussing this topic again at their upcoming meeting in May 2018.

While the models generally agree for some analyses, divergent results presented by the two models under some circumstances (see red porgy analysis in *Attachment 7a*) are at the crux of the request from the amendment's IPT for the SEP and SSC to provide guidance on the appropriate model results to use for the biological, economic, and social effects.  The SEP's discussion is intended to help the IPT with the analysis of the social and economic effects for actions in the amendment as well as contribute to the SSC's

upcoming discussion on the topic at their next meeting in May 2018.  Council staff will provide an overview of the models used and the model results to facilitate the discussion.

### 21.8.3        Presentation

John Hadley, SAFMC staff

### 21.8.4        ACTIONS

Discuss and comment on the use and uncertainties of the two methods used in Snapper Grouper Regulatory Amendment 27 to analyze the effects of the actions and alternatives.

Discussion Questions:

1.  Is one methodology more appropriate for use in these analyses?

2.  Do either of these approaches provide clearer management advice to the Council?

3.  Are there differences in relative risk or uncertainty between the two methods?

**SEP RECOMMENDATIONS:**

*1.  Is one methodology more appropriate for use in these analyses?*

*The Council asked the SEP to comment on the appropriateness of two models (the "Last 3 Years" model and the SARIMA model) and methodologies used to predict catches and closure dates under various management alternatives.  The Last 3 Years model is based on average catch rates from the last three years whereas the SARIMA model is based on autoregressive methodology.  Both models were applied to blueline tilefish and red porgy, and the results were presented to the SEP for comparision and consideration.  The models generally agreed on closure dates for blueline tilefish, and disagreed for red porgy, with the Last 3 Years model predicting closures for red porgy whereas the SARIMA model did not.  Divergent results presented by the two models for red porgy (see analysis in Attachment 7a) are at the crux of the request.*

*Regarding the appropriateness of the two models and methodologies used to predict landings under various scenarios, the SEP agreed that, in principle, the SARIMA method was superior to the "Last 3 Years" averaging method; however, the SEP recommends that the council be presented with results from both models, as both models have pros and cons.  The "Last 3 Years" model is less complicated and easier to understand, but it puts perhaps too much weight on data from recent years at the expense of neglecting longer-run effects due to changes in year class abundance or environmental or policy shocks or cycles.  The SARIMA model is more complicated but probably gives a better picture of the uncertainty involved in predicting landings through better modeling of the error term that incorporates the effects of factors left out of the model.  Over time, as data availability and quality improve, the performance of the SARIMA model should improve relative to the "Last 3 Years" model.*

*In the particular application of the models to red porgy, the SEP recommends additional research to determine why their predicted outcomes differed with regard to management advice about potential future closures.  Current regulations for red porgy include a closure from January through April which would be rescinded.  The models may have differed in their predictions about future catches and closure dates in part (or even primarily) due to the way in which they predicted potential catches between January and April.  The "last 3" method used adjusted historical data to predict landings from January through April, whereas the SARIMA model did not ("Jan-April catches were left blank").  If predicted landings between January and April by the SARIMA model were substantially smaller than with the "last 3" model, the discrepancy between model predictions might be resolved if the SARIMA model were re-estimated by using the same adjusted historical data for the January through April closed period as was used in the "last 3" model.*

**2.  *Do either of these approaches provide clearer management advice to the Council?***

**3.  *Are there differences in relative risk or uncertainty between the two methods?***

*More generally, because the SARIMA model is based on more years of data compared to the Last 3 Years model, and because there is typically greater variation in the data over longer periods of time compared to shorter periods of time, the confidence intervals produced by the SARIMA model will likely be wider than those produced by the Last 3 Years model.  This does not mean that the the SARIMA model is producing less accurate forecasts compared to the other model; rather, the SARIMA model is providing a more accurate picture of the potential uncertainty in the forecasts.  Presenting confidence interval estimates for alternative, lower confidence levels for each model (in addition to point estimates and 95% confidence intervals) might help the council compare the uncertainty in the results across the two models.  It is expected that although the 95% confidence intervals might be quite different across the two models, 80% and 70% CI's, say, might be more similar.  A hypothetical example of how this might be presented by staff to the Council is shown below:*



*In situations where the variation in the data is so great that the SARIMA model does not produce a (positive) point estimate, the staff could provide the council with the (upper) confidence interval estimates from each model.  In this situation, it could be especially useful to provide 70% and 80%, say, confidence interval estimates (in addition to the 95%) in order to show that as the council's risk tolerance increases, the estimates*

*provided by the two models become more similar (that is, 70% confidence intervals likely will be more similar across models compared to 95% confidence intervals).*

*Staff might want to use typical time series modeling methods to identify the significant lag lengths for the SARIMA model rather than using only one-month and 12-month lags. Although one-month and 12-month lags are typically important, other lag lengths related to the species' life cycle length or cycles in environmental parameters (water temps, prey abundance, predator abundance, etc.) might be significant.*

*Staff might want to compare existing SARIMA results with the results from running the SARIMA model with missing data for some years replaced with averaged or interpolated values from prior and subsequent years.*

*Staff might want to consider updating the SARIMA model estimates over time.  As new data arrive each year, the SARIMA model could be run on a larger data set, improving model performance.*

*Neither model is designed to inform decisions regarding the equitable geographic/spatial distribution of landings.  If the historical average catch distribution across regions is applied to the results from each model, the models are not producing different estimates of the spatial distribution; rather, the models are simply providing different estimates of total catch that are then allocated to the different geographic areas using the same, given, historical landing distribuion across areas.*

## 21.9 Red snapper management and recreational reporting

### 21.9.1    Document

**Attachment 8a.** Revised Snapper Grouper Amendment 46 Options Paper
**Attachment 8b.** MyFishCount 2017 Red Snapper Mini-Season Report
**Attachment 8c.** Draft survey on recreational reporting

*Additional references for discussion:*
1) MyFishCount feedback correspondence #1

2) MyFishCount feedback correspondence #2

3) K. Garvy. The Emergence and Use of Angler Self-Reporting Apps in Recreational
   Fisheries.  Masters Thesis (2015).

### 21.9.2    Overview

The Council requested that staff begin development of Amendment 43 (red snapper) in June 2016 to address items related to management of red snapper and other directly

and indirectly related items that would ultimately result in an adaptive management approach and respond to items in the Vision Blueprint (i.e., recreational stamp, recreational season, time-area closures, etc.). At their June 2017 meeting, the Council directed staff to finalize development of Amendment 43 with only one action: to remove the process currently in place to set ACLs and set an ACL for red snapper for 2018 and beyond in order to allow limited harvest. The remainder of the actions in Amendment 43 will continue to be developed in Amendment 46 in 2017-2018.

The Council is challenged with the quality of recreational data for red snapper and several other species occurring in the South Atlantic region. A primary management objective for the Council is to improve data streams for many recreationally caught species. The Council is considering alternatives for permitting and reporting for fishermen on private recreational vessels. One approach could be self-reported data from anglers. As such, staff is in the process of developing a mobile phone app, MyFishCount, that will allow anglers to electronically report information on landed and discarded fish caught during recreational trips. Another primary objective of the Council is to reduce the number of dead discards through regulations or through best release practices. Both self-reporting and implementing best management practices will benefit from the use of incentives if they are to become common practice among the recreational community.

Council staff will facilitate discussion on recently considered management options (***Attachment 8a***) to implement recreational reporting, improve the survival of released fish, and manage the dive fishery. Staff will give an overview of the catch reporting app and ask the SEP for further input on reports sent to anglers who used the MyFishCount, an electronic recreational reporting platform during the 2017 red snapper mini-season (***Attachment 8b***), and determining angler motivation and participation to recreational report through a survey-based approach (***Attachment 8c***).

## 21.9.3      Presentation

Chip Collier and Kelsey Dick, SAFMC staff

## 21.9.4      Actions

Discuss and provide recommendations to the Council and staff on potential ways to incentivize recreational reporting and best management practices.

Discussion Questions:

1.  Literature indicates the importance of providing information and feedback to citizen science project participants. Is the MyFishCount report messaging and content clear and cohesive? Does the report provide information that would be of interest to anglers?

2.  Limited literature and research exists on angler motivations to recreationally report or participate in recreational reporting projects. This information is important as it can guide outreach and messaging content to ultimately increase participants. Is the survey clear and cohesive? Does the survey aim to answer the research questions provided?

3. Are there other readily achieved social or economic approaches that could be used to incentivize anglers to regularly use the recreational reporting app?

**SEP RECOMMENDATIONS:**

*1. Literature indicates the importance of providing information and feedback to citizen science project participants. Is the MyFishCount report messaging and content clear and cohesive? Does the report provide information that would be of interest to anglers?*

*The SEP recommends providing information on catch in numbers instead of percentages. The SEP encourages the SAFMC to continue to provide information and make clear that the feedback provides information that allows anglers to continue fishing.*

*2. Limited literature and research exists on angler motivations to recreationally report or participate in recreational reporting projects. This information is important as it can guide outreach and messaging content to ultimately increase participants. Is the survey clear and cohesive? Does the survey aim to answer the research questions provided?*

*The angler survey provides an excellent opportunity to collect information on red snapper fishing to support Amendment 46. Respondents could be asked about their behavior related to Amendment 46 alternatives, such as future fishing plans and willingness to purchase a special red snapper license and how many red snapper target trips would be taken under various conditions. The survey itself should follow the economics literature in terms of behavioral questions, including collecting continuous measures of trips or days fished (currently the draft survey includes categorical responses that mask potentially very informative variation within categories). Collecting zip codes for angler residence would allow estimation of an economic demand model to estimate the value of red snapper trips and catch.*

*3. Are there other readily achieved social, economic or marketing approaches that could be used to incentivize anglers to regularly use the recreational reporting app?*

*One suggestion was to move the app into the realm of social media, providing instant feedback about catch, linking it to twitter, etc.*

*Another suggestion was that various types of marketing incentives could be explored to encourage anglers to use the app.  For example,*
   *a. Using the app could give the user a chance to receive a free or reduced-price fishing license the following year or a chance to "win" an increase in his bag limit that season, or the following season.*
   *b. Sport fishing product manufacturers, for-hire fishing businesses, marinas, fishing centers, etc., could provide electronic discount coupons on the app that would simultaneously provide incentives to the app users and advertising opportunities for fishing-related businesses.*

c. *A business could donate a product or service (a fishing boat, or a fishing trip) to SAFMC (or a third party non-profit foundation) (which would perhaps be tax deductible for the business) that would be advertised on the app, and using the app would give the user a chance of winning the product or service (similar to a raffle or lottery).*

d. *If the zip code and catch history of the user are known, then marketing incentives could be auto-tailored/matched to a user's location and catch preferences; for example, if fishing trips were offered as prizes, the user could be shown fishing trips in his region rather than fishing trips in far-away regions, and if the user targets flounder, then the user could be shown ads or prizes that are flounder-related.*

## 21.10 Other Business

*No other business was discussed.*

## 21.11 Opportunity for Public Comment

*There were no public comments.*

## 21.12 Report and Recommendations Review

## 21.13 Next SEP Meeting

- Spring 2019, Charleston SC

# 22. APPENDIX 2

**Stock Projections for South Atlantic Black Sea Bass**
**Requested by the SAFMC's SSC on May 2, 2018**

At the May, 2018 SSC meeting, new projections were requested for SA black sea bass. The SSC requested three modified projections:

Adjust the P* value to 0.375 instead of 0.40, use the recruitment from 1991-2016, and use recruitment from 2013-2016. In the process of running those projections, we found that the initialization was using the 2016 stock size at age instead of the 2017 estimates. We have included corrected projection scenarios provided in the assessment report as well as the new projections requested:

1) $F_{MSY}$ using 1978-2016 recruitment values,
2) P* of 0.375 using 1978-2016 recruitment values (this was previously a P* of 0.4),
3) 75%$F_{MSY}$ using 1978-2016 recruitment values,
4) P* of 0.375 using 2013-2016 recruitment values, and
5) P* of 0.375 using 1991-2016 recruitment values.

Modified projections were carried out as follows:

For the deterministic projections, the geometric mean of the recruitments in the years specified (2013-2016 for Run 4 and 1991-2016 for Run 5) were calculated and used as a fixed recruitment. For the stochastic projections, the geometric mean of the recruits in the years specified from the MCBs was used along with deviations around that mean. These deviations were computed as described in the assessment report. All other methods and protocols are identical to the projections provided previously.

Table 1. Projection results with fishing mortality rate fixed at F = $F_{MSY}$ starting in 2019. R = number of age-1 recruits (in 1000s), F = fishing mortality rate (per year), S = spawning stock (mt), L = landings expressed in numbers (n, in 1000s) or whole weight (w, in 1000 lb), and D = dead discards expressed in numbers (n, in 1000s) or whole weight (w, in 1000 lb), pr.> $SSB_{MSY}$= proportion of stochastic projection replicates with SSB ≥ $SSB_{MSY}$. The extension base indicates expected values (deterministic) from the base run; the extension med indicates median values from the stochastic projections.

| year | R.base (1000) | R.med (1000) | F.base | F.med | S.base (mt) | S.med (mt) | L.base (1000) | L.med (1000) | L.base (1000 lb) | L.med (1000 lb) | D.base (1000) | D.med (1000) | D.base (1000 lb) | D.med (1000 lb) | pr. >SSBmsy |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2017 | 32971 | 30509 | 0.22 | 0.24 | 190 | 196 | 593 | 589 | 792 | 789 | 483 | 454 | 251 | 235 | 0 |
| 2018 | 33556 | 30676 | 0.25 | 0.27 | 204 | 203 | 574 | 571 | 792 | 789 | 662 | 622 | 330 | 309 | 0.006 |
| 2019 | 34366 | 31257 | 0.31 | 0.34 | 226 | 222 | 595 | 605 | 803 | 818 | 980 | 929 | 487 | 462 | 0.054 |
| 2020 | 35003 | 31977 | 0.31 | 0.34 | 246 | 239 | 564 | 573 | 705 | 718 | 1266 | 1178 | 666 | 612 | 0.116 |
| 2021 | 35495 | 32539 | 0.31 | 0.34 | 263 | 256 | 596 | 601 | 695 | 703 | 1323 | 1221 | 709 | 645 | 0.196 |
| 2022 | 35833 | 32973 | 0.31 | 0.34 | 276 | 269 | 647 | 649 | 735 | 739 | 1351 | 1245 | 724 | 658 | 0.268 |
| 2023 | 36045 | 33253 | 0.31 | 0.34 | 284 | 278 | 690 | 691 | 786 | 785 | 1373 | 1265 | 737 | 670 | 0.322 |

Table 2. Projection results with fishing mortality rate fixed at P*=0.375 (which is about 92% of F = $F_{MSY}$) starting in 2019. R = number of age-1 recruits (in 1000s), F = fishing mortality rate (per year), S = spawning stock (mt), L = landings expressed in numbers (n, in 1000s) or whole weight (w, in 1000 lb), and D = dead discards expressed in numbers (n, in 1000s) or whole weight (w, in 1000 lb), pr.> $SSB_{MSY}$= proportion of stochastic projection replicates with SSB ≥ $SSB_{MSY}$. The extension base indicates expected values (deterministic) from the base run; the extension med indicates median values from the stochastic projections.

| year | R.base (1000) | R.med (1000) | F.base | F.med | S.base (mt) | S.med (mt) | L.base (1000) | L.med (1000) | L.base (1000 lb) | L.med (1000 lb) | D.base (1000) | D.med (1000) | D.base (1000 lb) | D.med (1000 lb) | pr. >SSBmsy |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2017 | 32971 | 30509 | 0.22 | 0.24 | 190 | 196 | 593 | 589 | 792 | 789 | 483 | 454 | 251 | 235 | 0 |
| 2018 | 33556 | 30676 | 0.25 | 0.27 | 204 | 203 | 574 | 571 | 792 | 789 | 662 | 622 | 330 | 309 | 0.006 |
| 2019 | 34366 | 31257 | 0.29 | 0.32 | 226 | 222 | 554 | 563 | 748 | 761 | 910 | 862 | 452 | 429 | 0.054 |
| 2020 | 35070 | 32060 | 0.29 | 0.32 | 248 | 241 | 534 | 542 | 669 | 681 | 1181 | 1099 | 623 | 572 | 0.125 |
| 2021 | 35591 | 32640 | 0.29 | 0.32 | 266 | 260 | 571 | 576 | 669 | 677 | 1236 | 1142 | 664 | 605 | 0.215 |
| 2022 | 35948 | 33114 | 0.29 | 0.32 | 280 | 274 | 624 | 626 | 715 | 719 | 1263 | 1164 | 679 | 617 | 0.298 |
| 2023 | 36174 | 33391 | 0.29 | 0.32 | 290 | 283 | 670 | 671 | 769 | 769 | 1286 | 1185 | 692 | 629 | 0.357 |

Table 3. Projection results with fishing mortality rate fixed at F = 75%$F_{MSY}$ starting in 2019. R = number of age-1 recruits (in 1000s), F = fishing mortality rate (per year), S = spawning stock (mt), L = landings expressed in numbers (n, in 1000s) or whole weight (w, in 1000 lb), and D = dead discards expressed in numbers (n, in 1000s) or whole weight (w, in 1000 lb), pr.> $SSB_{MSY}$ = proportion of stochastic projection replicates with SSB ≥ $SSB_{MSY}$. The extension base indicates expected values (deterministic) from the base run; the extension med indicates median values from the stochastic projections.

| year | R.base (1000) | R.med (1000) | F.base | F.med | S.base (mt) | S.med (mt) | L.base (1000) | L.med (1000) | L.base (1000 lb) | L.med (1000 lb) | D.base (1000) | D.med (1000) | D.base (1000 lb) | D.med (1000 lb) | pr. >SSBmsy |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2017 | 32971 | 30509 | 0.22 | 0.24 | 190 | 196 | 593 | 589 | 792 | 789 | 483 | 454 | 251 | 235 | 0 |
| 2018 | 33556 | 30676 | 0.25 | 0.27 | 204 | 203 | 574 | 571 | 792 | 789 | 662 | 622 | 330 | 309 | 0.006 |
| 2019 | 34366 | 31257 | 0.23 | 0.26 | 226 | 222 | 459 | 467 | 621 | 632 | 750 | 711 | 374 | 355 | 0.054 |
| 2020 | 35219 | 32231 | 0.23 | 0.26 | 253 | 246 | 460 | 466 | 579 | 589 | 985 | 916 | 522 | 479 | 0.147 |
| 2021 | 35808 | 32871 | 0.23 | 0.26 | 275 | 268 | 505 | 510 | 599 | 606 | 1035 | 956 | 560 | 509 | 0.265 |
| 2022 | 36208 | 33397 | 0.23 | 0.26 | 291 | 285 | 563 | 565 | 655 | 659 | 1059 | 975 | 573 | 521 | 0.371 |
| 2023 | 36464 | 33724 | 0.23 | 0.26 | 303 | 296 | 612 | 612 | 716 | 716 | 1081 | 997 | 586 | 533 | 0.448 |

Table 4. Projection results with fishing mortality rate fixed at P*=0.375 (which is about 92% of F = $F_{MSY}$) starting in 2019. R = number of age-1 recruits (in 1000s), F = fishing mortality rate (per year), S = spawning stock (mt), L = landings expressed in numbers (n, in 1000s) or whole weight (w, in 1000 lb), and D = dead discards expressed in numbers (n, in 1000s) or whole weight (w, in 1000 lb), pr.> $SSB_{MSY}$ = proportion of stochastic projection replicates with SSB ≥ $SSB_{MSY}$. The extension base indicates expected values (deterministic) from the base run; the extension med indicates median values from the stochastic projections. This projection scenario used recruitments from 2013-2016 to explore the dynamics under a perpetually low recruitment condition.

| year | R.base (1000) | R.med (1000) | F.base | F.med | S.base (mt) | S.med (mt) | L.base (1000) | L.med (1000) | L.base (1000 lb) | L.med (1000 lb) | D.base (1000) | D.med (1000) | D.base (1000 lb) | D.med (1000 lb) | pr. >SSBmsy |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2017 | 17909 | 16281 | 0.22 | 0.24 | 194 | 195 | 592 | 589 | 792 | 789 | 468 | 438 | 250 | 234 | 0 |
| 2018 | 17909 | 16318 | 0.26 | 0.27 | 178 | 178 | 573 | 569 | 792 | 789 | 601 | 563 | 320 | 300 | 0 |
| 2019 | 17909 | 16266 | 0.29 | 0.32 | 166 | 164 | 543 | 551 | 744 | 757 | 716 | 680 | 394 | 374 | 0 |
| 2020 | 17909 | 16341 | 0.29 | 0.32 | 158 | 155 | 482 | 488 | 639 | 649 | 662 | 606 | 361 | 326 | 0 |
| 2021 | 17909 | 16327 | 0.29 | 0.32 | 154 | 151 | 445 | 449 | 574 | 581 | 654 | 599 | 354 | 320 | 0 |
| 2022 | 17909 | 16266 | 0.29 | 0.32 | 152 | 149 | 420 | 421 | 530 | 534 | 653 | 598 | 353 | 320 | 0 |
| 2023 | 17909 | 16286 | 0.29 | 0.32 | 151 | 148 | 403 | 404 | 501 | 502 | 653 | 598 | 353 | 319 | 0 |

Table 5. Projection results with fishing mortality rate fixed at P*=0.375 (which is about 92% of F = F$_{MSY}$) starting in 2019. R = number of age-1 recruits (in 1000s), F = fishing mortality rate (per year), S = spawning stock (mt), L = landings expressed in numbers (n, in 1000s) or whole weight (w, in 1000 lb), and D = dead discards expressed in numbers (n, in 1000s) or whole weight (w, in 1000 lb), pr.> SSB$_{MSY}$ = proportion of stochastic projection replicates with SSB ≥ SSB$_{MSY}$. The extension base indicates expected values (deterministic) from the base run; the extension med indicates median values from the stochastic projections. This projection scenario used recruitments from 1991-2016.

| year | R.base (1000) | R.med (1000) | F.base | F.med | S.base (mt) | S.med (mt) | L.base (1000) | L.med (1000) | L.base (1000 lb) | L.med (1000 lb) | D.base (1000) | D.med (1000) | D.base (1000 lb) | D.med (1000 lb) | pr. >SSBmsy |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 2017 | 27636 | 25640 | 0.22 | 0.24 | 194 | 195 | 592 | 589 | 792 | 789 | 477 | 449 | 251 | 235 | 0 |
| 2018 | 27636 | 25560 | 0.25 | 0.27 | 195 | 194 | 574 | 570 | 792 | 789 | 640 | 602 | 326 | 306 | 0.001 |
| 2019 | 27636 | 25542 | 0.29 | 0.32 | 204 | 201 | 550 | 559 | 746 | 760 | 839 | 798 | 431 | 410 | 0.009 |
| 2020 | 27636 | 25707 | 0.29 | 0.32 | 214 | 210 | 515 | 523 | 658 | 669 | 989 | 925 | 528 | 486 | 0.019 |
| 2021 | 27636 | 25580 | 0.29 | 0.32 | 222 | 218 | 524 | 530 | 635 | 643 | 1008 | 942 | 545 | 501 | 0.027 |
| 2022 | 27636 | 25597 | 0.29 | 0.32 | 227 | 224 | 547 | 550 | 646 | 650 | 1008 | 942 | 545 | 502 | 0.037 |
| 2023 | 27636 | 25583 | 0.29 | 0.32 | 230 | 227 | 564 | 567 | 665 | 667 | 1008 | 942 | 545 | 502 | 0.042 |

Figure 1. Fishing mortality rate fixed at F = F<sub>MSY</sub>, with 2019 as the first year of new regulations. In all panels except the bottom right, expected values represented by solid lines, median values represented by dashed lines, and uncertainty represented by thin lines corresponding to 5th and 95th percentiles of replicate projections. Horizontal lines mark MSY-related quantities from the base run (solid blue lines) and medians from the MCB runs (dashed green lines). Spawning stock (SSB) is at time of peak spawning. In the bottom right panel, the curve represents the proportion of projection replicates for which SSB has reached at least SSB<sub>MSY</sub>.
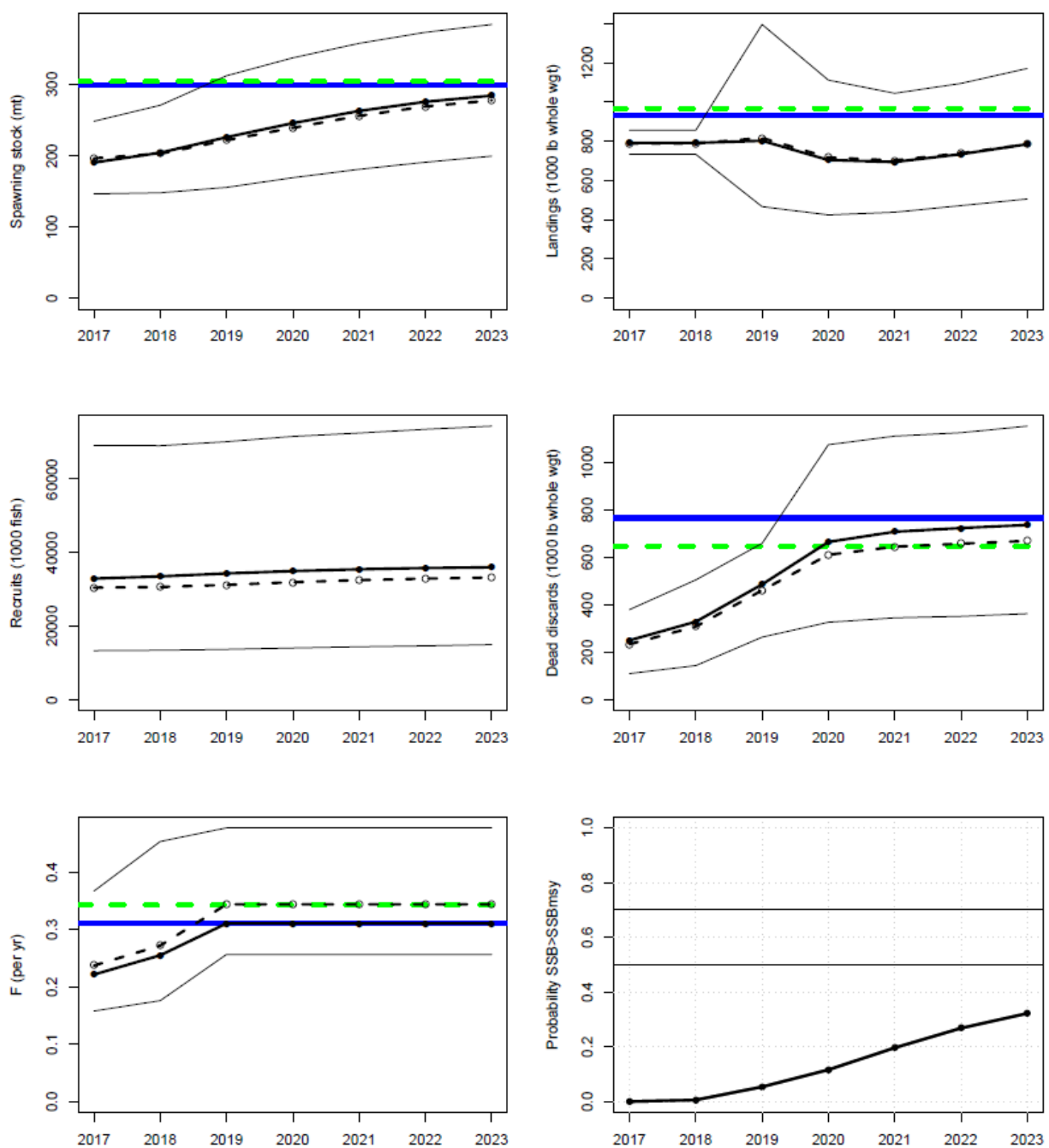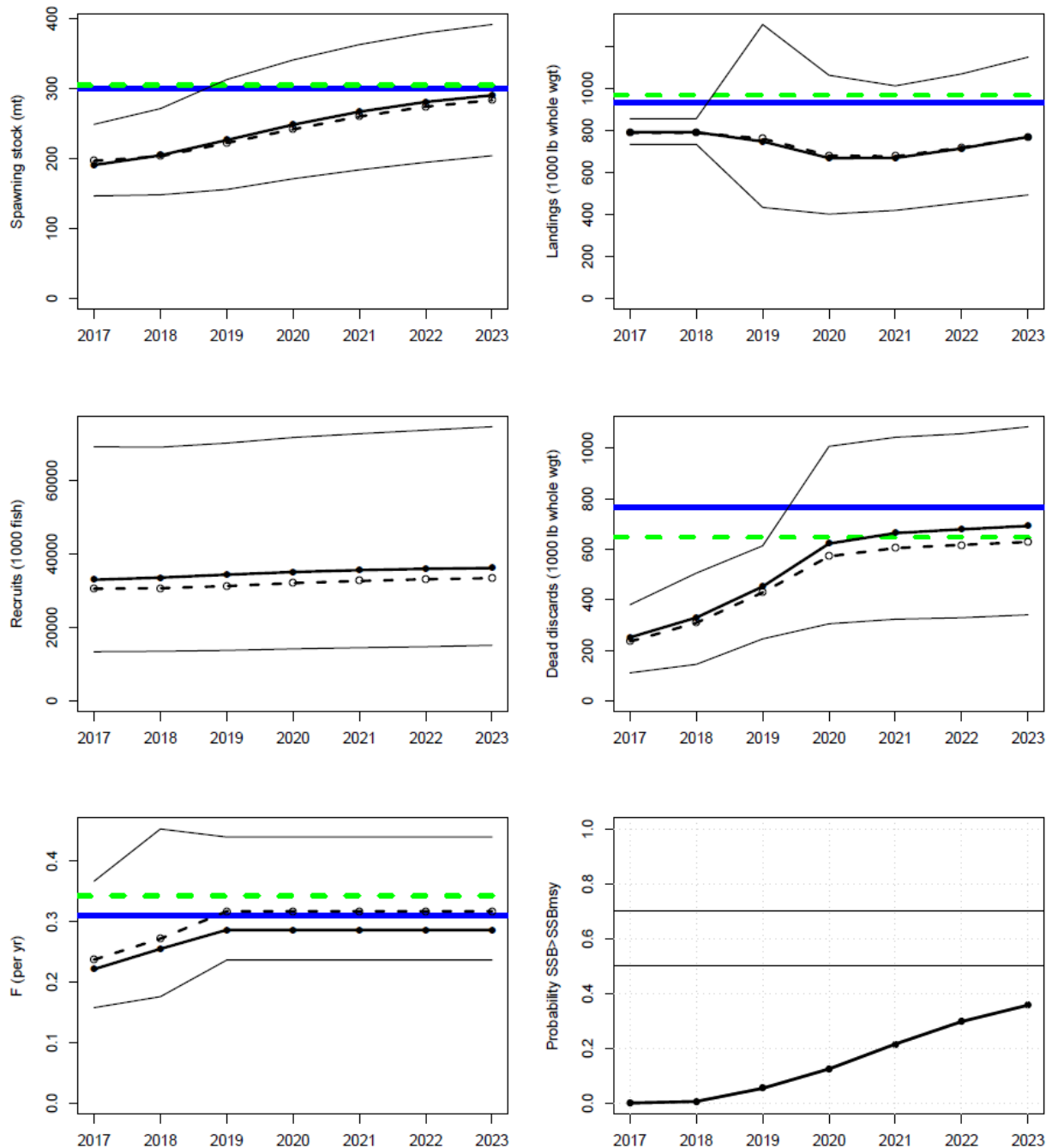
Figure 2. Fishing mortality rate fixed at P* = 0.375, with 2019 as the first year of new regulations. In all panels except the  bottom right, expected values represented by solid lines, median values represented by dashed lines, and uncertainty represented by thin lines corresponding to 5th and 95th percentiles of replicate projections. Horizontal lines mark MSY-related quantities from the base run (solid blue lines) and medians from the MCB runs (dashed green lines). Spawning stock (SSB) is at time of peak spawning. In the bottom right panel, the curve represents the proportion of projection replicates for which SSB has reached at least $SSB_{MSY}$.

Figure 3. Fishing mortality rate fixed at F = 75%F$_{MSY}$, with 2019 as the first year of new regulations. In all panels except the  bottom right, expected values represented by solid lines, median values represented by dashed lines, and uncertainty represented by thin lines corresponding to 5th and 95th percentiles of replicate projections. Horizontal lines mark MSY-related quantities from the base run (solid blue lines) and medians from the MCB runs (dashed green lines). Spawning stock (SSB) is at time of peak spawning. In the bottom right panel, the curve represents the proportion of projection replicates for which SSB has reached at least SSB$_{MSY}$.
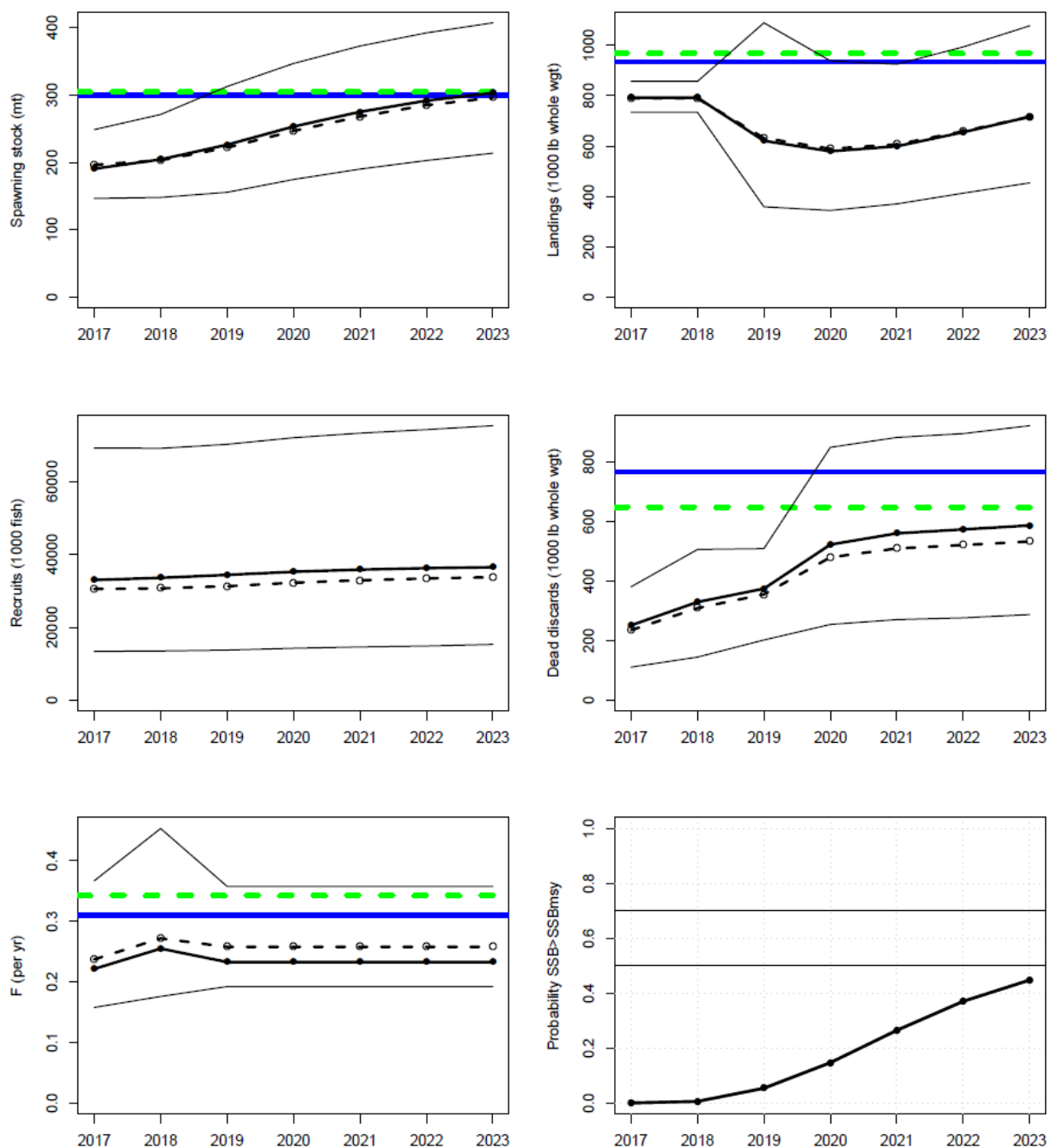
Figure 4. Fishing mortality rate fixed at P* = 0.375, with 2019 as the first year of new regulations. In all panels except the  bottom right, expected values represented by solid lines, median values represented by dashed lines, and uncertainty represented by thin lines corresponding to 5th and 95th percentiles of replicate projections. Horizontal lines mark MSY-related quantities from the base run (solid blue lines) and medians from the MCB runs (dashed green lines). Spawning stock (SSB) is at time of peak spawning. In the bottom right panel, the curve represents the proportion of projection replicates for which SSB has reached at least $SSB_{MSY}$. This projection scenario used recruitments from 2013-2016 to explore the dynamics under a perpetually low recruitment condition.
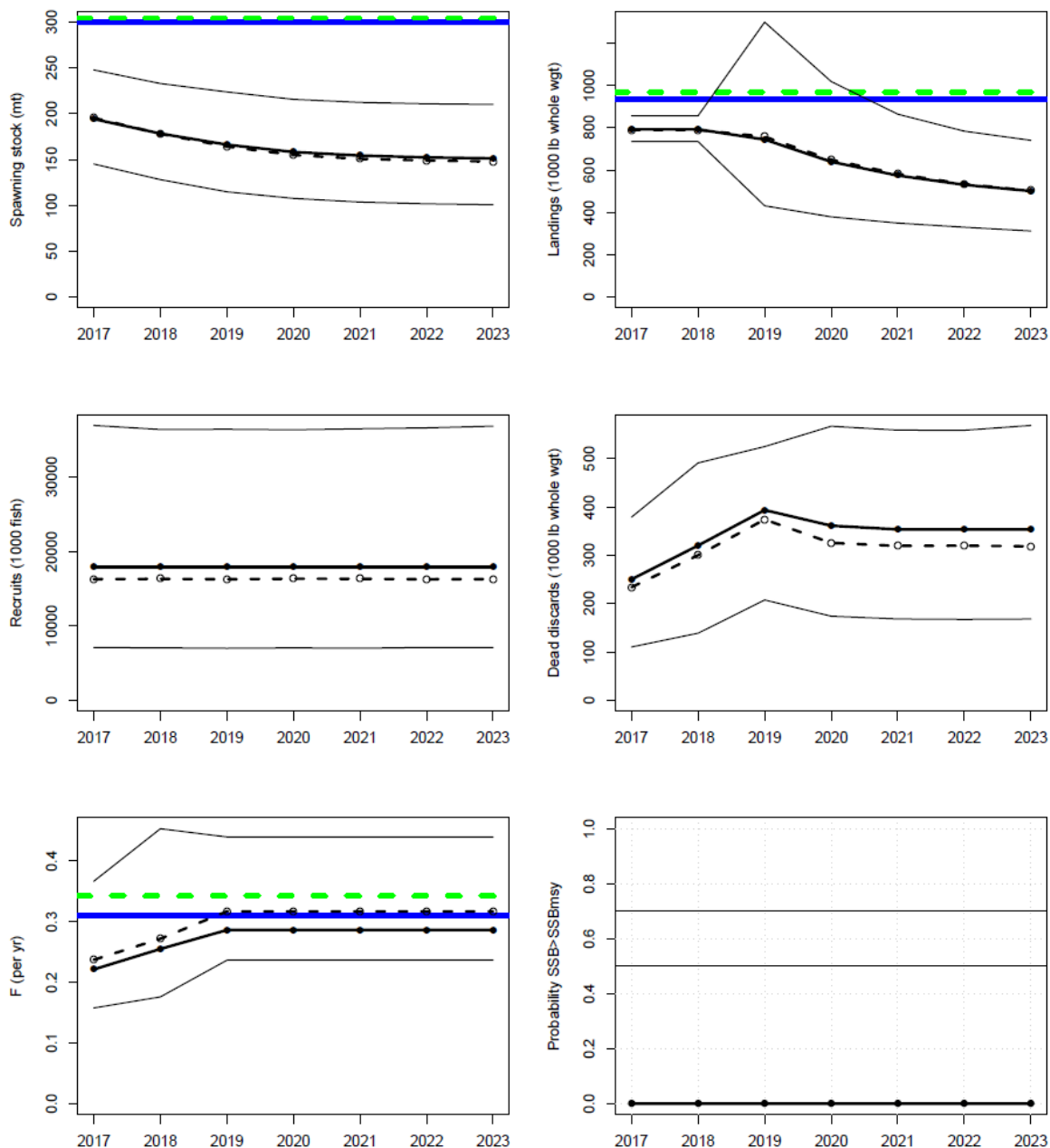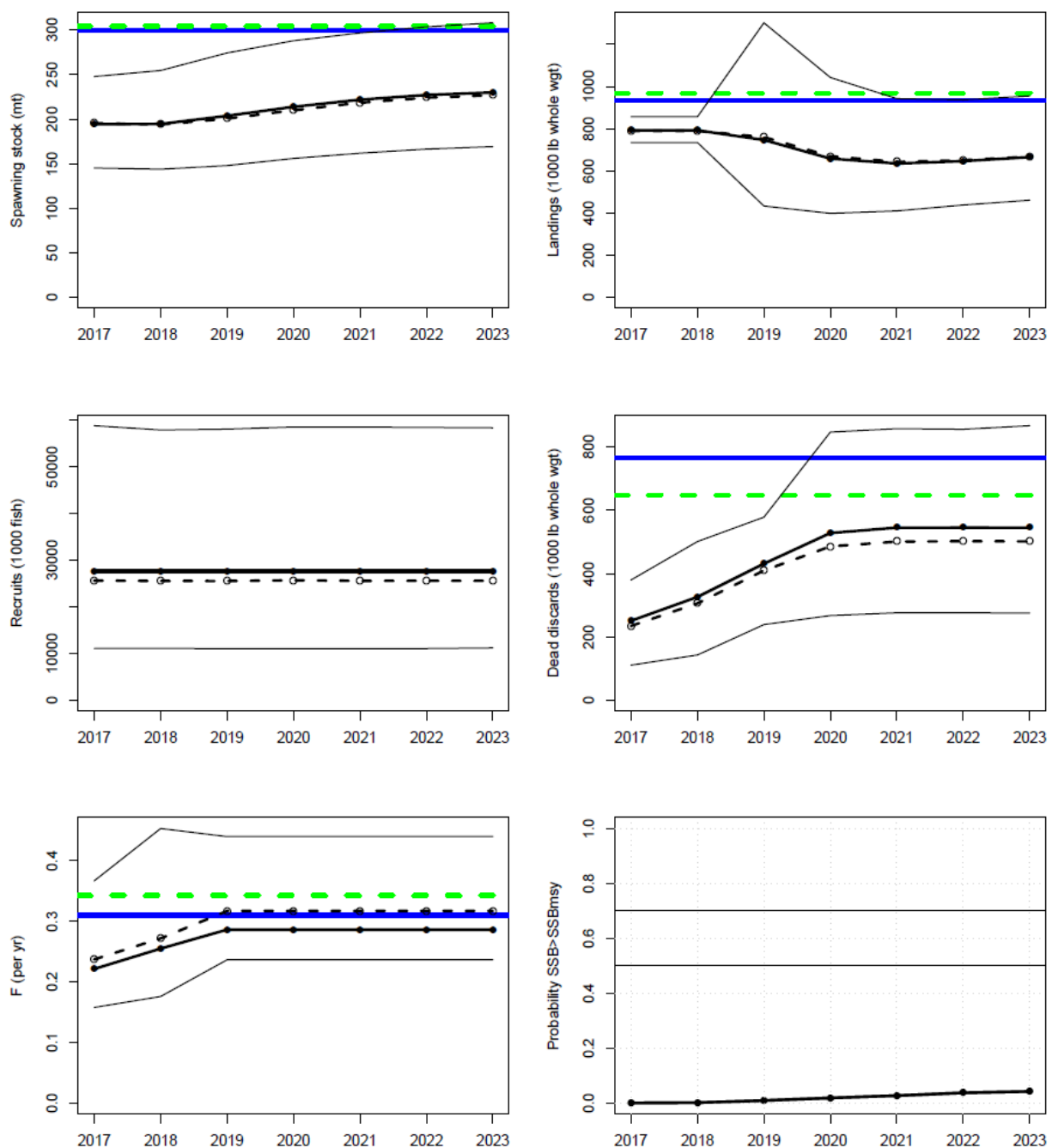
Figure 5. Fishing mortality rate fixed at P* = 0.375, with 2019 as the first year of new regulations. In all panels except the bottom right, expected values represented by solid lines, median values represented by dashed lines, and uncertainty represented by thin lines corresponding to 5th and 95th percentiles of replicate projections. Horizontal lines mark MSY-related quantities from the base run (solid blue lines) and medians from the MCB runs (dashed green lines). Spawning stock (SSB) is at time of peak spawning. In the bottom right panel, the curve represents the proportion of projection replicates for which SSB has reached at least SSB$_{MSY}$. This projection scenario used recruitments from 1991-2016.

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