SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

SSC Meeting Report

February 25, 2019

Meeting via Webinar

VERSION
FINAL
March 27, 2019

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2.1. Documents

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2.2. Presentation

Revision Assessments Overview: Dr. Erik Williams, SEFSC

2.3. Overview

At their October 2018 meeting, the Committee reviewed four assessments that had been revised using the newly calibrated MRIP data (Blueline Tilefish, Red Grouper, Vermilion Snapper, and Black Sea Bass). The consensus of the Committee was that there was not enough information available to adequately review these assessments and fully understand the impacts and ramifications of the use of this new dataset on the model outputs (Attachment 2). Therefore, the Committee requested a webinar be scheduled, prior to their Spring meeting, where the full model diagnostic outputs can be considered for each of the revisions. The Committee also asked that a list of all the data decisions made regarding the MRIP catches during the SEDAR Data Workshop be compiled for each species to evaluate if those decisions are still viable given the new data stream (Attachment 3). Some of the catch trends that resulted from the calibration, which the Committee had questions about, were also investigated. Below is a review of the four species whose recent SEDAR assessments were revised.

Blueline Tilefish

A benchmark assessment for Atlantic Blueline Tilefish (SEDAR 50) was completed in October 2017, with data through 2015. Due to a large spatio-temporal change in how the fishery operated in the latter part of the assessment and the fact that age determination was too uncertain to be used in the assessment, the Blueline Tilefish stock had to be assessed as two separate units and by different assessment methods for each unit. This unique approach to assessing this stock made it impossible to determine stock status at this time.

Some of the biggest concerns for this stock were the lack of data and the splitting of the recreational data at Cape Hatteras (where the 2 units were split). There were very few intercepts of Blueline Tilefish, resulting in odd landings and discard spikes in the data. One such data point, charter discards from NC for 2007, was so out of line with the surrounding data that it was replaced with the average of the surrounding years.

The unit south of Cape Hatteras was assessed using an age aggregated Production Model and the ABC for that portion of the stock was determined using traditional projections with OFL recommended at $F=F_{MSY}$ and ABC at P*=0.3 through 2020.

A workgroup of both South Atlantic and Mid-Atlantic SSC members was formed to develop a method for determining an ABC for the unit north of Cape Hatteras and developing a means of splitting that ABC between the South Atlantic and Mid-Atlantic jurisdictions. The OFL and consequently ABC was determined using Mean Length estimators from the DLMTool. A pilot trawl survey was used to allocate that ABC between the South Atlantic and Mid-Atlantic. The ABC was determined as being at P*=0.125 and the MAFMC:SAFMC split was determined to be 56%:44%. The SSC recommended this ABC for no longer than 3 years.

Table 1. OFL and ABC of Blueline Tilefish in South Atlantic waters from the original SEDAR 50 in pounds whole weight.

Year	South Hatteras		North Hatteras		Total South Atlantic	
	OFL	ABC	OFL	ABC	OFL	ABC
2018	230,000	172,000	103,985	78,980	333,985	250,980
2019	227,000	175,000	103,985	78,980	330,985	253,980
2020	225,000	178,000	103,985	78,980	328,985	256,980

Red Grouper

A SEDAR standard stock assessment for South Atlantic Red Grouper (SEDAR 53) was completed in February 2017, with data through 2015, that indicated the stock was overfished and undergoing overfishing. The results of the assessment showed that rebuilding would not be possible by 2020, which is the terminal year of the current rebuilding plan, even with no fishery present (F=0) and the stock would likely take until at least 2030 to rebuild at F=0. The SSC reviewed SEDAR 53 at their April 2017 meeting and stated that the assessment is based on the best scientific information available.

In June 2017, after SEDAR 53 was reviewed by the SSC, the Council requested that the Southeast Fishery Science Center (SEFSC) produce rebuilding projections for Red Grouper based on SEDAR 53. The Council's SSC reviewed four rebuilding projections produced by the SEFSC at their October 2017 meeting. The projections were based on fishing mortality rates of F_{MSY} and $F_{Rebuild}$, each with long-term expected recruitment and low recruitment scenarios. Due to poor recruitment trends for the stock in recent years, the SSC recommended the projections at F_{MSY} and the low recruitment scenario for the overfishing limit, and projections for $F_{Rebuild}$ under the low recruitment scenario for the ABC, for the short term (next 5 years). The SSC noted that recruitment could increase in the future and become consistent with long-term levels that the stock is predicted to produce.

Table 2. Red Grouper OFL and ABC projections at low recruitment scenario from the original SEDAR 53 in pounds whole weight.

Year	OFL	ABC
2018	183,000	139,000
2019	191,000	150,000
2020	202,000	162,000
2021	212,000	176,000
2022	223,000	189,000

Vermilion Snapper

The SSC reviewed the Standard assessment for Vermilion Snapper prepared through SEDAR 55 at their May 2018 meeting. SEDAR 55 was completed in April 2018, with data through 2016, and found that the Vermilion Snapper stock in the South Atlantic was neither overfished nor undergoing overfishing. The SSC did comment on several uncertainties, such as the headboat index dropping dramatically in 1992, when there is a management change, and most likely not tracking the population abundance as it did prior to that time. Also, there was an issue fitting the CVID index, especially at the end of the time series, due to a disconnect between the age comps from the CVID index and those from the landings. The SSC recommended projections for the OFL at $F=F_{MSY}$ and for the ABC at $P^*=0.4$ for no more than 5 years.

Table 3. Vermilion Snapper OFL and ABC projections from the original SEDAR 55 in pounds whole weight.

Year	OFL	ABC
2019	1,810,000	1,579,000
2020	1,614,000	1,478,000
2021	1,486,000	1,408,000
2022	1,412,000	1,362,000
2023	1,371,000	1,336,000

Black Sea Bass

The SSC reviewed the Standard assessment for Black Sea Bass prepared through SEDAR 56 at their May 2018 meeting. SEDAR 56 was completed in April 2018, with data through 2016, and found that the Black Sea Bass stock in the South Atlantic was neither overfished nor undergoing overfishing. However, the SSC noted that the terminal Spawning Stock Biomass (SSB) was only slightly above Minimum Stock Size Threshold (MSST) and trending downward. Recruitment (R) was also trending downward in the last few years.

The SSC commented on several uncertainties for Black Sea Bass. In the terminal year of the assessment, 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, which was significantly lower than all other years 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 SSC also mentioned the lack of all fishery-dependent indices at the end of the time series, where the fishery-independent index indicated the largest changes have occurred in population size. Also, that the selectivity of the Chevron trap vs. the video index may differ, especially under situations of high R.

The SSC did have concern over which R was to be used for projections. The R estimated from the Stock-Recruitment relationship was significantly higher than the realized R in the latter part of the assessment, especially since the terminal SSB was so close to the MSST. Ultimately, the SSC recommended using the average R from 1991 to the terminal year for projections to determine the ABC. The OFL was recommended as standard projections at $F=F_{MSY}$. The ABC was recommended as projections using the R pattern from 1991 to the terminal year with a P*=0.375. These values should be in place for no longer than 3 years.

Table 4. Black Sea Bass OFL and ABC projections from the original SEDAR 56 in pounds whole weight.

Year	OFL	ABC
2019	818,000	760,000
2020	718,000	669,000
2021	703,000	643,000

2.4. Action

General

- Are the revised assessments recommended as Best Scientific Information Available?
  - *The Committee was unable to reach a consensus regarding the revised assessments being BSIA.*
  - *The assessment revisions were well done.*
  - *The resulting decisions made were reasonable under the constraints imposed on the analysts.*
  - *Generally, the information provided by the analysts is very helpful.*
  - *SSC Recommendation: The SSC will discuss this question further at their April meeting and will provide additional guidance at that time. Topics for the April discussions include the following:*
    - *The SSC still has questions regarding the implementation of FES and the implications of the new survey on catch estimates. The Committee understands that the design of the MRIP surveys (APAIS and FES) underwent thorough review by the National Academy of Science and received high marks. However, unexpected issues with implementation of*

FES-based recreational catch estimates (i.e., issues that are beyond the survey design such as possible non-response bias or hidden bias) could be causing problems that require additional fine-tuning or adjustments.

- *Reef fish-specific recreational fishing surveys developed in close collaboration with MRIP staff and their statistical consultants to supplement the general MRIP survey in the Gulf of Mexico (i.e., to treat the reef fish component of the fishery as a specific stratum and then generate more precise estimates that can be integrated with results from the general survey) are generating very different estimates for reef fisheries from the FES-based general MRIP.*
- *If there are hidden biases, or potential biases, that could be identified for the FES, professional statisticians (MRIP consultants) currently looking into this could develop specific recommendations that would then be applied to the SEDAR process for the SSC to subsequently consider.*

- *Because identification of the issues associated with FES-calibrated MRIP data may require further testing or additional analyses, the SSC is not sure at this point of how concerns regarding higher uncertainties or potential biases should be handled in these assessments (besides pointing them out). However, the Committee feels that, as presented, the revisions are likely unable to account for the higher level of uncertainty in the FES-calibrated data due to the constraints put on the analysts in the revision framework (i.e., these assessments did not follow the regular SEDAR assessment process). The Committee is particularly concerned with exacerbated impacts on data-poor and rare-event fisheries (e.g., Blueline Tilefish) caused by the revised FES estimates, and the outcomes on stock status.*

- *Concern with the calibrated Florida East Coast Shore mode effort being over three times higher than the calibrated Private Boat mode effort (Figures 1 & 2).*
  - *Shore effort has increased to a much greater extent (6-7x) on the Eastern Coast of Florida as compared to the Gulf Coast (3-4x).*
  - *Questions that need to be addressed include:*
    - *What change in the model caused the large difference for the Florida East Coast?*
    - *Is the model change reasonable in this case?*
    - *The baseline assumption is that the model change was reasonable, since the FES survey design underwent NAS review; nevertheless, we should identify the specific model change that led to the large revision in model results. Further, data anomalies or survey implementation problems (such as potential non-response bias) that are difficult to identify before a survey is fully implemented could indicate that,*

although the FES design is scientifically-sound, adjustments to the survey instrument or other survey operational tools might be needed.

- *Are the model outcomes that resulted from the model change reasonable in this case (are they consistent with any other available, corroborative data)? If not, why not? If yes, then do we anticipate that the model change will lead to similar, large revisions in general (for other species and locations)? If not (that is, if East Florida was just an anomaly), then it's not a big problem for the future. If yes, then we need to develop a clear explanation of why model results/revisions such as those produced for East Florida are theoretically/statistically better, how they better reflect patterns in the existing data for East Florida, how they better reflect patterns in any corroborative data (state beach tourism numbers, etc.), and why we might expect to see similarly large revisions in other locations and for other species in the future.*

  - *Florida, as well as other Gulf states, has additional effort surveys that can be used to compare to the estimates of the FES effort, allowing investigation of whether Reef Fish can be treated as their own stratum.*
  - *This issue is currently being investigated by Gulf states, the MRIP program, and NOAA's office of Science and Technology.*

- *Not using the new FES data ignores the increased catch of the recreational sector, which may have a large impact on the stock in situations where recreational catch is a large portion of the total.*
- *SSC Recommendation: The new FES data should be incorporated in a formal SEDAR assessment for each species.*
  - *Specify uncertainties in assessment TORs for analysts to explore.*
  - *Explore how the FES data relate to individual species assessments.*
  - *Since the new FES data can have significant impacts on the reference points and stock status, the SSC would like to have these data fully vetted and reviewed to ensure there are no unforeseen issues.*
- *New FES data did not have the benefit of going through a SEDAR Data Workshop and being evaluated by the DW panel for outliers and other issues.*
  - *Outlier empirical data points can have a large influence on model outcomes.*
  - *SEDAR process should develop a protocol for identifying and treating outliers in a manner that can be determined by the SSC to be BSIA.*
    - *What decision rule should we use to identify outliers, and how should model outcomes be adjusted to account for outliers?*

- Recommend projections or further information necessary to make fishing level recommendations at the Spring 2019 meeting.

- *The SSC did not recommend the use of these revision assessments for making fishing level recommendations at this point.*

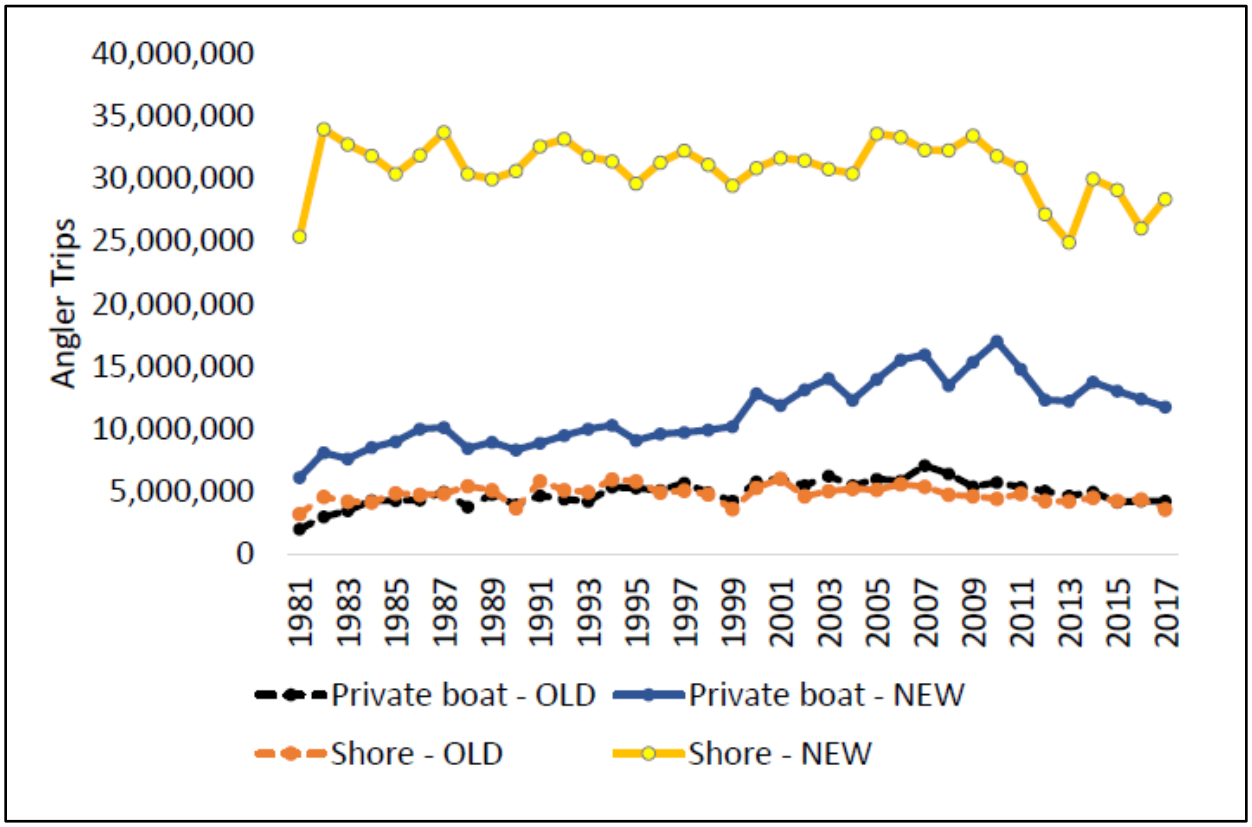

Figure 1. East Florida Angler Trips (Shore ~ 7x higher; Private ~ 2.5x higher).

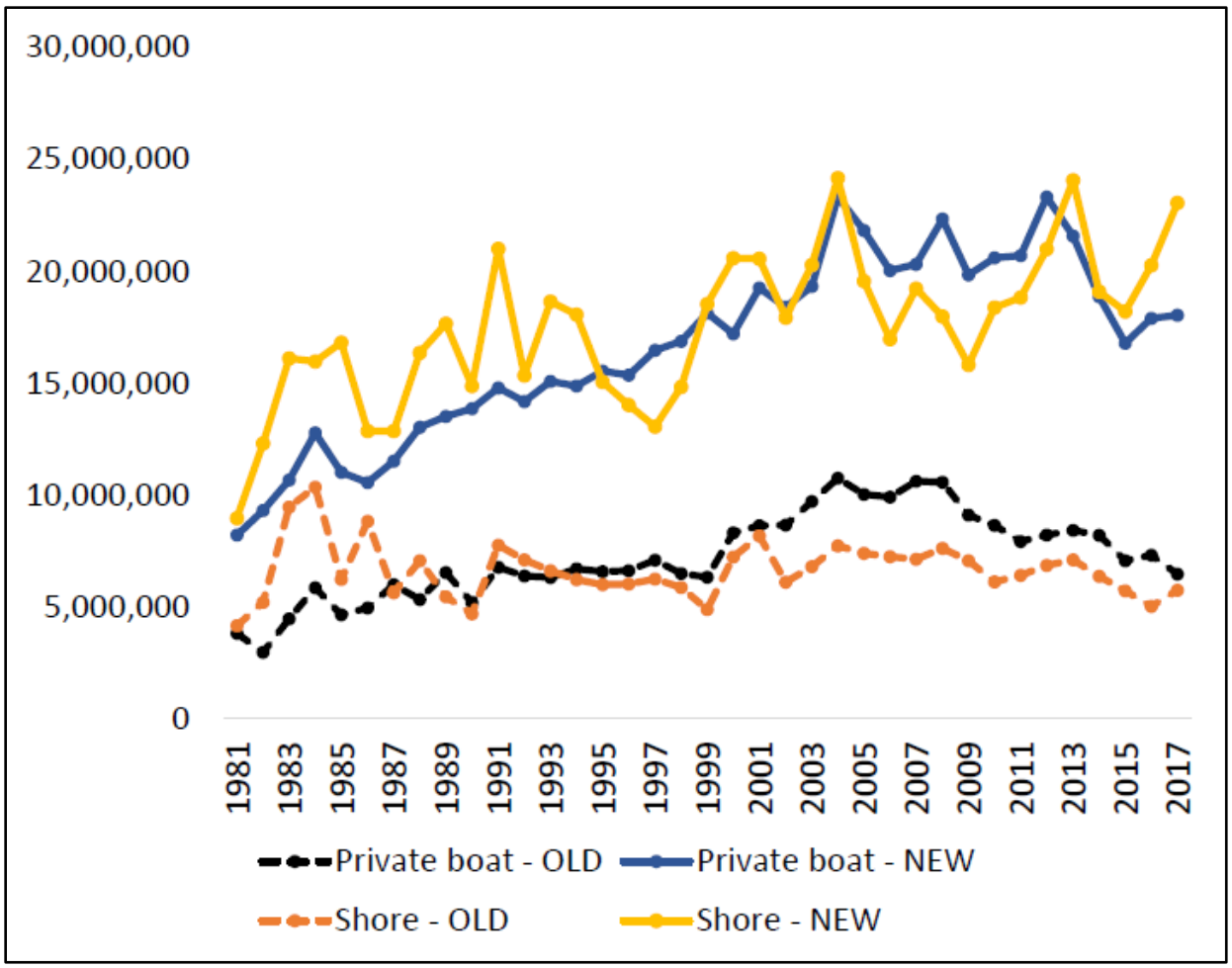

Figure 2. West Florida Angler Trips (Shore ~ 2.5x higher, PR ~ 2.7x higher).

Blueline Tilefish

- What impact did the revised data have on measures of assessment uncertainty?
  - *The use of golden Tilefish and Snowy Grouper as proxies for calculating the conversion factor for Blueline Tilefish adds to the already high degree of uncertainty (see original SSC assessment report) in this assessment.*

Red Grouper

- What impact did the revised data have on measures of assessment uncertainty?

Vermilion Snapper

- What impact did the revised data have on measures of assessment uncertainty?

Black Sea Bass

- What impact did the revised data have on measures of assessment uncertainty?

3. OTHER BUSINESS

- *Council staff informed the SSC that another volunteer would be required for the Cobia Data Workshop. Due to the rescheduling of that workshop, Alexei Sharov will no longer be able to attend. Council staff will send an email with further details.*

4. REPORT AND RECOMMENDATIONS REVIEW

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

A presentation of the consensus points will be provided to the Council by 9 am on Monday, March 4, 2019 (approximately 1 week from the end of the meeting) for discussion at the March Council meeting.

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