SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SCIENTIFIC AND STATISTICAL COMMITTEE

SSC Meeting Final Report - Revised

October 22-24, 2024

Hotel Indigo Mount Pleasant

250 Jonnie Dodds Blvd.

Mount Pleasant, SC 29464

VERSION
FINAL – REVISED
4/15/2025

CONTENTS

DOCUMENTS

*Indicates materials not available for briefing book at time of posting. These materials were added to the recent materials section when available.

TABLES AND FIGURES

SAFMC PUBLIC COMMENT PROCESS

Written comment:

Written comments on SSC agenda topics could be provided to the Committee through an online form, similar to all other Council briefing materials. Written comment could be submitted at this link. For this meeting, the deadline for submission of written comments was 10:00 a.m., October 24th.

Verbal comment:

Two opportunities for comment on agenda items were provided at set times during SSC meetings. The first at the beginning of the meeting, and the second near the conclusion. Those wishing to comment indicated such in the manner requested by the Chair, and were then recognized to provide comment.

An opportunity for comment on specific agenda items was also provided as each item came up for discussion. Comments were taken after all the initial presentations were given and questions from the SSC answered, but before the SSC started making recommendations to address the action items. As before, those wishing to comment indicated such in the manner requested by the Chair, who would then recognize individuals to provide comment. All comments are part of the record of the meeting.

Meeting Format:

This meeting was held in-person at Hotel Indigo Mount Pleasant, 250 Jonnie Dodds Blvd., Mount Pleasant, SC. Online registration for the meeting could be found at the Council's website: https://safmc.net/scientific-and-statistical-committee-meeting/

1. INTRODUCTIONS

1.1 Documents

Attachment 1a. SSC October 2024 Agenda
Attachment 1b. Minutes from the August 2024 meeting
Attachment 1c. August 2024 Meeting Final Report

1.2 Action

- Introductions
  On behalf of the Committee, the Chair congratulated fellow SSC member Dr. Amy Schueller on receiving a NOAA Fisheries Bronze Award for her work on spatial stock assessment research.
- Review and approve agenda.
  The agenda was approved with one minor change: move agenda item 14 to the first item to be discussed on Thursday.
- Approve minutes from August meeting.
  Minutes were approved.

2. PUBLIC COMMENT

The public was provided this comment period for any general comments pertaining to any items on the agenda. There was also time provided for public comment during each specific agenda item as they were discussed. Those wished to make a comment indicated their desire to do so to the Committee Chair.

No written comments were submitted, and no public comments were provided at the beginning of the meeting.

3. ABC-CR AND STOCK RISK RATINGS

3.1 Documents

*Attachment 3a. South Atlantic ABC-CR Presentation
Attachment 3b. Comprehensive ABC-CR Amendment
*Attachment 3c. ABC-CR Quick Reference
Attachment 3d. ABC-CR Risk Tolerance Spreadsheet

3.2 Presentation

SAFMC Staff

3.3 Overview

The South Atlantic FMC in collaboration with their SSC recently developed a new ABC Control Rule (ABC-CR) amendment applicable to the Snapper-Grouper, Dolphin-Wahoo, and Golden Crab fishery management plans. The new ABC-CR categorizes stocks based on the available information and scientific uncertainty evaluation and incorporates the Council's risk tolerance

policy through an accepted probability of overfishing (P*). The Council will specify the P* based on the relative stock biomass output from an updated stock assessment and a stock risk rating that is developed using a variety of biological, social, economic, and environmental indicators. The new ABC-CR was developed to increase flexibility and adaptability in accounting for uncertainty through both the scientific and management process, to incorporate phase-in and carry-over provisions, and to provide a mechanism for categorizing uncertainty in data-limited and unassessed stocks.

The stock risk rating matrix is compiled from SSC and Advisory Panel input based on available information from SEDAR stock assessment reports, commercial and recreational databases, fishery performance reports, and social and economic indicators. The scoring matrix from the SSC and AP is aggregated and approved by the Council before the completion of a new stock assessment and along with the relative stock biomass estimate provides the accepted probability of overfishing (P*). The template for the stock risk ratings is included as Attachment D and will be updated with available information to help inform the scoring during the meeting.

The SSC received a refresher on the new ABC-CR amendment and provide input on the stock risk ratings metrics for Tilefish, Blueline Tilefish, Mutton Snapper, Yellowtail Snapper, and Red Snapper.

3.4 Public Comment

3.5 Action

- Received refresher on the new South Atlantic ABC-CR
  - *The SSC voiced several concerns over the process of applying the new ABC-CR:*
    - *When adjustments to the risk ratings are made after going through the risk matrix, it is critical that there is consistency in how the SSC, AP, or Council make those P* adjustments.*
    - *Management risk and scientific uncertainty are more intertwined in the new ABC-CR, making it difficult to isolate scientific uncertainty from management risk.*
    - *It was not entirely clear to a number of SSC members how the uncertainty output from the assessment MCBE approach is considered in the ABC-CR. It was explained that the assessment risk is included in the ABC recommendation as the impact the distribution of the uncertainty in the OFL will have on applying the P*. Given a certain P*, a narrow distribution (smaller CV, less uncertainty) will result in a smaller buffer relative to a broader uncertainty distribution.*
    - *Other methods for characterizing uncertainty such as the Ralston method, can be used as part of the new ABC-CR. The Ralston method measures uncertainty among repeated assessments by quantifying changes in terminal biomass estimates over time to summarize variation as a proxy for model specification error, which then informs*

appropriate buffer sizes in the harvest control rule. As such, it accounts for both estimation and model specification error, and thus more fully characterizes uncertainty in stock assessment outputs (See A meta-analytic approach to quantifying scientific uncertainty in stock assessments. Ralston et al., Fishery Bulletin 109: 217–231, 2011).

- *The SSC recommended that Staff compare the performance of the new ABC-CR vs the old ABC-CR method from previously completed assessments to gauge performance and consistency.*
- *For the biological attributes in the stock risk ratings, the two basic biological parameters (natural mortality, age at maturity) are appropriate, but the SSC mentioned to possibly consider adding a recruitment attribute in a next ABC-CR iteration.*
- *There is a need to develop procedures to apply the ABC CR to Category 2 to 4 stocks. This process should commence soon.*
- *The SSC recommended clarifying some of the language in the Stock Risk Rating table.*
  - *"Recreational desirability" could be modified to "recreational importance". A species could be very desirable to the recreational fishers, but due to management regulations, they would not be allowed to target them. The criteria in the rubric deal with percentage of targeted trips, which could be a function of desirability and/or regulations.*
  - *There was some concern how scoring in "Ecosystem importance" was potentially applied and what additional tools may be available to help with guiding a decision (turned on/off) when not a lot of info may exist for some species. Specific examples that may be helpful were the Ecopath model space for the South Atlantic and the climate vulnerability analysis.*
  - *For species that go across management boundaries (i.e., mid vs. south Atlantic) there could be fishery independent sampling programs outside our region that may indicate expansions.*
  - *The SSC would like some clarification on the "Annual Commercial Value" and "Social Concerns" categories. Specifically, should ratings be based on current conditions or expected conditions when a stock is fully rebuilt. For example, the number of communities reliant on a given species (e.g., Red Snapper) will likely vary depending on stock status and current regulations.*
  - *For the "Social concerns" category there was also discussion on how to consistently apply this across species (especially for those species that may be more limited in distribution but are important for the areas that they occur). The social concerns elements could be more clearly described in the risk tolerance spreadsheet description so that*

what is assessed for each species by community/county can be more easily determined.

- Update stock risk ratings for Tilefish, Blueline Tilefish, Mutton Snapper, Yellowtail Snapper, and Red Snapper.
  - *Under the new ABC-CR, the SSC recommended the stock risk rating for the five listed species (see Appendix B for details):*
    - *Tilefish: High risk*
    - *Blueline Tilefish: High risk*
    - *Mutton Snapper: High risk*
    - *Yellowtail Snapper: High risk*
    - *Red Snapper: High risk*

4. SEDAR PROCESS UPDATE AND KEY STOCKS

4.1 Documents

*Attachment 4a. SEDAR Process Changes Presentation
*Attachment 4b. Key Stocks Discussion Presentation
*Attachment 4c. Key Stocks Report SEDAR Committee

4.2 Presentation

Julie Neer, SEDAR; and SAFMC Staff

4.3 Overview

The SEDAR steering committee has recommended numerous changes to the SEDAR process for conducting stock assessments to improve throughput and timeliness in providing management advice. These proposed changes were developed by the SEFSC with the input of the Gulf of Mexico and South Atlantic Councils cooperators based on the respective Council and SEFSC objectives and priorities. SEDAR staff will provide a summary of the SEDAR goals and objectives, the need for modification to the current process, the goals and objectives for the proposed changes, and the SSC's roles in the proposed process.

A fundamental component of the proposed changes involves the selection of "key stocks" for each region, which are intended to represent those stocks that 'drive' the fishery and provide a subset that can indicate conditions of the fishery and stocks of a larger complex (e.g. snapper-grouper). The Council and SEFSC have compiled a preliminary list of the proposed key stocks for the South Atlantic region and are seeking feedback from the SSC on the identification of key stocks for regular assessment scheduling, the criteria and information necessary for the determination of the key stocks, and any recommended changes to the proposed list.

4.4 Public Comment

No public comment was provided.

4.5 Action

- SEDAR process changes and role of SSC
  - Provide guidance on the structure of the proposed assessment process:
    - Other components to include (in addition to data workshops, assessment webinar, stock ID, peer review, process panels or topical working groups)?
      - *Recommend retaining the Scope of Work (or similar) stage to specify assessment components and needs prior to drafting of the Terms of Reference.*
      - *The time needed to complete an assessment will depend on the complexity of the assessment (e.g. compare old benchmark vs. update). Does a proposed schedule allow for sufficient flexibility in the timing?*
    - Recommend data or assessment topics to be included in the process.
      - *Make sure to maintain any data progress from previous assessments to increase efficiency in data procurement.*
      - *Leave one analyst slot open for "as-needed" or "wild-cards" to address unplanned assessment responses needed or address assessment for non-key stocks.*
      - *The SSC expressed some resistance to the removal of the standardized nomenclature on account that maximizing production typically comes with standardization. There was concern that this will increase ambiguity in SSC roles and expectations and new structure will make anticipated SSC workload commitments more uncertain.*
      - *Leverage other partners (e.g., state agencies, academic institutions) to conduct assessments to expand capacity, where possible.*
      - *It seems that the timely availability of data is a critical factor, and often a bottleneck, in the assessment process and timing. This needs to be addressed if the new scheduling and assessment format is to be successful.*
      - *For certain stocks, a less complex assessment method or model can be applied that may provide more timely results. The trade-off between timeliness and a potentially higher uncertainty with these methods will need to be considered.*
      - *Consider if a species with similar life histories could be assessed as a complex, reducing the number of "slots" needed.*

- Key Stocks Discussion:
  - Support identifying key stocks for regular assessment scheduling? Support fixed, long-term scheduling of key stocks?

- What are the foreseeable benefits/drawbacks to this approach?
  - *There is no "slot" for non-key stocks in the current schedule.*

- What information would guide the criteria for the determination of key stocks (e.g. landings trends, life history information, indices, etc.)?
  - *Additional information to consider: economic information, status determination criteria, available data, availability and timeliness of fisheries-independent indices, recruitment trends, age validation. Also, data on landings by weight and numbers for all of the species can be used to get a sense of the main drivers, a percentage breakdown over time might be a good visual for this.*
  - *Volatility of key assessment outputs – the more volatile stocks would need to be assessed more frequently.*
  - *A full list of criteria for a "key stock" determination would assist setting priorities.*
- What information is needed for the SSC to provide catch level recommendations vs. what is needed for a stock 'health check'?
  - *Catch level recommendations: Stock status with uncertainty estimates.*
  - *Health Check: All available updated data, but at a minimum: index trends, catch trends, economic information, if season was closed (ACL reached) or ratio landings/ACL.*
  - *The stocks assessed by FWRI (or other partners) are part of the SSC workload and should be added to the overall schedule.*
- Does the SSC recommend interim analyses, updates, or other methods for the 'UM' segments?
  - *Any of the mentioned methods, depending on available time and data. The more comprehensive methods may reduce uncertainty but may take more time to complete.*

- Does the SSC recommend any changes to the proposed key stocks based on information identified above?
  - *The SSC mentioned Gray Triggerfish and White Grunt (two species with good information including landings, life history, fishery independent index), but the committee realized that other species would have to be removed.*

5. SPR PROXIES IN SOUTH ATLANTIC STOCK ASSESSMENTS

5.1 Documents

Attachment 5. SPR Proxies Presentation

5.2 Presentation

Erik Williams, SEFSC

5.3 Overview

The SAFMC has requested the SSC review scientific information and provide thorough rationale for using the recommended spawning potential ratio (SPR) proxies for maximum sustainable yield (MSY) in South Atlantic stocks as status determination criteria. For most current South Atlantic fishery management plans, the MSY proxy had historically been set at F30%SPR (Comprehensive Amendment, 1998), but recent technical guidance on National Standard 1 from NMFS has indicated that the SPR proxy should be re-evaluated with each new stock assessment as scientific information has evolved over time. The SEFSC will provide a presentation on SPR proxies for the South Atlantic. The SSC should review this presentation and provide a thorough rationale and scientific justification for using recommended proxies in stock assessments and for management. The Council's request for this rationale stemmed from discussion of the Black Sea Bass stock assessment review but would be applicable for other stocks moving forward.

5.4 Public Comment

No public comment was provided

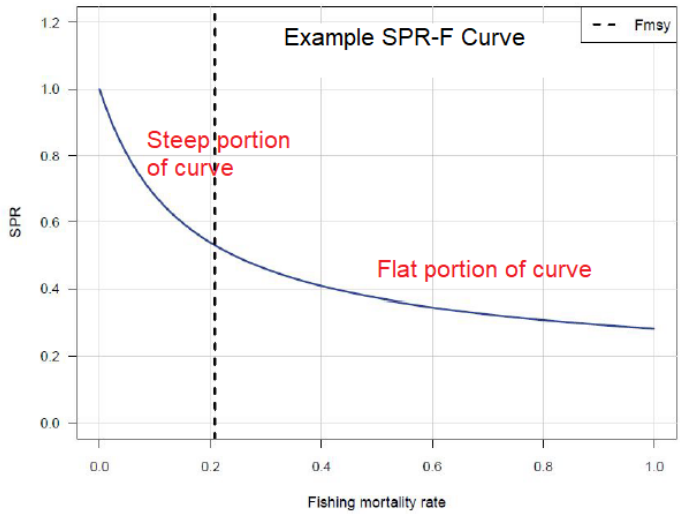
5.5 Action

- Review presentation on SPR proxies for South Atlantic stocks
  - *If one can estimate MSY and the stock-recruitment relationship well, then MSY based reference points are preferable to SPR proxies.*
  - *Although scientific literature recommended SPRs in the 20%-40% range in the 1990s, since 2000 the scientific literature has recommended SPRs in the 40%-60% range. A recent review study (Zhou 2020) found mean SPRmsy was 47% for all the species in a large fisheries life history database (RAM Legacy Database), with 64% of stocks having a SPRmsy > 40%.*
  - *Most SPR proxies currently in use in the US range between 30% and 50%. NOAA Technical Guidance (see Dr. Rick Methot's presentation from a previous SSC meeting) on the SPRs that would be consistent with NS1, recommends SPRs in the range of 30%-60%, with a default of 40-45% for most stocks.*
  - *For SAFMC stocks, many of the SPRs are legacy values from assumptions made a long time ago that have simply stayed on the books. Looking back, the lower SPR values (such as SPR30%) did not keep the stocks at MSY, so there appears to be some evidence that these SPR values are too low.*
- Provide thorough rationale and scientific justification for use of recommended SPR proxies.
  - *Recommendation: minimum of 40%SPR as an appropriate proxy based on:*

- *40%SPR represents the lowest bound of recommended range from presented information.*
- *In the benchmark assessment of mutton snapper (SEDAR 79) SSBmsy was estimated based on the stock -recruitment relationship and it was equal to an SPR40%.*
- *The SEDAR 68 Scamp assessment model estimated Fmsy. That Fmsy value was equivalent to an SPR of 52%.*
- *When selecting SPR, shape of selectivity curve and age-at-maturity are important. Selectivity is an important determinant of where SPR40% falls on the SPR-F curve (see also below).*
- *SPR considerations for recreational fisheries appear to be similar to those for commercial fisheries except that selectivity for recreational fisheries may be different from selectivity for commercial fisheries.*
- *Zhou (2020) found that faster-growing, low-survival, short-lived species require higher SPR.*

- *It may be useful to further review the Pacific Fisheries Management Council's use of higher %SPRs (such as SPR50%) for additional guidance on the factors that may warrant higher SPRs for SAFMC stocks.*
- *SSC members were wondering if SPR calculations would hold when recruitment is crashing. It was explained that SPR proxies are more useful if recruitment is crashing because of its fishery independent nature.*
- *The difference between various SPR values in terms of the implications for F depends on the shape of the SPR-F curve. When alternative SPR values lie in a flat part of the SPR-F curve (see example below), the difference in F implied by alternative SPR values is larger than when the SPR values lie in the steeper part of the SPR-F curve. Alternative SPR values in the flatter portion of the SPR-F curve may require more careful consideration.*

Figure 1.
Hypothetical SPR-F relationship.



- *Williams and Shertzer (2003) found a direct relationship between the shape of the SPR-F curve and the steepness of the Stock-Recruitment relationship. Therefore, the productivity of the stock and the Stock-Recruit relationship should be re-evaluated at each stock assessment.*

6. BLACK SEA BASS PROJECTIONS

6.1 Documents

*Attachment 6a. Black Sea Bass Projections Presentation
*Attachment 6b. Black Sea Bass Projections Report
*Attachment 6c. Snapper Grouper Amendment 56 Discussion Document

6.2 Presentation

SAFMC Staff; and Matt Vincent, SEFSC

6.3 Overview

The SEFSC has developed numerous projection scenarios based on requests made by the Council. These scenarios included: projection runs when changing minimum size limits to 11, 12, and 13 inches; discard *F* is reallocated to landings *F*; phase-in approach of ABC reductions over 3 years; and applying commercial/recreational allocation to total fishery yield, before subtracting discards (see attachment 6a 'introduction' for details).

Following the September Council, an additional request was made to provide projections for Black Sea Bass at F_{MSY}. The Fishery Management Plan (FMP) for black sea bass has the proxy

for F_{MSY} explicitly defined as $F_{30\%}$ of unfished levels. The SSC decided that the appropriate SPR proxy for MSY in SEDAR 76 should be $F_{40\%}$ (Table 1). Since the FMP is in a different metric than what is reported in SEDAR 76, the Southeast regional office has not listed black sea bass as overfished to the Council. Because of this discrepancy, the Council has divided the amendment process into two amendments: the first would set catch levels based on the current F_{MSY} proxy, and a second that would establish a rebuilding plan, once the stock has been declared overfished (see 6c 'background' for details).

The SSC should review the most recent projection scenarios provided by the SEFSC and then make catch level recommendations for Black Sea Bass based on the F_{MSY} ($F_{40\%}$) proxy values.

6.4 Public Comment

On Wednesday morning (10/23/2024), several people provided public comments concentrating on the uncertainty in the assessment and the data (specifically MRIP and discards) and the fact that legal size Black Sea Bass have become rare in Florida.

6.5 Action

In previous meetings the SSC approved the Black Sea Bass assessment and deemed the assessment and the resulting stock status (overfished and overfishing) Best Scientific Information Available (BSIA). The SSC applied the, now previous, ABC Control and recommended a P 30%. The SSC also requested several projections for the basis of its fishing level recommendations to the Council.*

Dr. Curtis updated the SSC on recent developments and subsequent discussion at the September 2024 SAFMC meeting that the overfished determination could not be made because the SPR value in the current FMP (SPR30%) differed from the recommended SPR value of 40%. Given this complication, the overfished stock declarations cannot be made.

The Council is currently working on an amendment to change the SPR language, and once this is done, the stock status can be adjusted and a rebuilding plan developed. It is also expected that the first year of new management for Black Sea Bass will be 2026, which is the 5th year after the terminal year of the current assessment. Note that the SSC typically provides ABC recommendation no further than 5 years beyond the terminal year of the assessment (2021) given the increasing uncertainty in the projections over time. The Council is working on an amendment to change management for 2026 and requested that the SSC make a fishing level recommendation at this meeting.

*Following the overview by Dr. Judd Curtis, Dr. Matt Vincent presented a series of requested projections that included rebuilding scenarios. The SSC focused its subsequent questions and discussion on the non-rebuilding projections, and in particular the SPR40%, P*30, and recent recruitment scenarios. The bulk of the discussion centered around the use of current discard estimates and recruitment assumptions (i.e., long-term average vs. recent). Questions were raised concerning the interim years in the*

projections, specifically why the projections were not updated with the actual landings and index values.

During the discussions the SEFSC liaison Dr. Erik Williams noted that the SSC should not use the provided projections for management recommendations because the assumptions used in the projections are no longer valid:

- *The projections included four interim years of propagating bias since the terminal year.*
- *The available data show that the fishery independent index abundance value (available through 2023, see SERFS report provided at the February SSC meeting) is going down in recent years, while the projected index value is going up.*
- *The available data show that the projected MRIP removals (including discards) are higher than the realized values, which is an indication that the projections may be overestimating stock and/or recruitment.*
- ~~*The stock is at historically low values. Potential ABC based on the current projections would call for an increase in catch relative to the realized catch in recent years, even with these low stock levels.*~~

The SSC Chair specifically confirmed with Dr. Williams that he recommended not using the projections for our ABC recommendation, though later in the meeting Dr. Williams clarified that he expressed his personal opinion on this matter and further explained his reasoning. Given this significant issue, the SSC tabled the discussion until later in the meeting to allow the members to consider alternatives.

Although the SSC is aware of the general uncertainties and caveats in projections, the recommendation that it should not use any of the provided projections came as a surprise. The information justifying this recommendation is not new and was known before the SSC meeting and before the projections were presented. Meeting preparation time and efforts of all involved could have been used more efficiently if the SEFSC liaison had presented his reasoning regarding why the projections might be invalid before the detailed projections were presented and asked the SSC whether it wanted to proceed with a review of the detailed projections.

Subsequently considerable discussions about the available projections and alternatives resulted in five options the SSC considered:

1) *Disagree with the SEFSC liaison's recommendation, and use the projection with SPR40%, P*30, and recent recruitment for the basis of the ABC recommendation.*
   SSC recommends not using the provided projections based on the considerations described above.
2) *Agree with the SEFSC liaison's recommendation and not provide fishing level recommendations and not recommend a path forward until the SSC has additional information and guidance to base recommendations on and provide a rationale for this decision.*
   SSC did not consider option 2 at this time because it is expected to take considerable time for discussion and the outcome would be uncertain (see also notes above).

3) *Agree with the SEFSC liaison's recommendation and deviate from the ABC Control rule. The likely result would be to propose an ORCS-like approach. The SSC would need to carefully provide a clear rationale for its recommendation. It is expected that the SSC would need considerable time for discussion to formulate and justify an approach and recommendation.*
   SSC did <u>not</u> consider option 3 at this time because it is expected to take considerable time for discussion and the outcome would be uncertain (see also notes above).
4) *Agree with the SEFSC liaison's recommendation and recommend an interim analysis based on available index data.*
   SSC did <u>not</u> consider option 4 at this time because the interim analysis has not been used by the SAFMC's SSC for fishing level recommendations, but it was noted that the index based interim analysis has been used in the Gulf of Mexico for management advice. This approach would need time for careful consideration with an uncertain outcome as to the SSC's ability to use it for an ABC recommendation.
5) *Agree with the SEFSC liaison's recommendation and propose additional model/projection runs using all available, updated data.*
   <u>The SSC recommends option 5.</u> It is expected to provide information that the SSC could use directly for an ABC recommendation. A further advantage of this approach is that it may allow for an extension of the projection timeframe and start the work on rebuilding scenarios. Dr. Williams also indicated that rerunning the model with updated information would be doable and feasible in a reasonable timeframe as this is likely given a high priority within the agency, but a specific time frame was not provided. Getting the data as soon as possible is critical.
   Dr. Wally Bubley mentioned that Black Sea Bass length and age data for the SE Fishery Independent Survey's trap catches are available through at least 2023.

Dr. Chip Collier reminded the SSC that the Council also needs estimates of the total yield by sector and resulting ABC recommendations. Given that the estimates of discards are very high, while the index is still going down, it is critical to look at how discards will change in the future.

Dr. Carolyn Belcher, the SAFMC's liaison to the SSC, informed the SSC that there was no immediate urgency (meaning at this meeting) for the SSC to provide catch level recommendations, but that the Council needs an ABC for 2026, and possibly 2027 soon to move forward with the amendment. Given that catch level recommendations are not needed immediately, the SSC decided that the best path forward was to wait for the SEFSC to update the assessment model with new data and generate new projections.

Given the likely delay until management can address rebuilding, the council might want to protect what spawners are in the population to increase the chance of better recruitment. Delaying action may further delay rebuilding.

- Review most recent projection scenarios associated with $F_{rebuild}$ and characterize uncertainties.
  See above.

- Set catch level recommendations based on the F_{MSY} ($F_{40\%}$) proxy values. *See above.*

7. SEDAR 89: SOUTH ATLANTIC TILEFISH STOCK ASSESSMENT REVIEW

7.1 Documents

Attachment 7a. SEDAR89: Tilefish Stock Assessment Report
*Attachment 7b. South Atlantic Tilefish Stock Assessment Presentation
Attachment 7c. SEDAR 89: Terms of Reference
*Attachment 7d. Additional Tilefish Sensitivity Analyses and Projections

7.2 Presentation

Matt Vincent, SEFSC

7.3 Overview

The SEDAR 89: South Atlantic Tilefish stock assessment was an operational assessment completed using the Beaufort Assessment Model (BAM) with a terminal year of 2022. Data compilation and assessment methods were guided by methods used in previous Tilefish assessments (SEDAR 4, SEDAR 25, and SEDAR 66), and other recent SEDAR assessments along with recommendations from the topical working group for this assessment. A base run of BAM was configured and a mixed Monte Carlo/Bootstrap Ensemble (MCBE) analysis was conducted to provide estimates of key management quantities, such as stock and fishery status.

Current stock status was estimated in the base run to be SSB2022/MSST = 1.261, indicating that the stock is not overfished. Throughout its history, SSB did not drop below MSST. Results from the MCBE suggested that the estimate of SSB relative to SSBMSY and the status relative to MSST is highly uncertain. A small majority (54%) of MCBE runs agreed with the stock status result from the base assessment model. The base model, median and majority of the MCBE suggests that the stock is not overfished but is below SSBMSY.

The estimated time series of F/F_{MSY} from the assessment model suggests that although F has exceeded F_{MSY} sporadically for individual years during the assessment period, it has not been consistently above the limit since the period of overfishing during 1990-1995. However, fishing mortality has been increasing considerably since 2010 and is estimated to be above F_{MSY} in the terminal year of the model. There is considerable uncertainty in F/F_{MSY} as demonstrated by the MCBE, especially toward the end of the assessment period. Current fishery status in the terminal year, with current F represented by the geometric mean from 2020 − 2022 ($F_{current} = F_{2020–2022} = 0.216$), was estimated by the base run to be $F_{2020–2022}/F_{MSY} = 1$. Thus, at the end of the assessment Tilefish was fully exploited. However, results from the MCBE show that there is a lot of uncertainty in the fishing status of the species. Only 35% of MCBE runs agreed with the

fishing status result from the base model, and the median value of $F_{2020–2022}/F_{MSY}$ from the MCBE runs (1.16).

The SSC is asked to review, discuss, and provide feedback on the SEDAR 89: South Atlantic Tilefish Operational Assessment model configurations, projections, and uncertainties. If the assessment is determined to be suitable for providing management advice, the SSC will apply the new ABC Control Rule and make catch-level recommendations to the Council.

7.4 Public Comment

No public comment was provided.

7.5 Action

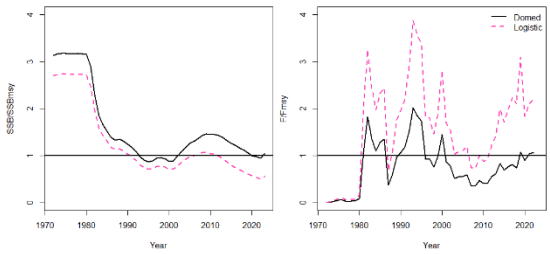
- **Review assessment**

  The SSC thanked Dr. Vincent for a thorough assessment overview and commented that the stock status indicators (SSB and F) are close to what can be expected with managing using MSY; both $SSB_{2022}/MSST$ and $F_{2020-2022}/F_{MSY}$ are near 1.

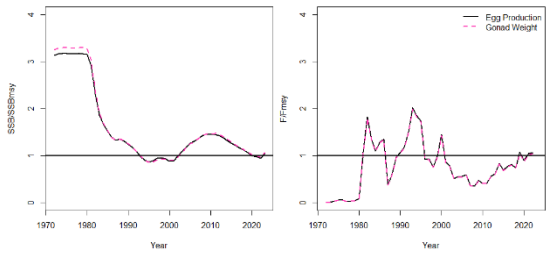
  - Does the assessment address the ToRs to the SSCs satisfaction?
    - *Yes, addressed all TORs including sub-bullets.*
  - Is the assessment consistent with BSIA guidance and practices?
    - *Yes, meets all BSIA guidance and practices, many model parameters were updated with more recent information.*
  - Does the assessment reliably capture past trends in the fishery and population?
    - *Yes. The appropriate changes in selectivity were made, and there were good fits to landings, indices, and age-comps, and reasonable good fits to length-comps.*
  - Does the assessment provide a reliable, quantitative estimate of current stock status?
    - *Yes. The stock status indicators are reliable and show that both SSB and F indicators are close to what is expected when managed to MSY. However, there is a noticeable difference between base model values and median MCBE values that have an influence on stock status determination.*
  - Does the assessment provide reliable predictions of future conditions to support fishing level recommendations?
    - *Yes. The requested projections provide guidance to support fishing level recommendations, but with the usual caveat that the further the projections in the future, the more uncertain the results.*

- **Identify, summarize, and discuss assessment uncertainties.**

- Review, summarize, and discuss the factors of this assessment that affect the reliability of estimates of stock status and fishing level recommendations.
  - *Although the stock-recruit relationship was used to derive MSY, there are additional parameters with high uncertainty:*
    - *The F_init parameter (the value of fishing mortality rate to initialize the model, see slide 33 of attachment 7b) has high uncertainty.*
    - *Significant uncertainty in distribution of the steepness; steepness was fixed in past assessment and is estimated in the current assessment.*
  - *There is substantial retrospective bias in stock biomass in terminal year run (Fig. 34 in the Assessment Report). However, this may be explained by the introduction of the new selectivity time block towards the terminal year.*
- Describe the risks and consequences of the assessment uncertainties with regard to status and fishing level recommendations.
  - *Stock status determination is different between base run and median MCBE runs (see phase plots, Fig. 28 in Assessment Report). All variables using the MCBE indicate more conservative stock dynamics.*
  - *Lack of indices of abundance for recent years.*
- Are methods of addressing uncertainty consistent with SSC expectations and the available information?
  - *Yes, the methods of addressing uncertainty are consistent with expectations using the MCBE approach.*
- 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.
  - *Steepness (impacts both F and SSB as stock status determination criteria).*
  - *F_init (impacts only F as stock determination criteria).*
  - *Selectivity: The shape of the selectivity curves affects stock size and SSB. The selectivity at age was estimated using a two-parameter, flat-topped, logistic model for years prior to 2020. The selectivity functions for both the commercial handline and commercial longline fleets were estimated for two time blocks (1972-2019, 2020-2022), where the most recent assumed a domed selectivity (See page 22 of the Assessment Report).* A *sensitivity run with dome shaped selectivity for the earlier time block presented during the meeting showed significant changes in stock size and SSB and did not seem appropriate.*



- *Change in spawning input (gonad weight to fecundity) in the latest assessment may affect SSB, but note that a comparison of the two methods presented during the meeting showed very little difference in stock status between the methods.*



- *The uncertainty in stock status determination in the tilefish assessment (differences observed between MCBE and Base model) has an impact on the confidence in stock status determination.*

➢ **Provide fishing level recommendations.**
- Apply the South Atlantic ABC control rule.
  - *Stock risk rating: High (see Agenda item 3)*
  - *Current biomass status: Moderate*
  - *Using the new ABC-CR, the SSC recommends P* = 30%*
- Comment on any difficulties encountered in applying the Control Rule, including any required information that is not available.
  - *See comments under agenda item 3 on stock risk rating.*
  - *In the future, the Council is expected to select risk rating prior to assessment. Because the ABC control rule is new, they have not officially selected one yet, but the assessment is completed.*

➢ **Provide advice on monitoring the stock until the next assessment.**
- What indicators or metrics should be included in the SAFE Report to monitor and evaluate the stock until the next assessment? Current data will be included:

- Total Landings relative to ABC from the previous assessment until values from SEDAR 89 are adopted.
- Recreational (FES values) and Commercial Landings
- *Fish sizes from Recreational and Commercial fisheries.*
- *Trends in abundance included in South Atlantic Deep Water Longline Survey (SADLS)*
- Economic trends
- Recreational – MRIP Directed Trips
- Commercial – Ex-Vessel Value
- Social trends
- Observations of Closures
- Comments from Fishery Performance Report
- Recent management actions
- Other?
  - *SADLS survey data:*
    - *Monitoring size distribution to assess if larger fish are present or not, which could inform the use of dome-shaped vs. flat topped selectivity.*
    - *Catch rates: sudden decline in catch rates would be a concern.*

➢ **Provide research recommendations and guidance for the next assessment.**

- Review the included research recommendations and indicate those most likely to reduce risk and uncertainty in the next assessment.
  - *Investigate effect of changing selectivity pattern to dome-shaped selectivity.*
  - *Investigate potential differences between size distributions of the survey and fishery that may explain dome-shaped selectivity, such as a change in fisher behavior or fleet distribution (e.g., more nearshore).*
  - *SADLS data availability:*
    - *Fishery-Independent abundance index.*
    - *Age-comps from survey.*
  - *New age validation studies.*
  - *Investigate stock structure along the Atlantic coast.*

- Provide any additional research recommendations the SSC believes will improve future stock assessments.
  - *See above.*
- Provide guidance on the next assessment, addressing its timing and type.
  - *Assessment Components:*
    - *Inclusion of SADLS (need for forming a topical working group?)*
    - *Stock ID workshop.*
    - *SSC review (no CIE review necessary).*

- *New assessment within 5 years.*
- *Monitor SADLS to confirm dome shaped selectivity from assessment.*

Table 1. SEDAR 89: South Atlantic Tilefish Stock Assessment Output

Table 18. Estimated status indicators, benchmarks, and related quantities from the base run of the BAM, conditional on estimated current selectivities averaged across fleets. Also presented are median values and measures of precision (standard errors, SE) from the Monte Carlo/Bootstrap ensemble analysis. Rate estimates (F) are in units of y^{-1}; status indicators are dimensionless; biomass estimates are in units of thousands of pounds, as indicated; and recruits are in millions of age-1 fish. Spawning stock biomass (SSB) is measured as fecundity of mature females (trillion eggs). $L_{current}$ are the average landings from 2020–2022.

Quantity	Units	Estimate	Median	SE
F_{MSY}	y^{-1}	0.22	0.18	0.06
$75\%F_{MSY}$	y^{-1}	0.16	0.14	0.04
B_{MSY}	1000 lb whole	6191.07	7263.71	2446.69
SSB_{MSY}	Trillions of Eggs	0.514	0.651	1.738
MSST	Trillions of Eggs	0.385	0.488	1.304
MSY	1000 lb gutted	545.08	564.30	70.90
$L_{75\%MSY}$	1000 lb gutted	524.22	540.50	68.97
$L_{current}$	1000 lb gutted	531.56	530.24	19.54
R_{MSY}	millions fish	0.05	0.05	0.01
$F_{2020-2022}/F_{MSY}$	—	1.00	1.16	0.52
$SSB_{2022}/MSST$	—	1.26	1.04	0.42
SSB_{2022}/SSB_{MSY}	—	0.95	0.78	0.32

Table 2. South Atlantic SSC Tilefish Catch Level Recommendations

Criteria	**Value**
Stock Risk Rating	*High*
Relative Stock Biomass Level	*Moderate*
P-Star	*30%*
SSC recommended $P_{Rebuild}$	N/A

OFL RECOMMENDATIONS		
Year	Landed (lbs gutted weight)	Landed (number)
2025	*495,000*	*75,000*
2026	*508,000*	*77,000*
2027	*517,000*	*78,000*
ABC RECOMMENDATIONS		
Year	Landed (lbs gutted weight)	Landed (number)
2025	*407,000*	*61,000*
2026	*429,000*	*64,000*
2027	*447,000*	*67,000*

8. SOUTH ATLANTIC FOR-HIRE REPORTING MODIFICATIONS

8.1 Documents

Attachment 8a. SEFHIER Improvement Decision Document
*Attachment 8b. SEFHIER Improvement Summary Presentation
*Attachment 8c. SEP Report Summary, Oct 7

8.2 Presentation

John Hadley, SAFMC Staff; Jennifer Sweeney-Tookes, SEP Chair

8.3 Overview

The Southeast For-Hire Integrated Electronic Reporting (SEFHIER) Program was launched in 2021 with the implementation of the Comprehensive For-Hire Electronic Reporting Amendment (SAFMC 2017). The amendment put in place or modified reporting requirements for federally permitted charter vessels and headboats in the snapper grouper (SG), dolphin wahoo (DW), and coastal migratory pelagics (mackerel and cobia; CMP) fisheries. Reporting requirements through SEFHIER went into effect for charter/for-hire vessels in January 2021.

Recent issues with for-hire reporting in the South Atlantic (most notably low compliance), led the SAFMC to initiate discussions on ways to improve compliance, strengthen reporting requirements, and explore data validation, with the goal of utilizing the information collected in future management decisions. At the June 2024 meeting, the Council received additional feedback from the NOAA Fisheries Southeast Regional Office (SERO) and the Southeast Fisheries Science Center that data being collected through the SEFHIER program cannot be used at all for assessments or management due to low compliance and lack of validation. It was also noted that NMFS cannot validate the logbook until reporting compliance improves.

The Council began discussions on ways to improve compliance for the SEFHIER program and has requested additional information and feedback from the SSC and SEP in the development of the SEFHIER improvement amendment. The SEP met via webinar October 7th to provide this feedback and the SEP chair will present the meeting report to the SSC. The SSC should provide any additional recommendations to the SEP recommendations to relay to the Council for their December meeting.

8.4 Public Comment

8.5 Action

Note that the SSC's SEP report in Appendix B provides additional comments.

- Is there information in the program that can still be used, such as for evaluating management alternatives, improving understanding of the fishery, filling in assessment unknowns?

- *Without seeing the program information and survey questions, it is hard to assess program appropriateness.*
- *It would be good to find out for people that did respond, what led them to be compliant? Such information could be used to create compliance incentives in the future.*
- *Investigate if any regional differences exist for the levels of compliance.*
- *Social and economic information could improve understanding of the fishery.*
- *Find out which components of the reporting process were most problematic for compliance.*

- What information would be useful for the SSC to review if the data are to be used for management advice (Sample size, geographic distribution of samples, etc.)?
  - *Comparison of compliance rates across other surveys.*
  - *Timing of reporting (prior to landing as in Gulf of Mexico) may affect level of compliance, and efficacy of the validation program.*
  - *How does limited access vs. open-access affect compliance?*
  - *A validation study is clearly needed to assess accuracy of those who complying with reporting.*
  - *Need to compare the universe of respondents to non-respondents to evaluate any bias.*

9. SNAPPER GROUPER MANAGEMENT STRATEGY EVALUATION

9.1 Documents

Attachment 9. Snapper Grouper MSE Presentation

9.2 Presentation

Adrian Hordyk, Blue Matter Science

9.3 Overview

Management Strategy Evaluation (MSE) is internationally recognized as best practice for evaluating the performance of alternative management approaches and identifying the mode of management that is most likely to meet the various management objectives of a fishery. The MSE process is designed to support evidence-based decision-making in the face of uncertainty on the status and dynamics of a fishery system. It was developed in response to a common

situation where there were conflicting interpretations of a stock assessment process, and there was no clear path for making an informed and transparent management decision. In short, the MSE process involves building a range of models which span the key uncertainties in the fishery system and using computer simulations to evaluate the performance of alternative management methods against established management objectives.

Stakeholder participation is a fundamental component of the MSE process. Discussions with stakeholders are used to establish the three main areas of the MSE process: 1) Uncertainties in the Fishery System, 2) Feasible Management Options, and 3) Objectives for Evaluating Performance. Stakeholder input and feedback will be primarily obtained from the SAFMC Council and Snapper-Grouper Advisory Panel. Scientific input in modeling and uncertainties has been obtained through numerous presentations to the SSC and MSE technical team.

The SSC is requested to review the final updates made to the Snapper Grouper MSE, and discuss the data inputs and uncertainties with the operating model, management options, performance metrics, results, and future iterations of the MSE process.

9.4 Public Comment

No public comment was provided.

9.5 Action

- **General Comments:**
  - *The SSC commended the analytical team on the thoroughness of the MSE study and its products. Earlier SSC recommendations and comments were addressed and included in the presented results. This can be a valuable tool to develop management.*

- **Operating Model**
  - Does the model appropriately characterize population dynamics for Black Sea Bass, Gag, and Red Snapper?
    - *Yes, the operating model is based on approved stock assessments with some uncertainties:*
      - *Base model results may be overly optimistic in some cases because operating models use long-term average recruitment.*
  - Does the spatial structure seem appropriate for the three species?
    - *Yes, regional and depth strata selected after previous review of model improved the spatial structure.*
  - Are the fisheries represented properly?
    - *Yes, although management regulations in state waters may be different than in federal waters.*

- Does the model address key uncertainties (differences in M, reduced recreational removals, effort changes, and recent recruitment)?
  - *Yes, the model has addressed the uncertainties requested from the SSC.*
  - *Additional uncertainties to explore*:
    - *Recent recruitment vs. long-term average recruitment.*
    - *Effort changes: trends in rec licenses and vessel registrations, increases in catch efficiency (change in catchability) with gear and technology improvements.*

➢ **Management Options**

- Are the management options appropriately included in the projection analysis?
  - *Yes, given the number of projection scenarios explored.*
- Should dynamic management options be considered for use instead of static management?
  - *Yes, consider both dynamic management options (dynamic reference points, etc.) and dynamic responses (e.g., changes in effort offshore), where possible. Consider changes to the levels of compliance in management options.*

➢ **Performance Metrics**

- Are the performance metrics evaluated appropriately?
  - *Yes, performance metrics evaluated both stock status relative to targets and thresholds and quantified landings in three fisheries and approximate measure of value to those fisheries. Also, it included measures of discards in performance metrics.*

➢ **Results**

- Is the model appropriate as a basis for developing management recommendations?
  - *Yes, but it is important to note that the results of the MSE are relative. It is difficult for an MSE to make quantitative predictions about what will happen in the future (e.g., the probability of rebuilding which depends on many different factors), but the relative nature of MSE comparisons serves as good framework for evaluating and comparing various management strategies (e.g., strategy A is twice as likely as strategy B) to achieve the desired management outcomes.*
  - *It is important to note that MSE is thought to be most useful at identifying management strategies that will not work, so that those can be avoided.*

- Discuss which strategies could meet goals for reducing discards and rebuilding Black Sea Bass, Gag, and Red Snapper.
  - *Using modeled recruitment regimes, neither Gag nor BSB would be rebuilt under any management scenario.*
  - *Moving effort offshore seems to be a good strategy for Red Snapper, while moving effort nearshore would be one for Gag.*
  - *General recreational fishery relative effort reduction scenarios have the highest probability of meeting rebuilding targets. Thus, reductions in fishing effort or the catchability of that fleet appear to be the most promising management strategies. There may be creative ways to reduce catchability that can be included in management. A wildlife example that was mentioned is a longer bow hunting season for bow and arrow gear because of gear efficiency.*

➢ **Future MSE**

- What other strategies should be explored for future iterations?
  - *Effort shift from nearshore to offshore: explore an option allowing some fishing in nearshore areas as State regulations may differ (e.g. allow fishing) from those in Federal waters.*
  - *Include species interactions in population dynamics.*
  - *Effort reduction, in particular for the recreational sector, and caps for commercial and recreational sector.*
  - *Recalculation of reference points (e.g. regime shift, use of dynamic reference points).*
- What is the next piece of information to integrate into a future MSE (i.e. Ecopath with EcoSim, social and economic information, additional species, commercial measures, etc.)?
  - *Recreational fleet responses to management actions, especially inshore/offshore shifts and season length changes.*
  - *Compliance rates.*
  - *Additional species and species interactions.*
  - *Measure of recreational angler satisfaction perhaps including a non-market valuation survey that identifies willingness to pay.*
  - *An anthropological survey of some kind may be used. This information can serve as a performance metric to quantify the value of a particular management strategy for the recreational sector.*

10. MUTTON AND YELLOWTAIL SNAPPER SSC REVIEW PLAN

10.1 Documents

Attachment 10. Mutton and Yellowtail Snapper Review Plan Presentation

10.2 Presentation

Judd Curtis, SAFMC Staff

10.3 Overview

The SEDAR 79: Southeastern Mutton Snapper and SEDAR 96: Southeastern Yellowtail Snapper stock assessments will be jointly reviewed by the South Atlantic and Gulf of Mexico SSCs in early 2025. Both these species are Florida-centric species comprised of one stock that spans the jurisdictional boundary between the two Councils, necessitating joint scientific review and management. The joint SSC will be responsible for reviewing each stock assessment, applying the ABC-CR, and providing OFL and ABC catch level recommendations for the entire stock. A strategy for the joint review process and panel composition has been developed and will be presented to each SSC and Council for approval.

10.4 Public Comment

No Public comment was provided.

10.5 Action

- Review approach, process, and timeline for joint review of Mutton and Yellowtail Snapper stock assessments.
  - *The approach, process, and timeline were approved by the SSC.*
- Enlist 10-11 SSC members for sub-group.
  - *The following SSC members volunteered for the joint sub-group: Fred Serchuk, Alexei Sharov, Amy Schueller, Marcel Reichert, Dustin Addis, Fred Scharf, Jim Gartland, Steve Turner, and Jeff Buckel.*

11. SCIENTIFIC COORDINATION SUBCOMMITEE 8TH ANNUAL MEETING REPORT

11.1 Documents

Attachment 11a. SCS8 Final Agenda
Attachment 11b. SCS8 Summary and Outcomes Presentation

11.2 Presentation

Judd Curtis, SAFMC Staff

11.3 Overview

The Scientific Coordination Subcommittee convened its 8th workshop (SCS8) in Boston, MA on August 26-28, 2024, hosted by the New England Fishery Management Council (NEFMC). The SCS8 meeting theme was *Applying ABC Control Rules in a Changing Environment* and featured three sub-themes: (1) Advances in ecosystem science and assessment to inform ABC control

rules in a dynamic environment, (2) Application of social science to achieve management goals under dynamic conditions, and (3) Adaptation of reference points, control rules, and rebuilding plans to a changing environment. The meeting included several keynote speakers in sub-theme areas and regional case studies from SSC members and NOAA staff followed by break-out groups and synthesis of ideas. On the final day, participants broke out into regional SSC groups and brainstormed several ideas for actionable outcomes, implementation, and pathways forward for their respective regional SSCs.

11.4 Public Comment

No public comment was provided.

11.5 Action

- Receive report on the Scientific Coordination Subcommittee 8th annual meeting.
- Review existing actionable outcomes, develop additional ones, and discuss strategies for implementation.
  The SSC briefly discussed the three presented actionable items and will discuss these and possible others in future meetings.

12. SEFSC PRECISION THRESHOLDS WORKGROUP

12.1 Documents

Attachment 12. SEFSC Precision Thresholds Workgroup Presentation

12.2 Presentation

Vivian Matter, SEFSC

12.3 Overview

A joint NOAA Southeast Fishery Science Center (SEFSC) and NOAA Office of Science and Technology (OST) workgroup was formed last year to analyze highly imprecise estimate scenarios that are impacting assessments and how to address these concerns. Once determined, these methods will be used to provide updated data streams for the South Atlantic unassessed stocks, and the Unassessed Stocks SSC workgroup can begin exploring appropriate analytical tools to set ABCs for the upcoming unassessed stocks amendment. The SSC will receive an update on the progress of this workgroup.

12.4 Public Comment

No public comment was provided.

12.5 Action

- Receive update on the progress of the precision thresholds workgroup.

To test the method, the SSC recommends including Black Sea Bass and unassessed stocks, and species suffering from high PSEs and low sample size such as Tilefish species and Snowy Grouper.

- Enlist SSC members to participate in the review panel
  The review will likely take place in February 2025 during a multi-day in-person meeting.

13. SSC WORKGROUPS AND SEDAR PANELS MEMBERSHIP

13.1 Documents

Attachment 13. SSC Workgroup and SEDAR Panels Membership Document

13.2 Presentation

Judd Curtis, SAFMC Staff

13.3 Overview

Council staff will review the list of SSC workgroups and SEDAR panel membership and provide any updates from recent work accomplished by the workgroups or SEDAR panels.

The SEDAR 92: Atlantic Blueline Tilefish stock assessment is scheduled to be completed in Spring 2025. This stock overlaps the jurisdictional boundary of the South Atlantic and Mid-Atlantic and will require joint review by the respective Council SSCs for setting catch level recommendations. Procedurally, the Mid-Atlantic SSC does not review stock assessments in the same manner as the South Atlantic SSC, relying on technical panels for assessment review, and the SSC role strictly relates to setting catch level recommendations, while the South Atlantic SSC is typically responsible for both assessment review and setting catch level recommendations. Because of the difference in role between the two SSCs, the recommended approach was to develop a sub-group consisting of 2-3 SSC members and Council staff from each region, and SEFSC representatives to discuss the planning, procedure, and timeline for the Blueline Tilefish review for both regions. Ideally, SSC members volunteering for this sub-group would be part of the review panel. The entire South Atlantic SSC will have an opportunity to review the assessment during our spring 2025 meeting.

13.4 Public Comment

No public comment was provided.

13.5 Action

- Receive updates on recent workgroup and SEDAR panel business.
  There was no Workgroup (WG) activity since the last SSC meeting and as a result, no WG updates were provided.

  In the next SSC meeting the SSC should select chairs for all WGs and add members where needed.

- Form planning sub-group for joint review of the upcoming Blueline Tilefish stock assessment.
  - *Timeline: early next year, three two-hour webinar meetings.*
  - *Jim Gartland volunteered.*

  Other workgroups.
  - *Jared Flowers volunteered to join Ecopath and Regime Shifts WG.*

14. REVIEW OF POSSIBLE ADDITIONAL PROJECTIONS FOR TILEFISH AND BSB

14.1 Documents

14.2 Presentation

Matt Vincet, SEFSC

14.3 Overview

After reviewing base models and/or projection scenarios, the SSC will have the opportunity to review additional projection runs that were requested from agenda items above.

14.4 Public Comment

No public comment was provided.

14.5 Action

- Review additional requested projections for Black Sea Bass (if necessary)
  No additional projections were requested during the meeting. See comments above under agenda item 6.
- Review additional requested projections for Tilefish (if necessary)
  The SSC appreciated Matt's efforts to provide the requested Tilefish projections during the meeting. The SSC reviewed these projections (attachment 7d), and comments and recommendations are included above under Agenda item 7.

15. OTHER BUSINESS

- Review of Stock Assessment and Fishery Evaluation (SAFE) Reports.
  Dr. Chip Collier informed the SSC that SAFE reports would be available for SSC desk review in the near future, and would appreciate any comments the Committee may have

16. PUBLIC COMMENT

The public is provided one final opportunity to comment on SSC recommendations and agenda items.

Mr. Tim Grainer thanked the SSC and noted the importance of SCS8 meeting subtheme 3.
Mr. Charlie Phillips thanks the SSC for their deliberations and recommendations to the Council.

17. CONSENSUS STATEMENT AND RECOMMENDATIONS

The Chair suggested that the committee provide notes and comments to Dr. Curtis and the Chair for inclusion in the draft, and the Committee agreed.
The October SSC Report was provided to Council staff on November 18, 2024 for inclusion in the briefing book for the December 2024 Council meeting.

18. NEXT MEETINGS

18.1 Scientific and Statistical Committee Meetings

- February 25-26, 2025 in Tampa, FL (sub-group review)
- April 14-15, 2025 in Charleston, SC (SEP)
- April 15-17, 2025 in Charleston, SC (SSC)
- October 21-23, 2025 in Charleston, SC

18.2 South Atlantic Fishery Management Council Meetings

- December 2-6, 2024 in Wrightsville Beach, NC
- March 3-7, 2025 in Georgia (TBD)
- June 9-13, 2025 in Cape Canaveral, FL

ADJOURNED at 11:45am on October 25, 2024.

19. APPENDIX A. SEP OCT WEBINAR REPORT

SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

SOCIAL AND ECONOMIC PANEL OF THE SCIENTIFIC AND STATISTICAL COMMITTEE

Social and Economic Panel (SEP) Meeting Overview

October 7, 2024

Held via webinar

PURPOSE

This meeting is convened to discuss and provide input to the Scientific and Statistical Committee (SSC) and the South Atlantic Fishery Management Council (Council) on:

- Recent and developing Council actions and amendments,
- Improvements to the Southeast For-Hire Integrated Electronic Reporting (SEFHIER) Program, and
- Social and Economic considerations when setting MSY for black sea bass.

CONTENTS

DOCUMENTS

Attachment 1. Minutes from the April 2024 meeting

Attachment 2. Recent and Developing South Atlantic Fishery Management Council Amendments

Attachment 3a. Discussion document for the Southeast For-Hire Integrated Electronic Reporting (SEFHIER) Program Improvement Amendment
Attachment 3b. Presentation slides for the Southeast For-Hire Integrated Electronic Reporting (SEFHIER) Program Improvement Amendment

Attachment 4. Presentation slides for Maximum Sustainable Yield (MSY) Considerations Based on Social and Economic Inputs

1. Introduction

1.1. Documents

- **Attachment 1**. Minutes from the April 2024 meeting

1.2. Actions

- Introductions
- Review and approve the agenda
- Approve April 2024 minutes
- Opportunity for public comment

2. Recent and Developing Council Actions

2.1. Document

- **Attachment 2**. Recent and Developing South Atlantic Fishery Management Council Amendments

2.2. Overview

Council staff will update the SEP on the status of recent and developing Council actions.

2.3. Presentation and Discussion

Christina Wiegand and John Hadley, SAFMC staff

2.4. Action

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 appreciated the updates but had no questions.

3. Southeast For-Hire Integrated Electronic Reporting (SEFHIER) Program Improvements Amendment

3.1. Document

- **Attachment 3a**. Discussion document for the Southeast For-Hire Integrated Electronic Reporting (SEFHIER) Program Improvements Amendment
- **Attachment 3b.** Presentation slides for the Southeast For-Hire Integrated Electronic Reporting (SEFHIER) Program Improvements Amendment

3.2. Overview

At the June 2024 meeting, the Council received feedback from the NOAA Fisheries Southeast Regional Office and Southeast Fisheries Science Center that data being collected through the SEFHIER program and for-hire logbook cannot be used for management due to low compliance and lack of validation. The letter included a list of recommendations to render the data collected through SEFHIER useful for management. The Council directed staff to initiate work on an amendment to address these shortcomings, including discussion of actions that can be taken in the near-term without an amendment, and consideration of actions and alternatives being explored by the Gulf of Mexico Fishery Management Council. At the September 2024 the Council refined potential actions in the amendment.

3.3. Presentation

John Hadley and Christina Wiegand, SAFMC Staff

3.4. Action

Review background information and provide feedback to discussion questions at the end of the discussion document to provide guidance to the Council on initial considerations for improving for-hire reporting compliance.

DISCUSSION QUESTIONS AND SEP RECOMMENDATIONS:

1. **Incentivizing reporting:** Figuratively speaking, there are several "sticks" (i.e. requirements) and not many "carrots" (i.e. incentives) being considered in this amendment. Does the SEP have any suggestions on how to better incentivize for-hire reporting compliance?

    - The SEP questioned what outreach was being made to the for-hire industry to explain the program and alleviate concerns they may have. They noted that the industry has concerns about the intent of the data gathering, and what will result from this data collection effort. They suggest engaging with the industry to identify people who are reporting to understand their motivations, and to increase transparency on why data is collected and how it will be used.

- The SEP suggested that rather than simply labelling this is as "non-compliance" that instead efforts be invested in identifying the specific barriers in order to identify relevant strategies to increase compliance (Ask "why not?").
- The SEP urges transparency in the process and outreach efforts to lessen industry concerns about data usage (particularly that the IRS does not have access to Fisheries Science Center data and vice versa).
    - It was noted that there are for-hire economic concerns about government overreach, the potential for this information to be shared with the IRS, and the types of information being sought in these surveys. The SEP discussed the confidentiality of the data being collected, and members explained that the information was used to try to estimate net revenue on trip and complete economic effects analysis, which could be used in relief contexts.
- The SEP noted that outreach efforts should include the information that the industry needs a "baseline" economic measure to go from in the face of disasters, perhaps including that in the context of the BP oil spill, it was helpful to fishers who reported their past business expenses to identify and prove losses. Management can only take for-hire into account if revenue is captured somewhere, and they need to have revenue information for fisheries disasters declarations.
- The SEP suggested that a potential solution to issues around government mistrust could be assuaged by working with a trusted, neutral third party that is trusted by the fishers.
- The SEP questioned why compliance is higher in Gulf, and were informed of multiple potential reasons:
    - Cost of not reporting is losing permit
    - Stakeholders bought in and worked as ambassadors
    - Report prior to offload
    - Strict validation survey

2. **Changes to the economic component of the logbook**: The Gulf Council is considering an action that may implement a random sampling method rather than a census for the economic component of the for-hire reporting requirement. The range being considered by the Gulf Council is up to 10% to 33% of for-hire trips that would be sampled.
    a. What does the SEP recommend that the Council consider in regard to an action that would potentially implement a random sampling method for the economic component of the for-hire logbook?

        - The SEP discussed known sampling methods previously employed in studies on commercial and recreational fisheries.
            - One suggested methodology was to first determine the smallest sub-group of the target population. Once you determine the smallest possible group that needs sub-sampling, it will determine how large the overall representative sample need be.
        - There exists ample literature on sampling methodologies and tools for determining a representative sample of a population. However, the SEP noted that researchers are often surprised by the true sample size needed to achieve a 95% or 90% confidence interval. Determining the sample size is not often the challenge, it is generating enough valid responses to be statistically defensible.

- The SEP also noted that the NFMS has never dictated a particular minimum sample size, or sampling methodology. This is left to the researcher's judgement.
    - It was also noted that sub-sampling does not occur within the For-Hire sector with respect to their permits and those fisheries they operate in.
    - Another point made was that NMFS utilizes sampling of both inactive and active in the Coastal Logbook Program to better determine how vessel owners are utilizing their available capital.
    - Council staff noted that their goal is to produce robust sample sizes, while trying to minimize the level of regulatory burden.

b. If a random sampling method were considered to gather economic information on the for-hire logbook, does the SEP have recommendation for the range of trips that should be sampled (i.e. up to a certain percentage of total trips that would be sampled)?

- The SEP did not recommend any set percentage of trips that would need to be sampled. Rather, the SEP recommended following accepted sampling methodologies to determine the percentage needed that would yield the desired confidence intervals.
- The SEP recommends that standard survey sample approaches be followed. For example, consider the smallest possible subgroup (e.g., states) and shoot for a 5% margin of error for each of these (n=384) and scale up. The SEP/SAFMC might be surprised at how large this sample would be.
- The SEP recommends attempting to generate an accuracy similar to the logbook program. The SAFMC could use lessons from the NMFS' approach to gathering economic information from the commercial sector. For example: completion of one survey per year (and being exempt the following year), a target of 20% coverage, questions about a typical trip instead of specific trips to capture variable costs and an annual survey to capture fixed costs.
- The SEP recommends that active and inactive vessels are sampled separately, similar to the logbook program.

c. Please discuss some of the strengths and weaknesses of a census vs sampling methodology to gather social and economic data.
    i. What are the potential tradeoffs if the economic component of the for-hire logbook switched from a census to random sampling methodology?
        1. Reporting burden?
        2. Administrative burden?
        3. Application of the results in analyses?
    ii. Does the SEP feel there are net benefits to one method over the other in the context of the economic component of the for-hire logbook?

- The SEP noted that randomization will reduce the overall reporting burden, however this can incentivize non-reporting due to infrequent contact.
    - Sampling might pose greater administrative burden overall due to follow-ups and reminders that are frequently employed with sample surveys.

- The Coastal Logbook program's sampling might shed some light on whether sampling affects the census reporting aspect of the program.
- The SEP concluded that a census is more appropriate, if not necessary, for landings. Census data on landings would provide more useful information for management purposes.
- The SEP concluded that sampling practices are more appropriate for economic data collections.
- The SEP noted that while census data will provide far better data, there is a need for additional compliance consequences in order to facilitate responses.

3. **Use of logbook information:** As noted, the NMFS has stated that the existing logbook information cannot be used in any sort of management sense due to low compliance (a 37.4% compliance rate in 2023) and lack of validation.
   a. Does the SEP have any recommendations for a realistic target compliance rate (i.e. less than 100%) that would need to be reach before log-book data can be used in management?
      i. Describe some of the uses in relation to various compliance rate. Would there need to be a different minimum compliance rate for different uses of the data. For example, would you need a different minimum compliance rate for use of summary economic statistics vs tracking ACLs?

- The SEP responses to this question noted that any compliance rate can be valid if it can be determined that the sample is representative, which can be determined by doing "non-response checks" and identifying if the responses received are markedly different than these checks. A validation methodology needs to be selected in order to determine what rates could be sufficient.
  - They noted that response rates are perhaps less important than the accuracy of the data being reported, and whether or not truthful information is being submitted (vs. simply submitting anything in a report just to be able to renew a license). It was proposed that perhaps observers on vessels could help with this issue.
- The SEP noted that logbooks and dealer reports (both census level) are used for regulatory analysis and people seem to trust the commercial landings data far more than the data that is sampled from recreational fleets. If the Council does not make landings mandatory for all, then we should expect more arguments in the future.

4. **Importance of consistency in reporting requirements:** As noted, the Gulf Council and HMS are currently developing their own electronic for-hire reporting programs. Additionally, there are long-standing for-hire reporting requirements in the Mid-Atlantic and New England regions through vessel trip reports (VTRs). Each one of these programs has varying reporting requirements.

   Based on 2020 permit information, there were 2,458 vessels with a South Atlantic Snapper

Grouper, Coastal Migratory Pelagic, or Dolphin Wahoo for-hire permit. 343 of the vessels (or 14%) indicated a home port in the Gulf of Mexico region, 294 of the vessels (or 12%) had a home port in the Mid-Atlantic or New England regions. An unknown, but likely notable number of vessels also have for-hire HMS permits.

a. Does the SEP have any comments or recommendations for the Council to consider about the importance of consistency across for-hire reporting requirements?

- The SEP suggests starting with similarities in the Gulf and South Atlantic, then looking to the Mid-Atlantic. They noted that there is also a NOAA divide between the Mid and South Atlantic, with Woods Hole responsible for the former but Miami for the latter. The agency is working on better integration across that divide, especially as stocks have started shifting north. Blueline tilefish is an example where the differences in data collection between the two regions made management cooperation difficult, including setting the ABCs and ACLs.
  - The group noted that reporting requirements between the Northeast and the Gulf don't necessarily need to have compatible methodologies, but this is more necessary because of overlap in South Atlantic with the Gulf, and South Atlantic with the Northeast. It will likelier be easier for the South Atlantic to first seek consistency with Gulf because they have the highest overlap in South Atlantic permits.
- The SEP agrees that having reporting requirements more in sync will be in the best interest of the councils in the future and support the development of a system that will compile all data across regions from Texas to Maine.

5. **Other items:** Are there additional items or topics that the Council may want to consider exploring that could improve compliance with the for-hire logbook or utility of log-book data?

- The SEP suggests development of phone app log book, but stresses the need for this to be simple and quick to use, with minimal interaction needed. They urge the integration of user experience (UX) professionals to ensure that the reporting is easy to do on a phone.

4. Other Business

4.1. Document

- **Attachment 4**. Presentation slides for Maximum Sustainable Yield (MSY) Considerations Based on Social and Economic Inputs

4.2. Overview

Under Other Business, the SEP was asked to discuss MSY considerations for black seabass based on social and economic inputs.

4.3. Presentation

Chip Collier, SAFMC Staff

4.4. Action

Review background information and provide feedback to discussion questions to provide guidance on initial considerations for social and economic inputs when setting MSY for black seabass.

Discussion Questions and SEP Recommendations:

1. How might staff combine results from multiple surveys and sources covering similar material? (i.e. provide simplified or summarized information that still acknowledges differences that may result from varied collection methodologies).
    a. Different survey methods, and
    b. Different scope of survey and approaches to gathering information.

        - The SEP recommends multiple ways to approach data complication, such as:
            - Conducting a meta-analysis and identifying effect size, or using a meta-analysis technique called multitrait multimethod analysis.
            - Looking for consistent group comparisons, having more than one data source that looks at the same topic, and to make inferences based on quality of data collected in different methodologies.
            - Considering the tradeoff of catch and CPUE of the recreational fleet based on catch levels.
            - In studies on the same topic with dissimilar methods, qualitative analysis of those findings will help align the data on the necessary topics.

2. What is the most compelling way to present information, specifically to the Council and SSC, on fishermen preferences that could impact selectivity?
    a. What social or economic factors might influence fishing behavior/preferences that could change selectivity?

        - The SEP suggests personalizing the data with case studies in the industry, or allowing the "story" of particular fishers illustrate larger issues.

3. Any additional reports or datasets that could inform preferences for Black Sea Bass, specifically, or Snapper Grouper species, generally?

    - The SEP recommends that target vs catch data be collected, as target could be a synonym for preference. They recommend looking at reported targeted species from when the council was developing an app pre COVID, and consider the difference between stated vs revealed preference, as just because the species was caught does not mean the angler had a preference for that species necessarily.

5. Report and Recommendations Review

6. Next SEP Meeting

7. Adjourn

20. APPENDIX B. STOCK RISK RATING TABLES.

SPECIES: RED SNAPPER

	Risk of Overexploitation			Red Snapper				
Biological Attributes	**High (1)**	**Medium (2)**	**Low (3)**	**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Estimated natural mortality (M)	M ≤ 0.20	0.20-0.40	M ≥ 0.4	SEDAR 73 (2021): Constant value was 0.11 (age-dependent estimates were scaled to this value) AP: Red snapper are fast-growing and long-lived, may be less susceptible than most species to overfishing	1	2	1	1
Age at maturity	≥ 4 years	2-4 years	≤ 2 years	SEDAR 73 (2021), >50% maturity between 1 and 2 years	3	3	3	3
Final Biological Score					**2**	**2.5**	**2**	**2**
Human Dimension Attributes	**High (1)**	**Medium (2)**	**Low (3)**	**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Ability to regulate fishery	fishery consistently exceeds Total ACL (ex. 3+ out of 5 years) and/or exceeds Total ACL by more than 15%	fishery mostly kept below Total ACL (ex. Exceeds ACL 1-2 out of 5 years) and/or does not exceed ACL by more than 15%	fishery consistently kept below Total ACL	Total ACL (2018-2022) exceeded by >15% in 2018, 2019, 2020, 2021 Commercial ACL (2018-2022) exceeded by <15% in 2018, 2019, 2020, 2021 Recreational ACL (2018-2022) exceeded by >15% in 2018, 2019, 2020, 2021 AP: The short recreational season limit and low ACL affect how well management can control landings - 75 lb trip limit contains the variability of commercial harvests, allowing closer adherence to the commercial ACL - Commercial exceedance is not as large as recreational, so recommend 2	1	2	1	1
Potential for discard losses	Dead discards are a significant proportion of the total catch (over 40%)	Dead discards are a moderate proportion of the total catch (20%-40%)	Dead discards very small component of total catch (<15%-20%)	SEDAR 73 landings indicated dead discards in last 3 years of the assessment (2017-2019) were >90% of removals (# fish)	1	1	1	1
Annual Commercial value	> 10% total annual revenue	Between 1% and 10% of total annual revenue	< 1% total annual revenue	Between 1% and 10% of total annual revenue for all years 2018-2022 Average 5.8%	3	3	3	2
	> 40% of total trip revenue, on average	Between 10% and 40% of total trip revenue, on average	< 10% total trip revenue, on average	Between 10% and 40% of total trip revenue for all years 2018-2022 Average 29.7% AP: Exceeding the ACL was due to timing of management				
Recreational desirability	> 5% trips report targeting this species	Between 1% and 5% of trips report targeting this species	< 1% trips report targeting this species	2018-2022, annual recreational targeted trips range from 5% to 36% of recreational trips in the region; average of 19%	1	1	1	1
Social concerns	>13 communities highly reliant on this species	7-13 communities highly reliant on this species	<7 communities highly reliant on this species	Estimated at the county level, most counties have low reliance on this species	3	3	3	3
Final Human Dimension Score					**1.80**	**2.00**	**1.80**	**1.60**
Environmental Attributes	**High (1)**			**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Ecosystem importance	Does this species significantly affect other species, e.g. as a keystone predator, primary prey, habitat builder etc.?							
Climate change	Is this species likely to experience/be experiencing negative stock impacts due to climate change?							
Other Environmental Variables	Are other environmental variables causing negative effects on this stock, e.g. in the form of regime shifts, recruitment failure, etc.?							
Final Environmental Score					**0**	**0**	**0**	**0**
Final Risk Score					**1.900**	**2.250**	**1.900**	**1.800**
					High	**Medium**	**High**	**High**

SPECIES: GOLDEN TILEFISH

	Risk of Overexploitation			Golden Tilefish				
Biological Attributes	**High (1)**	**Medium (2)**	**Low (3)**	**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Estimated natural mortality (M)	M ≤ 0.20	0.20-0.40	M ≥ 0.4	SEDAR 66 (2021): constant natural mortality averaging 0.1038 based on a max age of 40 years	1	1	1	1
Age at maturity	≥ 4 years	2-4 years	≤ 2 years	Age at 50% maturity from SEDAR 66 (2021): 3 years	2	2	2	2
Final Biological Score					**1.5**	**1.5**	**1.5**	**1.5**
Human Dimension Attributes	**High (1)**	**Medium (2)**	**Low (3)**	**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Ability to regulate fishery	fishery consistently exceeds Total ACL (ex. 3+ out of 5 years) and/or exceeds Total ACL by more than 15%	fishery mostly kept below Total ACL (ex. Exceeds ACL 1-2 out of 5 years) and/or does not exceed ACL by more than 15%	fishery consistently kept below Total ACL	Total ACL (2018-2022) exceeded by <15% in 2019, 2020 (<1%), 2022 (<1%) Commercial ACL (2018-2022) exceeded by <15% in 2019, 2020, 2021 Recreational ACL (2018-2022) exceeded by >15% in 2018, 2019, 2020, 2021	2	3	2	3
Potential for discard losses	Dead discards are a significant proportion of the total catch (over 40%)	Dead discards are a moderate proportion of the total catch (20%-40%)	Dead discards very small component of total catch (<15%-20%)	Previous assessments have characterized discards as negligible AP: Some caution due to the lack of recreational intercepts and wide variability in recreational catch estimates	3	3	3	3
Annual Commercial value	> 10% total annual revenue	Between 1% and 10% of total annual revenue	< 1% total annual revenue	>10% of total annual revenue for all years 2018-2022 Average 20.3%	1	1	1	1
	> 40% of total trip revenue, on average	Between 10% and 40% of total trip revenue, on average	< 10% total trip revenue, on average	>40% of total trip revenue for all years 2018-2022 Average 69.9%				
Recreational desirability	> 5% trips report targeting this species	Between 1% and 5% of trips report targeting this species	< 1% trips report targeting this species	2018-2022, annual recreational targeted trips range from 0% to 2% of recreational trips in the region; average of 1% AP: Desirability can vary in different parts of the region	3	3	3	3
Social concerns	>13 communities highly reliant on this species	7-13 communities highly reliant on this species	<7 communities highly reliant on this species	Estimated at the county level, most communities have low reliance on this species One community is Medium (Dare, NC, commercial) and one is Medium-High (Monroe, FL, recreational) AP: As fishing for other species has become more restrictive and access via boating technology has increased, more interest in this species	2	2	2	2
Final Human Dimension Score					**2.20**	**2.40**	**2.20**	**2.40**
Environmental Attributes	**High (1)**			**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Ecosystem importance	Does this species significantly affect other species, e.g. as a keystone predator, primary prey, habitat builder etc.?			Affect habitat through burrowing behavior		1		
Climate change	Is this species likely to experience/be experiencing negative stock impacts due to climate change?							
Other Environmental Variables	Are other environmental variables causing negative effects on this stock, e.g. in the form of regime shifts, recruitment failure, etc.?							
Final Environmental Score					**0**	**1**	**0**	**0**
Final Risk Score					**1.850**	**1.633**	**1.850**	**1.950**
					High	**High**	**High**	**High**

SPECIES: BLUELINE TILEFISH

	Risk of Overexploitation			Blueline Tilefish				
Biological Attributes	**High (1)**	**Medium (2)**	**Low (3)**	**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Estimated natural mortality (M)	M ≤ 0.20	0.20-0.40	M ≥ 0.4	SEDAR 50 (2017): 0.13 based on meta-analysis growth parameters	1	1	1	1
Age at maturity	≥ 4 years	2-4 years	≤ 2 years	No age information used in SEDAR 50 (2017) assessment. Length at maturity estimated as 305 mm. Linf from meta-analysis estimated as 690 mm.				
Final Biological Score					**1**	**1**	**1**	**1**
Human Dimension Attributes	**High (1)**	**Medium (2)**	**Low (3)**	**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Ability to regulate fishery	fishery consistently exceeds Total ACL (ex. 3+ out of 5 years) and/or exceeds Total ACL by more than 15%	fishery mostly kept below Total ACL (ex. Exceeds ACL 1-2 out of 5 years) and/or does not exceed ACL by more than 15%	fishery consistently kept below Total ACL	Total ACL (2018-2022) exceeded by >15% in 2018, 2019, 2020, 2021 Commercial ACL (2018-2022) exceeded by <15% in 2018, 2019, 2021, 2022 Recreational ACL (2018-2022) exceeded by >15% in 2018, 2019, 2020, 2021	1	1	1	1
Potential for discard losses	Dead discards are a significant proportion of the total catch (over 40%)	Dead discards are a moderate proportion of the total catch (20%-40%)	Dead discards very small component of total catch (<15%-20%)	SEDAR 50 (2017) characterized dead discards as 3% of total removals (both sectors) for the southern portion of the stock	3	3	3	3
Annual Commercial value	> 10% total annual revenue	Between 1% and 10% of total annual revenue	< 1% total annual revenue	Between 1% and 10% of total annual revenue for all years 2018-2022 Average 3.3%	2	2	2	2
	> 40% of total trip revenue, on average	Between 10% and 40% of total trip revenue, on average	< 10% total trip revenue, on average	Between 10% and 40% of total trip revenue for all years 2018-2022 Average 15.1%				
Recreational desirability	> 5% trips report targeting this species	Between 1% and 5% of trips report targeting this species	< 1% trips report targeting this species	2018-2022, annual recreational targeted trips range from 0% to 2% of recreational trips in the region; average of <1%	3	3	3	3
Social concerns	>13 communities highly reliant on this species	7-13 communities highly reliant on this species	<7 communities highly reliant on this species	Estimated at the county level, most communities have low reliance on this species One community is Medium (Dare, NC, commercial) and two are Medium-High (Dare, NC, recreational and Monroe, FL, recreational)	2	2	2	2
Final Human Dimension Score					**2.20**	**2.20**	**2.20**	**2.20**
Environmental Attributes	**High (1)**			**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Ecosystem importance	Does this species significantly affect other species, e.g. as a keystone predator, primary prey, habitat builder etc.?							
Climate change	Is this species likely to experience/be experiencing negative stock impacts due to climate change?				1	1	1	1
Other Environmental Variables	Are other environmental variables causing negative effects on this stock, e.g. in the form of regime shifts, recruitment failure, etc.?				#REF!			
Final Environmental Score					**#REF!**	**1**	**1**	**1**
Final Risk Score					**#REF!**	**1.400**	**1.400**	**1.400**
					#REF!	**High**	**High**	**High**

SPECIES: MUTTON SNAPPER

	Risk of Overexploitation			Mutton Snapper				
Biological Attributes	**High (1)**	**Medium (2)**	**Low (3)**	**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Estimated natural mortality (M)	M ≤ 0.20	0.20-0.40	M ≥ 0.4	SEDAR 15A (2015): constant natural mortality averaging 0.11 based on a max age of 40 years	1	1	1	1
Age at maturity	≥ 4 years	2-4 years	≤ 2 years	SEDAR 15A (2015): 50% mature at 3.7 years AP: Size limit change was a significant measure	2	2	2	2
Final Biological Score					**1.5**	**1.5**	**1.5**	**1.5**
Human Dimension Attributes	**High (1)**	**Medium (2)**	**Low (3)**	**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Ability to regulate fishery	fishery consistently exceeds Total ACL (ex. 3+ out of 5 years) and/or exceeds Total ACL by more than 15%	fishery mostly kept below Total ACL (ex. Exceeds ACL 1-2 out of 5 years) and/or does not exceed ACL by more than 15%	fishery consistently kept below Total ACL	No overages from either sector from 2018-2022 AP: Not meeting ACL in recent years; closed areas where mutton are found in south FL	3	3	3	3
Potential for discard losses	Dead discards are a significant proportion of the total catch (over 40%)	Dead discards are a moderate proportion of the total catch (20%-40%)	Dead discards very small component of total catch (<15%-20%)	SEDAR 79 (2024): Dead Discards were 23.83% of all removals for years 2018-2022 using 30% discard mortality rate Rec dead discards were >24% of recreational removals and commercial dead discards were between 5% and 8% of commercial removals AP: Typically shallow water releases, noting problems with shark depredation	3	3	2	2
Annual Commercial value	> 10% total annual revenue	Between 1% and 10% of total annual revenue	< 1% total annual revenue	Between 1% and 10% of total annual revenue for all years 2018-2022 Average 1.8%	2	3	2	2
	> 40% of total trip revenue, on average	Between 10% and 40% of total trip revenue, on average	< 10% total trip revenue, on average	<10% of total trip revenue for all years 2018-2022 Average 6.7% AP: More valuable in lower quantities				
Recreational desirability	> 5% trips report targeting this species	Between 1% and 5% of trips report targeting this species	< 1% trips report targeting this species	2018-2022, annual recreational targeted trips range from 10% to 29% of recreational trips in the region; average of 20% AP: Valued in headboat/charter fishery, effort may taper off due to shark depredation frustration	1	1	1	1
Social concerns	>13 communities highly reliant on this species	7-13 communities highly reliant on this species	<7 communities highly reliant on this species	Estimated at the county level, most communities have low reliance on this species One county is Medium (St. John, FL, recreational) and one is Medium-High (Monroe, FL, recreational)	3	3	3	3
Final Human Dimension Score					**2.40**	**2.60**	**2.20**	**2.20**
Environmental Attributes	**High (1)**			**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Ecosystem importance	Does this species significantly affect other species, e.g. as a keystone predator, primary prey, habitat builder etc.?							
Climate change	Is this species likely to experience/be experiencing negative stock impacts due to climate change?							
Other Environmental Variables	Are other environmental variables causing negative effects on this stock, e.g. in the form of regime shifts, recruitment failure, etc.?			AP: Targeting further north in recent years (Jacksonville)	#REF!			
Final Environmental Score					**#REF!**	**0**	**0**	**0**
Final Risk Score					**#REF!**	**2.050**	**1.850**	**1.850**
					#REF!	**Medium**	**High**	**High**

SPECIES: YELLOWTAIL SNAPPER

	Risk of Overexploitation			Yellowtail Snapper				
Biological Attributes	**High (1)**	**Medium (2)**	**Low (3)**	**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Estimated natural mortality (M)	M ≤ 0.20	0.20-0.40	M ≥ 0.4	SEDAR 64 (2019): constant mortality-at-age = 0.160 using a max age of 28 years; natural mortality at age (Mat-age ranged from 0.385-0.147	1	1	1	1
Age at maturity	≥ 4 years	2-4 years	≤ 2 years	SEDAR 64 (2019): in FL waters, 50% of females were sexually mature at 1.7 years	3	3	3	3
Final Biological Score					**2**	**2**	**2**	**2**
Human Dimension Attributes	**High (1)**	**Medium (2)**	**Low (3)**	**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Ability to regulate fishery	fishery consistently exceeds Total ACL (ex. 3+ out of 5 years) and/or exceeds Total ACL by more than 15%	fishery mostly kept below Total ACL (ex. Exceeds ACL 1-2 out of 5 years) and/or does not exceed ACL by more than 15%	fishery consistently kept below Total ACL	No rec overages from 2018-2022 Com closures in 2018 and 2019 AP: Commercial overages could be a lag in tracking landings	3	3	3	3
Potential for discard losses	Dead discards are a significant proportion of the total catch (over 40%)	Dead discards are a moderate proportion of the total catch (20%-40%)	Dead discards very small component of total catch (<15%-20%)	Releases are often in shallow water, so probably high survival for hook and line Notable recreational fishing observed in SEDAR 64, but different recreational data being used in SEDAR 96 (FL State Reef Fish Survey)	3	3	3	3
Annual Commercial value	> 10% total annual revenue	Between 1% and 10% of total annual revenue	< 1% total annual revenue	>10% of total annual revenue for all years 2018-2022 Average 36.2%	1	1	1	1
	> 40% of total trip revenue, on average	Between 10% and 40% of total trip revenue, on average	< 10% total trip revenue, on average	>40% of total trip revenue for all years 2018-2022 Average 83.0%				
Recreational desirability	> 5% trips report targeting this species	Between 1% and 5% of trips report targeting this species	< 1% trips report targeting this species	2018-2022, annual recreational targeted trips range from 18% to 29% of recreational trips in the region; average of 25% AP: Highly targeted especially with high fuel cost and ability to catch	1	1	1	1
Social concerns	>13 communities highly reliant on this species	7-13 communities highly reliant on this species	<7 communities highly reliant on this species	Estimated at the county level; 13 communities analyzed due to species range Most communities have low reliance on this species, but one community is Medium (St. John, FL, recreational) and one is Medium-High (Monroe, FL, recreational) AP: Because of the high importance to the South FL communities, should be high risk. People may be shifting more to YTS with other species becoming more highly regulated.	2	1	2	1
Final Human Dimension Score					**2.00**	**1.80**	**2.00**	**1.80**
Environmental Attributes	**High (1)**			**Notes**	**Default Score**	**AP Score**	**SSC Score**	**Council Score**
Ecosystem importance	Does this species significantly affect other species, e.g. as a keystone predator, primary prey, habitat builder etc.?							
Climate change	Is this species likely to experience/be experiencing negative stock impacts due to climate change?							
Other Environmental Variables	Are other environmental variables causing negative effects on this stock, e.g. in the form of regime shifts, recruitment failure, etc.?			Infrastructure impacts on shallow water fish; dependent on coral habitat		1		
Final Environmental Score					**0**	**1**	**0**	**0**
Final Risk Score					**2.000**	**1.600**	**2.000**	**1.900**
					High	**High**	**High**	**High**