Joint Mid-Atlantic and South Atlantic SSC Blueline Tilefish Sub-Group

Review Workshop Summary Report

April 21 and 23, 2025 via webinar

Report Prepared by Sub-Group Members:
Dr. John Boreman, NOAA Fisheries (retired), Mid-Atlantic SSC
Dr. Jim Gartland, Virginia Institute of Marine Science, South Atlantic SSC
Dr. Yan Jiao, Virginia Tech University, Mid-Atlantic SSC
Dr. Cynthia Jones, Old Dominion University (retired), Mid-Atlantic SSC
Dr. Marcel Reichert, South Atlantic SSC

Background

As part of the Southeast Data, Assessment, and Review (SEDAR) 92 process, operational assessments for Atlantic Blueline Tilefish were conducted. These operational assessments updated the SEDAR 50 Blueline Tilefish models – an ASPIC model for South of Cape Hatteras to the Gulf of Mexico at the South Atlantic Council boundary and the latest Data Limited Methods (DLM) model for North of Cape Hatteras that includes the South Atlantic and Mid-Atlantic Council management boundaries. Operational assessments through the SEDAR process "incorporate recent information into existing assessments and produce timely management advice." New information and changes to model configuration can also be considered but are not required.

A joint Mid-Atlantic and South Atlantic Scientific and Statistical Committee (SSC) sub-group was formed to provide a technical review and guidance on the information available for the Blueline Tilefish stock north of Hatteras. A similar approach was conducted back in 2017-2018 following the outcomes of SEDAR 50. The joint sub-group was charged with responding to the peer review Terms of Reference (ToRs) (Appendix 1) approved by leadership from both the Mid-Atlantic and South Atlantic Councils. The ToRs tasked the joint sub-group to review the available data and DLM model, provide guidance and/or preliminary recommendations for the overfishing limit (OFL) and acceptable biological catch (ABC) for full SSC (both MAFMC and SAFMC) consideration, and provide a scientifically derived method to apportion the ABC between the two Council jurisdictions.

The joint sub-group review workshop was held via webinar on Monday, April 21st and Wednesday, April 23rd, 2025. A detailed review workshop agenda can be found in Appendix 2. The joint sub-

group was supported by staff from the Northeast and Southeast Fisheries Science Centers and Mid-Atlantic and South Atlantic Councils. The review workshop was open to the public and public comment opportunities were provided at various times throughout the workshop (see Appendix 3 for review workshop attendance).

Overall takeaways/comments

- While the SEDAR 92 assessment process addressed some data concerns identified following SEDAR 50 (e.g., growth parameters, Delphi estimates, and some ageing), a significant number of data issues and shortcomings remain. In addition, the inclusion of MRIP catch estimates for the private recreational fleet are now used to inform the total catch time series. MRIP estimates for Blueline Tilefish are highly variable and uncertain. These data changes, in part, are responsible for the significant increases in total catch estimates observed since 2002. Sampling from the commercial longline fleet has declined since 2014 and now covers less than 10 trips per year. The fishery-independent South Atlantic Deepwater Longline (SADL) survey and its recent expansion north to the Mid-Atlantic holds a lot of promise and could provide a significant step forward in future science, assessment, and management applications, but the data were too limited to be directly included here. A 2023 South Atlantic SSC review of the SADL survey recommended that at least five years of data should be available prior to the potential use as an index of relative abundance.

- The DLM model updated for SEDAR 92 was an operational assessment and was therefore limited in scope as to what could be included or considered. The analysis only considered the five management procedures (MPs) evaluated and/or used following SEDAR 50. These included three catch-based MPs and two mean length (ML) based MPs. When run with new and updated input data, the two ML MPs did not produce viable outputs (i.e., when natural mortality (M) was subtracted from total mortality (Z), the estimates of fishing mortality (F) were usually negative). An extensive exploration was conducted to understand why the ML methods produced unreasonable results and found the ML methods removed the negative F estimates but retained the remaining extremely low F estimates. This resulted in extremely high estimates of biomass and subsequently unreasonably high TAC outputs.

    - Note: the two ML MPs were used to set catch advice following SEDAR 50 and the catch-based MPs were not recommended for use.

- The three catch-based MPs produced relatively similar TAC outputs. These TAC outputs are much higher than those produced following SEDAR 50. This is driven by the higher catches in recent years and the significant increasing trend in total catch for the area north of Hatteras since 2002. The increasing catch is primarily driven by the recreational fishery, and in part is due to the change from using the Delphi Method to MRIP estimates to quantify recreational removals. Of note, when ML MP runs were restricted to data through 2015 (the terminal year of the last assessment) and the Lc and Lbar were set to 2015 values, the results (i.e., median TAC outputs) were more consistent with the catch-based MP's.

- The DLM does not produce any quantitative estimates of stock status and does not produce stock projections (as typically considered with estimates of recruitment, weight at age, fishery selectivity etc.). The sub-group did note the increasing trend in catch, a higher proportion of larger fish in recent years, and optimistic population and fishery signs from industry could be indicators that represent positive signs for the population. However, these indicators have a variety of caveats and uncertainties associated with them.
- The TAC outputs produced from the previous two ML MPs and used to set catch advice following SEDAR 50 were a maximum sustainable yield (MSY) proxy and were considered an OFL. However, as noted above, these MPs did not produce viable results and the outputs from the catch-based MP were therefore considered an ABC and not an OFL.
- The "CC1" catch-based MP considers the most recent 5-year catch estimates and was considered the most appropriate catch-based MP to determine an ABC. This MP reflects the current fishery conditions and is capturing some amount of scientific uncertainty given the variability in the catch estimates.
- Given the high degree of uncertainty in an application of a catch-based MP from the DLM, the sub-group suggested the Councils consider applying a management uncertainty buffer when setting the annual catch limit (ACL) or annual catch target (ACT).
- The data collected from the fishery-independent SADL survey was determined to be appropriate for use in developing a method to apportion the ABC between Council jurisdictions. Using the SADL survey information is much more robust and a significant improvement over the data previously used from the 2017 fishery-independent pilot tilefish longline survey in the Mid-Atlantic. A standardized catch per haul, weighted by strata area, was identified as the most appropriate method to estimate Mid-Atlantic and South Atlantic proportions. The sub-group noted the uncertainties in characterizing the distribution of suitable Blueline Tilefish habitat within each stratum and across Council regions. Given the stratified random sampling survey design, the catch-per-haul information should account for habitat distribution differences throughout the strata area. A number of recommendations for future analysis to evaluate suitable Blueline Tilefish habitat were identified.
    - Note: the new method for apportioning the ABC using the SADL survey substantially changes the previous apportionment from SEDAR 50 (~14% difference).
- The sub-group discussed the timing of the next assessment and recommended an assessment be completed within the next 5 years given the identified uncertainties and availability of SADL survey data in the next few years that will enable the integration of a fishery-independent index to provide a more robust assessment method.

Response to Terms of Reference

The sub-group was tasked with preparing a report that addressed the following Terms of Reference (ToRs) regarding the Data Limited Methods (DLM) model for the portion of the Atlantic Blueline Tilefish stock north of Cape Hatteras. The ToRs are in *italics* and the sub-group responses are in standard font. Sub-group recommendations are identified by **bold** font.

Term of Reference #1 – Data

Evaluate the data used in the assessment, including a discussion of the strengths and weaknesses of data sources and decisions. Consider the following:

a) *Are data decisions made by the Topical Working Group and Assessment processes appropriate and justified?*
b) *Are data uncertainties acknowledged, reported, and within normal or expected levels?*
c) *Are the appropriate management strategies within the DLM Tool properly applied to the available data?*
d) *Are input data series sufficient to support the DLM approach?*

In 2018, the MAFMC SSC noted a number of concerns with the data sets used to support their ABC recommendation, which was eventually used for setting catch limits for the 2019-2025 fishing seasons (for the coastal region north of Cape Hatteras), including:

- Absence of reliable fishery-dependent indices
- Unreliable catch estimates
- An unknown natural mortality rate
- No estimates of recruitment
- An unknown level of fishing pressure
- No information on stock biomass vs B_{msy}
- Landings were not indicative of stock distribution
- Landings history exhibited wide fluctuations
- Use of growth parameters from other species was necessary
- Use of Delphi Method was necessary to develop the catch time series for the recreational fishery
- No estimate of fishery selectivity was available for the northern part of the range
- No age data were available because of the uncertainties in the age determination methodology

Some of these concerns were addressed in the most recent assessment: growth parameters were obtained directly from Blueline Tilefish samples, and recreational catch estimates derived by using the Delphi methodology were replaced by estimates from the MRIP survey, although the MRIP estimates had associated mean standard error values that were generally higher than the recommended range for use in management. The most recent assessment, however, still lacked supporting data for estimating fecundity, maturity, stock biomass, fishing mortality rates, or recruitment – key information that is needed to determine the overfishing limit (OFL). Data sources were essentially limited to commercial and recreational catch statistics and length frequency measurements.

Considering the limited data available, the group agreed that the data decisions made by the Topical Working Group and in the assessment were appropriate and justified. However, the group noted the high level of uncertainty associated with the MRIP estimates used to characterize recreational removals. The group also agreed that the most significant data uncertainties were acknowledged and reported, recognizing that the assessment is an operational assessment supported by very limited data. As such, the assessment did not incorporate fishery-independent

information being collected in the ongoing SADL survey that was instituted in 2020 following SEDAR 50 and recently expanded in 2023 to the coastal region from the NC/VA border to the DELMARVA peninsula. The sub-group considered continued use of the DLM Toolbox in the current assessment was appropriate and justified, given the limited data sets that were available. The group also supported the decision to drop two of the five derived management procedures in the DLM Toolbox that were used in the previous assessment due to unrealistic values (e.g., negative estimates of fishing mortality rates) when they were updated. The remaining three procedures (average catch across the entire time series, average catch for the most recent five years, and 70% of the average catch for the most recent five years) were properly applied to the available data and appropriate for use in selecting an ABC value for the portion of the Blueline Tilefish stock north of Cape Hatteras.

Term of Reference #2 – Methods

Evaluate and discuss the strengths and weaknesses of the methods used to assess the stock, taking into account the available data. Consider the following:

a) Are methods scientifically sound and robust?

Yes, considering the limited data currently available on this species, the use of the DLM toolkit and same five management procedures (MPs) evaluated in SEDAR 50 is appropriate for this Operational Assessment. These five methods are used to estimate total allowable catch (TAC) and include (see SAR for more details on methods): (1) AvC: average catch (i.e., landings and dead discards) of the entire catch time-series, (2) CC1: Average catch over the most recent 5 years of the catch time-series, (3) CC4: 70% of average catch over the most recent 5 years of the catch time-series, (4) Fdem_ML: demographic method that uses length data to estimate Z_{recent}, F_{recent}, and $B_{current}$ to generate TAC, and (5) YPR_ML: yield per recruit analysis that estimates an F_{msy} proxy ($F_{0.1}$) which is then paired with $B_{current}$ from (4) to yield TAC. The latter two length-based methods (4) and (5) resulted in TAC distributions that were unrealistic (i.e., 10 – 20 times larger than maximum observed catch), and estimates of total mortality (Z) that were less than M for several bootstrap iterations. These two ML methods were therefore determined to be unsuitable for developing TAC recommendations from SEDAR 92.

The remaining MPs (1, 2, 3) based solely on catch time-series generated more realistic estimates of TAC. Note that these MPs were designated as "not preferred" in SEDAR 50, because the ML-based methods included data beyond catch and produced viable results in that assessment. Since these ML-based methods yielded unrealistic TAC estimates in SEDAR 92, however, the catch-based approaches were the only MPs deemed suitable for providing management advice from this assessment, given available data.

b) Are priority modeling issues clearly stated and addressed?

Yes, SEDAR 92 clearly stated that the primary modeling objective was to re-fit the MPs included in SEDAR 50 with data updated through 2023. As noted in section 2a, the main issue encountered was that the ML-based approaches considered viable in SEDAR 50 yielded unrealistic TAC estimates in SEDAR 92, and thus were deemed unsuitable for generating management advice.

c) Are the methods appropriate for the available data?

Yes, given the limited data available for this Operational Assessment, use of the DLM Toolkit and five MPs outlined in 2a was considered an appropriate approach.

d) Is the DLM configured properly and used in a manner consistent with standard practices?

Yes. Further, the analyst is to be commended for going beyond standard practices by recreating the calculations associated with the ML-based approaches outside of the DLM Toolkit to identify the cause of the unrealistic TAC estimates (i.e., M approaching and at times exceeding Z) derived from those methods.

Term of Reference #3 – Stock Status

Evaluate the DLM including its capabilities for what it can estimate, and consider the following:

a) Are population estimates (model output – e.g. abundance, exploitation, biomass) estimable from the DLM? If so, are they reliable and consistent with input data and population and biological characteristics?

The DLM tool analyses do not provide a description of the population dynamics, time series of abundance, biomass, or exploitation levels. Additionally, they do not estimate the current population or the status of the fishery. The DLM MPs from SEDAR92 rely solely on catch time series to inform the TAC.

For the assessment of the Blueline Tilefish stock north of Cape Hatteras, the assessment team utilized catch time series data, length data, life history parameters, and their associated uncertainties. Given these circumstances, while no population estimates were provided, the results align with the input data and biological characteristics of this data-limited species.

b) Are quantitative estimates of status determination criteria for this stock estimable using the DLM? If not, are there other indicators that may be used to inform managers about stock trends and conditions?

Quantitative estimates for the status determination criteria of the north of Cape Hatteras stock are not provided by the DLM analyses. The DLM tools used by SEDAR 92 analyze average catch data, and they do not provide estimates of trends or conditions for the stock.

During the meeting, several other indicators were discussed:

- The time series of catches is showing an increasing trend, with catches in recent years significantly higher than in the past. Length composition samples from the commercial longline indicate a higher percentage of larger fish in recent years (2019-2023), although sample sizes have been low since 2013.
- An industry representative noted that management may benefit from a wealth of information available in the fishery. The industry is observing a large presence of fish of various sizes and classes, and environmental conditions seem ideal for supporting Blueline Tilefish productivity.
- Catch limits are being reached by both commercial and recreational fleets.

- There has been an increase in record-size fish awards and citations for recreational Blueline Tilefish in Virginia (https://www.mrc.virginia.gov/vswft/). Additionally, state records for Blueline Tilefish have been documented in North Carolina and Maryland in 2023 and 2024, respectively.

Term of Reference #4 – Projections

If stock projections are provided from the DLM, evaluate the projections, including discussing strengths and weaknesses, and consider the following:

a) *Are the methods consistent with accepted practices and available data?*
b) *Are the methods appropriate for the assessment model and outputs?*
c) *Are the results informative and robust, and useful to support inferences of probable future conditions?*
d) *Are key uncertainties acknowledged, discussed, and reflected in the projection results?*

The DLM cannot provide population projections. DLM provides a TAC based on a time series of historical catches, the AvC, that is used in place of projections. Additionally, the DLM does not provide measures of CV for the AvC. Note that, regardless of the catch-based management procedure selected, the TAC is carried forward without alteration until a new assessment is completed.

Projections rely on estimates of abundance, biomass, exploitation, and recruitment, which are not available for this species.

Term of Reference #5 – Uncertainties

Consider how uncertainties in the assessment, and their potential consequences, are addressed.

a) *Comment on the degree to which methods used to evaluate uncertainty reflect and capture the significant sources of uncertainty in the population, data sources, and assessment methods.*

The approaches used in SEDAR 92 to assess the northern component of the Blueline Tilefish stock effectively addressed uncertainties to the extent practicable when considering limitations imposed by the available data. The bootstrapping approach conducted internally to the DLM Toolkit provided estimates of uncertainty in TAC for the three catch-based MPs (AvC, CC1, CC4) based on interannual variability in catch, and the resulting distributions were combined to produce an ensemble distribution external to the Toolkit. The TAC distributions from the three MPs and ensemble were right-skewed but overlapping, providing some confidence in the use of these methods to support management advice. Further, the analyst in essence conducted a sensitivity analysis, where the ML-based MPs were successfully fitted using catch data through 2015 (the terminal year of SEDAR 50), and resulting TAC estimates were similar to those of the catch-based MPs used in this assessment. This analysis added some confidence in the TAC estimates generated by the catch-based MPs.

It is important to note that while the DLM Toolkit bootstrapping approach and sensitivity analysis mentioned above were valuable, it is likely that uncertainties in the catch-based TAC estimates

were underestimated. Intra-annual measures of uncertainty associated with the various sources of removals were not propagated through the analysis, and these measures were quite large in several years, particularly for private recreational landings and discards generated by MRIP. As in SEDAR 50, removals by private recreational anglers represent a very large source of uncertainty throughout SEDAR 92.

With regard to the ML methods, estimates of uncertainty were incorporated for all life history parameters included in these MPs. While the very large TAC estimates produced by these methods were considered unrealistic and therefore deemed unsuitable for serving as the basis for management advice, the uncertainty in these estimates was also very large (i.e., TAC distributions were very broad), which reinforced the decision to disregard these methods in SEDAR 92.

Term of Reference #6 – Catch Recommendations

Propose an OFL and ABC recommendation for full SSC consideration for the portion of the Blueline Tilefish stock north of Cape Hatteras.

There is no OFL recommendation based on the DLM tool analyses, and thus the OFL is unknown. The two MSY proxy-based MPs, Fmed_ML and YPR_ML, recommended to be used to set catch advice after SEDAR 50, were determined to be not viable for SEDAR 92.

a) *Consider the use of the Mid-Atlantic risk policy and ABC Control Rule to recommend an ABC for the entire area*.

The joint SSC sub-group did not use the MAFMC's risk policy and ABC Control Rule. The sub-group recommended using the DLM tool analysis results, specifically CC1, based on the average catch over the most recent five years. The other two average catch-based DLM MPs do not seem appropriate – AvC does not account for recent changes and CC4 applies a 70% buffer and if we add another buffer you are double deducting. **The sub-group suggests setting catch recommendations based on CC1 and considering the 50% quantile of CC1 as an estimate for the ABC, which is 646,000 pounds (293 mt)**.

Furthermore, the subgroup recommends that the councils consider adding an additional buffer when establishing the ACL/ACT due to the high uncertainty in the recreational catch estimate. The subgroup also recommends developing a new assessment based on the SADL survey as soon as this survey has a sufficient time-series of data (e.g., 5 years).

b) *If deviation from the ABC Control Rule is recommended, outline and provide justification for using an alternative method*.

The recommended CC1 MP from the DLM tool analysis is based on the most recent five-year catch history and is recommended to be the ABC by the joint sub-group, i.e., no need to use the ABC Control Rule.

Term of Reference #7 – Jurisdiction Apportion

Develop a process for separating the ABC recommendations for the portion of the blueline tilefish stock north of Cape Hatteras between Council jurisdictions (i.e. VA-NC border).

a) Consider if the methodology used in the previous assessment to separate the ABC is suitable and identify appropriate fishery-independent data sources that are available.

b) *If the previous methodology is not suitable, determine other methodologies for the ABC separation of this stock between jurisdictions.*

The joint SSC sub-group considered two approaches to separate the two proportions: 1) based on landings, and 2) based on fishery independent longline survey information.

Option 1) was not recommended as it would heavily depend on effort in each of the areas. Option 2) was similar to the one used previously, but at the time relied on data from only one year (2017) of a pilot longline tilefish survey, which had relatively low catch rates for Blueline Tilefish (75 fish). At that time, a weighted proportional estimate (accounting for areas not sampled in the most southern region and a slight mismatch in the survey strata boundary at the VA/NC border) of Blueline Tilefish caught north and south of the VA/NC border resulted in a proportional split of 56% of the ABC to the MAFMC and 44% to the SAFMC. Since then, two years (2023 and 2024) of standardized SADL survey data are available with information from nearly 1,100 Blueline Tilefish caught. As a result, **the joint SSC sub-group recommends dividing the ABC based on the more recent fishery-independent SADL survey information, which had higher catch rates of Blueline Tilefish (518 fish in 2023 & 563 fish in 2024).**

The sub-group had significant discussions about the approach to determine the percentage for proportioning and the associated uncertainty. Some key discussion points were:

- Basing the proportions on a weighting based only on surveyed area assumes that the sampling frame area equals habitat area.
- No information to distinguish habitats among strata.
- The CPUE used is # of fish per longline haul. However, this may need to be adjusted for the small differences in number of deployed/retrieved hooks per line, and given the standardized method, the group agreed that this may only have a very minor impact on the CPUE.

Several methods for the Council jurisdiction proportions were presented and discussed:

- Raw fish counts by year
- Raw fish counts for the two years combined
- Raw CPUE by year and/or use an average
- Weighted CPUE by the stratum area by year
- Weighted CPUE by the stratum area for the two years combined

The joint SSC sub-group recommended that the ABC north and south of the VA/NC border be proportioned based on the combined 2023 and 2024 SADL survey CPUEs scaled by sampling area (stratum). This resulted in an apportioning of 30% for the area from Cape Hatteras to the NC/VA border and 70% for the area north of the NC/VA border.

The justification for this choice was that the mean CPUE (mean abundance per station or set) weighted by the stratum area and combining the two years should represent a more appropriate estimate of Blueline Tilefish distribution through the incorporation of the survey design.

Sources of discussed uncertainty were:

- Sampling density was relatively low, given the total sampling area.
- Only two years of data were available, and the assumption is that the catches are representative of the entire area.
- CPUE was based on # of fish per haul or # of fish per hook retrieved and # of hooks per deployed line was lower than the standard 450 hooks in a small number of cases. This had only a minor impact.

The sub-group also discussed and recommended ways to improve on the data and reduce uncertainty of the ABC split between the two regions in the future:

- Discussions about habitat could incorporate Mid-Atlantic Regional Council on the Ocean (MARCO, https://www.midatlanticocean.org/) and other oceanographic data to identify variability in bottom types.
- Bottom type could be informative in distinguishing (Blueline Tilefish) habitat types within strata. However, the presence of Blueline Tilefish in the longline catch inherently indicates Blueline Tilefish habitat. Catch-per-haul may give some indication of habitat usage differences between areas. It may be worthwhile to look at variance of CPUE within strata in the future. Poorer habitats may have greater variation than better habitats.
- Resampling techniques may be useful to assess the variability of estimates for strata.

Term of Reference #8 – Assessment Process

Provide, or comment on, recommendations to improve the assessment.

a) Consider the research recommendations provided by the Topical Working Groups and Assessment processes in the context of overall improvement to future stock assessments and provide any additional research recommendations.

b) If applicable, provide recommendations for improvement or for addressing any inadequacies identified in the data or the DLM.

To address this ToR, the sub-group reviewed the research recommendations identified as part of SEDAR 50, documented the current status in addressing those recommendations, and identified any new recommendations for future consideration.

Recommendations from SEDAR 50:

1. Develop independent indices of abundance, such as a stratified random sample for the species
2. Resolve ageing issues -provide reliable age readings (Pd/Ra) and growth curves (tagging studies)
3. Improve understanding of recruitment and reproduction – biophysical modeling for egg and larvae, and use of genetics, investigate possible changes in spawning season
4. Improved observer coverage specifically for the South Atlantic region

5. Recreational – implement rare event sampling to improve sample size
6. Estimate discard mortality from deep-drop fishing
7. Improve data collection for fishing effort, catch size, and catch rate (especially around Cape Hatteras)
8. Investigate appropriate assessment models

SEDAR 50 also expected that Blueline Tilefish might be aged precisely such that an age-based model might be available. However, age estimation of Blueline Tilefish has proven imprecise and an aged-based model could not be used. Based on an assumption of an age-based model they also recommended:

9. Study of variability in fish length within each fishery – to produce scaled length-frequencies
10. Fully investigate catch and effort to provide standardized CPUE
11. Sensitivity analysis of poorly-known life history parameters
12. Better methods to capture uncertainty

Progress on these data recommendations include:

- The SADL is a survey that was begun less than five years ago to provide STRS for habitat use, biological information, and potentially CPUE once five or more years of data have been collected. SADL already provided a better understanding of the stock to SEDAR 92.
- There have been a series of NMFS workshops to evaluate age estimation from otoliths. One major advance was a study from SCDNR that relied on historical otolith samples tested through bomb carbon in otoliths cores. Although the data revealed that age data did follow the reference curve, it was deemed too imprecise to use in age-based models.
- The sub-group was not aware of any research that has addressed recruitment and reproduction on this species. However, it is possible that data on spawning and spawning season might be available from the SADL survey in the future.
- The sub-group highlighted the importance of continuing and expanding observer coverage.
- Because Blueline Tilefish are a specialty species (not a rare species), the recreational catch is infrequently encountered in MRIP sampling. Therefore, if more precise estimation of catch is to be made, a targeted sampling program for this species would be recommended.
- To the sub-group's knowledge, there has been no research on discard mortality of this species. However, studies on other deep-sea fishes such as Snowy Grouper could be used as a proxy for barotrauma in deep-drop fisheries.
- The sub-group heard from a commercial fisherman who provided an Excel worksheet of catches from the Wanchese, NC, area and requested better data collection for the region from Cape Hatteras to the Virginia border that appeared to have large landings compared with other regions.
- The stock assessment scientist provided extensive exploration of the DLM and how it calculates and estimates stock status.
- The sub-group noted that data on catches, including lengths, came from a limited sample of longline vessels. The sub-group notes that sampling more vessels would provide a more

accurate estimate of statistics, including length-frequencies. Moreover, the sub-group discussed the use of length-based methods as an approach to supplement DLM.

- Because recreational anglers catch approximately ⅔ of Blueline Tilefish and, as a specialty fishery, intercepts are infrequent, measures of CPUE will be variable between years; it will be difficult to obtain well-estimated CPUE with MRIP as the only data source for recreational catch.
- As a data limited species, these recommendations would require targeted studies of this species. The sub-group is unaware of any such current studies for this species that will address these issues besides an expansion of SADL survey.

Term of Reference #9 – Joint SSC Process

Comment on the overall assessment and joint SSC work group process and provide recommendations on possible ways to improve it.

Assessment process:

- There was considerable input from the Topical Working Groups that improved the assessment.
- The Joint SSC Sub-Group appreciated the lead analyst's work and that of others, and their responsiveness to questions and comments.
- Overall, the assessment team did the best with the very limited available data.

Joint group process:

- The joint sub-group had to make some tough decisions, but was able to come to consensus recommendations for our respective councils.
- The sub-group appreciated the process and collegial atmosphere of the discussions.
- The sub-group felt the webinar format worked OK, but monitoring hands, following the presentations and discussion, and making notes is challenging, especially given the complexity of the issues and discussion. Several members would have preferred an in-person meeting.
- Adding one or two more members of each SSC should probably be considered for similar future joint SSC sub-groups, especially when the topic is complicated and formulating recommendations challenging.
- During this review, different sub-group members led discussions for the various TORS. These members were also responsible for drafting the responses for their assigned TORs. The sub-group felt that that approach worked very well and spread the workload.

Appendix 1 – Review Workshop Terms of Reference

1. Evaluate the data used in the assessment, including a discussion of the strengths and weaknesses of data sources and decisions. Consider the following:
    a) Are data decisions made by the Topical Working Group and Assessment processes appropriate and justified?
    b) Are data uncertainties acknowledged, reported, and within normal or expected levels?
    c) Are the appropriate management strategies within the DLM Tool properly applied to the available data?
    d) Are input data series sufficient to support the DLM approach?

2. Evaluate and discuss the strengths and weaknesses of the methods used to assess the stock, taking into account the available data. Consider the following:
    a) Are methods scientifically sound and robust?
    b) Are priority modeling issues clearly stated and addressed?
    c) Are the methods appropriate for the available data?
    d) Is the DLM configured properly and used in a manner consistent with standard practices?

3. Evaluate the DLM including its capabilities for what it can estimate, and consider the following:
    a) Are population estimates (model output – e.g. abundance, exploitation, biomass) estimable from the DLM? If so, are they reliable and consistent with input data and population and biological characteristics?
    b) Are quantitative estimates of status determination criteria for this stock estimable using the DLM? If not, are there other indicators that may be used to inform managers about stock trends and conditions?

4. If stock projections are provided from the DLM, evaluate the projections, including discussing strengths and weaknesses, and consider the following:
    a) Are the methods consistent with accepted practices and available data?
    b) Are the methods appropriate for the assessment model and outputs?
    c) Are the results informative and robust, and useful to support inferences of probable future conditions?
    d) Are key uncertainties acknowledged, discussed, and reflected in the projection results?

5. Consider how uncertainties in the assessment, and their potential consequences, are addressed.

a) Comment on the degree to which methods used to evaluate uncertainty reflect and capture the significant sources of uncertainty in the population, data sources, and assessment methods.

6. Propose an OFL and ABC recommendation for full SSC consideration for the portion of the blueline tilefish stock north of Cape Hatteras.

a) Consider the use of the Mid-Atlantic risk policy and ABC Control Rule to recommend an ABC for the entire area.

b) If deviation from the ABC Control Rule is recommended, outline and provide justification for using an alternative method.

7. Develop a process for separating the ABC recommendations for the portion of the blueline tilefish stock north of Cape Hatteras between Council jurisdictions (i.e. VA-NC border).

a) Consider if the methodology used in the previous assessment to separate the ABC is suitable and identify appropriate fishery-independent data sources that are available.

b) If the previous methodology is not suitable, determine other methodologies for the ABC separation of this stock between jurisdictions.

8. Provide, or comment on, recommendations to improve the assessment.

a) Consider the research recommendations provided by the Topical Working Groups and Assessment processes in the context of overall improvement to future stock assessments and provide any additional research recommendations.

b) If applicable, provide recommendations for improvement or for addressing any inadequacies identified in the data or the DLM.

9. Comment on the overall assessment and joint SSC work group process and provide recommendations on possible ways to improve it.

Appendix 2 – Review Workshop Agenda

Monday, April 21, 2025

1:00 Welcome/Overview of meeting agenda (TBD, Sub-Group Chair)

1:05 Overview of SEDAR 92 process and DLM model for stock north of Cape Hatteras (N. Klibansky, SEFSC)
- Review of data inputs, model runs, and results
- Sub-group Q&A

2:20 Public comment

2:30 Break

2:40 Discussion and response to Terms of Reference #1 - #5 (SSC Sub-Group)
- Identify tasks for Wednesday session, if needed

4:30 Adjourn

Times are approximate and subject to change

Note: there will be opportunities for additional public comment at the discretion of the chair

Wednesday, April 23, 2025

1:00 Overview of agenda and Monday meeting outcomes and tasks, if needed (TBD, Sub-Group Chair)

1:10 Overview of Mid-Atlantic Council harvest control rule and overfishing limit coefficient of variation (OFL CV) process (J. Boreman)
- Sub-group Q&A

1:30 Discussion and response to Terms of Reference #6 (SSC Sub-Group)

2:25 Break

2:35 Overview of South Atlantic Deepwater Longline (SADL) survey information
- 2023-2024 Blueline Tilefish survey information (K. Craig, SEFSC)
- Overview of process and calculations to portion catch limit between management jurisdictions (Council staff)
- Sub-group Q&A

3:15 Discussion and response to Terms of Reference #7 (SSC Sub-Group)

4:05 Discussion and response to Terms of Reference #8 - #9 (SSC Sub-Group)

4:25 Next Steps (Council staff)

4:30 Adjourn

Times are approximate and subject to change

Note: there will be opportunities for additional public comment at the discretion of the chair

Appendix 3 – Review Workshop Attendance

Sub-Group Members: J. Boreman, J. Gartland, Y. Jiao, C. Jones, M. Reichert

Council/Center/Regional Office Staff: H. Hart, J. Curtis, N. Klibansky, M. Schmidtke, J. Montañez, K. Dancy, B. Muffley, K. Craig, C. Collier, M. Brouwer

Public: A. Bianchi, F. Akers, D. Hemilright, M. Waine