



Mid-Atlantic Fishery Management Council

800 North State Street, Suite 201, Dover, DE 19901-3910

Phone: 302-674-2331 | Toll Free: 877-446-2362 | FAX: 302-674-5399 | www.mafmc.org

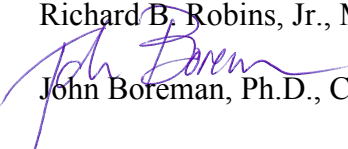
Richard B. Robins, Jr., Chairman | Lee G. Anderson, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

DATE: 25 July 2016

TO: Richard B. Robins, Jr., MAFMC Chairman

FROM:  John Boreman, Ph.D., Chair, MAFMC Scientific and Statistical Committee

SUBJECT: Report of the July 2016 SSC Meeting

The SSC met in Baltimore, MD, on 21-22 July 2016 for the main purpose of reviewing multi-year ABC recommendations for Summer Flounder, Bluefish, Scup, and Black Sea Bass, and continuing discussion of criteria for assigning coefficients of variation (CVs) for overfishing limits (OFLs). The final meeting agenda is attached (Attachment 1).

A total of 13 SSC members were in attendance on July 20th and 11 on July 21st, which constituted a quorum for both days (Attachment 2). Also in attendance were scientists from the NEFSC (NMFS Northeast Fisheries Science Center) in person and by phone, Council members, Council staff, a representative from ASMFC, and staff from NMFS HQ. Documents cited in this report can be accessed via the MAFMC SSC website (<http://www.mafmc.org/ssc-meetings/2016/july-20-21>).

Summer Flounder

Mark Terceiro (NEFSC) and Kiley Dancy (MAFMC) reviewed the updated assessment and fishery performance report for Summer Flounder. Based on the information contained in those reports, the SSC decided that it could not endorse the ABC recommendations for fishing years 2017 and 2018 that were developed at the July 2015 meeting. The principal reasons for the lack of endorsement (as detailed below) are that the biological reference points have continued to decline, stock projections have been consistently over-optimistic, and the stock biomass is dangerously close to being overfished, which could happen as early as next year if increased efforts to curb fishing mortality are not undertaken. As such, the SSC followed the terms of reference provided by the Council should that decision by the SSC be made. The terms of reference (in italics) and the SSC's responses are provided below.

For Summer Flounder, review the Council's existing multi-year specifications for 2017 and 2018 and provide updated ABC recommendations, if necessary to prevent overfishing, for 2017 and 2018. If changes are warranted, the SSC will provide a written report that identifies the following for fishing years 2017 and 2018.

1) *The level of uncertainty that the SSC deems most appropriate for the stock assessment information*

upon which the ABC determination was made, using the criteria listed in the Omnibus Amendment.

The assessment model framework has not changed since the previous benchmark (SAW/SARC 57). Accordingly, the SSC maintained its determination that the assessment should be considered an “SSC-modified OFL” status.

2) If possible, the level of catch (in weight) associated with the overfishing limit (OFL) based on the maximum fishing mortality rate threshold or, if appropriate, an OFL proxy.

The 2016 update of the assessment indicates an OFL for 2017 of **7,600 mt (= 16.76 million pounds)**.

The 2018 OFL, assuming fishing at F_{MSY} ($F=0.309$), is anticipated to be **8,476 mt (= 18.69 million pounds)**. The SSC notes that stock production estimates have been consistently over-optimistic and thus the SSC anticipates the increase in OFL may not be realized.

3) The level of catch (in weight) and the probability of overfishing associated with the acceptable biological catch (ABC) for the stock.

In 2015 the Council requested the SSC provide multi-year ABC specifications that phased in its recommended ABCs over a three-year period; this was a deviation from the Council’s risk policy that was intended to mitigate for economic and social impacts.

Under the SSC’s 2015 specification, the SSC intended the ABC for 2017 to be 80% of the OFL. However, using the revised OFL derived from the updated assessment, the original ABC for 2017 (7,193 mt) would be 95% of the revised OFL and represent a policy associated with a risk of overfishing (P*) of 46%.

The revised understanding of the stock status produced by the assessment update indicates reductions in the estimates of SSB, and increases in the estimates of annual Fs. In light of these trends, the SSC expresses the following concerns:

- a) The retrospective patterns on SSB and F in the model are close to levels at which the NEFSC typically applies corrections in the assessment. If such corrections are applied the stock is closer to the overfished threshold and annual Fs would be substantially over the F_{MSY} reference point.
- b) With the exception of 2007, the update assessment reinforces a consistent pattern of overfishing since 1981, albeit at a greatly reduced level in last 15 years.
- c) An evaluation of the reliability of stock projections since 2008 indicated that projections of stock status have been consistently over-optimistic. A definitive understanding of the sources of the bias in projections lacking, but assuming that implemented F policies are actually achieved and the lack of accounting for all sources of catch may be contributing factors.
- d) A downward trend is evident in the majority of stock indices, including recruitment, since 2011.

Accordingly, the SSC recommends against implementing the 2017 and 2018 ABCs it recommended last year as a part of a three-year phased approach to specifications. In addition to the concerns listed above, the SSC notes that this is the second year in which the assessment has indicated deterioration in stock status, and that implementation of previous ABCs calculated on the full buffer for scientific uncertainty did not avoid overfishing. The SSC concluded that the patterns in survey and recruitment indices indicate a longer-term decline in stock performance and require additional caution. The SSC further

notes that the stock is currently estimated to be at 58% of SSB_{MSY} ¹ and also that recent recruitment levels have been below average. Thus, the SSC concludes there is a risk of the stock becoming overfished in the near future if the phased-in approach, which implements a reduced buffer for scientific uncertainty, is continued.

The SSC recommends a return to its standard approach for implementing the Council's risk policy in estimating ABC. Assuming an OFL with a lognormal distribution having a 60% CV, and a stock status lower than B_{MSY} , the Council's policy is to use a $P^* = 0.239$. This yields an ABC for 2017 of **5,125 mt (= 11.30 million pounds)**. Application of this standard procedure for 2018 yields a $P^* = 0.267$ and an ABC of **5,999 mt (= 13.23 million pounds)**.

4) *The most significant sources of scientific uncertainty associated with determination of OFL and/or ABC.*

- Retrospective patterns were evident in the assessment update that have substantial implications for the reliability of model projections and inferences regarding the status of the stock. The causes of the retrospective pattern are unknown, but might include changes in the following:
 - 1) Sources of mortality that are not fully accounted in the assessment. These could include:
 - Under-estimation of discards in both the commercial and recreational fisheries, and lower estimates of mortality rates applied to the discards than are actually occurring; and
 - Under-reported landings.
 - 2) Natural mortality, which may be underestimated – but the presence of older male flounder in the population suggest this is unlikely.
 - 3) Availability or catchability of fish due to changes in stock distribution.
- Changes in life history are apparent in the population.
- Potential changes in availability of fish to some surveys and to the fishery as a result of changes in the distribution of the population.

5) *Ecosystem considerations accounted for in the stock assessment information presented, and any additional ecosystem considerations that the SSC took into account in selecting the ABC, including the basis for those additional considerations.*

No specific, additional ecosystem information was provided to the SSC for consideration in forming its ABC recommendation.

6) *Prioritized research or monitoring recommendations that would reduce the scientific uncertainty in the ABC recommendation and/or improve the assessment information level.*

- 1) Determining and evaluating the sources of the over-optimistic stock projections.
- 2) Socio-economic research on the objectives and performance measures for the fishery to understand the balance of costs and benefits of ABC specifications.
- 3) The SSC recognizes the research recommendations provided in the last benchmark assessment report. Also, the SSC recommends research is conducted to:
 - Evaluate the causes of decreased recruitment and changes in recruitment per spawner in recent years;
 - Evaluate uncertainties in biomass to determine potential modifications to OFL CV employed;

¹ This estimate of the level of SSB_{MSY} does not incorporate the retrospective correction, which would lower the percentage of SSB_{MSY} even further

- Evaluate fully the sex- and size distribution of landed and discarded fish, by sex, in the Summer Flounder fisheries;
- Evaluate past and possible future changes to size regulations on retention and selectivity in stock assessments and projections; and
- Incorporate sex-specific differences in size at age into the stock assessment.

7) *The materials considered in reaching its recommendations.*

The following documents were used by the SSC to develop the revised ABC recommendations. All of these documents can be accessed through the SSC meeting website (<http://www.mafmc.org/ssc-meetings/2016/july-20-21>).

- Summer Flounder MAFMC Staff Memo: Specifications Review for 2017-2018
- Summer Flounder NEFSC Assessment Update for 2016
 - ABC Projection Options (Version 1)
 - ABC Projection Options (Version 2 with MAFMC staff recommendation)
 - ABC Options Comparison (Version 2)
- Summer Flounder, Scup, and Black Sea Bass Fishery Performance Reports and Additional Advisor Comments (as of 7/8/16)
- Summer Flounder Fishery Information Document

8) *A certification that the recommendations provided by the SSC represent the best scientific information available.*

To the best of the SSC's knowledge, these recommendations are based on the best available scientific information.

Bluefish

Mark Terceiro presented the NEFSC's data update and Jose Montañez (MAFMC) reviewed the regulatory history and the latest fishery performance report for Bluefish. The data update included commercial and recreational landings and discards, and updated indices for seven fishery independent surveys and one fishery dependent survey. The stock biomass appears to be stable, and the fishing mortality rate is declining and is below the F_{msy} proxy ($F_{35\%}$).

The SSC questioned why the commercial quota was lowered for 2016 relative to the information the SSC reviewed in 2015. The response was that this was due to an update on landings that became available after SSC deliberations in 2015, which resulted in slightly different quota calculations due to the inability to transfer some recreational quota to the commercial sector. There was also a general concern raised by the SSC that survey indices appear to be declining across the board and catch continues to decline. There was also a suggestion to aggregate all the current surveys into a composite index of abundance. These concerns notwithstanding, the SSC found no compelling evidence to change its ABC recommendations for bluefish of **9,363 mt (20.64 million pounds)** for 2017 and **9,895 mt (21.81 million pounds)** for 2018. The SSC will review the most recent information available again in 2017 to determine if changes to the recommended ABC are warranted.

Scup

As he did for Bluefish, Mark Terceiro presented the NEFSC's data update for Scup and Julia Beatty (MAFMC) followed with a summary of the regulatory history and the latest fishery performance report. The data update included the commercial and recreational fisheries catch, landings, and discard estimates, and NEFSC and state survey indices through 2015. Scup biomass indices continue to be high, the relative exploitation ratios are remaining low, and there appears to be a strong 2015 year class.

The SSC noted that, although the stock appears to still be large (all stock metrics appear to be generally positive), the ABC projections are declining; the Council should consider requesting an assessment update since it appears that yields could be increased. The SSC asked if any states are catching or exceeding their quotas – there was no information available to answer this question directly, but the scup fishery has state-by-state quotas in the summer only, so the fishery is only constrained regionally for a short window of the overall fishery. The SSC also had some concern about the ecological impact of the large scup stock on benthic communities, but information was not available to address this question. Given the information presented, the SSC found no compelling reason to change its ABC recommendations of **12,881 mt (28.40 million pounds)** for 2017 and **12,270 mt (27.05 million pounds)** for 2018.

Black Sea Bass

Mark Terceiro presented the NEFSC's data update for Black Sea Bass, which included catch and survey information through 2015. Kiley Dancy then followed with a summary of the regulatory history and the latest fishery performance report. A benchmark assessment is currently underway for Black Sea Bass with a SARC review slated for 29 November – 2 December 2016. The SSC will meet in early 2017 to review and potentially revise the 2017 ABC recommendation based on the results of the assessment, assuming the assessment passes SARC muster. Due to the continued lack of an acceptable estimate of the OFL, and the fact that a benchmark assessment is underway and on track, the SSC decided at this point in time not to change its ABC recommendation for 2017 of **3,024 mt (6.67 million pounds)**.

The SSC expressed continued concern about the catch overages, illegal catches, and under-reporting in the recreational fishery for Black Sea Bass. The fishery performance report prepared by the advisory panel suggests this situation may be getting worse.

Criteria for Setting OFL CVs

The SSC discussed next steps for the OFL CV subcommittee. A high priority topic from the last meeting was exploring the use of projection performance information to inform an appropriate OFL CV. The SSC appreciated the projection performance information presented for the 2016 Summer Flounder assessment update, and would like to compare similar information for other stocks; projection performance information for Scup is in progress and could be reviewed in the future. The main question is how to translate projection performance into an OFL CV for use in the MAFMC control rule.

The SSC held a broader discussion of the impacts of uncertainty due not just to model structure but also due to input data series (in particular recreational catch and discard). Separate consideration of these

uncertainty types (bias vs. variance) may be required to capture uncertainty in OFL appropriately. All agreed that convening a workshop to address assessment uncertainty and options for estimating OFL CV with NEFSC assessment staff would be useful.

Between now and the September 2016 SSC meeting, the subcommittee will work to:

1. Revise the current OFL CV white paper with the examples of projection performance from the Summer Flounder assessment update.
2. Further revise the draft during a subcommittee call in August 2016.
3. Distribute revised white paper for review at the Sept SSC meeting.
4. Develop SSC/NEFSC workshop goals, objectives, and outputs (draft for Sept SSC).
5. Consider whether a workshop can be scheduled prior to the end of calendar 2016.
6. Consider broader participation in the workshop (e.g., Rick Methot, Patrick Lynch, NEFMC SSC)

cc: SSC Members, Lee Anderson, Chris Moore, Rich Seagraves, José Montañez, Kiley Dancy, Julia Beatty, Mark Terceiro, Tony Wood, Gary Shepherd, Kirby Rootes-Murdy

Mid-Atlantic Fishery Management Council
Scientific and Statistical Committee Meeting
21-22 July 2016

Final Agenda

Wednesday July 21, 2016

- 10:00 a.m. Recommend Summer Flounder ABC specifications (2017-2018)
- 12:00 p.m. Lunch
- 1:30 p.m. Summer Flounder ABC cont.
- 2:30 a.m. Review 2017 Atlantic Bluefish specifications
- 3:30 p.m. Review multi-year ABC specifications for Scup
- 5:00 p.m. Adjourn

Thursday July 22, 2016

- 8:30 a.m. Review 2017 Black Sea Bass specifications
- 10:00 a.m. Report of OFL CV Subcommittee
- 11:00 a.m. Other business
- 12:00 p.m. Adjourn

MAFMC Scientific and Statistical Committee
20-21 July 2016 Meeting
Baltimore, MD

<u>Name</u>	<u>Affiliation</u>
<i>SSC Members in Attendance:</i>	
John Boreman (SSC Chairman)	NC State University
Tom Miller (SSC Vice-Chair)	University of Maryland - CBL
David Tomberlin	NMFS Office of Science and Technology
Mark Holliday	NMFS (Retired)
Mike Frisk	Stony Brook University
Sarah Gaichas	NMFS Northeast Fisheries Science Center
Ed Houde	University of Maryland – CBL
Wendy Gabriel	NMFS Northeast Fisheries Science Center
Olaf Jensen (7/20 only)	Rutgers University
Paul Rago	NMFS (retired)
Yan Jaio	VA Tech
Brian Rothschild	UMass Dartmouth
Cynthia Jones (7/20 only)	Old Dominion University
<i>Others in attendance:</i>	
Rick Robins	MAFMC chair
Lee Anderson	MAFMC vice-chair
Kirby Rootes-Murdy (7/20 in person, 7/21 by phone)	ASMFC
Rich Seagraves	MAFMC staff
José Montañez (7/20 only)	MAFMC staff
Kiley Dancy	MAFMC staff
Julia Beatty (7/20 only)	MAFMC staff
Mark Terceiro	NMFS Northeast Fisheries Science Center
Tony Wood (by phone, 7/20 only)	NMFS Northeast Fisheries Science Center
Gary Shepherd (by phone, 7/21 only)	NMFS Northeast Fisheries Science Center
John Maniscalco (by phone, 7/20 only)	NYDEC
Rey Marquez (7/20 only)	NMFS Office of Sustainable Fisheries