



## Mid-Atlantic Fishery Management Council

800 North State Street, Suite 201, Dover, DE 19901  
Phone: 302-674-2331 | Toll Free: 877-446-2362 | FAX: 302-674-5399 | [www.mafmc.org](http://www.mafmc.org)  
Michael Luisi, Chairman | G. Warren Elliott, Vice Chairman  
Christopher M. Moore, Ph.D., Executive Director

# MEMORANDUM

**DATE:** 21 July 2017

**TO:** Michael Luisi, MAFMC Chairman

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

**SUBJECT:** Report of the July 2017 SSC Meeting, Part 1: ABC Recommendations

The SSC met in Baltimore on the 19<sup>th</sup> and 20<sup>th</sup> of July 2017. The main objectives of the meeting were to affirm or develop new ABC recommendations for Scup, Summer Flounder, Black Sea Bass, and Bluefish in light of updated information on stock status. Other topics discussed at the meeting included the status of progress being made by the Council toward a Chub Mackerel assessment, wording of the generic terms of reference provided to the SSC for developing ABC recommendations, and the status of work being undertaken by the SSC's OFL CV Working Group (Attachment 1). This part of the report contains the SSC's ABC recommendations for the four species. Part 2 of the report, to be submitted by the August Council meeting, will contain a summary of the SSC's discussions relative to the other topics on the agenda.

A total of 12 SSC members were in attendance on July 19<sup>th</sup> and 12 members attended on July 20<sup>th</sup>, which constituted a quorum for both days (Attachment 2). Also in attendance were MAFMC staff, staff from NMFS Northeast Fisheries Science Center and GARFO, and representatives from the fishing industry and the public. For each ABC deliberation, the following order of business was used: (1) presentation by the lead NEFSC assessment scientist (for Scup and Summer Flounder only); (2) presentation by the lead or designated MAFMC staff member; (3) comments by the lead SSC members for species biology and socioeconomics, respectively; (4) public comments; and (5) ABC deliberations by the SSC. All documents referenced in the report can be accessed via the SSC's meeting website (<http://www.mafmc.org/ssc-meetings/2017/july-19-20>).

## Scup

Mark Terceiro (NEFSC) summarized the recent assessment update for Scup, followed by Julia Beaty (MAFMC staff), who summarized the status of management, the fishery performance report, and MAFMC staff's ABC recommendations. Based on the 2017 stock assessment update, the Scup stock was not overfished and overfishing was not occurring in 2016. Spawning stock biomass (SSB) in 2016 was estimated to be about 2.1 times the  $SSB_{MSY}$  proxy reference point, and fishing mortality on fully-selected age 3 scup was about 63% of the  $F_{MSY}$  proxy reference point. The 2015 year class abundance was estimated to be about 2.1 times the average (1984-2016) recruitment, and the 2016 year class abundance was estimated to be about 46% below the 1984-2016 average. Based on the results of the updated assessment, the SSC decided to revise its ABC recommendation for fishing year 2018 in addition to providing an ABC recommendation for fishing year 2019, as requested by the Council.

The SSC's responses to the terms of reference provided by the Council (in italics) are as follows:

*For Scup, the SSC will provide a written report that identifies the following for fishing years 2018-2019:*

*1) The level of uncertainty that the SSC deems most appropriate for the information content of the most recent stock assessment, based on criteria listed in the Omnibus Amendment;*

The SSC determined the level of uncertainty of OFL in the assessment requires an SSC-specified CV.

The SSC accepted the MSY proxy used in the assessment as a reasonable foundation for OFL and ABC determination.

The SSC had typically used a  $CV = 100\%$  for OFL as a default when the stock assessment lacked reliable guidance on the uncertainty. The Scup assessment is a clear improvement over this level. The SAW/SARC recommended a  $CV = 30\%$ ; however, in a meta-analysis of stock assessments, a  $CV = 30\%$  is typical of the very best quality assessments that fully quantify all sources of uncertainty in the OFL. Accordingly, the SSC recommends a  $CV = 60\%$  based on: (1) the SSC's understanding that the assessment considers uncertainty primarily in biomass and does not include fully the uncertainty in the fishing mortality proxy or the association between the biomass and exploitation proxies; and (2) precedence with other assessments it has considered.

The SSC is committed to re-evaluating the CV for the uncertainty in the OFL for Scup in future specifications of ABC following the next benchmark assessment.

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;*

Based on projection estimates provided in the NEFSC projection document, the level of catch associated with the OFL for 2018 and 2019, based on an OFL proxy of  $F_{40\%}$  and assuming that 87% of the ABC in 2017 is caught, are:

<b>Fishing Year</b>	<b>OFL (mt)</b>
<b>2018</b>	<b>20,433</b>
<b>2019</b>	<b>18,612</b>

The proportion of the 2017 ABC taken assumed in these calculations (87%) is based on the fishing pattern in 2016.

3) *The level of catch (in weight) and the probability of overfishing associated with the acceptable biological catch (ABC) for the stock, the number of fishing years for which the ABC specification applies and, if possible, interim metrics that can be examined to determine if multi-year specifications need reconsideration prior to their expiration;*

The SSC accepted the CV of 60% in the OFL as the foundation for the ABC. Using the Council’s published risk policy for a stock for which  $B/BMSY > 1$ , the SSC implemented a  $P^* = 0.40$  strategy. The recommended ABCs are as follows:

<b>Fishing Year</b>	<b>ABC (mt)</b>	<b>% of OFL</b>
<b>2018</b>	<b>17,755</b>	<b>87</b>
<b>2019</b>	<b>16,525</b>	<b>89</b>

Next year, in the absence of an assessment update, which the SSC prefers, the SSC will consider the following interim metrics to determine whether the ABCs recommended here are appropriate:

1. Survey CPUE (kg/tow) in the fall NEFSC survey;
2. Mean size and size-structure in the fall NEFSC survey; and
3. Exploitation ratio (catch / survey biomass).

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

- While older age Scup (age 3+) are represented in the catch used in the assessment model, most indices used in the model do not include ages 3+. As a result, the dynamics of the older ages of Scup are driven principally by catches and inferences regarding year class strength.
- Uncertainty exists with respect to the estimate of natural mortality (M) used in the assessment.
- Uncertainty exists as to whether the MSY proxies ( $SSB_{40\%}$ ,  $F_{40\%}$ ) selected and their precisions are appropriate for this stock.

- The SSC assumed that OFL has a lognormal distribution with a CV = 60%, based on a meta-analysis of survey and statistical catch at age (SCAA) model accuracies.
- Survey indices are particularly sensitive to Scup availability, which results in high inter-annual and regional variability – efforts were made to address this question by weighting surveys in the SAW/SARC that should be continued.
- The projection on which the ABC was determined is based on an assumption that 87% of the 2017 ABC will be caught.

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

The ABCs were not modified based on ecosystem considerations. The most recent benchmark assessment included ecosystems considerations, specifically efforts to estimate habitat suitability based on a thermal niche model that was fit to survey catchability, but this did not improve model fits.

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

1. Improve estimates of discards and discard mortality for commercial and recreational fisheries.
2. Evaluate the degree of bias in the catch, particularly the commercial catch.
3. Explore the utility of incorporating ecological relationships, predation, and oceanic events that influence Scup population size on the continental shelf and its availability to resource surveys used in the stock assessment model.
4. Conduct experiments to estimate catchability of Scup in NEFSC surveys.
5. Explore additional sources of age-length data from historical surveys to inform the early part of the time series, thus providing additional context for model results.
6. Explore patterns in the fishery-independent surveys to account for regional differences in availability of Scup.

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

- Staff memo: 2018-2019 Scup Management Measures
- Scup Fishery Performance Report and additional advisor comments relevant to Scup
- Scup Fishery Information Document
- Scup Stock Assessment Update:
  - 2017 Scup Stock Assessment Update
  - 2018-2019 ABC projections
- Stock assessment update presentation

All documents are available on the SSC meeting website:  
<http://www.mafmc.org/ssc-meetings/2017/july-19-20>

*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.

## **Summer Flounder**

Mark Terceiro (NEFSC) summarized the recent data update for Summer Flounder, followed by Brandon Muffley (MAFMC staff), who summarized the status of management, the fishery performance report, and MAFMC staff's ABC recommendations. The data update indicates that there is little likelihood that a substantial change in stock status occurred since the 2016 assessment update. Many of the survey indices of abundance decreased slightly between 2015 and 2016, and recruitment indices in 2016 were highly variable. Based on the updated information, the SSC decided not to change its previously-recommended ABC of **5,999 mt** for fishing year 2018.

## **Black Sea Bass**

Brandon Muffley (MAFMC staff) presented a summary of the data update for Black Sea Bass provided by the NEFSC, as well as summary of the status of management, the fishery performance report, and MAFMC staff's ABC recommendations. The data update indicates that Black Sea Bass biomass continues to be high, and the 2015 year class appears to be above average in many of the state surveys (with the exception of NJ and VA), as well as the 2017 NEFSC spring survey. Reported 2016 landings in the commercial fishery were 93% of the 2016 commercial quota, and estimated 2016 landings in the recreational fishery were 184% of the recreational harvest limit. Total catch in 2016 was 149% of the 2016 ABC. Based on the updated information, the SSC decided not to change its previously recommended ABC of **4,057 mt** for fishing year 2018. SSC members did express concern about the overages in recreational landings in 2016, since stock biomass projections were based on the assumption that overages would not occur.

## **Bluefish**

Matt Seeley (MAFMC staff) presented a summary of the data update for Bluefish provided by the NEFSC, as well as summary of the status of management, the fishery performance report, and MAFMC staff's ABC recommendations. According to the data update, total fishery catch for Bluefish in 2016 was equal to 8,289 mt, which was 94% of the 2016 ABC; mean weight at age for Bluefish remained steady for younger ages caught in 2016, and increased for ages 4, 5, and 6 when compared to 2015 values. All recruitment indices, except the SEAMAP juvenile survey, showed an increase from 2015 values. Based on this information, the SSC found no

compelling evidence to support a change to its previously recommended ABC of **9,895 mt** for fishing year 2018.

c: SSC Members, Warren Elliott, Chris Moore, Rich Seagraves, Brandon Muffley, Kiley Dancy, Julia Beaty, Matt Seeley, José Montañez, Kirby Rootes-Murdy, Mark Terceiro, Gary Shepherd, Tony Wood, Jan Saunders



## Mid-Atlantic Fishery Management Council

800 North State Street, Suite 201, Dover, DE 19901  
Phone: 302-674-2331 | Toll Free: 877-446-2362 | FAX: 302-674-5399 | [www.mafmc.org](http://www.mafmc.org)  
Michael Luisi, Chairman | G. Warren Elliott, Vice Chairman  
Christopher M. Moore, Ph.D., Executive Director

# MEMORANDUM

**DATE:** 1 August 2017

**TO:** Michael Luisi, MAFMC Chairman

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

**SUBJECT:** Report of the July 2017 SSC Meeting, Part 2: Other Topics

This is Part 2 to the report I sent to you on July 21<sup>st</sup>. Part 1 of the report contained the ABC recommendations for Scup, Summer Flounder, Black Sea Bass, and Bluefish developed by the SSC at its meeting in Baltimore on the 19<sup>th</sup> and 20<sup>th</sup> of July 2017. Other topics discussed at the meeting, and summarized in this part of the report, included the status of progress being made by the Council toward a Chub Mackerel assessment, wording of the generic terms of reference provided to the SSC for developing ABC recommendations, and the status of work being undertaken by the SSC's OFL CV Working Group. All documents referenced in this report can be accessed via the SSC's meeting website (<http://www.mafmc.org/ssc-meetings/2017/july-19-20>).

## Chub Mackerel

Julia Beaty (MAFMC staff) updated the SSC on progress being made by the Council in amending the Squid-Mackerel-Butterfish fishery management plan to include Chub Mackerel as a "stock in the fishery". Management of Chub Mackerel necessitates development of an ABC, ACL, and a definition of EFH, as required by the Magnuson-Stevens Act. The Council had issued a request for proposals (RFP) to conduct an assessment of the Chub Mackerel stock, but the RFP was later withdrawn due to the realization that data are currently insufficient to support such an activity. Instead, Council staff are assembling known data sources for the species, identifying gaps in knowledge that still exist but are necessary to support a stock assessment, and developing a strategy for filling those gaps.

The fishery management advisory team (FMAT) assigned to Chub Mackerel identified key data needs for a stock assessment, including: commercial CPUE -- historic and recent time series; fishery-independent abundance indices; age and length compositions; maturity information; fishery and survey gear selectivity information; information on stock structure; information related to environmental and climatic impacts on stock abundance and availability; and better quantification of recreational catches. The FMAT also recommended that several workshops be held to help assemble this information: (1) a workshop to gather fishermen's observations of Chub Mackerel biology, life history, and population ecology; (2) a workshop to discuss factors influencing availability; (3) a workshop to assemble historic and recent data related to fishery catch and effort; and (4) a workshop to explore the importance of Chub Mackerel in the diet of key predators.

The SSC suggested that the FMAT explore how Chub Mackerel and closely-related species, such as the Pacific Chub Mackerel (*Scomber japonicus*), are being managed. Data on life history of closely related species may be useful as proxy values for Chub Mackerel. In light of the paucity of catch and effort data for Chub Mackerel along the Atlantic coast, the FMAT may want to consider simply looking for presence/absence of the species in the available fishery-dependent and fisher-independent data sets as a first approximation for spatial and temporal distribution and abundance. Finally, the SSC suggested that the objectives for a Chub Mackerel fishery management plan be clearly laid out; i.e., exactly what is the Council trying to achieve by managing Chub Mackerel. For example, does the Council want to cap the fishery, or does the Council want to manage the commercial fishery to allow it to develop? This would make it easier for the SSC to provide advice on catch levels that help achieve those objectives.

## **Generic Terms of Reference**

The SSC discussed the proposed change to CFR §648.20 Mid-Atlantic Fishery Management Council Acceptable Biological Catch (ABC) control rules, as contained in a proposed rulemaking posted in the Meeting Materials section of the Council web site. The proposed change includes discretionary language for the SSC to specify constant, multi-year ABCs derived from the average of ABCs (or average risk of overfishing). The option would be subject to limits on the resulting average probability of overfishing, and the duration could extend to either three or five years depending on the species. As discussed in previous meetings, and expressed in prior actions taken by the SSC, the members support the Council's intent to provide regulatory stability to fishery stakeholders. In this case, constant ABCs is a valid management policy option to facilitate multi-year business planning and investment decisions.

A decision to implement a constant ABC is a policy choice that may be appropriate for some managed species. However, if the Council wishes it to be implemented by the SSC as a scientifically-determined option, it will require a fuller exploration of the implications of the policy on the dynamics of the target stock. This concern was previously expressed at the May 2017 SSC meeting, where the members chose not to specify a constant three-year ABC for Butterfish. As documented in the SSC's report to the Council from that meeting, "The SSC chose not to accept the MAFMC staff recommendation of a constant ABC because the SSC believed the constant ABC strategy implied an evaluation of economic trade-offs, for which the



SSC did not have clear guidance." To date, no staff assessment or SSC analysis has been conducted on the impact of modifying the currently separate three-year projections. The Council has already indicated that a five-year time frame is more appropriate for Spiny Dogfish, and three years may not be appropriate for other managed species (perhaps short-lived species such as Butterfish). Thus, the implications of a default imposition of a three-year average ABC should be explored before being implemented. The SSC prefers to retain the current wording of the generic terms of reference, which gives the committee flexibility in deciding whether or not to recommend a three- or five-year constant ABC.

The SSC notes that there may be better ways to promote regulatory and industry stability. For example, the cumulative distributional and economic effects by sector, state, or for vessels with permits in multiple FMPs have not been evaluated. The SSC reaffirms its support of providing regulatory stability to participants. The committee also believes stability can and should be accomplished only following a full evaluation of the impacts of such a management policy on both maintaining stock status and avoiding overfishing, and on the economic returns to the fishery.

## **OFL CV Working Group**

Dr. Paul Rago (SSC member and chair of the OFL CV Working Group) described several approaches the OFL CV Working Group is currently investigating that would enable a quantitative and consistent approach to applying coefficients of variation (CVs) to OFL estimates. Among the approaches being investigated are: (1) using one-, two-, and three-year projection errors based on stock assessments conducted over an extended number of years with basically the same methodology; (2) identifying factors that affect the scientific uncertainty of OFL estimates and deriving quantitative metrics for those factors; and (3) piggy-backing on management strategy evaluations (MSEs) currently being conducted on fishery stocks along the northeast Atlantic coast.

The SSC decided to devote a half day at its September 2017 meeting to reach decision points on which methods to apply, and how, to mid-Atlantic stocks that currently require an SSC-based OFL CV. They would also like the Council to invite Dr. John Wiedenmann to the meeting to share his expertise on running MSEs for mid-Atlantic and New England fishery stocks. In the meantime, the Working Group will attempt to fill out the metrics identified for quantifying CVs for 1-2 species (probably Summer Flounder and/or Scup), obtain the results from Dr. Wiedenmann's latest MSE work and fold them into the process, and address questions of binning CV values (how many bins and the range of values for each bin).

c: SSC Members, Warren Elliott, Chris Moore, Rich Seagraves, Brandon Muffley, Julia Beaty, Jan Saunders

**Mid-Atlantic Fishery Management Council  
Scientific and Statistical Committee Meeting**

July 19 - 20, 2017

Royal Sonesta Harbor Court Baltimore  
550 Light Street Baltimore, MD, 2120

**Agenda**

**Wednesday, July 19, 2017**

- 1:00 Scup Assessment Update and 2018-2019 ABC Specifications (Terceiro/Beaty)
- 3:00 Summer flounder data and fishery update; review of implemented 2018 ABC (Terceiro/Muffley)
- 4:30 Chub mackerel RFP update and future direction (Beaty)
- 5:15 Generic Terms of Reference review
- 6:00 Adjourn

**Thursday, July 20, 2017**

- 8:30 Black sea bass data and fishery update; review of implemented 2018 ABC (Muffley)
- 10:00 Bluefish data and fishery update; review of implemented 2018 ABC (Seeley/Montanez)
- 11:30 OFL Working Group Update
- 12:30 Adjourn

MAFMC Scientific and Statistical Committee  
19-20 July 2017 Meeting Attendance

<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
Mark Holliday	NMFS (Retired)
Wendy Gabriel	NMFS Northeast Fisheries Science Center
Sarah Gaichas	NMFS Northeast Fisheries Science Center
Ed Houde	University of Maryland – CBL
Dave Secor	University of Maryland - CBL
Paul Rago	NMFS (retired)
Yan Jiao	Virginia Tech
Lee Anderson	University of Delaware (retired)
Cynthia Jones	Old Dominion University
Olaf Jensen	Rutgers University
 <i>Others in attendance:</i>	
Rich Seagraves	MAFMC staff
Brandon Muffley	MAFMC staff
Julia Beaty (19 <sup>th</sup> only)	MAFMC staff
José Montañez (20 <sup>th</sup> only)	MAFMC staff
Matt Seeley (20 <sup>th</sup> only)	MAFMC staff
Mark Terceiro (19 <sup>th</sup> only)	NMFS Northeast Fisheries Science Center
Greg DiDomenico (19 <sup>th</sup> only)	Garden State Seafood Association
Emily Gilbert	NMFS GARFO
Robert Leaf	University of Southern Mississippi
Purcie Bennett-Nickerson (19 <sup>th</sup> only)	Pew Charitable Trust
Kirby Rootes-Murdy (19 <sup>th</sup> only)	ASMFC