M E M O R A N D U M

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 19th and 20th 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 19th and 12 members attended on July 20th, 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:

Fishing Year	OFL (mt)
2018	20,433
2019	18,612

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:

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

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
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

Name	Affiliation
SSC Members in Attendance:	
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
Others in attendance:	
Rich Seagraves	MAFMC staff
Brandon Muffley	MAFMC staff
Julia Beaty (19th only)	MAFMC staff
José Montañez (20th only)	MAFMC staff
Matt Seeley (20th only)	MAFMC staff
Mark Terceiro (19th only)	NMFS Northeast Fisheries Science Center
Greg DiDomenico (19th only)	Garden State Seafood Association
Emily Gilbert	NMFS GARFO
Robert Leaf	University of Southern Mississippi
Purcie Bennett-Nickerson (19th only)	Pew Charitable Trust
Kirby Rootes-Murdy (19th only)	ASMFC