**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
Michael Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

# M E M O R A N D U M

**DATE**: 27 January 2017

**TO**: Michael Luisi, MAFMC Chairman

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

**SUBJECT:** Report of the January 2017 Special SSC Meeting

The SSC met in Baltimore, MD, on 25 January 2017. The specific purpose of the meeting was to determine if the most recent benchmark stock assessment for Black Sea Bass and the associated SAW/SARC review provided sufficiently new information to change the SSC's ABC recommendations for the 2017 and subsequent fishing years. The meeting agenda is attached (Attachment 1).

A total of 16 SSC members were in attendance, which constituted a quorum (Attachment 2). Also in attendance, besides you, were MAFMC staff, staff from NMFS GARFO, and representatives from state agencies, the fishing industry, Rutgers University, the Pew Charitable Trust, and the Office of Senator Sheldon Whitehouse (RI). All documents and presentations cited in this report can be accessed via the MAFMC SSC website: http://www.mafmc.org/ssc-meetings/2017/jan-25

Gary Shepherd (NMFS NEFSC) and John Maniscalco (NY DEC) presented a detailed summary of the benchmark assessment to the SSC, followed by a presentation by Brandon Muffley of MAFMC staff recommendations. The latest benchmark assessment successfully cleared the SAW/SARC 62 peer review process, addressing many of the significant concerns raised during peer reviews of earlier assessments. The model used in the assessment was an age-structured assessment program (ASAP) for two spatial sub-units (North and South of Hudson Canyon). It should be noted that the use of spatial sub-units in the model was not based on biological characteristics of the stock, but rather as a means to facilitate development of a spatially explicit model. Conclusions reached by the SAW/SARC process were that: (1) the stock is not overfished and overfishing was not occurring in the assessment terminal year (2015); (2) the spawning stock biomass in 2015 is estimated to be 2.3 times higher than the target, and (3) the

fishing mortality rate in 2015 was 25% below the $F_{msy}$ proxy. Based on the new information provided in the benchmark assessment via the SAW/SARC process, the SSC determined that its ABC recommendations for fishing years 2017 and beyond should be revised, and responded to the terms of reference provided by the MAFMC (in italics below):

*For Black Sea Bass, the SSC will provide a written report that identifies the following for fishing years 2017-2019:*

*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 acknowledges the substantial improvement in the stock assessment for Black Sea Bass. The SSC accepted the overfishing limit (OFL) estimate provided in the assessment, and determined the level of uncertainty of OFL in the assessment requires an SSC-specified coefficient of variation (CV).

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

The SSC accepts the OFL proxy ($F_{40\%} = 0.36$) used in the assessment. Based on results of the combined, two-area model, the OFLs are:

| Year | OFL (M lbs) | OFL (mt) |
|---|---|---|
| 2017 | 12.05 | 5,467 |
| 2018 | 10.29 | 4,669 |
| 2019 | 9.18 | 4,163 |

For each year of the specification, the SSC notes that $P_{overfishing} < 0.5$.

*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 acknowledges the substantial effort invested by state and federal scientists that resulted in an improved assessment.

The SSC recommends using a CV associated with the OFL of 60%. This reduction from the default 100% value is based on the following observations:

- The assessment presented multiple alternative assessment models with different structures regarding observation and process errors, which were largely concordant.
- Spatially explicit models were implemented in the assessment, and there had been detailed efforts to explore the consequences of the misspecification of the spatial resolution of these models on perceptions of stock status.
- The level of uncertainty in catches, including the presence of a large recreational sector,

associated with this stock were similar to other stocks for which the SSC had used a 60% CV.
- There were broadly consistent patterns in the fishery independent indices, similar to other species for which the SSC adopted a 60% CV.

The SSC also notes that the assessment included a thorough analysis of the particulars of the life history of Black Sea Bass and, thus, recommends that no additional buffer for an atypical life history is necessary

Implementing the Council's risk policy based on a lognormal distribution with a CV of 60% around the OFL, and no additional buffer to account for the atypical life history, the SSC recommends the following ABC values for the next three fishing years:

| Year | ABC (M lbs) | ABC (mt) |
|---|---|---|
| 2017 | 10.47 | 4,750 |
| 2018 | 8.94 | 4,057 |
| 2019 | 7.97 | 3,617 |

The SSC notes that the ABCs given above assume that the catch will be equal to the ABC each year, without error. If the actual catches moving forward do not meet this assumption, the SSC may have to reconsider the values given in the table.

The SSC also notes the pattern of declining ABCs during the next three years. This pattern reflects the dynamic response of the population to a pattern of fishing at ABC, and is also reflective of the passage of the large 2011 year class out of the fishery.

Next year, the SSC will use the following interim metrics to determine if the ABC specification needs to be reconsidered:
- Catch levels
- Survey indices
- Effects of implementation of the new MRIP effort survey on current and historic recreational catch statistics

*4) The most significant sources of scientific uncertainty associated with determination of OFL and ABC.*
- The natural mortality rate (M) used in the assessment — because of the unusual life history strategy the current assumption of a constant M in the assessment model for both sexes may not adequately capture the dynamics in M;
- The spatial distribution of productivity within the stock range;
- The level, temporal pattern, and spatial distribution of recreational catches; and
- The nature of exchanges between the spatial regions defined in the assessment model.

*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 assessment explored the role of benthic habitat, temperature, depth, and salinity as explanatory factors on exchange rates. No additional ecosystem considerations were included in the determination of ABC.

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

The SSC endorses the list of research recommendations included in the SARC report.

In addition, the SSC recommends:

1. Considering a directed study of the genetic structure in the population north of Cape Hatteras.
2. Increasing our understanding of movement rates and cues within the population.
3. Developing a reliable fishery independent index for Black Sea Bass beyond the existing surveys. This may require development and implementation of a new survey.
4. Additional monitoring and compliance investments to control ABCs at recommended levels that are necessary if predicted scientific outcomes for future stock biomasses are to be realized.
5. Evaluating the implications of range expansion to stock and fishery dynamics.
6. Understanding the importance of recruitment variability, given the role of individual, strong year classes in the dynamics of the population and the fisheries it supports.

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

- MAFMC Staff Memo
- Assessment Summary Report
- SARC 62 Peer Review Panel Summary Report
- SARC 62 Review Panelist Reports
- Working Papers reviewed by SARC
- Background Papers for SARC review
- Blalock and Shepherd (2016)
- Robinson et al. (in press)

These documents can be accessed via: http://www.mafmc.org/ssc-meetings/2017/jan-25

*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.

c: SSC Members, Warren Elliott, Chris Moore, Rich Seagraves, Brandon Muffley, Kiley Dancy, Gary Shepherd, John Maniscalco, Jan Saunders

Attachment 1

Mid-Atlantic Fishery Management Council
Scientific and Statistical Committee Meeting
25 January 2017

Final Agenda

9:00 Introductions, review agenda (Boreman)

9:10 SAW/SARC 62 Black Sea Bass Assessment (Presenters: Shepherd and Maniscalco)

11:00 Review Staff Memo and 2017-2019 ABC Recommendations for BSB (Presenter: Muffley)

11:30 SSC 2017-2019 ABC Recommendations for BSB (SSC Discussion Lead: Jensen)

2:00 Adjourn

Attachment 2

MAFMC Scientific and Statistical Committee
25 January 2017 Meeting
Baltimore, MD

| Name | Affiliation |
|---|---|
| *SSC Members in Attendance:* | |
| 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) |
| Doug Lipton | NMFS Headquarters |
| Sarah Gaichas | NMFS Northeast Fisheries Science Center |
| Ed Houde | University of Maryland – CBL |
| Wendy Gabriel | NMFS Northeast Fisheries Science Center |
| Olaf Jensen | Rutgers University |
| Lee Anderson | University of Delaware (Retired) |
| Yan Jaio | VA Tech |
| Brian Rothschild | UMass Dartmouth (Retired) |
| Rob Latour | VIMS |
| Dave Secor | University of Maryland - CBL |
| Paul Rago | NMFS (retired) |
| Mike Frisk | Stony Brook University |
| *Others in attendance:* | |
| Mike Luisi | MAFMC chair |
| Rich Seagraves | MAFMC staff |
| Brandon Muffley | MAFMC staff |
| Kiley Dancy | MAFMC staff |
| John Maniscalco | New York DEC |
| Gary Shepherd | NMFS Northeast Fisheries Science Center |
| Purcie Bennett-Nickerson | Pew Charitable Trust |
| Rob O'Reilly | Virginia MRC (MAFMC Council member) |
| Abigail Golden | Rutgers University |
| Adena Leibman | Office of Senator Sheldon Whitehouse (RI) |
| Greg DiDomenico | Garden State Seafood Association |
| Alexei Sharov | Maryland DNR |
| Emily Gilbert | NMFS GARFO |