



Mid-Atlantic Fishery Management Council

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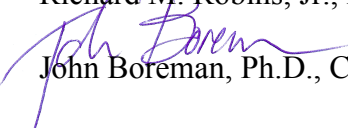
Richard B. Robins, Jr., Chairman | Lee G. Anderson, Vice Chairman

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

MEMORANDUM

DATE: 27 July 2015

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

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

SUBJECT: Report of the July 2015 Meeting of the MAFMC SSC

The SSC met in Baltimore, MD, on 21-23 July 2015 for the main purpose of developing new ABC recommendations for Bluefish, Scup, Summer Flounder, and Black Sea Bass. The SSC also reviewed an early draft of the Terms for Reference for the upcoming benchmark assessment of Black Sea Bass, and were updated on a several ongoing activities of the MAFMC. The final meeting agenda is attached (Attachment 1).

A total of 10 SSC members were in attendance on July 21st, 13 in attendance on July 22nd, and 12 in attendance on July 23rd, all of which constituted quorums (Attachment 2). Also in attendance were staff from the NMFS Northeast Fisheries Science Center (in person and by phone), Council members and staff, ASMFC staff, and representatives from the fishing industry and general public. Discussion of ABC recommendations for each species began with a review of supporting information by the MAFMC staff lead and/or NEFSC assessment lead, then the SSC species leads (Attachment 3) and any members of the public attending the meeting were given an opportunity to comment, followed by SSC deliberations.

Most documents cited in this report can be accessed via the MAFMC SSC website (<http://www.mafmc.org/ssc-meetings/2015/july-21-23>).

Terms of reference (TORs) provided by the Council for the four species are in *italics*.

Bluefish

For Bluefish, the SSC will provide a written report that identifies the following for fishing years 2016-2018:

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 SARC 60 benchmark assessment was a significant improvement over previous assessments. Many uncertainties were addressed regarding input data and there was a characterization of uncertainty in the

OFL, which was adjusted upward by 50% from the model output by the assessment team to account for un-modeled uncertainty.

Despite these improvements, the SSC deems the assessment uncertainty level that requires an SSC-derived coefficient of variation (CV) for the OFL as the most appropriate for the new benchmark assessment, for the following reasons:

- The estimated OFL uncertainty provided by the assessment committee (15%) was low relative to meta-analysis results;
- There are uncertainties in the OFL that the assessment could not capture with respect to the highly influential MRIP index and selectivity;
- The OFL uncertainty provided by the assessment team is low relative to the between assessment model runs for SSB that examined assumptions for the natural mortality rate (M), selectivities, and including various indices.

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 noted that the F_{msy} proxy of $F_{40\%}$ might be inappropriate for Bluefish, a highly productive species (Thorson et al. 2012; Rothschild et al. 2012). A proxy of $F_{35\%}$ is indicated by various published meta-analyses for the order Perciformes.

Using $F_{35\%}$, the SSC recommends an OFL of:

2016	11,686 mt
2017	11,995 mt
2018	12,688 mt

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.

A CV of 60% was applied to the OFL, instead of the previously used CV of 100%, to reflect the much-improved treatment of uncertainty in the current Bluefish assessment, and is consistent with the rationale used by the SSC to determine CV for the Summer Flounder assessment OFL. Three-year specifications are required. The OFL level for 2016 was determined by using $F_{35\%} = 0.19$. The equilibrium catch (a proxy for MSY) under this scenario is 14,443 mt. The SSB_{msy} is therefore 101,343 mt and $SSB_{2014} = 86,534$ mt, so the $SSB/SSB_{msy} = 0.85$, with an SSB threshold of 50,672 mt. The SSC applied the Council policy of $P^* = 0.307$ in 2016. This results in an ABC of:

2016	8,825 mt ($P^* = 0.307$)
2017	9,363 mt ($P^* = 0.328$)
2018	9,895 mt ($P^* = 0.327$)

An updated assessment is preferred for the SSC review of the Bluefish ABCs next year. Otherwise, the SSC would like to review an updated trawl survey index and updated MRIP index.

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

In order of importance:

- Uncertainty in the stock recruitment relationship adds to uncertainty in appropriate reference points.
- The uncertainty in MRIP sampling overall, which is the most influential data in the assessment. Questions have been raised about the uncertainty in the historical MRFSS/MRIP estimates in general, and are particularly relevant here given the highly episodic nature of Bluefish catches in the recreational fisheries coast wide.
- Approximately 60% of the population biomass is in the aggregated 6+ age group for which there is relatively little information.
- The extent to which the MRIP index and MRIP catch are partially redundant in the assessment needs to be determined.
- Commercial discards are assumed to be insignificant, which may not be the case.

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 by the SSC based on ecosystem considerations.

The stock assessment included ecosystem considerations:

- An index of habitat suitability was calculated based on a thermal niche model. It was fit as a covariate to survey catchability, but did not improve model fits.
- Diet compositions from multiple surveys were included as auxiliary information

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

- Develop a fishery independent index that better captures older, larger fish, which would reduce reliance on MRIP sampling.
- Develop Bluefish-specific MSY reference points or proxies.
- Evaluate species associations with recreational angler trips targeting Bluefish to potentially modify the MRIP index used in the assessment.
- Low frequency environmental variability may have caused changes in the timing of the movement of juvenile Bluefish through the region that, in turn, may have affected availability. Changes in the selectivity of age-0 Bluefish in the survey relative to water column or surface temperature and date should be examined.
- Evaluate methods for integrating disparate indices produced at multiple spatial and temporal resolutions into a stock-wide assessment model, especially for a migratory species like Bluefish.
- Initiate fishery-dependent and fishery-independent sampling of offshore populations of Bluefish.

7) The materials considered in reaching its recommendations.

- Montañez, J. 2015. Staff memorandum to Chris Moore, dated 7 July 2015, entitled: “Atlantic Bluefish Management Measures for 2016-2018.” 30 pp.
- MAFMC Staff. 2015. Atlantic Bluefish Advisory Panel Information Document. Mid-Atlantic Fishery Management Council. 17 pp.

- MAFMC Staff. 2015. 2015 MAFMC Bluefish Fishery Performance Report. Mid-Atlantic Fishery Management Council. 6 pp.
- Northeast Fisheries Science Center. 2015. A Report of the 60th Northeast Regional Stock Assessment Workshop: Assessment summary report – pre-publication draft (dated 6-30-2015). 25 pp.
- Jones, C. M., N. Hall, S. Kupschus, and K. Stokes. 2015. Summary Report of the 60th Northeast Regional Stock Assessment Review Committee (SARC 60). Center for Independent Experts. 62 pp.
- Hall, N. G. 2015. Report on the SARC Review of SAW 60 Stock Assessments for Scup and Bluefish, June 2015. Center for Independent Experts. 57 pp.
- Kupschus, S. 2015. Review report for the benchmark stock assessment for Scup and Bluefish, SAW/SARC60. Center for Independent Experts. 45 pp.
- Stokes, K. 2015. Independent Peer Review Report on the 60th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC): Benchmark stock assessments for Scup and Bluefish. Center for Independent Experts. 51 pp.
- Northeast Fisheries Science Center. 2015. A Report of the 60th Northeast Regional Stock Assessment Workshop: Assessment report. 864 pp.
- Thorson, J. T., J. M. Cope, T. A. Branch, and O. P. Jensen. 2012. Spawning biomass reference points for exploited marine fishes, incorporating taxonomic and body size information. *Canadian Journal of Fisheries and Aquatic Sciences* 69: 1–13 (2012).
- Rothschild, B. J., Y. Jiao, and S.-Y. Hyun. 2012. Simulation Study of Biological Reference Points for Summer Flounder. *Transactions of the American Fisheries Society* 141: 126-136.

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.

General Comment

The SSC received the full description of the Bluefish stock assessment less than one day before our meeting to set Acceptable Biological Catches (ABCs) for this stock. This was a particular problem because the base model was changed during the peer review and the description, results, and diagnostics of the final configuration were not in the version of the assessment report for peer review that was previously provided to the SSC. Without the details in the full, updated assessment report, the SSC would have been unable to determine whether the assessment results constituted best available science and, thus, would not have been able to determine ABCs. Furthermore, the delay in providing the report to the SSC underserves the strong work that was done on the assessment by the stock assessment working group.

Scup

For Scup, the SSC will provide a written report that identifies the following for fishing years 2016-2018:

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 (Ralston et al. 2011). 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.

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.

Based on projection estimates provided in the SAW/SARC document, the level of catch associated with the OFL for 2016-2018, assuming that 75% of the ABC in 2015 is caught, are:

2016	16,238 mt
2017	14,556 mt
2018	13,464 mt

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 recommended ABCs are as follows:

2016	14,110 mt
2017	12,881 mt
2018	12,270 mt

These values are equivalent to ~87% of the OFL.

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 variability – efforts were made to address this question in the SAW/SARC that should be continued; and
- The projection on which the ABC was determined is based on an assumption that the quotas would be landed in 2016, 2017, and 2018.

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 stock 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.

In order of priority:

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. An MSE could evaluate the effectiveness of Scup management procedures.
5. Conduct experiments to estimate catchability of Scup in NEFSC surveys.
6. Explore additional source of age-length data from historical surveys to inform the early part of the time series to provide additional context for model results.

7) The materials considered in reaching its recommendations.

- Northeast Fisheries Science Center. 2015. A Report of the 60th Northeast Regional Stock Assessment Workshop: Assessment summary report – pre-publication draft (dated 6-30-2015). 25 pp.
- Jones, C. M., N. Hall, S. Kupschus, and K. Stokes. 2015. Summary Report of the 60th Northeast Regional Stock Assessment Review Committee (SARC 60). Center for Independent Experts. 62 pp.
- Hall, N. G. 2015. Report on the SARC Review of SAW 60 Stock Assessments for Scup and Bluefish, June 2015. Center for Independent Experts. 57 pp.
- Kupschus, S. 2015. Review report for the benchmark stock assessment for Scup and Bluefish, SAW/SARC60. Center for Independent Experts. 45 pp.

- Stokes, K. 2015. Independent Peer Review Report on the 60th Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC): Benchmark stock assessments for Scup and Bluefish. Center for Independent Experts. 51 pp.
- Northeast Fisheries Science Center. 2015. A Report of the 60th Northeast Regional Stock Assessment Workshop: Assessment report. 864 pp.
- Beaty, J., and K. Dancy. 2015. Staff memo to Chris Moore, dated 9 July 2015, entitled “Scup Management Measures for 2016 - 2018.” 12 pp.
- Cadrin, S., J.-J. Maguire, and R. Leaf. 2015. Scup Stock Assessment Team Report. Science Center for Marine Fisheries (SCeMFiS). 39 pp.
- MAFMC. 2015. Summer Flounder, Scup, and Black Sea Bass Fishery Performance Reports June 2015. 9 pp.
- MAFMC. 2015. Summer Flounder, Scup, and Black Sea Bass Advisory Panel: Additional Comments, June 2015. 4 pp.
- MAFMC SSC. 2015. Draft working paper on “Description and Foundation of the Mid-Atlantic Council’s ABC Control Rule,” dated March 11, 2015. 11 pp.
- MAFMC. 2015. Scup fishery information document, June 2015. 11 pp.
- Ralston, S., A. E. Punt, O. S. Hamel, J. D. DeVore, and R. J. Conser. 2011. A meta-analytic approach to quantifying scientific uncertainty in stock assessments. *Fishery Bulletin* 109: 217-231.

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

For Summer Flounder, the SSC will provide a written report that identifies the following for fishing years 2016-2018:

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 was provided with an assessment update based on the model formulation approved at SAW/SARC 57. The reference points accepted at the SAW/SARC were $F_{35\%}$ as F_{MSY} proxy = 0.309 and SSB_{MSY} proxy = 62,394 mt.

Because the assessment model was unchanged from SAW/SARC 57, the SSC did not alter its categorization of the assessment as an assessment requiring an SSC-derived CV for the OFL. The SSC also concluded that no new information was presented that would cause the SSC to deviate from using an OFL CV of 60%.

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 level of catch associated with the OFL in 2016 is **8,194 mt**.

3) *The level of catch (in weight) and the probability of overfishing associated with the acceptable biological catch (ABC) for the stock based on an approach which phases-in any required reductions in the ABC specifications over a three-year period without exceeding the OFL or $P^* = 50\%$. If possible, identify interim metrics that can be examined to determine if multi-year specifications need reconsideration prior to their expiration.*

Using a three-year phase in of the required reduction in ABC assuming a CV in the OFL of 60% and that the ABC is caught in each year for the period under consideration are:

Year	ABC	P*	OFL	SSB
2016	7,375 mt	0.425	8,194 mt	45,885
2017	7,193 mt	0.344	8,991 mt	50,052
2018	7,111 mt	0.260	10,159 mt	54,966

The SSC recognizes that the phased in approach does not meet the Council’s risk policy for the probability of overfishing in the first two years of the phased period. The Council asked the SSC to deviate from the Council’s risk policy because of socio-economic concerns over the magnitude of the reduction in the fishery catch in 2016 that would be potentially destabilizing. The SSC notes that the projected biomass for the stock in 2018 is approximately equal to that expected to be present if the Council’s risk policy had been followed for all three years.

An assessment update must be conducted in 2016 to guide the Council and SSC in determining future ABCs.

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

- Retrospective patterns evident in the assessment update 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.
- Projections are made assuming the ABC will be harvested fully, but not exceeded. However, there are trends in harvest indicating an increasingly likelihood of catches exceeding ABCs.
- In 2016 and 2017, the probability of overfishing is higher than the Council’s risk policy.
- The potential exists for sex-specific differences in life history parameters.
- The existence of spatially distinct size distributions.
- NEFSC surveys and PMAFS fishery sampling confirm sexually-dimorphic and time-varying spatial differences in growth that are not fully accounted for in the stock assessment because not all fishery and survey catches were fully and independently sampled by sex.
- Landings from commercial fishery assume no under-reporting of Summer Flounder landings and thus should be considered minimal estimates.
- The current assumption for M remains an ongoing source of uncertainty. M is highly influential on assessment results and impacts nearly all aspects of the assessment and evaluation of status.
- The stock-recruitment relationship could not be defined internally in the model and thus an F_{MSY} proxy was used to calculate the OFL.

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.*

There were no additional ecosystem recommendations considered by the SSC.

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

The SSC recommends an expedited benchmark assessment to seek to improve model performance and reduce the retrospective bias present in the current assessment update.

The SSC recognizes the research recommendations provided in the assessment report. In addition, the SSC recommends research be conducted to:

- Evaluate uncertainties in biomass to determine potential modifications to OFL CV employed;
- 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.

- Dancy, K., and J. Beaty. 2015. Staff memo to Chris Moore, dated 9 July 2015, entitled “Summer Flounder Management Measure for 2016 - 2018.” 11 pp.
- Dancy, K., and J. Coakley. 2015. Staff memo to Chris Moore, dated 17 July 2015, entitled “Summer Flounder ABC Recommendations for 2016 – 2018.” 2 pp.
- NEFSC. 2015. Stock assessment update of Summer Flounder for 2015. 17 pp.
- MAFMC. 2015. Summer Flounder, Scup, and Black Sea Bass Fishery Performance Reports, June 2015. 9 pp.
- MAFMC. 2015. Summer Flounder, Scup, and Black Sea Bass Advisory Panel: Additional Comments, June 2015. 4 pp.
- MAFMC. 2015. Summer Flounder fishery information document, June 2015. 14 pp.
- Amory, M. 2015. Letter to SSC, dated 16 July 2015. 2 pp.
- Virginia Seafood Council. 2015. Letter to SSC, dated 16 July 2015. 2 pp.
- Donofrio, J. 2015. Recreational Fishing Alliance letter to John Boreman, dated 21 July 2015. 2 pp.
- Schill, J. 2015. NC Fisheries Association letter to John Boreman, dated 21 July 2015. 1 pp.
- Pallone, F., Jr., R. Mendez, and C. A. Booker. 2015. Congressional letter to Richard B. Robins, Jr., and John Boreman, dated 21 July 2015. 2 pp.

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.

Black Sea Bass

For Black Sea Bass, the SSC will provide a written report that identifies the following for fishing years 2016-2017:

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 that the OFL could not be specified given the current state of knowledge.

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.

Because no OFL was specified for this species, the level of catch cannot be derived.

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 recommends the 2016-2017 ABC should be based on a constant catch policy of **2,494 mt (= 5.5 M lbs)**. This revised constant catch level remains less than the 6 M lbs that was taken during rebuilding, is approximately the 50th percentile of the observed cumulative catch distribution, and likely represents approximately 75% of F_{MSY} .

The SSC notes in its advice to the Council that this is a short term, empirical measure. The SSC commits to evaluate a new approach to setting ABC developed by McNamee et al. (2015 working paper) in September 2015. This new approach has been proposed until a revised assessment is completed (expected December 2016) that will be reviewed by the SAW/SARC by Spring 2017 in time for ABC determination for 2018.

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

- Atypical life history strategy (protogynous hermaphrodite) means that determination of appropriate reference points is difficult;
- Assessment assumes a completely mixed stock, while tagging analyses suggest otherwise;
- Evidence of changes in the spatial distribution of the species, specifically an expansion of the species into more northern areas (Bell et al. 2014);
- Uncertainty exists with respect to M — because of the unusual life history strategy the current assumption of a constant M in the model for both sexes may not adequately capture the dynamics in M ; and
- Concern about the application of trawl calibration coefficients (ALBATROSS IV vs BIGELOW) and their influence on the selectivity pattern and results of the assessment. There was concern that the pattern of the calibration coefficients across lengths was difficult to justify biologically.

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.

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.

1. Develop a first principles foundation for establishing reference points and assessment methods to account for Black Sea Bass' life history.
2. Explore the utility of a spatially structured assessment model for Black Sea Bass to address the incomplete mixing in the stock.
3. Consider a directed study of the genetic structure in the population north of Cape Hatteras.
4. Develop a reliable fishery independent index for Black Sea Bass beyond the existing surveys. This may require development and implementation of a new survey.
5. Additional monitoring and compliance investments to control ABCs at recommended levels are necessary if predicted scientific outcomes for future stock biomasses are to be realized.
6. Evaluate the implications of range expansion to stock and fishery dynamics.

7) The materials considered in reaching its recommendations.

- Dancy, K. 2015. Staff memo to Chris Moore, dated 10 July 2015, entitled "Black Sea Bass Management Measures for 2016 – 2017." 10 pp.
- NEFSC. 2015. Black Sea Bass 2014 Catch and Survey Information for Northern Stock. 19 pp.
- MAFMC. 2015. Summer Flounder, Scup, and Black Sea Bass Fishery Performance Reports, June 2015. 9 pp.
- MAFMC. 2015. Summer Flounder, Scup, and Black Sea Bass Advisory Panel: Additional Comments, June 2015. 4 pp.
- MAFMC. 2015. Black Sea Bass fishery information document. 14 pp.
- McNamee, J., G. Fay, and S. Cadrin. 2015. Data limited techniques for Tier 4 stocks: an alternative approach to setting harvest control rules using closed loop simulations for management strategy evaluation. RI Division of Fish and Wildlife and University of Massachusetts Dartmouth. 57pp.
- Miller, T. 2013. SSC memo to Richard B. Robins, Jr., dated 30 January 2013, entitled "Report of January 23, 2013 Meeting of the MAFMC Scientific and Statistical Committee on Black Sea Bass ABC determination." 9 pp.
- J. McNamee, G. Fay, and S. Cadrin. 2015. Memo to SSC, dated 18 July 2015, entitled "Recommendation for an ABC for Black Sea Bass based on the Data Limited analysis." 4 pp.
- Dawson, J. 2015. Email to Kiley Dancy, dated 19 July 2015, entitled "Black Sea Bass Stock Assessment."
- Bell, R. J., D. E. Richardson, J. A. Hare, P. D. Lynch, and P. S. Frantantoni. 2014. Disentangling the effects of climate, abundance, and size on the distribution of marine fish: an example based on four stocks from the Northeast US shelf. ICES Journal of Marine Science 72(5): 1311-1322.

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.

Summary of Species Information Requests

The following is a summary of the information requests made at the meeting by the SSC for next year's round of ABC deliberations. Questions about specifics can be directed to the SSC species leads (Attachment 3).

The SSC would prefer to have updated assessments in 2016 for Bluefish and Scup. If updated assessments are not possible for either or both of these species, then the SSC would like to have the following information in hand prior to its July 2016 meeting:

- Bluefish: updated trawl survey index and updated MRIP index
- Scup:
 - Survey CPUE (kg/tow) in the fall NEFSC survey;
 - Mean size and size-structure in the fall NEFSC survey; and
 - Exploitation ratio (catch / survey biomass).

For Summer Flounder, an assessment update **must** be conducted in 2016 to guide the Council and SSC in determining future ABCs. Also, the SSC recommends an expedited benchmark assessment to seek to improve model performance and reduce the retrospective bias present in the current assessment update.

For Black Sea Bass, the SSC commits to evaluate a new approach to setting ABC developed by McNamee et al. (2015 working paper) in September 2015. This new approach has been proposed until a revised assessment is completed (expected December 2016) that will be reviewed by the SAW/SARC by Spring 2017 in time for ABC determination for 2018.

Other Business

The SSC Chair briefed the SSC on the status of several ongoing SSC projects, including development of non-OFL approaches for setting ABCs for Blueline Tilefish, the rumble strip approach for setting multi-year ABCs, and the report of the National SSC Workshop held in February 2015. Rich Seagraves briefed the SSC on progress being made to develop a universal list of research priorities for the MAFMC, and Julia Beaty briefed the SSC on progress being made by MAFMC staff to define and develop management options for forage species in the mid-Atlantic region. Finally, Olaf Jensen led the SSC through a review of an early draft of proposed terms of reference for the upcoming benchmark stock assessment for Black Sea Bass; suggested changes made by the SSC were transmitted to the NEFSC.

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

Mid-Atlantic Fishery Management Council
Scientific and Statistical Committee Meeting
July 21-23, 2015
Final Agenda

Tuesday, July 21 2015

1300 Bluefish 2016-2018 ABC Specifications (Montañez/Wood/Jones)
1730 Adjourn

Wednesday, July 22 2015

0800 Scup 2016-2018 ABC Specifications (Dancy/Beaty/Terceiro/Gabriel)
1245 Lunch
1345 Summer Flounder 2016-2018 ABC Specifications (Dancy/Terceiro/Wilberg)
1730 Adjourn

Thursday, July 23 2015

0800 Black Sea Bass 2016-2018 ABC Specifications (Dancy/Shepherd/McNamee/Jensen)
1130 Other Business

- Research Priorities (Seagraves)
- Update on Unmanaged Forage Initiative (Beaty)
- Blueline Tilefish Issues (Boreman)
- Fifth National SSC Report (Boreman)
- Rumble Strip Update (Wilberg)
- Review of Preliminary TORs for Black Sea Bass Benchmark Assessment (Jensen)

1300 Adjourn

MAFMC Scientific and Statistical Committee
21-23 July Meeting
Baltimore, MD

<u>Name</u>	<u>Affiliation</u>
<i>SSC Members in Attendance:</i>	
John Boreman (SSC Chairman)	North Carolina State University
Tom Miller (SSC Vice-Chair, 7/22 and 7/23 only)	University of Maryland - CBL
Mike Wilberg	University of Maryland - CBL
Doug Lipton	NMFS
David Secor	University of Maryland – CBL
David Tomberlin (7/21 only)	NMFS Office of Science and Technology
Mark Holliday	NMFS (Retired)
Cynthia Jones (7/21 and 7/22 only)	Old Dominion University
Sarah Gaichas	NMFS Northeast Fisheries Science Center
Sunny Jardine (7/22 and 7/23 only)	University of Delaware
Mike Frisk	Stony Brook University
Olaf Jensen	Rutgers University
Wendy Gabriel	NMFS Northeast Fisheries Science Center
Ed Houde (7/22 and 7/23 only)	University of Maryland – CBL
 <i>Others in attendance:</i>	
Rich Seagraves	MAFMC staff
José Moñtanez (7/21 only)	MAFMC staff
Julia Beaty``	MAFMC staff
Kiley Dancy	MAFMC staff
Chris Moore (7/22 only)	MAFMC staff
Tony Wood (7/21 only)	NMFS Northeast Fisheries Science Center
Gary Shepherd (by phone, 7/22 and 7/23 only)	NMFS Northeast Fisheries Science Center
Mark Terceiro (7/22 and 7/23 only)	NMFS Northeast Fisheries Science Center
Rick Robins (7/21 and 7/22 only)	MAFMC Chair
Greg DiDomenico (7/22 only)	GSSA
Kirby Rootes-Murdy	ASMFC staff
John Maniscalco (7/22 and 7/23 only)	NYDEC
Moira Kelly (7/22 and 7/23 only)	NMFS GARFO
Mike Luisi (7/22 only)	MD DNR, MAFMC Council Member
Jason McNamee (7/22 and 7/23 only)	RI F&W
Alexei Sharov (7/22 and 7/23 only)	MD DNR
Tom Fote (7/22 and 7/23 only)	ASMFC Commissioner, NJ
Joe Grist (7/22 and 7/23 only)	VMRC
Bob Rush (7/22 only)	United Boatmen of NJ
John DePersonaire (7/22 only)	Recreational Fishing Alliance (NJ)
Spencer Talmage (7/22 only)	ASMFC staff

Species and Topic Leads for MAFMC SSC Members

Species/Topic	Biology/Assessment Lead	Socio-economics Lead
Atlantic Mackerel	Dave Secor	Mark Holliday
Atlantic Surfclam	Wendy Gabriel	Bonnie McCay
Ocean Quahog	Ed Houde	Bonnie McCay
Spiny Dogfish	Yan Jiao	David Tomberlin
Bluefish	Cynthia Jones	Doug Lipton
Butterfish	Rob Latour	Mark Holliday
Black Sea Bass	Tom Miller/Olaf Jensen	Marty Smith
Golden Tilefish	Doug Vaughan	Marty Smith
Scup	Wendy Gabriel	Mark Holliday
Summer Flounder	Mike Wilberg	Doug Lipton
Long-finned Squid	Mike Frisk	Sunny Jardine
Short-finned Squid	Tom Miller	Sunny Jardine
Ecosystems	Ed Houde	Doug Lipton
Deep Sea Corals	John Boreman	Bonnie McCay
Blueline Tilefish	Sarah Gaichas	David Tomberlin