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: 30 July 2014

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

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

SUBJECT: Report of the July 2014 Meeting of the MAFMC SSC

The SSC met in Baltimore, MD, on 23 July 2014 for the main purpose of developing ABC recommendations for Bluefish in response to terms of reference provided by the MAFMC (Attachment 1), and reviewing ABC recommendations made previously for Summer Flounder, Scup, and Black Sea Bass. The SSC also received updates on the white paper on forage species being developed for the Council, progress on developing a research track project on Black Sea Bass, plans for the upcoming National SSC meeting in Honolulu, and progress on refining the MAFMC five-year research plan. The meeting agenda is attached (Attachment 2).

A total of 13 SSC members were in attendance (Attachment 3), which constituted a quorum. Also in attendance were staff from the NMFS Northeast Fisheries Science Center, Council members and staff, ASMFC staff, and representatives from the fishing industry and general public.

All documents cited in this report can be accessed via the MAFMC SSC website (http://www.mafmc.org/ssc-meetings/2014/July-2014).

Bluefish

Below are the SSC's responses to the terms of reference (in italics) provided by the MAFMC for Bluefish.

1) The materials considered in reaching its recommendations:

- Wood, A. D. 2013. Bluefish 2014 Stock Assessment Update: Data and Model Update Through 2013. Coastal Pelagic Working Group, Northeast Fisheries Science Center, NOAA Fisheries. 37 pp.
- Armstrong, J. 2014. Staff memorandum to Chris Moore, dated 17 July 2014, entitled: "Bluefish ABC and Management Measures for 2015." 9 pp.
- MAFMC Staff. 2014. Bluefish AP information document – July 2014. Mid-Atlantic Fishery Management Council. 15 pp.

- MAFMC Staff. 2014. 2013 Bluefish fishery performance report. Mid-Atlantic Fishery Management Council. 2 pp.

2) The level (1-4) 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 designated the assessment as **Level 3** because the structure of the assessment was unchanged from previous specification. There were no new estimates of uncertainties associated with the maximum fishing mortality rate (OFL).

3) 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 **OFL = 15,522 mt**, based on an F_{msy} of 0.19.

4) 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 an **ABC = 9,772 mt** (21.5 million lbs) for the 2015 fishing year, based on the control rule for Level 3 assessments. The SSC used an assumed CV of the OFL with a lognormal distribution of 100%, noting that the ratio of B/B_{MSY}, based on mid-year estimates from 2014, is 0.751, and that Bluefish exhibits a typical life history. The SSC applied the Council's policy of P* = 0.289. The projection is 62.9% of the catch at OFL. Since a benchmark assessment of Bluefish is scheduled for 2015, the SSC does not recommend ABCs for fishing years beyond 2015.

5) The most significant sources of scientific uncertainty associated with determination of OFL and ABC:

- The value of B_{MSY} has been fixed, based on the 2005 Assessment, and has not been changed since then – in contrast, the OFL has been updated annually. This increases uncertainty in the ABC.
- Delay in the timing of the NEFSC fall survey in 2013 by three weeks resulted in an estimated CPUE that was a time series low. This low CPUE may reflect the change in the survey timing and not Bluefish stock abundance *per se*.
- There is a significant amount of missing data involved in constructing the age-length keys (ALKs), which are critical for development of the catch-at-age matrix.
- Concern exists about the application of aggregate trawl calibration coefficients (ALBATROSS IV vs BIGELOW), and their influence on the selectivity pattern and results of the assessment. Also, some near shore areas previously sampled by the ALBATROSS IV are unavailable for sampling by the BIGELOW;
- Commercial discards are assumed to be insignificant, which may not be the case.
- Approximately two-thirds of the population biomass is in the aggregated 6+ age group for which there is relatively little information.

- 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.
- The basis for the unusual bimodal selectivity curve used in the ASAP model is not well understood.

6) 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 information pertinent to ecosystem considerations was explicitly included in selecting the ABC.

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

- Evaluate the amount and length frequencies of discards from the commercial and recreational fisheries.
- Explore implications of alternative approaches to expand the age-length information 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 temperature and date should be examined.
- Initiate fishery-dependent and fishery-independent sampling of offshore populations of Bluefish during the winter months (consider migration, seasonal fisheries, and unique selectivity patterns resulting in the bimodal partial recruitment pattern, and if the migratory pattern results in several recruitment events).
- Collect data on size and age composition in the fisheries by gear type and statistical area.
- Develop Bluefish index surveys (proof of concept), including abundance/biomass trend estimates for the offshore populations in winter.

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

The SSC reviewed the following information relevant to the status of Summer Flounder:

- MAFMC Staff. 2014. Summer Flounder Advisory Panel information document. Mid-Atlantic Fishery Management Council. 15 pp.

- MAFMC Staff. 2014. Summer Flounder, Scup, and Black Sea Bass fishery performance reports. Mid-Atlantic Fishery Management Council. 5 pp.
- Dancy, K. 2014. Staff memorandum to Chris Moore, dated 8 July 2014, entitled: "Review of Summer Flounder Management Measures for 2015." 10 pp.
- Northeast Fisheries Science Center. 2014. Summer Flounder data update for 2014. 20 pp.

The SSC saw no compelling evidence to change its recommendation of **ABC = 10,329 mt** for 2015.

Scup

The SSC reviewed the following information relevant to the status of Scup:

- MAFMC Staff. 2014. Scup Advisory Panel information document. Mid-Atlantic Fishery Management Council. 20 pp.
- MAFMC Staff. 2014. Summer Flounder, Scup, and Black Sea Bass fishery performance reports. Mid-Atlantic Fishery Management Council. 5 pp.
- Dancy, K. 2014. Staff memorandum to Chris Moore, dated 8 July 2014, entitled: "Review of Scup Management Measures for 2015." 9 pp.
- Northeast Fisheries Science Center. 2014. Scup data update for 2014. 15 pp.

The SSC saw no compelling evidence to change its recommendation of **ABC = 15,320 mt** for 2015.

Black Sea Bass

The SSC reviewed the following information relevant to the status of Black Sea Bass:

- MAFMC Staff. 2014. Black Sea Bass Advisory Panel information document. Mid-Atlantic Fishery Management Council. 15 pp.
- MAFMC Staff. 2014. Summer Flounder, Scup, and Black Sea Bass fishery performance reports. Mid-Atlantic Fishery Management Council. 5 pp.
- Dancy, K. 2014. Staff memorandum to Chris Moore, dated 8 July 2014, entitled: "Black Sea Bass Management Measures for 2015." 8 pp.
- Northeast Fisheries Science Center. 2014. Black Sea Bass 2012-2013 Catch and Survey Information. June 27, 2014. 13 pp.

The SSC saw no compelling evidence to change its recommendation of **ABC = 2,494 mt** for 2015.

Other Topics

Black Sea Bass Research Track

Gary Shepherd gave an update on recent modeling for black sea bass work being conducted by the NEFSC. Models are being developed that relate recruitment strength to physical oceanographic attributes of shelf waters, including temperature and salinity. Additional work looking at the synchrony or lack thereof among the state surveys and spring NEFSC survey was also presented. There appear to

be consistent patterns of recruitment success by area (i.e., north vs south), which correlate with certain physical characteristics of shelf waters, primarily temperature and salinity (that may be aliasing other factors). Consistent spatial differences in recruitment patterns may be indicative of spatial patterns in stock structure.

Additional work describing the impact of protogyny under the "lek" life history model vs true harem building was also presented. Models are under development under the hypothesis that the migratory nature of northern Black Sea Bass alters their spawning behavior. It is likely that BSB form leks rather than harems, and the presence of "sneaker" males (young males that sneak in a contribute during a spawning event) may be important to spawning success. Gary noted that sex transition occurs in fall/winter during offshore movement period and secondary sex characteristics may form quickly, but physical change takes longer. The feedback for transitioning may occur in fall pre-migration aggregation rather than during spawning season (it might even be a random event). Gary also hypothesized that Black Sea Bass may not be true protogynous hermaphrodites, but rather be best described as gonochorists that may lead to the northern stock component being more robust to exploitation than its southern counterpart (i.e., the stock south of Cape Hatteras).

Gary also described early development of a length-based Black Sea Bass population simulation model, which includes monthly time steps in 50-75 year simulations. The model configuration currently includes a quarterly growth transition matrix by cm (probability of remaining the same size or increasing to another cm category) with four stages of transition (female, transition, secondary male, primary male) by cm. He also described additional projects which are currently underway, including a behavior study being conducted by John Rosendale and Beth Phelan (NEFSC J.J. Howard Lab), documentation of behavior in pots and spawning behavior, a morphometric study (Mark Wuenschel and Gary Shepherd, NEFSC Woods Hole, with Brad Kiegwin, UMass Amherst) examining body shape by sex using landmarks subjected to multivariate analysis, a fishery independent Black Sea Bass pot survey (Laura Skrobe, URI, with David Borden), and a study of Black Sea Bass habitat use in the Gulf of Maine (Marissa McMahon and Jon Grabowski, Northeastern University) .

The SSC was encouraged by the recent efforts to examine recruitment dynamics and the impact of various life history models on robustness of the northern stock component to fishing. However, the SSC remained concerned that the need to discern the impact of assuming spatial stock structure on model results is still not being addressed. The SARC 53 review panel noted "the Panel identified substantial concerns over the potential for spatial structure and incomplete mixing within the stock area that compromised the ability of the forward projecting catch at age model index abundance and fishing mortality reliably based on the data available". As a result, SSC members noted that additional activities conducted under the Black Sea Bass research track project should address the spatial issues raised by the SARC 53 Review Panel before any new stock assessment undergoes peer review. The current version of Stock Synthesis in the National Fishery Tool Box is capable of handling stock structure, and the assessment working group should consider using it in future Black Sea Bass stock assessments.

MAFMC Five-Year Research Plan

Rich Seagraves briefed the SSC on progress being made in the refinement of the Council's five-year research plan. He has asked Mark Holliday and Brian Rothschild to help scope out a strategy for the refinement, and a draft should be ready for review by the September SSC meeting. Rich asked the SSC for additional volunteers to serve on the group.

EAFM Forage White Paper

Rich Seagraves briefly discussed progress on drafting a white paper for the Council on forage species, based on the forage fish workshop held by the Council last year. He expects to have a draft ready for review by the SSC in a few weeks.

National SSC Workshop V

John Boreman and Rich Seagraves apprised the SSC of recent developments related to the upcoming National SSC Workshop (NSSC V). The Council Coordinating Committee approved the following theme for the workshop that was proposed by the SSC Chairs: "Providing ABC Specifications in the Face of Uncertainty." Two inter-related subthemes are: "(1) setting ABCs in data poor and model resistant situations; and (2) incorporating variable and changing climate and ecosystem conditions (including spatial management and habitat considerations) into ABC specifications." SSC members were asked to think of presentation and discussion topics that would be timely and appropriate for the subthemes. The workshop will probably be held some time in February 2015 in Honolulu.

cc: SSC Members, Lee Anderson, Chris Moore, Rich Seagraves, Jim Armstrong, Kiley Dancy, Fred Serchuk, Tony Wood, Mark Terceiro, Gary Shepherd

Mid-Atlantic Fishery Management Council
Scientific and Statistical Committee Meeting
July 23, 2014
Terms of Reference

For bluefish the SSC will provide a written report that identifies the following for fishing year 2015:

1) The materials considered in reaching its recommendations;
2) The level (1-4) that the SSC deems most appropriate for the information content of the most recent stock assessment, based on criteria listed in the Omnibus Amendment;
3) 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;
4) 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;
5) The most significant sources of scientific uncertainty associated with determination of OFL and ABC;
6) 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;
7) Prioritized research or monitoring recommendations that would reduce the scientific uncertainty in the ABC recommendation and/or improve the assessment level;
8) A certification that the recommendations provided by the SSC represent the best scientific information available.

Mid-Atlantic Fishery Management Council
Scientific and Statistical Committee
July 23-24, 2014
Baltimore, MD
Agenda

Wednesday July 23, 2014

9:00 Bluefish OFL/ABC Recommendations for 2015 (Wood/Armstrong)

12:00 Lunch

1:00 Review fishery performance report and multi-year ABC specification for summer flounder (Terceiro/Dancy)

2:00 Review fishery performance report and multi-year ABC specification for scup (Terceiro/Dancy)

3:00 Review fishery performance report and multi-year ABC specification for black sea bass (including Wave 1 data issue); Black Sea Bass Research Track Assessment discussion (Shepherd/Dancy)

Thursday July 24, 2014

8:00 Black Sea Bass Research Track Assessment (cont. if necessary)

10:00 Five Year Research Plan Development (Rothschild/Holliday/Seagraves)

11:00 EAFM Forage White Paper (Houde/Seagraves)

12:00 Other Business

Attachment 3

MAFMC Scientific and Statistical Committee
7-8 May 2014 Meeting
Baltimore, MD

Name	Affiliation
SSC Members in Attendance:	
John Boreman (SSC Chairman)	North Carolina State University
Tom Miller (SSC Vice-Chair) (5/7 only)	University of Maryland - CBL
Mike Wilberg	University of Maryland - CBL
Doug Lipton	NMFS
Ed Houde	University of Maryland - CBL
Doug Vaughan	NMFS (retired)
Dave Secor	University of Maryland – CBL
Sunny Jardine	University of Delaware
Brian Rothschild	University of Massachusetts - Dartmouth
David Tomberlin	NMFS Office of Science and Technology
Mark Holliday	NMFS Office of the Assistant Administrator
Mike Frisk	Stony Brook University
Wendy Gabriel	NMFS Northeast Fisheries Science Center
Others in attendance:	
Rich Seagraves	MAFMC staff
Kiley Dancy	MAFMC staff
Jim Armstrong	MAFMC staff
Tony Wood	NMFS Northeast Fisheries Science Center
Fred Serchuk	NMFS Northeast Fisheries Science Center
Lee Anderson	MAFMC Vice-chair
Gary Shepherd	NMFS Northeast Fisheries Science Center
Greg DiDomenico	GSSA
Kirby Rootes-Murdy	ASMFC staff
Joseph Gordon	Pew Charitable Trust
Purcie Bennett-Nickerson	Pew Charitable Trust
Aaron Kernbluth	Pew Charitable Trust
Toni Kerns (call-in)	ASMFC staff
Mark Terceiro (call-in)	NMFS Northeast Fisheries Science Center