September 2015 Mid-Atlantic SSC Meeting Report – Black Sea Bass Review

Mid-Atlantic SSC

SEDAR46-RD-10

February 2016

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: 22 September 2015

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

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

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

The SSC met in Annapolis, MD, on 16-17 September 2015 for the main purpose of developing new ABC recommendations for Spiny Dogfish and revisiting the ABC recommendations for Black Sea Bass. The SSC also reviewed a draft of the MAFMC research plan, discussed establishing clearer criteria for setting the coefficients of variation on overfishing limits (OFLs), discussed the composition of membership of the SSC and participation of SSC members in the SAW/SARC process, and were updated on summer flounder modeling efforts by Pat Sullivan, actions being taken by the South Atlantic Fishery Management Council with regard to Blueline Tilefish, and the status of the report from the most recent National SSC Workshop. The final meeting agenda is attached (Attachment 1).

A total of 13 SSC members were in attendance on September 16th for the discussions on setting ABCs for Black Sea Bass and Spiny Dogfish, which constituted a quorum (Attachment 2). Also in attendance were staff from the NMFS Northeast Fisheries Science Center (by phone), and staff from the Council, NMFS Northeast Regional Office, and ASMFC; no representatives from the fishing industry and general public were in attendance. 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), followed by SSC deliberations. Documents cited in this report can be accessed via the MAFMC SSC website (http://www.mafmc.org/council-events/2015/ssc-meeting-2).

Black Sea Bass

The SSC discussion on revisiting the Black Sea Bass ABC recommendation made by the committee at its July 2015 meeting began with a presentation by Tom Miller on the results of the 10 September 2015 peer review of the McNamee et al. (2015) white paper (Miller 2015). Members of the peer review panel were Tom Miller (SSC member and panel chair), Olaf Jensen (SSC member), John Wiedenmann (Rutgers University), and Katie Drew (ASMFC).

The McNamee et al. white paper used the Caruthers (2015) DLMtool in R to develop reference points and catch level recommendations. DLMtool evaluates the performance of 47 different fishery management procedures in an operating model, which is parameterized to represent a particular species defined by a suite of biological and fisheries related parameters. Many of the 47 different management

procedures are alternative "flavors" of the same approach, only with slightly different parameterizations. The selected management procedures are evaluated against a set of user defined performance measures in a closed loop management strategy evaluation (MSE) that projects a population forward under a defined management procedure by sampling from distributions of biological, fishery, and observation processes. The MSE assumes perfect implementation of each management procedure. From the output of the MSE, the management procedures that are determined to perform "best" are identified. The values of these "best" management procedures are then estimated based on the real data.

The white paper applied the DLMtool approach to Black Sea Bass. McNamee et al. used the probability of overfishing < 0.3, the probability that the biomass will be less than 10% of the BMSY < 0.2, and the relative yield should be > 0.5 as performance measures. The closed loop MSE evaluation was undertaken and a suite of "best" management policies identified. The reference points derived from these best management procedures were then estimated for Black Sea Bass by using data from 1982-2014.

The peer review panel concluded, based on the evidence presented in the McNamee et al. white paper, that three methods used to estimate reference points provide a reasonable foundation for providing an ABC for Black Sea Bass. All three methods use recent catch levels combined with the recent trend in stock abundance to derive an ABC recommendation. After a lengthy discussion, the SSC concurred with the panel's recommendation, and added a fourth method that is solely based on a constant catch (the method that the SSC is currently using to develop ABC recommendations for Black Sea Bass) that met the same criteria as the three methods selected by the panel. The SSC determined that using these four methods would provide an ABC recommendation that is based on the best scientific information available. Therefore, the SSC revisited the MAFMC's terms of reference used for its July 2015 deliberations (terms of reference (TORs) provided by the Council are in *italics*).

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 accepted for this species, the level of catch cannot be derived given the current state of knowledge.

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 determined the ABC to be **3,024 MT (6.67 million pounds)**. This value is calculated from the results of the application of data limited approaches given by Caruthers (2015). The approach established three performance measures that each data limited method must achieve (probability of overfishing during any year in the modeled period < 0.3, probability of B

<$0.1B_{msy}$ in the modeled period < 0.2 and the relative yield > 0.5). From the methods that met these criteria, the SSC used only those methods for which values for Black Sea Bass could be reliably determined. For Black Sea Bass, four methods met this standard, each having its own estimate of ABC. One method relies on a constant catch strategy and three combine, in different ways, information on total catch and the NEFSC spring survey to calculate an ABC. Because there was no a reliable foundation on which to weight the alternative methods, the SSC used the simple average of the estimates derived by the four methods to calculate the ABC.

It is not possible to provide an estimate of the probability of overfishing associated with the ABC.

At its July 2016 meeting, the SSC will revisit the ABC for 2017 based on information on the total catch and the spring NEFSC survey index for 2016.

The SSC expects to maintain this approach to setting ABCs 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.

- The application of data limited methods is associated with significant uncertainty;
- The lack of an analytical assessment prevents the estimation of an OFL reference point;
- Lack of data on abundance and fishing mortality rate estimates limited the range of approaches that could be used to generate reference points;
- The reliability of the NEFSC spring survey to serve as an index of abundance for Black Sea Bass is unknown;
- Atypical life history strategy (Black Sea Bass is a protogynous hermaphrodite) means that determination of appropriate reference points is difficult;
- Tagging analyses suggest incomplete mixing throughout the stock range;
- There is evidence of changes in the spatial distribution of the species (Bell et al. 2015), and;
- 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.

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 characteristics.
2. Explore the utility of a spatially structured assessment model for Black Sea Bass to address the incomplete mixing in the stock.
3. Continue and expand the application of data limited methods to Black Sea Bass as a default should an accepted analytical assessment model not be available. Specifically, the SSC recommends performance testing of the ensemble of data limited methods used by the SSC.

The committee also reference the recommendations developed by the peer review panel on Data Limited Methods for Black Sea Bass (Miller 2015).

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. Consider a directed study of the genetic structure in the population north of Cape Hatteras.
7. Evaluate the implications of change in distribution to stock and fishery dynamics.

7) The materials considered in reaching its recommendations.

- 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.
- 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.
    - Data and code (zip file)
    - Data Limited Techniques For Level 4 Stocks (PowerPoint presentation by Jason McNamee)
- Miller, T. 2015. Memo to John Boreman, dated 12 September 2015, entitled: "Review of McNamee et al "Data Limited Techniques for Tier 4 Stocks…." 7 pp.
- Bell, R. J., D. E. Richardson, J. A. Hare, P. D. Lynch, and P. S. Frantantoni. 2015. 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.

Spiny Dogfish

Paul Rago (NEFSC) briefed the SSC on the latest update to the Spiny Dogfish assessment, followed by Jason Didden's presentation summarizing recent management actions and the fishery performance report developed by the advisory panel. Since no public were present at the meeting, Yan Jiao (SSC species lead) then led the SSC deliberations in developing ABC recommendations for 2016 and beyond. Deliberations followed the order of the terms of reference provided by the MAFMC (in *italics*).

For Spiny Dogfish, 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 assessment includes an acceptable OFL, but the SSC deemed that the assessment uncertainty

level requires an SSC-derived coefficient of variation (CV) for the OFL. The SSC applied its default assumptions regarding the distribution around the OFL – that is, OFL is lognormally distributed with a mean as specified and a coefficient of variation of 100%.

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 F_{msy} proxy is calculated from a projection model for which the finite rate of population increase = 1.0. For spiny dogfish, the F_{msy} proxy = 0.2439. This is equivalent to **OFL = 24,247 mt**, based on the projected biomass in 2016 and the assumption that the catch in 2015 will be equal to 16,542 mt, which is equal to the 2014 catch.

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 a three-year specification of ABC. The SSC applied the Council's risk policy for a typical life history[1], an estimated B_{201x}/B_{msy} ratio < 1 for all three years, and a CV of the OFL distribution of 100% assuming a lognormal distribution. Using these parameters, the P* values and the associated ABC are as follows:

Year	P*	**ABC (mt)**
2016	0.326	**16,765**
2017	0.297	**16,526**
2018	0.282	**16,636**

The SSC notes that the stock biomass is projected to continue to decline from 2016 to 2019 because of poor recruitment in earlier years, before recovering again. This is consistent with the findings of the SSC 2013 determination of Spiny Dogfish stock status.

The SSC will examine Spiny Dogfish discard rates, survey abundance trends (size composition, sex ratio and pup size), average size and sex in commercial landings, agreement between observed and predicted catch and survey forecasts, changes in Canadian landings, and the spatial distributions of catch and survey abundances each year of the specification to determine if the multiyear ABC should be abandoned.

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

- The incomplete 2014 NEFSC bottom trawl survey. The assessment model uses a three-year running average, and the lack of data for 2014 means that estimates for the years surrounding 2014 are estimated from only two years of data.
- The assessment relies heavily on an assumed efficiency of the survey gear in developing minimal swept area estimates of biomass.
- Inter-annual differences in availability of the stock to the survey gear.

[1] The SSC notes that the assessment for spiny dogfish has been structured to account for many aspects of the unique life history of this species

- F_{msy} proxy is based on a projection model that relies on a time-invariant selectivity estimated from data up to 2008. The assessment assumes selectivity has not changed subsequently, but may be variable.
- Both the F_{msy} proxy and the projections rely on a model that assumes constant pup survival and pup production rates. Empirical evidence suggests pup survival correlates positively with maternal size.
- Inconsistency between the estimation model and the projection model.
- Potential changes in fishery selectivity. Large increases in catches could induce changes in the overall selectivity pattern in the fishery.
- Potential inconsistency between the life history-based estimates of fishing mortality rates and the biomass reference points derived from the Ricker stock recruitment curve.
- Total discard estimates and estimated mortality of discarded dogfish.

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 explicit or specific ecosystem considerations were included in the assessment. Furthermore, no additional ecosystem considerations were applied in calculating the ABC.

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

1. Revise the assessment model to investigate the effects of stock structure or distribution, sex ratio, and size of pups on birth rate and first year survival of pups.
2. Explore methods of imputing the 2014 survey-based abundance estimate. The 2014 survey was partially completed, but areas of the survey important to the estimate of abundance of Spiny Dogfish were not sampled as a result of vessel mechanical problems. Accordingly, the SSC recommends exploration of model-based methods to derive 2104 survey indices for Spiny Dogfish.
3. Continue large scale (international) tagging programs, including conventional external tags, data storage tags, and satellite pop-up tags, to help clarify movement patterns and migration rates.
4. Investigate the distribution of Spiny Dogfish beyond the depth range of current NEFSC trawl surveys, possibly by using experimental research or supplemental surveys.
5. Continue aging studies for Spiny Dogfish age structures (e.g., fins, spines) obtained from all sampling programs (include additional age validation and age structure exchanges), and conduct an aging workshop for Spiny Dogfish, encouraging participation by NEFSC, Canada DFO, other interested state agencies, academia, and other international investigators with an interest in dogfish aging (US and Canada Pacific Coast, ICES).
6. Evaluate ecosystem effects on Spiny Dogfish acting through changes in dogfish vital rates.

7) The materials considered in reaching its recommendations.

- Rago, P., and K. Sosebee. 2015. Update on the Status of Spiny Dogfish in 2015 and Projected Harvests at the Fmsy Proxy and Pstar of 40%. Northeast Fisheries Science Center. 73 pp.
- MAFMC Staff. 2015. 2015 Spiny Dogfish Advisory Panel (AP) fishery performance report (FPR). 4 pp.

- MAFMC Staff. 2015. Spiny Dogfish Advisory Panel (AP) Informational Document - August 2015. 7 pp.
- Didden, J. 2015. Memo to Chris Moore, dated 11 September 2015, entitled: "Spiny Dogfish Specifications for 2016-2018 fishing years." 9 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.

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).

Black Sea Bass: At its July 2016 meeting, the SSC will revisit the ABC for 2017 based on information on the total catch and the spring NEFSC survey index for 2016. The SSC expects to maintain this approach to setting ABCs 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.

Spiny Dogfish: The SSC will examine Spiny Dogfish discard rates, survey abundance trends (size composition, sex ratio and pup size), average size and sex in commercial landings, agreement between observed and predicted catch and survey forecasts, changes in Canadian landings, and the spatial distributions of catch and survey abundances each year of the specification to determine if the multiyear ABC should be abandoned.

Criteria for OFL CV Specification

An updated document detailing the background on the MAMFC ABC Control Rule and development of the default 100% coefficient of variation (CV) for the overfishing limit (OFL) applied by the SSC (previously termed Level 3 based ABCs) was supplied by Mike Wilberg prior to the meeting. Based on this document, the SSC discussed two related issues: first, how can the SSC clarify criteria for applying OFL CV lower than 100%; and second, what guidance can the SSC give to assessment teams in estimating OFL CV to strive for analytically-based and expert-based OFL probability distributions (what were previously termed Level 1 and Level 2 assessments)? These issues are related and should be consistent.

The SSC has included some or all of the following considerations in estimating the OFL CV:

- Uncertainty in the estimate of current biomass, including observation error and process error carried through the assessment;
- Uncertainty in the estimate of the F_{msy} reference point, including process error estimated at the same time as biomass (B) is estimated in an integrated fashion;
- Covariation in the B and F_{msy} estimates;

- Sources of uncertainty that could not be included in an individual assessment model, which could include:
    - Model structural uncertainty (e.g., structured vs biomass dynamic models; single species vs multispecies models);
    - Parameter uncertainty (e.g., as currently included in sensitivity runs); and
    - Uncertainty in current state of nature (e.g., ecosystem production regime).

The SSC discussed using measures of model forecast error in determining the OFL CV, based upon information provided by NEFSC for several recent assessments, by comparing projected stock status from a past assessment to stock status estimated from a more recent assessment. Differences between past projections and current estimated could be used to derive a "forecast error" that could also be applied in estimating the OFL's CV.

The SSC discussed establishing "bands" of OFL CV levels, associated either with different levels of uncertainty treatment within an assessment and/or with a simulation analysis of the best possible CV expected under certain data availability and stock life history conditions compared with the level of uncertainty treatment within an assessment. Simulation analyses could also address where investments in data or assessment model improvements would be most likely to result in reduced OFL CV.

Based on this discussion, the SSC formed a subcommittee (T. Miller, S. Gaichas, O. Jensen, and B. Rothschild) to develop a white paper for discussion at the March 2016 SSC meeting. This white paper would outline criteria for using different CV levels, as well as a decision table aligning managed species with current forms of assessment, ABC level, and assumed OFL CV. Over the longer term, this subcommittee would outline simulation analyses to investigate appropriate OFL CV levels to achieve the Council's risk policy for each of its managed species, given available information.

Council Research Plan

Rich Seagraves gave an overview of the draft Comprehensive Five Year Research Plan, which will be presented to the Council at its October 2015 meeting. The Council, in consultation with its Scientific and Statistical Committee, first developed a research plan to meet this requirement in 2008 through examination of research needs identified in numerous stock assessments, Council FMP/Amendment documents, and through the Council's Research Set-Aside Program. The revised document was reorganized to address the science and research needs identified by the Council during its recent Visioning Project in its Strategic Plan.

A major SSC criticism of the Council's Strategic Plan (and the associated Research Plan) is that it lacks clear articulation of the Council's fundamental social and economic objectives for MAFMC fisheries. For example, most of the fishermen participating in MAFMC fisheries have access to numerous fisheries. The Council has not explicitly identified measurable social and economic objectives relative to flexibility of participants in multiple fisheries. In addition, the current risk policy was developed almost entirely based on biological considerations with little or no consideration of social and economic factors. Analyses supporting the Councils current risk policy should be greatly expanded to include policy analysis based on social and economic considerations.

The SSC noted that another major topic of research that needs to be addressed relates to the current practice of assessment and management on a single species basis. While the Council has made some in-roads into addressing the need to take an ecosystem approach to assessment and management in its EAFM effort, some fundamental changes to the current paradigm are required. The SSC recommended

that the Council develop an Operational Plan to allow for the transition from the current single-species approach to an ecosystem-based approach. This plan should include the development of Integrated Ecosystem Assessments that include clearly stated social and economic objectives.

The SSC also recommends that the Council consider conducting a thorough evaluation of the management performance of its current FMPs. Research and analyses are needed to define OY using an objective function in the same way other reference points are developed and evaluated. This would allow the Council to evaluate management performance based the objective criteria which define OY.

Finally, the SSC noted that the funding levels that were available through the RSA program are far from adequate relative to addressing the extensive list of research needs identified in the current research plan. Since all of the needs identified cannot be addressed given existing funding, it is critical that the Council prioritize its research needs and leverage funding opportunities with those of its management partners to maximize benefits given the limited pool of available research funds.

Summer Flounder Modeling

Pat Sullivan (Cornell University) briefed the SSC on the status of his summer flounder modeling project. He is attempting to configure a model that incorporates variability in sex, size, and age, with an even longer-term goal of eventually factoring in spatial differences as well. SSC members provided him some feedback and suggestions for consideration as he develops the model. Dr. Sullivan will be making a similar presentation at the upcoming MAFMC meeting in Philadelphia.

Other Business

SSC Membership

Given the likelihood that there may be vacancies on the SSC, the committee discussed future composition of SSC membership. The SSC cautions the Council to make sure there is a role to fill on the SSC before selecting new members with a specific scientific background. There was general agreement that the SSC needs to maintain a strong social sciences component. A sociologist or cultural anthropologist would bring a unique perspective in human dimensions to the SSC, but a lot depends on how the Council envisions utilizing the committee. An expert in quantitative risk assessment would also be a useful addition.

The SSC sees its role as going beyond simply responding to requests from the Council. Many of the SSC members see participation on the committee as a means of providing direction to their own research programs, thus expanding the influence and benefits of participating in the SSC's deliberations. Committee members also expressed interest in adding socio-economics and ecosystems topics as regular agenda items in SSC meetings in order to further engage and benefit from the members who are experts in these disciplines.

NSSC V Report

John Boreman and Rich Seagraves updated the SSC on progress being made on the report of the Fifth National Stock Assessment Workshop, held last February in Honolulu. In an August 12th conference call, the report's authors informed the workshop's steering committee that a draft report is still being

prepared; final comments on the draft meeting summary from the individual SSC's were due in early September.

Blueline Tilefish Update

John Boreman briefed the SSC on the recent SAFMC SSC webinar that reviewed updated projections of the stock status of Blueline Tilefish that were prepared by the Southeast Fisheries Science Center. Given the continued problems with large uncertainty in the data sources, as well as in the assessment itself, the SAFMC SSC decided not to use projections based on the assessment model as a basis for providing an ABC recommendation to the SAFMC, instead choosing to base the ABC recommendation on catch at 75% of F_{msy}. At our next SSC meeting in March 2016, the MAFMC SSC working group on Blueline Tilefish, under the leadership of Doug Vaughan, will be presenting several options for determining the ABC for this species in the mid-Atlantic region.

Participation of SSC members on SAW Working Groups

Olaf Jensen raised concern that SSC members might no longer be allowed to participate on the stock assessment working groups in the SAW/SARC process under the new guidelines developed by the Northeast Region Coordinating Council. MAFMC staff assured the SSC that this is not true. The SSC agreed that SSC members should be allowed to participate on the working groups on a case-by-case basis, depending on their expertise on the species being addressed (as well as continue being able to chair the SARCs).

cc: SSC Members, Lee Anderson, Chris Moore, Rich Seagraves, Kiley Dancy, Jason Didden, Jason McNamee, Kirby Rootes-Murdy, Paul Rago

Attachment 1

Mid-Atlantic Fishery Management Council
Scientific and Statistical Committee Meeting
September 16-17, 2015
Final Agenda

Wednesday, 16 September 2015

0900 Receive Report of Black Sea Bass Data Limited Methods Analysis Review (Miller)

1000 SSC Discussion on data limited methods relative to MAFMC Ad hoc ABC Species
- Consider/recommend alternative ABC specification approaches for Black Sea Bass

1200 Presentation on Status Update for Spiny Dogfish (Rago)

1245 Working Lunch

1300 Continue Discussion on ABCs for Black Sea Bass

1430 2016-2018 Spiny Dogfish ABC Specifications (Didden and Jiao)

1600 Criteria for OFL CV Specification (Boreman)

Thursday, 17 September 2015

0900 AFMC Research Priorities (Seagraves)

1020 Report on Sex-specific Modeling for Summer Flounder

1115 Other Business
- SSC Membership
- NSSC V Report
- Blueline Tilefish Update
- Participation of SSC members on SAW Working Groups

1200 Adjourn

Attachment 2

MAFMC Scientific and Statistical Committee
16-17 September Meeting
Annapolis, MD

Name	Affiliation
SSC Members in Attendance:	
John Boreman (SSC Chairman)	NC State University
Tom Miller (SSC Vice-Chair)	University of Maryland - CBL
Doug Lipton	NMFS
David Tomberlin	NMFS Office of Science and Technology
Mark Holliday	NMFS (Retired)
Doug Vaughan	NMFS (Retired)
Sarah Gaichas	NMFS Northeast Fisheries Science Center
Sunny Jardine (9/16 only)	University of Delaware
Rob Latour	VIMS
Olaf Jensen	Rutgers University
Ed Houde	University of Maryland – CBL
Brian Rothschild	UMass – Dartmouth
Yan Jiao	VA Tech
Others in attendance:	
Rich Seagraves	MAFMC staff
Kiley Dancy (9/16 only)	MAFMC staff
Jason Didden (9/16 only)	MAFMC staff
Paul Rago (by phone, 9/16 only)	NMFS Northeast Fisheries Science Center
Kirby Rootes-Murdy	ASMFC staff
Jason McNamee	RI F&W
Pat Sullivan (9/17 only)	Cornell University
Moira Kelly (by phone, 9/16 only)	NMFS Northeast Regional Office
Tobey Curtis (by phone, 9/16 only)	NMFS Northeast Regional Office

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