



Mid-Atlantic Fishery Management Council

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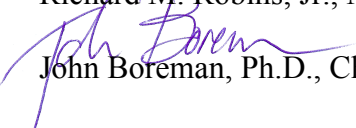
Richard B. Robins, Jr., Chairman | Lee G. Anderson, Vice Chairman

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

MEMORANDUM

DATE: 14 May 2014

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

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

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

The SSC met in Baltimore, MD, on 7-8 May 2014 for the main purpose of developing ABC recommendations for Butterfish, Atlantic Mackerel, Longfin Squid, and *Illex* Squid in response to terms of reference provided by the MAFMC (Attachment 1), and reviewing ABC recommendations made previously for surfclams and ocean quahogs. The SSC also received updates on the newly revised National Standard 2 Guidelines as they pertain to SSCs, and discussed the list of MAFMC research priorities. The meeting agenda is attached (Attachment 2).

A total of 17 SSC members were in attendance on May 7th and 13 SSC members on May 8th (Attachment 3); a quorum was present for both days. Also in attendance were staff from the NMFS Northeast Fisheries Science Center, Council members and 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/may-7-8-2014>).

Butterfish

1) *The materials considered in reaching its recommendations:*

- MAFMC staff memorandum from Jason Didden to Chris Moore, “Mackerel, Squid, and Butterfish (MSB) Acceptable Biological Catch (ABC) Staff Memo,” dated April 17, 2014. 15 pp.
- MAFMC MSB Advisory Panel. 2014. Fishery Performance Reports (FPRs) for 2015-2017 Specifications. 9 pp.
- Didden, J. 2014. Butterfish AP Informational Document, dated April 2014. Mid-Atlantic Fishery Management Council. 9 pp.
- NEFSC. 2014. Butterfish assessment summary for 2014. 58th SAW Assessment Summary Report. A. Butterfish. 10 pp.
- Coastal/Pelagic Working Group. 2014. Stock Assessment of Butterfish (*Peprilus triacanthus*) in the Northwest Atlantic. NMFS Northeast Fisheries Science Center. 300 pp.
- NEFSC. 2014. SAW/SARC 58 panelist reports.
- NEFSC Fall index update, NEFSC Spring index update, and VIMS NEAMAP index update (spreadsheet files)

All documents are available on the MAFMC SSC website.

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 considers the Butterfish assessment to be a Level 3 assessment. The SSC noted that an OFL was provided by the assessment, but the SSC believed the estimates of uncertainty around the OFL developed in the assessment substantially underestimated the true level of uncertainty present.

To support this conclusion, the SSC notes that the CV on the natural mortality rate (M) from the assessment (0.05) is unrealistic given the life history of this species. The SSC also notes that the decision to use surveys from Fall only also reduces the apparent uncertainty in abundances estimated by the model.

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 developed in the assessment is an F_{msy} proxy = $\frac{2}{3} * M = 0.81$. The level of 2015 catch associated with this **OFL is 41,092 mt.**

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 adjustment prior to their expiration:

The SSC adopted a CV for the OFL of 100% based on a meta-analysis of OFL distributions that the SSC has used previously.

The SSC noted the role of Butterfish as a forage species that was not formally accounted for in the assessment. However, the SSC further noted that the foundation of the F_{msy} proxy used Patterson's (1992) paper, which considered forage species explicitly. Accordingly, the SSC considers Butterfish as exhibiting a typical life history.

The SSC applied the Council's risk policy for $B/B_{msy} > 1$ and a $P^* = 0.4$ to generate a **2015 ABC = 33,278 mt.**

The SSC recommends a 3-year ABC specification. Using an F-based approach, which assumes the ABCs are harvested in each year, the SSC recommends the following ABCs:

2016	31,412 mt
2017	30,922 mt

The SSC notes the historical performance of the fishery indicates that it has only rarely caught in excess of 30,000 mt. The SSC notes little empirical understanding exists of stock performance at the higher catch levels, as suggested by the ABCs. Therefore, the SSC will examine catch and updated indices in subsequent years. The SSC recommends that the projections used in subsequent years to calculate the ABCs for 2016 and 2017 be repeated using observed 2015 and 2016 catches.

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

- The foundation for the OFL was *ad hoc* rather than being derived internally in the model.
- The application of an assumed q -value to estimate M , while novel and well thought out, contributes to uncertainty.
- The assessment was limited to a period of low stock productivity, well after a period of higher exploitation, which reduces the data contrast available to the model.
- Conflicting trends among seasonal surveys were not incorporated in the model.
- Model-based estimates of F are imprecise and particularly influenced by three years of low catch.
- There are residual trends in the survey data that might be explained by environmental or biotic (predation) factors that were not incorporated in the model.

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:*

There were no specific ecosystem considerations in the population dynamic model. However, the OFL was based on a proxy that incorporated consideration of the role of Butterfish as a forage species. Additionally, the calculation of availability of the fish to the survey did incorporate considerations of temperature as a factor influencing fish distributions.

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

- Simulation studies to evaluate the uncertainty in the *ad hoc* F_{msy} proxy;
- Develop reference points that are internal to the model;
- Develop a parallel catchability estimate for Spring surveys so that both Spring and Fall surveys could be included in the model;
- Evaluate approaches to include additional surveys, e.g., from States, in the assessment model;
- Analysis of spatial patterns in survey data to examine potential for changes in spatial distribution of the stock;
- Analyze additional estimation of consumptive demand of predators to identify critical periods of overlap of predators and prey; and
- Reconsider stock structure and degree of exchange with the South Atlantic stock component.

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.

Atlantic Mackerel

1) The materials considered in reaching its recommendations:

- MAFMC staff memorandum from Jason Didden to Chris Moore, "Mackerel, Squid, and Butterfish (MSB) Acceptable Biological Catch (ABC) Staff Memo," dated April 17, 2014. 15 pp.
- MAFMC MSB Advisory Panel. 2014. Fishery Performance Reports (FPRs) for 2015-2017 Specifications. 9 pp.
- Population Dynamics Branch. 2014. Atlantic Mackerel update for 2015 specifications. NMFS Northeast Fisheries Science Center. 13 pp.
- Didden, J. 2014. Mackerel AP Informational Document, dated April 2014. Mid-Atlantic Fishery Management Council. 14 pp.
- DFO. 2014. Assessment of the Atlantic Mackerel stock for the Northwest Atlantic (Subareas 3 and 4) in 2013. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2014/030.
- Wiedenmann, J., M. J. Wilberg, and T. J. Miller. 2013. An evaluation of harvest control rules for data-poor fisheries. North American Journal of Fisheries Management 33(4): 845-860.
- Deroba, J. J., G. Shepherd, F. Gregoire, J. Nieland, and J. Link. 2010. Stock assessment of Atlantic mackerel in the Northwest Atlantic – 2009. Transboundary Resource Assessment Committee. Reference Document 2010/01. 64 pp.

All of the above documents are available on the MAFMC SSC website.

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:

No new US assessment was presented to the SSC. A Canadian assessment was conducted in 2014. However, for both the prior US (Deroba, et al. 2010) and current Canadian (DFO 2014) assessments there is a substantial mismatch between the assessed area and the assumed total stock area. The SSC continues to judge assessments for Atlantic mackerel as Level 4 assessments.

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:

Not possible. No acceptable estimate of OFL is available.

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 adjustment prior to their expiration:

The SSC concluded that the foundation that it used for developing its previous ABC – the average of the 2006-2008 catches – was inappropriate because 2006-2008 was a period of unusually high catches.

The SSC is unable to come up with a definitive ABC at this time because of concerns in the highly

periodic nature of historical catches. Therefore, the SSC proposes an interim 1-yr ABC equal to the median of the 1978-2013 joint Canadian and US harvests. This period was chosen as a time when fisheries operations have been relatively consistent and foreign fleets were not in operation. The median of these harvests is **40,165 mt (= ABC)**.

By next year the SSC, contingent on modest support from the Council, will extend analyses funded by the Council (Wiedenmann, et al. 2013) that considers the performance of data poor approaches to ABC determination to include highly periodic catch time series. Based on the results of these simulations the SSC expects to produce a revised 2016 ABC for this stock.

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

- Disparate trend between NEFSC trawl survey and both the commercial CPUE trend and landings together with Canadian egg survey data.
- Apparent, but not fully explainable changes in survey catchability, which may alias a number of unidentified factors.
- Surveys cover an unknown portion of entire range (variable availability).
- Using a bottom trawl survey gear for a semi-pelagic species may induce variation in the indices of abundance and obscure the signal.
- Lack of quantification of the linkage between US and Canadian catches.
- No Canadian discard information and poor precision of U.S. discard and recreational estimates (though likely low).
- Lack of progression of age classes in recent years.

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 ecosystem considerations were included.

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

- Conduct simulations of performance of data poor methods of ABC determination for stocks exhibiting periodic catches.
- Consider approaches to evaluate the potential for stock structure and movement throughout the species range.
- Evaluate egg production data from existing fishery independent surveys (e.g., Marmap and EcoMon) to evaluate patterns in reproduction of the stock in the US portion of its range, and to evaluate correlations in recruitment between US and Canadian reproduction.
- Give high priority to analyses and collection of fishery-dependent information (CPUE, age structure, etc.).
- Improve analyses of fishery-independent survey data to evaluate the distribution of positive tows and total catches.
- Explore patterns in consumption as an additional index of abundance.
- Collaborate with industry to explore the spatial and temporal pattern and variability in catch to evaluate issues of abundance and availability.

- Examine covariation among survey and fishery-dependent indices.
- Examine growth trajectories from different areas of the stock to evaluate possible stock structure.
- Evaluate spatial catch patterns in the small pelagic fisheries to identify “hot spots” of co-occurrence.
- Explore management complementarities among small pelagic fisheries (e.g., mackerel, Atlantic herring, and river herring).

The SSC also continues to endorse the research recommendations listed in the last TRAC assessment:

- Explore opportunities for the development of alternative indices of abundance.
- Attempt to develop total stock abundance.
- Initiate broad scale international egg surveys covering potential spawning habitat that is consistently representative of the total stock area, including the shelf break. Investigate potential to conduct work in cooperation with commercial fishing industry (priority: high, long term).
- Explore spatial distribution of stock relative to the mixing of the northern and southern ‘contingents’ of mackerel i.e. tagging, genetics, chemical assay, microchemistry of otoliths (priority: high, medium-long term).
- Explore influence of environmental factors on spatial distribution of the stock e.g. rate of mixing and distribution of stock relative to the survey area (high priority, short term).
- Extend predation estimates to include DFO data and entire predator spectrum (marine mammals, highly migratory species).
- Examine methodology for incorporating consumptions estimates in the assessment.
- Quantify the magnitude of additional sources of mortality in Canada including the bait fishery, recreational catch and discards (high priority; short term).
- Explore bottom trawl characteristics for catchability of mackerel.
- Participate with industry in investigating the contemporary overlap of survey stock area, commercial fishery, and mackerel distribution and explore historical databases for the same purpose to better understand interpretation of abundance indices (survey, cpue) (medium term).
- Collaborate with industry to investigate alternative sampling gear (i.e. jigging) to survey adult abundance (long term).
- Explore MARMAP database relative to spatial distribution of survey indices.
- Investigate alternative assessment models that incorporate spatial structure (i.e., northern and southern contingents, different age groups).
- Explore alternative assessment models that incorporate covariates.
- Initiate a technical TRAC WG in order to advance and monitor progress of research recommendations.

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.

Following SSC agreement on responses to the terms of reference, Kiersten Curti led a discussion on what it would take to improve the assessment of Atlantic mackerel. She outlined shorter-term and longer-term projects that would provide scientific information useful in an assessment. Shorter-term projects involve studies of stock structure, availability, catchability, natural mortality, and an otolith exchange program with Fisheries and Oceans Canada. Efforts are already underway to address stock

structure and availability, but have not yet begun for the other shorter-term projects. Longer-term projects, also not yet begun, would include sampling the entire range of the stock and investigating approaches to ecosystem modeling of the stock's dynamics.

Longfin Squid

1) *The materials considered in reaching its recommendations:*

- MAFMC staff memorandum from Jason Didden to Chris Moore, "Mackerel, Squid, and Butterfish (MSB) Acceptable Biological Catch (ABC) Staff Memo," dated April 17, 2014. 15 pp.
- MAFMC MSB Advisory Panel. 2014. Fishery Performance Reports (FPRs) for 2015-2017 Specifications. 9 pp.
- Didden, J. 2014. Longfin AP Informational Document, dated April 2014. Mid-Atlantic Fishery Management Council. 15 pp.
- Population Dynamics Branch. 2014. Landings and Survey Data for Northern Shortfin Squid, *Illex illecebrosus*, and Longfin Inshore Squid, *Doryteuthis (Amerigo) pealeii*, through 2013. NMFS Northeast Fisheries Science Center. 8 pp.
- Northeast Fisheries Science Center. 2011. *Loligo pealeii* stock assessment for 2010. 51st SAW Stock Assessment Report. 158 pp.

All of the above documents are available on the MAFMC SSC website.

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 determined that this is a Level 4 assessment. Although an assessment is available from 2010 (Northeast Fisheries Science Center 2011), it did not contain an 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:*

Not possible. No acceptable estimate of OFL is available.

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 adjustment prior to their expiration:*

The SSC recommends an ABC for a three-year period (2015, 2016, and 2017) equal to the catch in the year of the highest exploitation ratio (1993). Thus, the recommended ABC is **23,400 mt**, the same as was previously set for 2012-2014 by the SSC, which occurred during a period of apparent relatively light exploitation (1976-2009) according to the 2010 longfin squid assessment.

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

- Surveys cover unknown portion of entire range (variable availability) – the range may extend beyond survey coverage;
- Poor precision of U.S. discard estimates;

- Using a bottom trawl survey gear for a semi-pelagic species may induce variation in the indices of abundance and obscure the true signal;
- Highly variable survey trends;
- Highly variable natural mortality;
- Extremely short life-span (less than 1 year), and unknown, but likely high, impact of environmental factors on recruitment;
- Because of its short life span, its high rate of natural mortality and the delay in collating survey and catch information, there is an inherent lag in information pertaining to the current state of the stock; and
- Inability to distinguish between inter-seasonal differences in productivity and inter-seasonal differences in catchability.

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 ecosystem considerations were used in the 2010 assessment, nor used in the SSC's ABC determination.

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

- Explore alternative weightings of semi-annual surveys other than simple averaging.
- Understanding the spatial coverage and availability to the surveys.
- Examine the performance of the squid fisheries and related fisheries in relation to the regulatory measures with a view towards improving the economics of the fisheries.
- Evaluate approaches to real time management including expanding age and growth studies to better estimate average growth patterns and to discern seasonal productivity/catchability patterns.
- Evaluate methods of incorporating ecological relationships, predation, and oceanic events that influence abundance and availability.
- Until real-time assessment is feasible, expand cohort analysis to refine stock assessments and their incorporation of seasonal indices (currently spring and fall are just averaged).
- Refine understanding of stock range and structure (especially proportion of stock inhabiting 400-800 m when NEFSC fall survey is conducted).
- Refine understanding of catchability in surveys (especially NEAMAP).

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.

Illex Squid

1) The materials considered in reaching its recommendations:

- MAFMC staff memorandum from Jason Didden to Chris Moore, “Mackerel, Squid, and Butterfish (MSB) Acceptable Biological Catch (ABC) Staff Memo,” dated April 17, 2014. 15 pp.
- MAFMC MSB Advisory Panel. 2014. Fishery Performance Reports (FPRs) for 2015-2017 Specifications. 9 pp.
- Didden, J. 2014. *Illex* AP Informational Document, dated April 2014. Mid-Atlantic Fishery Management Council. 10 pp.
- Population Dynamics Branch. 2014. Landings and Survey Data for Northern Shortfin Squid, *Illex illecebrosus*, and Longfin Inshore Squid, *Doryteuthis (Amerigo) pealeii*, through 2013. NMFS Northeast Fisheries Science Center. 8 pp.

All of the above documents are available on the MAFMC SSC website.

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 decided that *Illex* is a Level 4 assessment. No acceptable estimate of OFL is available. The last benchmark assessment for *Illex* was conducted in 2006.

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:

Not possible. No acceptable estimate of OFL is available.

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 adjustment prior to their expiration:

The SSC recommends a 2015-2017 multi-year ABC specification of **24,000 mt** (the same as was previously set for 2012-2014 by the SSC). This is based on the observation that landings of 24,000 - 26,000 mt do not appear to have caused harm to the *Illex* stock, based on indices and landings in years following when landings were in the range of 24,000 mt - 26,000 mt. Landings and indices vary within a wide range, although 2013 landings were low and indices have been trending lower in recent years and were below the long-term median in 2013. The SSC also notes that the observed decline in average size of *Illex* in the survey since 1985 suggests an increase in the exploitation rate as a possible explanatory factor. Other explanatory factors include changes in environmental variables, a possible change in the timing of the survey, and/or an increase in predation-related mortality.

The method used by the SSC for setting the ABC assumes that the stock has been lightly exploited.

The SSC recommends that a benchmark assessment or a research track examining the effects of environmental variables on survey trends in *Illex* be undertaken by 2017, which would be 11 years since the last benchmark assessment was conducted.

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

- Surveys cover an unknown portion of the entire range (leading to variable availability);
- Poor precision of U.S. discard estimates (but of low magnitude);
- Using a bottom trawl survey gear for a semi-pelagic species may induce variation in the indices of abundance and obscure the true signal;
- LPUE values are sensitive to availability;
- Highly variable natural mortality;
- Extremely short life-span (less than 1 year), and unknown, but likely high, impact of environmental factors on recruitment and growth; and
- No available estimates of biological reference points (F & B), and no estimates of recent biomass and/or fishing mortality.

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 ecosystem considerations were taken into account by the SSC in setting the ABCs.

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

- Collect demographic information on growth, maturation, mortality, and reproduction by sex, season, and cohort.
- Consider a length-based assessment with a sub-annual time step, undertaking cooperative research with the fishing industry.
- Expand investigations into oceanographic correlates with trends in recruitment, growth, and abundance.
- Investigate range and range dynamics at depths >185 m.
- Refine between-vessel survey calibration estimate for *Illex*, and consider a size-based calibration.
- Analyze the change in availability of *Illex* to the survey and fishery, resulting from long-term changes in climate or other oceanographic factors.
- Consider an *Illex* index standardization for the NEFSC trawl survey.
- Explore the reasons for the decline in average size of *Illex* caught in the survey since 1985.
- Compare predator consumption estimates to total catch.

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.

Surf Clams and Ocean Quahogs

Jessica Coakley presented updated catch data and survey indices, as well as the 2014 fishery performance reports for Surf Clams and Ocean Quahogs. Based on the information presented, the SSC saw no compelling reason to alter their 2015 ABC recommendation for either species.

During the course of discussion, the SSC was informed about the New England Council's proposed omnibus habitat amendment. The SSC agreed that there might be aspects of the NEFMC's amendment process where input from the MAFMC SSC might be beneficial, but deferred to the MAFMC for further direction.

Other Topics

MAFMC Research Priorities

The SSC discussed potential ways to prioritize research needs identified in the MAFMC's Five Year Research Priority Plan. Previous SSC discussion on this topic revealed reluctance on the part of the SSC to invest much time on this task if those in a position to implement the research priority plan remain unresponsive. However, recent discussion on the topic of developing and implementing a research plan for the NE region at the May NRCC meeting indicated that managers do indeed intend to work more aggressively to implement research programs that address needs identified by the Councils. In particular, MAFMC leadership has a keen interest in insuring that agency research programs systematically address research needs identified by the MAFMC.

The SSC noted some redundancy in the general research needs category, warranting some consolidation of these topics. The need for the MAFMC to articulate an overall goal for the research plan is highly desirable – the current research priority plan essentially represents a stock assessment improvement wish list. Research that better integrates social and economic impacts into the Council's management program needs to be highlighted, as is the need for management strategy evaluations, although approaches in this regard need not be overly complex. Research that addresses scientific uncertainty in biological reference points should also be identified as a high priority.

SSC members agreed to send comments to staff on the research priority plan by 20 May 2014. SSC members Mark Holliday and Brian Rothschild agreed to work with MAFMC staff on prioritization of research needs across species and across fisheries.

Revised National Standard 2 Guidelines

John Boreman briefly reviewed the revised guidelines, published within the last year in the Federal Register, which contain several new provisions related to SSC operations. Most of the revisions are already being practiced by our SSC. Among these provisions are confirmation that SSC members can serve on peer review panels, such as SAW/SARC and SEDAR; all science information passing to the Councils needs to be vetted through the respective SSC (i.e., science information related to setting annual catch limits cannot pass directly from a peer review to a Council); the SSC may provide an ABC recommendation to the Council that is inconsistent with the findings of a peer review, as long as it is

justified; and the SSC should certify that its scientific recommendations are based on the best scientific information available.

cc: SSC Members, Lee Anderson, Chris Moore, Rich Seagraves, Jason Didden, Jessica Coakley, Jose Montañez, Kiersten Curti, Chuck Adams, Fred Serchuk

Mid-Atlantic Fishery Management Council
Scientific and Statistical Committee Meeting
May 2014
Terms of Reference

The SSC will provide a written report that identifies the following for up to three fishing years (2015-2017):

- 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 adjustment 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
May 7-8, 2014
Baltimore, MD
Draft Agenda

Wednesday May 7, 2014

- 0900 Butterfish OFL/ABC Recommendations for 2015-2017 (Adams/Didden)
- 1200 Lunch
- 1300 Butterfish (cont.)
- 1400 Atlantic mackerel multi-year ABC review; Research Track Assessment Development (Curti/Didden)
- 1530 Multi-year ABC for Illex and Long-finned Squid (Hendrickson/Didden)
- 1700 Adjourn

Thursday May 8, 2014

- 0800 Squid multi-year ABC cont. (if necessary)
- 0900 Fishery Performance Reports for Surf clams and Ocean quahogs (Coakley/Montanez)
- 1100 Research Plan Development (Seagraves)
- 1230 Other Business
- 1300 Meeting adjourns

MAFMC Scientific and Statistical Committee
7-8 May 2014 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) (5/7 only)	University of Maryland - CBL
Mike Wilberg	University of Maryland - CBL
Doug Lipton (5/7 only)	NMFS
Ed Houde	University of Maryland - CBL
Doug Vaughan	NMFS (retired)
Olaf Jensen	Rutgers
Yan Jiao	Virginia Tech
Bonnie McCay	Rutgers University
Dave Secor (5/7 only)	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
Rob Latour	VIMS
Cynthia Jones (5/7 only)	Old Dominion University
<i>Others in attendance:</i>	
Rich Seagraves	MAFMC staff
Jose Montañez	MAFMC staff
Jason Didden	MAFMC staff
Jessica Coakley (5/8 only)	MAFMC Staff
Chuck Adams (5/7 only)	NMFS Northeast Fisheries Science Center
Kiersten Curti (5/7/only)	NMFS Northeast Fisheries Science Center
Lee Anderson	MAFMC Vice-chair
Greg DiDomenico (5/7 only)	GSSA
Jeff Kaelin	Lunds Seafoods, MAFMC Member
Laura Palamara (5/7 only)	Rutgers University
John Manderson	NMFS Northeast Fisheries Science Center
Pete Jensen (5/8 only)	Wallace and Associates
Tom Alspach (5/8 only)	Sea Watch International
Guy Simmons (5/8 only)	Sea Watch International