



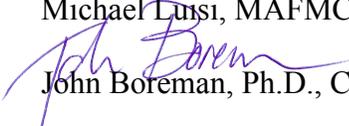
## Mid-Atlantic Fishery Management Council

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

# MEMORANDUM

**DATE:** 21 September 2016

**TO:** Michael Luisi, MAFMC Chairman

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

**SUBJECT:** Report of the September 2016 SSC Meeting

The SSC met in Baltimore, MD, on 14 September 2016 for the main purpose of reviewing the 2017 and 2018 ABC recommendations for Spiny Dogfish to determine if they should be changed, continuing discussion of criteria for assigning coefficients of variation (CVs) for overfishing limits (OFLs), and reviewing a draft of the State of the Ecosystem Report being prepared by the Northeast Fisheries Science Center. The final meeting agenda is attached (Attachment 1).

A total of 16 SSC members were in attendance, which constituted a quorum (Attachment 2). Also in attendance, beside you, were MAFMC staff, staff from NMFS HQ, and a representative from the Pew Charitable Trust. Documents cited in this report can be accessed via the MAFMC SSC website: <http://www.mafmc.org/sscmeetings/2016/september-14-2016>.

## Spiny Dogfish

Jason Didden presented the data update for Spiny Dogfish prepared by the Northeast Fisheries Science Center (NEFSC) and a summary of the Fishery Performance Report prepared by the Spiny Dogfish Advisory Panel. The stock is in the second year of a three-year specification period. Recent landings, discards, and trawl survey indices are all within the expected range, although the trawl survey was delayed. The NEFSC data update states that “estimated total catches in 2015 were less than half of the ABC, and the index of female spawning stock abundance increased in 2016. Hence, the primary metrics that underlie the assessment revealed no major causes for concern. Various indicators of stock status also suggest no causes for concern. Recent changes in average size of landed fish and an increase in the fraction of male

fish in landings should be monitored to determine if a change in fishery selectivity patterns is occurring.” The NEFSC survey indicates that recruitment appears to be trending upward in recent years, an observation supported by information obtained from the NEAMAP survey.

Based on the information provided by the NEFSC and that contained in the Fishery Performance Report, the SSC saw no compelling reason to change its ABC recommendations for the 2017 and 2018 fishing years. Another data update from the NEFSC is expected next year, followed by an assessment update in 2018.

Although the SSC did not alter the ABC recommendations, committee members did note several areas of concern. The impact of the delay in the Spring 2016 bottom trawl survey does not appear to be significant, but should be examined further through simulation modeling. Also, the multispecies impact of Spiny Dogfish predation, especially on other important species such as Atlantic Mackerel, should be explored, perhaps in conjunction with the next benchmark assessment. The SSC also recommends in-depth studies of the factors affecting catchability of Spiny Dogfish and the proportion of the stock biomass that exists outside of the area sampled by the NEFSC, since the biological reference points in the assessment are based on estimates of the total stock biomass.

## **OFL CVs**

The SSC discussed the latest report of the SSC’s OFL CV Subcommittee, which includes suggested next steps for clarifying methods used to quantify scientific uncertainty in the overfishing limit (OFL) – a requirement to implement the MAFMC risk policy. The discussion and clarification are necessary because it has been difficult to justify differences in the OFL coefficients of variation (CVs) that have been applied for different assessments when they are other than the default value of 100%. Different OFL CV values have direct implications for the levels of acceptable biological catch (ABC) under the MAFMC risk policy. The MAFMC intends to review its risk policy this coming year, and clarifying methods for determining OFL CVs is a critical step in the process.

The SSC outlined objectives for methods used to address scientific uncertainty in establishing ABC. Any method should:

1. Result in an accurate estimate of the true scientific uncertainty;
2. Be responsive to improvements in data and assessments;
3. Avoid unproductive dynamics between the SSC and stock assessment teams;
4. Follow a transparent, logical process;
5. Be operational, in that it can be applied consistently across assessments; and
6. Result in consistent decisions across all assessment and data categories to ensure that the buffer between the OFL and ABC actually increases with increasing uncertainty.

The SSC recognized that these objectives are difficult to achieve and also potentially in conflict with each other, but will nevertheless use them to shape further development of OFL CV methods. For example, while the true uncertainty (#1) is unknown, the chosen method should

come as close as possible given the current state of knowledge. Methods emphasizing objective #1 are likely to be complex and therefore less transparent (#4); however, a logical process can still be outlined and communicated. Accurately estimating uncertainty requires addressing both potential biases in input data streams and variances from multiple sources. However, simple methods that are transparent and consistent (#4 and 5), such as applying a constant buffer, will likely not achieve objective #1. An advantage of a simple transparent buffer is that it would relieve assessment teams of attempting to estimate scientific uncertainty, and would therefore prevent differences between the assessment team's and the SSC's estimates of uncertainty (achieving objective #3). However, simple transparent buffers applied to all assessment categories may result in inappropriately smaller uncertainty buffers where uncertainties are actually higher (data-poor assessments), and do not respond to improvements in data quality or assessment methods, sacrificing objectives #2 and #6. Finally, using simple buffers may blur the line between determining scientific uncertainty (the charge of the SSC) and establishing policy on acceptable risk of overfishing (the purview of the MAFMC).

The SSC discussed potential methods that could achieve the six objectives listed above. One approach could use a hybrid of OFL CV estimation and fixed buffers by establishing criteria for applying 3-4 fixed OFL CVs depending on data sources and their quality, life history, and assessment methodology for a given species. Another approach could use past assessment projection performance relative to current assessment estimates (this assumes the current estimate is unbiased). Addressing bias separately from variance is desirable, especially with upcoming changes to recreational catch datasets that may impact multiple MAFMC assessments.

Overall, communicating that improving estimates of uncertainty may not necessarily lead to lower OFL CVs will also be important; increased knowledge of our uncertainty (due to environmental interactions that are explicitly modeled or other assessment improvements) will still provide a benefit to the MAFMC. The SSC OFL CV Subcommittee will continue to update the MAFMC ABC document based on this discussion.

## **State of the Ecosystem Report**

Sarah Gaichas walked the SSC through the latest draft State of the Ecosystem report (SOE) provided by the Northeast Fisheries Science Center. The objective of this SSC review was to provide feedback to NEFSC on the report's format and content to improve its use as contextual information for MAFMC fishery management.

Overall, the SSC appreciated that so much information was summarized and distilled in one place, and found the aggregate indicators of biological and economic performance useful, especially where they are separated by MAFMC jurisdiction or region. The SSC was supportive of reviewing this contextual information annually in support of the MAFMC's Ecosystems Approach to Fisheries Management (EAFM) initiative, especially considering that this information is not redundant with current assessments. A potential schedule would be to have the SSC review the State of the Ecosystem report at its annual March meeting, with MAFMC review at its annual April meeting.

The SSC had the following major suggestions for improving the SOE before March 2017:

- Overall, each section should include a clear “SO WHAT?” — why should managers care? What should they do with this information? Is a short-term increase or decrease in an index bad or good? More guidance is needed on how to interpret the information.
- Include more forecasts where possible — what can we expect for a particular index or issue in the near term?
- Include links between sections in the narrative (e.g., temperature and Gulf Stream north wall indicators, similar to the link between copepods and right whales) for a more cohesive and integrated presentation.
- Link to information sources (data, documents, and/or contact information for lead scientists).
- A section on habitat issues/indicators (anthropogenic influence on habitat, trends in amount of area protected/reserved, etc.) and harmful algal blooms would be useful for the MAFMC.
- Include seabirds and marine mammals from the Mid-Atlantic region.
- Include a brief overview of Integrated Ecosystem Assessment (IEA) or other tools to implement ecosystem approaches to management, and where the MAFMC currently stands with implementation.
- A mix of indicators that are tracked annually and indicators that may rotate with others on an annual basis may be very useful; clearly delineate which are annual and which are “hot topics” or for a single year only.
- Using the same time interval for recent status and trends has merit, but investigate whether five years is an appropriate timeframe, and consider robust slope estimators to determine direction of the trends.

Additional, more detailed suggestions regarding particular indices were passed along to the NEFSC.

## **Ocean Quahog Assessment TORs**

The Northeast Region Coordinating Council (NRCC) has requested the MAFMC to review the terms of reference (TORs) for the upcoming Ocean Quahog benchmark assessment. The SSC briefly discussed the TORs and suggested that potential impacts of ecosystem effects, such as climate change, on stock dynamics and distribution be included. SSC members were asked to provide the SSC chair with any additional suggestions by 23 September; the SSC chair will then forward the suggestions to the Chris Moore for inclusion in the MAFMC’s response to the NRCC.

## **Upcoming Assessments and 2017 SSC Schedule**

Rich Seagraves reviewed the tentative work assignment for the SSC in 2017. The Black Sea Bass benchmark assessment is supposed to be reviewed and in the SSC’s hands by the end of 2016 and the MAFMC and ASMFC need to act on the results at the February 2017 MAFMC meeting. Therefore, a special meeting of the SSC will be scheduled for either the third or fourth week in January to re-visit the 2017 ABC recommendation in light of the new assessment results.

An SSC meeting will be scheduled in March 2017 primarily to review the 2018 ABC recommendations for Golden Tilefish and Blueline Tilefish. The SSC is expecting an assessment

update for Golden Tilefish and a data update for Blueline Tilefish from the NEFSC prior to the March meeting.

A benchmark assessment for Surfclams has recently been peer reviewed and the SSC is waiting for the final report. Additionally, a benchmark assessment for Ocean Quahogs will be peer reviewed in February 2017, so the May 2017 SSC meeting will be developing new ABC recommendations for these species. That meeting will also develop new ABC recommendations for Atlantic Mackerel, based on an expected assessment update provided by the NEFSC, and review its 2018 ABC recommendations for Butterfish and the squids, based on expected data updates also provided by the NEFSC.

The July 2017 SSC meeting will involve review of the 2018 ABC recommendation for Summer Flounder, based on an expected updated assessment from the NEFSC, and review of the 2018 ABC recommendations for Bluefish and Scup, based on expected data updates from the NEFSC. The September 2018 SSC meeting will involve review of the 2018 ABC recommendation for Spiny Dogfish, based on an expected data update from the NEFSC.

### **Species Lead Assignments**

Turnover in SSC membership during the past year have left several species lead assignments vacant, especially the species leads for social sciences. The SSC chair reviewed the current assignment list and will work with SSC members over the next few months on species leads re-assignments and new assignments.

c: SSC Members, Warren Elliott, Chris Moore, Rich Seagraves, Jason Didden, Kathy Sosebee

Mid-Atlantic Fishery Management Council  
Scientific and Statistical Committee Meeting  
September 2016

Final Agenda

Wednesday 14 September 2016

- 10:00 a.m. Review fishery performance report and multi-year ABC for Spiny Dogfish
- 12:00 p.m. Lunch
- 1:30 p.m. Report of OFL CV Subcommittee
- 3:00 p.m. NEFSC Ecosystem Status Report
- 4:00 p.m. Review/comment on Ocean Quahog Draft Assessment ToRs
- 4:30 p.m. 2017 SSC Schedule, Upcoming Assessments, Species Lead Assignments, etc.
- 5:00 p.m. Adjourn

MAFMC Scientific and Statistical Committee  
14 September 2016 Meeting  
Baltimore, MD

<u>Name</u>	<u>Affiliation</u>
<i>SSC Members in Attendance:</i>	
John Boreman (SSC Chairman)	NC State University
Tom Miller (SSC Vice-Chair)	University of Maryland - CBL
David Tomberlin	NMFS Office of Science and Technology
Mark Holliday	NMFS (Retired)
Doug Lipton	NMFS Headquarters
Sarah Gaichas	NMFS Northeast Fisheries Science Center
Ed Houde	University of Maryland – CBL
Wendy Gabriel	NMFS Northeast Fisheries Science Center
Olaf Jensen	Rutgers University
Lee Anderson	University of Delaware (Retired)
Yan Jaio	VA Tech
Brian Rothschild	UMass Dartmouth (Retired)
Cynthia Jones	Old Dominion University
Mike Wilberg	University of Maryland – CBL
Rob Latour	VIMS
Dave Secor	University of Maryland - CBL
<i>Others in attendance:</i>	
Mike Luisi	MAFMC chair
Rich Seagraves	MAFMC staff
Jason Didden	MAFMC staff
Jessica Coakley	MAFMC staff
Erin Schnettler	NMFS Office of Sustainable Fisheries
Karen Greene	NMFS Office of Sustainable Fisheries
Purcie Bennett-Nickerson	Pew Charitable Trust

