



**Mid-Atlantic Fishery Management Council**

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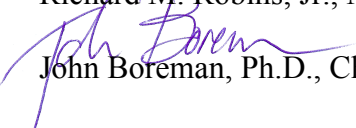
Richard B. Robins, Jr., Chairman | Lee G. Anderson, Vice Chairman

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

## MEMORANDUM

**DATE:** 25 September 2014

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

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

**SUBJECT:** Report of the September 2014 Meeting of the MAFMC SSC

The SSC met in Baltimore, MD, on 17-18 September 2014 for the main purpose of reviewing the ABC recommendations made previously for Spiny Dogfish. The SSC also received updates on development of a “rumble strip” approach for setting multi-year ABCs, the white paper on forage species being developed for the Council, and plans for the upcoming National SSC meeting in Honolulu. The meeting agenda is attached (Attachment 1).

A total of 11 SSC members were in attendance during the discussion of the Spiny Dogfish ABC (Attachment 2), 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/september-17-18-2014>).

### Spiny Dogfish

The SSC reviewed the following information relevant to the status of Spiny Dogfish:

- MAFMC Staff. 2014. 2014 Spiny Dogfish fishery performance report. Mid-Atlantic Fishery Management Council. 2 pp.
- Armstrong, J. 2014. Staff memorandum to Chris Moore, dated 10 September 2014, entitled: “Review of Spiny Dogfish Management Measures for 2015.” 11 pp.
- Rago, P., and K. Sosebee. 2014. Update of landings and discards for Spiny Dogfish in 2014. Northeast Fisheries Science Center. 19 pp.

Paul Rago (NEFSC staff) and Jim Armstrong (MAFMC staff) provided the SSC with updates on catch and discards of Spiny Dogfish in 2013 and the fishery performance. Due to mechanical problems the NEFSC was unable to sample critical strata in the Mid-Atlantic region during the spring bottom trawl survey in 2014. Therefore, it was not possible to update population abundance estimates in 2014, nor was it possible to provide updated estimates of fishing mortality rates or conduct projections of stock

size under varying fishing mortality rates.

Based on inspection of the catch and discard information, the SSC saw no compelling evidence to change its recommendation of **ABC = 28,310 mt** for 2015.

Following the ABC discussion, Mike Frisk summarized two journal articles recently published on the distribution of Spiny Dogfish off the Atlantic Coast as influenced by water temperature, climate, and other ecosystem factors:

Sagarese, S. R., M. G. Frisk, R. M. Cerrato, K. A. Sosebee, J. A. Musick, and P. J. Rago. 2014. Application of generalized additive models to examine ontogenetic and seasonal distributions of spiny dogfish (*Squalus acanthias*) in the Northeast (US) shelf large marine ecosystem. *Canadian Journal of Fisheries and Aquatic Sciences* 71.

Sagarese, S. R., M. G. Frisk, T. J. Miller, K. A. Sosebee, J. A. Musick, and P. J. Rago. 2014. Influence of environmental, spatial, and ontogenetic variables on habitat selection and management of spiny dogfish in the Northeast (US) shelf large marine ecosystem. *Canadian Journal of Fisheries and Aquatic Sciences* 71.

The authors found that significant nonlinear relationships between Spiny Dogfish and their environment or prey were common throughout the various dogfish stages and seasons. They also found that abundance estimates for dogfish, based on survey data, depended on environmental conditions (depth and bottom temperature) and ecological factors at the times of the surveys, such as squid abundances. There is quantitative evidence showing a north-south movement pattern for dogfish. Work is continuing on spatio-temporal interactions between Spiny Dogfish and commercial fisheries in the Northeast (US), the impact on survey metrics resulting from diel behavior, and the potential influence of climate change on availability of dogfish to the surveys.

## **Open Discussion with NEFSC**

Following the session on Spiny Dogfish, the SSC had an open discussion with lead scientists from the Northeast Fisheries Science. The purpose of the open discussion was to facilitate communications and understanding between the SSC and NEFSC, especially as they relate to development of ABC recommendations. Jason Didden led off the discussion by walking the group through the MAFMC's ABC control rule and associated risk policy.

The discussion group agreed that there does not appear to be a need for an immediate change to the process of setting ABCs. However, it may be useful to change how the levels are labeled and described, to reflect their intent and application more accurately.

The current practice of using a number-based classification system for applying the ABC control rule (i.e., Level 1, Level 2, Level 3, and Level 4) has led to confusion, since it wrongly implies a ranking in the quality of assessments. The purpose of the classification system is to guide how to determine the ABC, given the degree of scientific uncertainty in the forecast of the overfishing limit (OFL). Indeed, an assessment that more fully describes uncertainty may lead to a smaller or larger buffer depending on the actual scale of the uncertainty revealed by an assessment that better characterizes the uncertainty in the OFL.

An alternative basis for labeling the levels of the control rule was proposed that coincides with the current criteria for classification, but substitutes the numerical ranking with descriptors for how ABCs should be determined. For example, Level 1 could be labeled *Analytically-based ABC*; Level 2 could

become *Expert-based ABC*; Level 3 could become *Empirically-based ABC*; and Level 4 could become *Catch-Based ABC*.

The discussion group also suggested that a working group might be established under the auspices of the Northeast Regional Coordinating Council (NRCC) to: (1) compare and contrast application of ABC control rules in New England and the Mid-Atlantic regions; and (2) assess implications for regional management from results of management strategy evaluations (MSEs) of the ABC control rules.

## **Rumble Strip Approach to Setting Multi-year ABCs**

Mike Wilberg briefed the SSC on progress being made by the SUN Subcommittee, in cooperation with Brian Linton of the NEFSC, on development of a “rumble strip” approach to setting multi-year ABCs. The basic idea behind the rumble strip approach is that multiple indicators will be evaluated to determine if they are within a range that was expected when the multi-year ABCs were originally set; the analogy is that rumble strips alert drivers when they are going off the road. If indices are outside the bounds that were expected when ABCs were initially set, corrective action may be necessary. The rumble strip approach uses multiple indices to determine if a critical mass of information exists such that reevaluation is necessary. Each index is scored as zero or one depending on whether the value in a given year is within or outside the pre-set bounds, respectively. The overall score for a given year is the sum of the indicator scores across the indices for that year. If the overall score is greater than or equal to a pre-specified threshold, a re-evaluation of the available data for that stock is triggered. Changes will be made if the re-evaluation determines that corrective action is necessary.

Progress-to-date indicates that the approach developed so far appears to work reasonably well for some species but not for others. A full report on the rumble strip approach and SSC recommendations will be presented by the SUN Subcommittee at an upcoming MAFMC meeting (December 2014 or February 2015).

## **Forage Fish White Paper**

As an outgrowth of the forage fish workshop held last February in conjunction the MAFMC meeting in New Bern, NC, Ed Houde, Sarah Gaichas, and Rich Seagraves have been working on a white paper that will become supporting material as the MAFMC continues development of an ecosystem-based approach to management of the Mid-Atlantic fisheries. Ed and Rich walked the SSC through the current draft of the white paper and received several suggestions for its enhancement. The white paper will be revised based on comments received from the SSC at the meeting and through follow-up correspondence, and will be presented to the MAFMC at the October 2014 meeting.

## **National SSC V Workshop**

John Boreman and Rich Seagraves presented the latest draft of the proposed agenda for the upcoming National SSC V workshop. Under the overall theme of “Providing ABC specifications in the face of uncertainty: from data to climate and ecosystems,” two subthemes are: (1) setting ABCs in data poor/model resistant situations, and (2) incorporating variable and changing climate and ecosystem conditions (including spatial management and habitat considerations) into ABC specifications. The workshop will begin with a round robin that will address the current ABC specification process for the

eight SSCs. At this point, the workshop steering committee, which is composed of the eight SSC chairs and key council staff, are asking each SSC to submit topics that should be addressed at the workshop. The MAFMC suggests the following topics:

- Problems associated with sampling (monitoring) in relation to the ABC-setting process, including evaluation of ABC control rules;
- A comparison of ABC control rules across the SSCs, including commonalities, problems encountered, and successes;
- Linking the ABC control rules to emergent themes in the recent published literature and results of management strategy evaluations, particularly for model-challenged species; and
- A comparison of how SSCs are involved in the MSA requirement for councils to develop five-year research plans.

## **Other Business**

*Impact of Underfishing Quotas on ABC Recommendations:* Mark Holliday raised the question of how the SSC should handle multi-year ABC recommendations when fishing quotas are not fully achieved. This situation could be due to market conditions, availability of the stock to the fishing fleet, an overestimate of stock abundance, or other factors. Out-year ABCs recommended by the SSC are normally based on the assumption that the fishing quotas will be met each year. The SSC decided to ask the Council for guidance on whether or not this would be a worthwhile question for the SSC to pursue.

*SSC Retreat:* The SSC also discussed the benefits of having a meeting devoted to in-depth discussion of issues that underlie the ABC recommendations, such as applying ABCs to forage species and ABC performance evaluation. The optimal time for such a meeting would be following the next National SSC workshop (NSSC V), so the SSC could benefit from the materials presented and the conclusions drawn from the workshop.

*Meeting Venue:* Rich Seagraves informed the SSC that Council staff in charge of meeting arrangements has been generally dissatisfied with the Ascend Hotel group (Admiral Fell Inn and the Pier V) and is seeking guidance on alternative venues. The SSC wants to keep the meetings in or around Baltimore and asked Council staff to investigate other venues closer to the Inner Harbor and in Annapolis.

cc: SSC Members, Lee Anderson, Chris Moore, Rich Seagraves, Jim Armstrong, Jason Didden, Fred Serchuk, Paul Rago, Brian Linton

Mid-Atlantic Fishery Management Council  
Scientific and Statistical Committee Meeting  
September 17-18, 2014  
Agenda

Wednesday September 17, 2014

- 1:00 p.m. Review Multi-year ABC for spiny dogfish (Armstrong/Rago)
- 2:00 p.m. Open Discussion with NEFSC Leadership - MAFMC Risk Policy, Stock Assessment Tier Assignments, and Addressing MAFMC Research Needs (Didden/Seagraves)
- 5:30 p.m. Adjourn

Thursday September 18, 2104

- 9:00 a.m. SUN Subcommittee Report on Rumble Strip Analyses (Wilberg)
- 10:00 a.m. Review Forage Fish White Paper (Houde/Gaichas/Seagraves)
- 11:00 a.m. Topics for Fifth National SSC Workshop (Boreman)
- 12:00 p.m. Adjourn

MAFMC Scientific and Statistical Committee  
17-18 September 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)	University of Maryland - CBL
Mike Wilberg	University of Maryland - CBL
Doug Lipton (9/17 only)	NMFS
Ed Houde	University of Maryland - CBL
Brian Rothschild	University of Massachusetts – Dartmouth
Rob Latour	VIMS
David Tomberlin (9/17 only)	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
 <i>Others in attendance:</i>	
Rich Seagraves	MAFMC staff
Kiley Dancy (9/17 only)	MAFMC staff
Jim Armstrong (9/17 only)	MAFMC staff
Jessica Coakley (9/17 only)	MAFMC staff
Jose Montanez (9/17 only)	MAFMC staff
Jason Didden (9/17 only)	MAFMC staff
Chuck Adams (by phone, 9/17 only)	NMFS Northeast Fisheries Science Center
Gary Shepherd (by phone, 9/17 only)	NMFS Northeast Fisheries Science Center
Mark Terceiro (by phone, 9/17 only)	NMFS Northeast Fisheries Science Center
Brian Linton (by phone)	NMFS Northeast Fisheries Science Center
Jim Weinberg (9/17 only)	NMFS Northeast Fisheries Science Center
Paul Rago (9/17 only)	NMFS Northeast Fisheries Science Center
Greg DiDomenico	GSSA
Marin Hawk (9/17 only)	ASMFC staff
Elizabeth Silleck (9/18 only)	Pew Charitable Trust
Purcie Bennett-Nickerson (9/18 only)	Pew Charitable Trust
Jeff Kaelin	Lunds Fisheries and member, MAFMC
Justin Wilson (9/17 only)	University of Maryland - CBL
Cara Simpson (9/17 only)	University of Maryland - CBL
Charlie Wahl (9/17 only)	University of Maryland - CBL
Aimee Hoover (9/17 only)	University of Maryland - CBL
Suzan Shahrestani (9/17 only)	University of Maryland - CBL