Mid-Atlantic Fishery Management Council
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Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
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M E M O R A N D U M

Date: 18 September 2017

To: Michael P. Luisi, Chairman, MAFMC

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

Subject: Report of the September 2017 SSC Meeting

The SSC met in Baltimore on the 13th of September 2017. The main objective of the meeting was to affirm (or develop new) ABC recommendations for Spiny Dogfish in light of updated information on stock status. Other topics discussed at the meeting included a presentation by Dr. John Wiedenmann on a management strategy evaluation he is currently conducting on ABC control rule alternatives for the Mid-Atlantic Fishery Management Council, and continued development of criteria for setting coefficients of variation (CVs) for overfishing limits (OFLs) (Attachment 1).

A total of 14 SSC members were in attendance (Attachment 2), 12 of whom were present for the discussion of the Spiny Dogfish ABC, which constituted a quorum. Also in attendance were MAFMC staff, staff from NMFS Northeast Fisheries Science Center (by phone), and a representative from the public. All documents referenced in the report can be accessed via the SSC's meeting website (http://www.mafmc.org/ssc-meetings/2017/september-13).

Spiny Dogfish

Jason Didden (MAFMC staff), with assistance from Kathy Sosebee (NEFSC lead assessment scientist for Spiny Dogfish), presented the Advisory Panel's Fishery Performance Report and data update for Spiny Dogfish. Of particular note, the estimate of female spawning stock biomass for 2017 is the lowest in the time series, and a huge drop in Spiny Dogfish biomass on Georges Bank was also observed. However, all size and sex classes decreased in 2017, which likely indicates a year-specific availability issue. Mike Frisk (SSC) mentioned that he is completing an analysis of environmental and gear-related factors affecting distribution and abundance estimates of Spiny Dogfish along the Atlantic Coast, and will have that information available in time for next year's ABC deliberations.

Based on the information presented, the SSC decided not to change its ABC recommendation for the upcoming fishing year of **ABC = 22,635 mt (49.9 million pounds)**. A benchmark

assessment of Spiny Dogfish is listed as a possibilty for 2019; the SSC requests an updated assessment for its September 2018 meeting.

ABC Control Rule Alternatives

Dr. John Wiedenmann (Rutgers University) is under contract to the MAFMC to evaluate the impact of different types of ABC control rules on stock dynamics and fishery performance metrics. He is using a management strategy evaluation (MSE) approach, and has completed a preliminary analysis using Summer Flounder as a test species. He also plans to expand his analysis to include life history characteristics and stock assessment information for Butterfish and Scup. The SSC offered a number of suggestions regarding selection of approaches to setting ABCs, as well as content and format of output information from the MSE that would be most useful to the SSC (and Council). Dr. Wiedenmann has been working closely with the SSC's OFL CV Working Group, as his efforts coincide closely with the Working Group's objectives (see the following section of this report).

Criteria for Setting CVs for OFLs

The SSC discussed objectives and considerations for determination of the coefficients of variation (CVs) for estimates of the overfishing limit (OFL), as well as a draft set of decision criteria for assigning OFL CVs into categories representing low, moderate, and high uncertainty in the OFL estimate. The SSC also discussed the estimation of low, moderate, and high OFL CVs that could represent default values.

The SSC adopted the following objectives for its OFL CV determination process:

> We intend to elevate confidence in ABCs by establishing a replicable process that meets Council risk policy objectives, and identifies relevant components of assessment uncertainty to be provided to the SSC.
>
> The SSC's approach to setting OFL CVs will:
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> - Result in prudent decisions for catch advice that are consistent in meeting the objectives of the Council's Risk Policy in considering the trade-offs of biological, social, and economic benefits;
> - Be based on clear and transparent decision criteria; and
> - Be supportable with evidence.

The SSC further discussed and refined a set of decision criteria for OFL CVs that had been presented at prior meetings, deciding on the following wording:

1. Rigor of model identification during the assessment process
2. Informed by retrospective analysis
3. Informed by empirical estimates of abundance, stock biology, and fishing pressure

4. How the reference points are informed by ecosystem factors or comparisons with other species
5. Informed by measures of trends in recruitment
6. Informed by prediction error
7. Informed by simulation analysis or a full management strategy evaluation
8. Assessment accuracy under different fishing pressures

The SSC agreed that the entire set would be considered for discussion related to the generic ToR 2 (provide an OFL estimate) during an ABC setting process, but each consideration would not necessarily be weighed against the others. There would not be a need for quantification of elements on the list; a narrative from the assessment team/review panel is more helpful to the SSC than a score.

The SSC discussed a process for using this information and the example decision framework proposed: a table aligning the eight decision criteria with different assessment characteristics that would result in low, moderate, or high OFL CVs. All SSC members agreed that such a table would help structure the discussion and ensure that a consistent set of considerations were applied to all stocks. Overall, the SSC considered the framework to structure discussion in a way that does not obligate the group to make a certain decision, but helps lead the SSC to a consensus decision in a transparent manner.

A range of opinions were provided on how formulaic the decision rules should be, with some members preferring to retain flexibility and a continuous range of OFL CV options, and others preferring a more formulaic "robotic" approach with a small set of pre-determined default OFL CV bins. A continuum from 0-100% would be difficult to use consistently given that OFL CV is generally unknown. Differences in OFL CV on the order of 5-10-15% are probably too hard to justify and distinguish. Simulation testing could determine whether there are any meaningful differences in performance of the control rule with OFL CV bins at least 30-50% apart. Further work on determining levels of OFL CV that reasonably represent low, moderate, and high uncertainty for the range of species and assessments in the Mid-Atlantic region is necessary and will be conducted by the Working Group in collaboration with Dr. John Wiedenmann (see the preceding section of this report).

The SSC OFL CV Working Group will summarize the revisions from this meeting and make further refinements to the approach during a call in the upcoming month. The full SSC may meet by webinar to review and approve refinements to the approach so that it can be presented to the Council at its December 2017 meeting, and at the National SSC meeting in January.

c: SSC Members, Warren Elliott, Chris Moore, Rich Seagraves, Brandon Muffley, Jason Didden, Kathy Sosebee, John Wiedenmann, Jan Saunders

Attachment 1

Mid-Atlantic Fishery Management Council
Scientific and Statistical Committee Meeting

September 13, 2017
Royal Sonesta Harbor Court Baltimore
550 Light Street, Baltimore, MD 2120

Agenda

Wednesday, September 13, 2017

9:00 Spiny dogfish data and fishery update; review of 2018-2019 fishing year ABC (Didden)

10:30 Review of Council's current and alternative ABC control rules (Wiedenmann)

12:00 Lunch

1:00 Review of OFL CV Working Group progress and recommendations

4:00 Adjourn

Attachment 2

MAFMC Scientific and Statistical Committee
19-20 July 2017 Meeting Attendance

Name	Affiliation
SSC Members in Attendance:	
John Boreman (SSC Chairman)	NC State University
Tom Miller (SSC Vice-Chair) *	University of Maryland - CBL
Mark Holliday	NMFS (Retired)
Wendy Gabriel	NMFS Northeast Fisheries Science Center
Sarah Gaichas	NMFS Northeast Fisheries Science Center
Ed Houde	University of Maryland – CBL
Dave Secor	University of Maryland - CBL
Paul Rago (via phone)	NMFS (retired)
Yan Jiao	Virginia Tech
Lee Anderson	University of Delaware (retired)
Cynthia Jones	Old Dominion University
Mike Frisk	SUNY Stony Brook
Mike Wilberg	University of Maryland - CBL
Brian Rothschild *	UMass Dartmouth (retired)

*not present for Spiny Dogfish ABC discussion

Others in attendance:	
Rich Seagraves	MAFMC staff
Brandon Muffley	MAFMC staff
Jason Didden	MAFMC staff
Kathy Sosebee (by phone)	NMFS Northeast Fisheries Science Center
John Wiedenmann	Rutgers University