Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | G. Warren Elliott, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

M E M O R A N D U M

Date: 17 May 2019

To: Michael P. Luisi, Chairman, MAFMC

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

Subject: Report of the May 2019 SSC Meeting

The SSC met in Baltimore on the 7th and 8th of May 2019 primarily to review (and perhaps modify) 2020 ABC recommendations previously developed for Atlantic Mackerel, Butterfish, Longfin Squid, *Illex* squid, Surfclam, and Ocean Quahog (Attachment 1). The SSC also had an interactive session with Michelle Duval as part of the Council's 2020-2024 strategic planning exercise, and performed a final review of the OFL CV guidelines document for submission to the Council. Under Other Business, the SSC discussed its potential role in providing economic and social science advice to the Council on pending and proposed management actions.

The SSC had at least 11 members present for the review of ABC recommendations, which constituted a quorum (Attachment 2). Also participating were Council members and staff, NEFSC staff, and representatives from the fishing industry. Documents referenced in this report can be accessed via the SSC's meeting website (http://www.mafmc.org/ssc-meetings/2019/may-7-8).

Atlantic Mackerel

Jason Didden (Council staff) presented the data update for Atlantic Mackerel; Kiersten Curti (NEFSC lead scientist for mackerel) participated in the discussion via webinar. Jason reviewed the status of management, results of the recent NEFSC trawl surveys, updated commercial and recreational catch statistics, and the updated Fishery Performance Report prepared by the Council's Advisory Panel. Although not yet published, summarized preliminary findings of the recent stock assessment of Atlantic Mackerel conducted by the Canadians point to continued low levels of stock abundance and recruitment in Canadian waters. All indications from data collected by the NEFSC suggest that recruitment since the moderately strong 2015 year class, which was used by the SSC last year in stock biomass projections to derive ABCs for 2019, 2020, and 2021, has been below the long-term average. Based on the recent poor stock information from the US and Canada, the SSC decided it could no longer endorse its previous ABC recommendation for 2020. The SSC's responses to terms of reference provided by the Council should this situation occur (*in italics*) are as follows.

For Atlantic Mackerel, the SSC will provide a written statement that identifies the following for the 2020 fishing year:

1) *The appropriateness of the previously recommended 2020 ABC as specified under the Council's five-year rebuilding schedule. If the previously recommended 2020 ABC is inappropriate for the Council-approved rebuilding schedule, specify an alternative ABC and provide any supporting information used to make this determination.*

   Based on the SSC's recommendation developed in 2018, the 2020 ABC was set to increase from its 2019 level. The 2020 ABC value recommended by the SSC was predicated on a rebuilding strategy that recognized a strong 2015 year class and moderate year classes subsequently. The SSC determined that it would not be appropriate to recommend the higher 2020 ABC level based on recruitment levels in 2016-2018 that were lower than those anticipated in the rebuilding plan. Instead, the SSC recommends maintaining the ABC for 2020 at the level established for 2019 (ABC = **29,184 mt**). The SSC views this as a prudent level given the observed lower recruitments.

   The SSC anticipates receiving an assessment update in 2020 that will provide a quantitative foundation for future ABC specifications. The SSC requests that, within the limits of an updated assessment, these analyses consider evidence of alternative recruitment regimes in the most recent decade, and of variable rates of natural mortality.

2) *The most significant sources of scientific uncertainty associated with determination of the ABC.*

   The SSC notes the following areas of concern that led it to reduce the ABC for 2020:
   - Low level of recent recruitments evidenced in the:
     - Recent Canadian survey data,
     - NEFSC spring survey, and
     - Updated estimates of catch-at-age in the recreational and commercial data.
   - Persistent, low levels of spawning stock biomass in the recent Canadian assessment.
   - High estimates of fishing mortality in the Canadian assessment for 2018.
   - The unknown impacts of the 2019 closure of the mackerel fishery in response to the river herring / shad cap.

   These sources of concern stand in addition to the sources of uncertainty identified by the SSC in its ABC specification for 2019-2021, which are:
   - The estimated size of the most recent year class in the assessment (substantially higher than most recent recruitments) drives assumptions about rebuilding times, OFLs, and ABCs;
   - Conversion of egg survey results to the spawning stock biomass estimate;
   - The assessment is sensitive to the distribution of Atlantic Mackerel, which has been changing and may continue to change;
   - Trawl survey representation of abundance and age structure;
   - The assumption of fixed natural mortality rate and data gaps associated with major predators of mackerel; and

- Missing catch information from bait and recreational fisheries in Canada.

3) *The materials considered in reaching its recommendations.*

- Staff presentation to the SSC (7 May 2019)
- 2017 Atlantic Mackerel benchmark assessment
- 2019 Atlantic Mackerel, Squid, and Butterfish AP Fishery Performance Report
- Mackerel, Squid, and Butterfish Staff Memo and Recommendations
- 2019 Atlantic Mackerel Data Update
- 2019 Atlantic Mackerel AP Fishery Information Document
- Pre-publication Canadian DFO Data
- Letter from Roger Fleming et al. to Michael Pentony, dated April 30, 2019

These materials can be accessed via the SSC meeting website (http://www.mafmc.org/ssc-meetings/2019/may-7-8).

4) *A conclusion that the recommendations provided by the SSC are based on scientific information the SSC believes meets the applicable National Standard guidelines for best scientific information available.*

The SSC believes that the recommendations provided are based on scientific information that meets the applicable National Standard guidelines for best scientific information available.

Butterfish

Jason Didden presented the data update for Butterfish; Chuck Adams (NEFSC lead scientist for the species) participated in the discussion via webinar. Jason reviewed the status of management, results of the recent trawl surveys, updated catch statistics, and the updated Fishery Performance Report prepared by the Council's Advisory Panel. The SSC decided not to change its previously-derived ABC recommendation for Butterfish for 2020 (ABC = **32,063 mt**) because the most recent stock indices are within the expected range.

Longfin Squid and *Illex* Squid

The NEFSC data updates for both squid species were presented by Jason Didden, while Lisa Hendrickson (NEFSC lead scientist for the species) participated in the discussion via webinar. Jason's presentation included updated catch statistics and survey indices, and a summary of the most recent Fishery Performance Report prepared by the Council's Advisory Panel. The SSC noted that the declining trend in mean body weight of squid captured in the trawl surveys still seems to be an issue, which Lisa Hendrickson attributes to a combination of factors (incoming recruitment, dying spawners, emigration from the survey area, and the environment). The SSC decided that the information presented was not compelling enough to change its previously-derived 2020 ABC recommendations for either Longfin Squid (ABC = **23,400 mt**) or *Illex* squid (ABC = **26,000 mt**).

Surfclam and Ocean Quahog

Dan Hennen (NEFSC lead scientist for both clam species, participating via webinar) began the SSC discussion with an update on early findings from the redesigned NEFSC clam dredge survey, which has been targeting Surfclam. He noted that the centroid of distribution for Surfclam has been steadily shifting offshore, probably due to higher water temperatures that seem to have a more negative impact on larger individuals. When asked if data are being collected on the Ocean Quahog captured during the survey Dan replied that biological measurements were being taken on the captured specimens, but the samples could not be used to quantify abundance.

Jessica Coakley (Council staff) then presented the NEFSC data updates and Fishery Performance Reports for Surfclam and Ocean Quahog. Based on the information provided, the SSC decided there was no compelling reason to change its previously-set 2020 ABCs for either species. Assessment updates for both species are expected in 2020.

MAFMC's Five-Year Strategic Plan (2020-2024)

As part of information-gathering for drafting the Council's five-year strategic plan for 2020-2024, Michelle Duval (under contract to the Council) used the SSC meeting as an opportunity to get feedback on emerging themes and future priorities. She presented the background and purpose of the plan, results of the stakeholder surveys that have been conducted so far, and the timeline for the plan's completion. SSC members made a number of recommendations, including analysis of the stakeholder survey results state-by-state, and binning the responses into those from people whose livelihoods are directly affected by regulations developed by the Council and those that are not. The SSC stressed the importance of evaluating whether the plan is actually working, i.e., tracking the connection between the strategic plan and the annual implementation plans upon which it based. A recommendation was also made to review the Council's budget expenditures during the past five years to see how they stacked up against the objectives of the strategic plan currently in place. The session ended with a discussion of the connection (or lack thereof) between the five-year strategic plan and the five-year research plan.

OFL CV Guidelines

The SSC undertook one last full committee review of the guidelines for assigning a coefficient of variation (CV) value to estimates of the overfishing limit (OFL), a key step in determining ABCs. A concern expressed by SSC members is the amount of lead time needed to complete the "OFL CV framework" prior to the meeting during which the ABC will be developed. Much of the timing depends on when the assessment is submitted to the SSC. If the deadline for submitting the assessment is not met, one suggestion is to set aside a day ahead of the meeting to enable the SSC lead to work with the OFL CV review panel in drafting the framework. All agreed that SSC species leads can begin drafting the OFL CV framework immediately, based on

past history, which should speed up the process. The SSC also agreed that the NEFSC lead scientist for the species in question should be consulted early on in drafting the OFL CV framework. Finally, the SSC wants to make it clear that the guidelines are not set in stone, and that the SSC still has the flexibility to change criteria or the value of the CV bins (now 60%, 100%, and 150%) depending on circumstances unique to the species in question.

The SSC formally endorsed the OFL CV guidelines drafted by the working group. Over the next two weeks the working group will incorporate the suggestions made by the full SSC and perform final edits before submitting the draft guidelines to the Council for approval at its June meeting.

Other Business

Providing Economic and Social Science Advice to the Council

As part of the SSC's May 2019 scheduled review of the 2020 ABCs for Surfclam and Ocean Quahog, another case example arose that demonstrates the potential value for expanding the reliance on the SSC for science advice beyond advice on stock assessments to include economics and social science. There are several economic statements and conclusions about proposed management alternatives for an excessive shares amendment to the Surfclam and Ocean Quahog Fishery Management Plan contained in the Fishery Performance Report that are inaccurate and not supported by economic science facts, and the SSC is highlighting this lack of scientific rigor for the Council. Section 302(g) of the Magnuson-Stevens Act defines the SSC's role to include advising the Council on science information and quality across all disciplines. We are bringing this example of SSC economic advice to the attention of the Council now because, at our last meeting, Council vice-Chairman Warren Elliott personally asked for feedback about the desired composition and role of the Committee in light of Council's consideration of how to fill the four SSC vacancies.

The SSC wishes to work with the Council and staff in developing a formalized process to provide SSC economic advice and reviews to evaluate the economic science basis of Council actions (as requested), with the purpose of maintaining the highest quality scientific peer review and credibility of Council actions. This expanded advisory capacity of the SSC will require a discussion among SSC and Council members of when and where the SSC can best fulfill the economic analysis and review needs of the Council, and if added expertise on the SSC is necessary to fulfill this role. The SSC looks forward to a positive response for such a meeting.

In the meantime, given that the Council sent the excessive shares amendment back to committee, primarily over economic issues raised in alternatives 5 and 6, the SSC submits comments (Attachment 3) to assist the Council as it decides whether to include these alternatives in the public document, and looks forward to providing further support if requested.

c: SSC Members, Warren Elliott, Chris Moore, Brandon Muffley, José Montañez, Jessica Coakley, Kiley Dancy, Jason Didden, Kiersten Curti, Chuck Adams, Dan Hennen, Lisa Hendrickson, Jan Saunders

Mid-Atlantic Fishery Management Council

Scientific and Statistical Committee Meeting

May 7 – 8, 2019

Royal Sonesta Harbor Place

550 Light Street, Baltimore, MD, 21202

AGENDA

Tuesday, May 7, 2019

10:00 Atlantic Mackerel data and fishery update; review of previously recommended 2020 ABC (Didden)

11:00 Butterfish data and fishery update; review of previously recommended 2020 ABC (Didden)

12:00 Lunch

1:00 Longfin Squid data and fishery update; review of previously recommended 2020 ABC (Didden)

2:00 *Illex* Squid data and fishery update; review of previously recommended 2020 ABC (Didden)

3:00 Atlantic Surfclam data and fishery update; review of previously recommended 2020 ABC (Coakley)

4:00 Ocean Quahog data and fishery update; review of previously recommended 2020 ABC (Coakley)

5:00 Adjourn

Wednesday, May 8, 2019

8:30 Council 2020-2024 Strategic Plan – overview and comments (Duval)

10:00 OFL CV guidelines document – review and approve (OFL CV workgroup)

11:30 Other business

12:00 Adjourn

Attachment 2

MAFMC Scientific and Statistical Committee
7-8 May 2019

Meeting Attendance

Name	Affiliation
SSC Members in Attendance:	
John Boreman (SSC Chairman)	NOAA Fisheries (retired)
Tom Miller (SSC Vice-Chairman)	University of Maryland – CBL
Ed Houde	University of Maryland – CBL (retired)
Dave Secor (May 7th AM only)	University of Maryland – CBL
Paul Rago	NOAA Fisheries (retired)
Wendy Gabriel	NOAA Fisheries Northeast Fisheries Science Center
Lee Anderson	University of Delaware (emeritus)
Mark Holliday	NOAA Fisheries (retired)
Mike Frisk	Stony Brook University
Rob Latour	VIMS
Brian Rothschild	University of Massachusetts – Dartmouth (emeritus)
Olaf Jensen	Rutgers University
Others in attendance:	
Jessica Coakley (May 7th only, May 8th via webinar)	MAFMC staff
José Montañez (May 7th only, May 8th via webinar)	MAFMC staff
Jason Didden (May 7th only)	MAFMC staff
Kiley Dancy (May 8th only)	MAFMC staff
Brandon Muffley	MAFMC staff
Kiersten Curti (via webinar, May 7th only)	NOAA Fisheries Northeast Fisheries Science Center
Lisa Hendrickson (via webinar, May 7th only)	NOAA Fisheries Northeast Fisheries Science Center
Chuck Adams (via webinar, May 7th only)	NOAA Fisheries Northeast Fisheries Science Center
Dan Hennen (via webinar, May 7th only)	NOAA Fisheries Northeast Fisheries Science Center
Warren Elliott	MAFMC Vice-Chair
Jeff Kaelin	Lund's Fisheries
Greg DiDomenico (May 7th only)	GSSA
Dave Wallace (May 7th only)	Wallace and Associates
Michelle Duval (May 8th only)	MAFMC contractor

SSC Comments on the SCOQ Excessive Shares Amendment

As customary, at the SSC's May 2019 scheduled review of the 2020 ABCs for Surfclam and Ocean Quahog (SCOQ), a Council Advisory Panel's Fishery Performance Report (FPR) was submitted to the SSC for consideration. The primary purpose of the FPRs (and public comments at these ABC-setting meetings) is to contextualize catch histories for the SSC by providing information about fishing effort, market trends, environmental changes, and other factors.

The FPR, however, began with an extended discussion of several policy positions of the industry on various regulatory and fishery management actions that had been undertaken or were being proposed by NOAA Fisheries and/or the Council. The FPR is not intended to be a referendum or an industry poll on policy and management options, and normally the SSC simply disregards such oversteps.

However, the FPR (and public comment provided at the May 7th SSC meeting) made several economic statements and conclusions about proposed management alternatives for an excessive shares amendment to the SCOQ plan that were inaccurate and not supported by economic science facts. The FPR reaffirmed an action taken at the last Council meeting, during which the Council passed a motion to send the SCOQ Excessive Shares Amendment back to committee, partially at least, to reconsider the question of whether alternatives 5 and 6 should be included in the final document. The text of the FPR and the public comment concluded alternatives 5 and 6 were "... market restructuring plans and not excessive share controls." This characterization is factually incorrect. As described in the amendment and will be further explained in detail below, alternatives 5 and 6 were explicitly designed to address monopsony power in the market for ITQ shares. Moreover, excluding these alternatives from further discussion at this early stage of plan amendment unduly constrains discussion of a significant economic tool for resolution of the Council's excessive shares requirement.

The SSC's role includes advising the Council on science information and quality, and had such errors in fact been of a biological nature, the SSC would have brought this lack of scientific rigor to the attention of the Council. The following evaluation explores the economic science underpinnings of the misleading statements and inaccuracies.

At the outset, it should be clear that this economic evaluation is not intended to subsume the Council's sole role in policy making. The purpose here is to provide advice and general background information from an economic science perspective, and can be summarized as follows:

(1) The Council is required by law to address excessive shares to prevent market power. [*Monopoly* market power occurs when the ITQ system allows quota holders to reduce product *output* such that their behavior affects market-wide prices. *Monopsony* market power occurs when the ITQ system allows quota owners to affect the market-wide price of *inputs*, in this case, of quota shares.];
(2) Because of unique circumstances in the SCOQ industry, market power in the form of monopsony exists and has existed for some years, and has led to serious effects on the industry;
(3) Alternatives 5 and 6 would remedy the market power and correct for future problems, but would also result in measurable distribution effects. Due diligence requires a full consideration of all current alternatives to achieve open discussion and transparency; and
(4) There is also a need for economic research to measure the economic effects quantitatively, and the likely distribution of those effects though a detailed assessment of each.

As a starting point, the purpose of the excessive shares amendment is to make sure that the operation of the ITQ program does not foster or enable market power over the price of product or of catch shares. As further background, a very big problem faced during the development of the ITQ programs was how to make the initial allocation of quota. During the public hearings people were much more interested in who would win and who would lose from the different formulae than they were in the actual workings of the program; i.e., it was all about distribution. In any event, the allocation was made and participants received ITQ shares that were supposed to give them a viable piece of the action. That was one of the arguments made in favor of adopting the ITQ program in the first place.

The SCOQ industry and ITQ program, however, is quite special and almost unique in at least three respects. First, catch must be processed before sale; more than simply heading and gutting. Second, there are few buyers of the processed product (few large companies e.g., Campbell's Soup Company). Third, for a number of years the annual TAC has not been harvested for either species.

For ease of exposition below let us specify the market equilibrium output as MEO, or the amount the industry is willing and able to produce and sell in a given year, all else being equal. The current condition with both species is TAC > MEO.

A plausible explanation for the current state of the industry (the fundamentals of which are described in the amendment) follows from these three unique aspects and it differs from the picture painted by the industry. Once the processing sector accumulated enough catch shares to match the market equilibrium output the game was over. The processors would produce the MEO level of production with their own annual shares, and all other annual shares would go unused. The processors have monopsony power with respect to the purchase of quota shares. If TAC < MEO, as it is in every other ITQ program, there is no problem because, to fulfill the market demand. all of the catch shares will have to be utilized and the ownership of catch shares will guarantee all owners a share of the action. But in the SCOQ case, some catch share owners cannot sell or rent their shares because of the monopsony power of the processors, and their

operational piece of the action is zero. The monopsony gains to the processors is the increase in net revenue due to the fact that they do not have to pay for all of the catch shares, as is the case in all other ITQ programs.

The industry argument refers to this group as "ITQ owning non-participants who do not contribute to the industry and have no investment at risk." Another possible description is a group of ITQ owners who have been systematically deprived of their piece of the action over the years due to the market power of processors, which follows from the three unique aspects in this program mentioned above. The very existence of non-participating ITQ owners is proof of monopsony power.

Both alternatives 5 and 6 attempt to address this problem and are worth consideration and full study. Essentially, they propose two types of catch shares: Type A and Type B. The total amount of Type A shares is set equal to some average of the MEO over the last few years. This will be allocated to all ITQ owners in the normal fashion. The amount of Type B shares will equal TAC minus MEO and can only be used when all of the type A has been used. [Type B shares provide the opportunity for the industry to expand production up to the safe limits of the biologically determined TAC if the market expands.] To produce enough to meet MEO, the processors will have to purchase all (or close to all) of the Type A shares. As a result, they will lose their monopsony power, because the number of Type A shares is equal to MEO. All ITQ owners will get a piece of the action.

What are the ramifications of this? Just like the initial allocation, the whole thing is about distribution. And the full effects of this require careful study.

However, at first glance some of the industry statements appear spurious.

Will this increase the cost of harvesting? No. There is a difference between real costs and financial costs. The real cost of harvesting and processing the product, in terms of actual inputs used, should not change at all. The same amount of gas will be burned and the same amount of labor will be used, etc.

Will the processors have to pay more in financial costs if these alternatives are implemented? Yes. To produce the market equilibrium output, the processors will have to purchase the Type A shares given to the formerly "ITQ owning non-participants," and that will decrease processor net revenues. But the decrease in net revenue is due to the loss in monopsony gains (described above), which will be transferred to the now fully participating ITQ owners. Correcting for the monopsony market power in the processing sector, which is the purpose of the excessive shares amendment, will cause this corrective redistribution.

Will the price to the consumer go up because the increase in financial costs will be passed on to the consumer? No. We have heard many times that the clam processing industry is in a tough position because Campbell's/other buyers will not consider price increases due to the many substitute products for Surfclam. The processors say that if they attempt to raise Surfclam product prices their customers will just use other substitute products in the chowder. Thus, the

price to consumers for soup will not go up, but as described above, the net returns to the processing industry will go down.

The Council should not discard alternatives 5 and 6, which were conceived by the FMAT to directly address the monopsony market power problem. The excessive shares amendment has definite redistribution effects and they need to be fully evaluated. However, the complete proposed amendment, including alternatives 5 and 6, should be subject to a full public discussion.

Finally, answers to policy questions require clear and credible economic analysis. It is acknowledged that insufficient economic data make the qualitative analysis in the amendment the best available science presently. Notwithstanding the current limitations on the quantity of available economic data, it would be useful if the Council and the industry worked cooperatively to obtain the necessary data to quantitatively measure the economic effects of alternatives in the amendment such that stakeholders and the public can more clearly distinguish between economic effects (changes in real costs and prices) and the distribution effects (identifying the winners and losers and explaining how and why the changes follow from alternatives being considered). This will add to the clarity of discussion, improve the quality of science used in decision-making, and help ensure the sustainability of our Nation's Surfclam and Ocean Quahog fishery resources.