



Mid-Atlantic Fishery Management Council

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MEMORANDUM

Date: April 30, 2015
To: Dr. Chris Moore, Executive Director
From: Jason Didden *JDD*
Subject: Mackerel, Squid, and Butterfish (MSB) ABCs and River Herring/Shad Cap

Summary

This memo supports the May 2015 SSC meeting for:

- Review of ongoing *Illex* Squid, longfin squid, and butterfish multiyear specifications (2015-2017)
- Setting mackerel specifications for up to three years (2016-2018)
- Providing input on the Council's river herring and shad (RH/S) cap on the mackerel fishery

Introduction

The Magnuson Stevens Act (MSA) as currently amended requires each Council's Scientific and Statistical Committee (SSC) to provide, among other things, ongoing scientific advice for fishery management decisions, including recommendations for acceptable biological catches (ABCs). The SSC recommends ABCs to the Council that address scientific uncertainty such that overfishing is unlikely to occur. The Council's ABC recommendations to NMFS for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC. As such, the SSC's ABC recommendations form the upper limit for catches of Council-managed species.

Once the SSC meets and decides on the ABCs, the Squid-Mackerel-Butterfish Monitoring Committee will meet (May 21) to discuss if changes to other management measures should be recommended per the ABCs from the SSC and other management considerations. These measures include Annual Catch Limits (ACLs), Annual Catch Targets (ACTs), and Accountability Measures (AMs). Based on the SSC's and Monitoring Committee's recommendations, the Council will make recommendations to the NMFS Northeast Regional Administrator. Based on NMFS' evaluation of the Council's recommendations, NMFS will publish a Proposed Rule for specifications and then a Final Rule, which may change from the Proposed Rule based on public comment.

Illex Squid, Longfin Squid, and Butterfish

Illex squid, longfin squid, and butterfish are currently in year 1 of multi-year specifications for 2015, 2016, and 2017. The SSCs recommendations, available here: <http://www.mafmc.org/s/SSC-2014-May-Report.pdf>, document the SSC's previous rationale and also summarize the major sources of scientific uncertainty. The NMFS Northeast Fisheries Science Center provided data updates for *Illex* squid, longfin squid, and butterfish, which are posted at: <http://www.mafmc.org/council-events/2015/ssc/may-13-14>, along with staff informational documents for Advisory Panel Fishery Performance Report development and links to previous assessment documents. The MSB Advisory Panel met before this memo was submitted and the Fishery Performance Report will be posted by May 1, 2015. Based on a review of this information, staff recommends no changes to these multi-year specifications – the relevant data continue to vary within expected ranges. In 2016 the ABCs for these species will be reviewed again and in 2017, the SSC and Council will consider specifications for 2018 and beyond.

Atlantic Mackerel

Summary

- The status of mackerel is currently “unknown” with respect to both fishing mortality rates and stock size. The next assessment timing is being determined but will likely be 2016 or 2017.
- For 2016-2018, staff recommends starting with an ABC of 18,245 mt (estimated 2014 catch), with a trigger that the ABC would increase by 5,000 mt following any year the directed fishery would close.
- A summary of updated biological information is available in a document provided by the NMFS Northeast Fisheries Science Center ("NEFSC Mackerel Biological Update"), available at: <http://www.mafmc.org/council-events/2015/ssc/may-13-14>. That page also has links to recent assessment documents.
- A landings history and other fishery information are provided in the fishery information document, also available at: <http://www.mafmc.org/council-events/2015/ssc/may-13-14>.
- The 2014 SSC recommendations, available here: <http://www.mafmc.org/s/SSC-2014-May-Report.pdf>, document the SSC's previous rationale and also summarize the major sources of scientific uncertainty.
- A Fishery Performance Report meeting designed to inform the specifications process from the perspective of the MSB Advisory Panel has taken place and a report will be available at <http://www.mafmc.org/council-events/2015/ssc/may-13-14> by May 1.

Regulatory Review

The 2015 ABC for mackerel is 40,165 mt, which translates into a domestic ACL of 25,039 mt after Canadian catch is accounted for. The fishery operates under a tiered limited access system. The primary directed commercial fishery closes at 95% of domestic annual harvest (DAH = 20,872 mt). Incidental trip limits of 20,000 pounds are allowed if the directed fishery closes. A recreational fishery exists but generally catches a small amount of mackerel relative to the commercial fishery. Directed Canadian mackerel harvests have been limited to 10,000 mt recently, though there are also substantial unrecorded bait and recreational fisheries (pers com Francois Gregoire, DFO Canada) - 15,126 mt are deducted to cover reported and unreported Canadian catches. A river herring and shad cap can close the mackerel fishery if observer and landings data estimate that 89 mt of combined river herring and shad

are caught by trips landings 20,000 pounds or more mackerel before the fishery has landed 10,000 mt of mackerel. The cap increases to 155 mt after the mackerel fishery has landed 10,000 mt. Unlike most MAFMC-managed fisheries, the performance of the mackerel fishery (mostly a winter/spring fishery) in one year is generally known before specifications are made for the next year. This means that a change in abundance or other issues can be reacted to relatively quickly (i.e. for the next year) through the standard specifications process.

Biological Reference Points, Stock Status, and Projections

The full mackerel stock was last assessed in 2010 (utilizing data through 2008) via a joint U.S. - Canadian Transboundary Resource Assessment Committee (TRAC). The TRAC was unable to resolve uncertainties in the analyses to an acceptable degree so there are no accepted reference points. The previous assessment was also deemed unreliable. Accordingly, the status of mackerel is currently “unknown” with respect to mortality rates or stock size. No projections are available. A recent (2014 with 2013 data) Canadian assessment of the Canadian mackerel contingent recommended that catch be limited to 800 mt. Links are provided at <http://www.mafmc.org/council-events/2015/ssc/may-13-14>.

Catch and Landings

Mackerel's landing history is characterized by high foreign catches in the 1970s (up to 400,000 mt or almost 900 million pounds) followed by domestication of the fishery with lower catches. Following the highpoint of the domestic fishery (which was still a fraction of the foreign fishery) in the mid-2000s, the domestic fishery experienced a sharp decline from 2006 to almost nothing in 2011. U.S. and Canadian total reported catches have been low in recent years, but stable near 13,000 mt over 2011-2014. 2015 also appears likely to be a year of relatively low landings from the U.S. perspective (Canadian landings occur later in the year and U.S. landings can also occur later in the year). Discards are believed to be just a few percent of catch and are accounted for within the overall ABC. The most recent information (April 29, 2015 database query) indicates 2014 U.S. mackerel landings were 5,906 mt. Assuming a 1.29% discard ratio relative to landings (ratio from sums of last five years from TRAC data) equates to 76 mt of discards. Recreational landings in 2014 were estimated to be 786 mt (U.S. total = 6,768 mt). While preliminary, the most recent information from Canada is that they had 6,394 mt of landings, the lowest since 1961 (personal communication, Martin Castonguay, DFO Canada). Applying the same discard approach results in 82 mt of Canadian discards. Communications with Francois Gregoire last year (Canadian DFO, now retired) suggested that there could be around 5,000 mt of unreported Canadian bait and recreational harvest (Canadian total = 11,476 mt). Total 2014 U.S. and Canadian catch is thus estimated to be about 18,245 mt.

2016-2018 Mackerel OFL/ABC Recommendations

OFL - An overfishing level likely cannot be determined given the uncertainty involved with this stock.

ABC

For 2015 the SSC set a mackerel ABC of 40,165 mt, which was the median catch (U.S. plus Canadian) from 1978-2013. The SSC also requested that a Management Strategy Evaluation (MSE) be conducted for mackerel by extending previous work (Wiedenmann, et al. 2013). Dr. John Wiedenmann conducted this work under contract for the Council, and his report has been posted at <http://www.mafmc.org/council-events/2015/ssc/may-13-14>. The MSE conducted by Dr. Wiedenmann

suggests that recent catches have been unlikely to be causing overfishing, and the average of OFLs across applicable model runs and control rules equals 23,893 mt for an over-exploited stock, 87,016 mt for a fully-exploited stock, and 298,904 mt for a lightly exploited stock (Table 7 - http://www.mafmc.org/s/Mackerel_ABC_reportOpt-k89s.pdf).

The available evidence leads staff to conclude that mackerel abundance will remain at low levels until favorable environmental conditions lead to either a high recruitment event or migration of mackerel back into U.S. waters. Both the TRAC and recent Canadian assessments suggest that high mackerel catches have been associated with an occasional strong year class. If this is the case, and only occasionally strong year classes are expected, it would seem appropriate to limit initial fishing mortality on such year classes since mackerel can live up to 17 years. If the issue is primarily distributional, it may still make sense to limit fishing mortality on the pioneers that first return to U.S. waters. As such, staff recommends an incremental approach to ABCs starting with recent catch, as further described below.

While the MSB Advisory Panel did note some encouraging signs (more mackerel were available and caught at the end of 2014 compared to previous fall seasons, and in early 2015 more mackerel were available farther south than recent years), most signs point to very low mackerel abundance and/or availability. These include the Canadian assessment, the NEFSC trawl survey, and catches.

Staff sees two possible interpretations of the landings history. One is that the fishery has taken advantage of several periods of higher productivity/access/interest in the fishery, principally in the early-1970s, and then to a lesser degree in the late-1980s, and the mid-2000s. Alternatively, it seems plausible that the 1970s constituted substantial overfishing as well as the smaller peaks of catches in the late-1980s and mid-2000s.

Staff concludes that it is worth maintaining relatively low total catches (compared to historical catches) to see if higher and more stable mackerel productivities can be achieved in the future, and only make incremental catch increases if catch improves. Accordingly, for 2016-2018, staff recommends a total (U.S. plus Canada) ABC of ABC of 18,245 mt (estimated 2014 catch), with a trigger that the ABC would increase by 5,000 mt following any year the directed fishery would close. Staff is recommending an incremental approach such that landings cannot be increased rapidly if mackerel become available. The hypotheses this recommendation would test is that a strong year class will appear at some point, and if fishing on that age class is restricted as suggested, there could be eventual gains for both the stock and the fishery.

It is possible that the resulting catches could be unnecessarily restrictive for fishermen or insufficiently protective of the stock, but such is the nature of the present information-poor situation for almost any ABC. Given the landings history, the MSE analysis from Dr. Wiedenmann, the high uncertainty with the mackerel stock, and the majority of signs pointing toward low mackerel abundance and/or availability, this incremental approach appears most reasonable to staff.

The 2015 landings quota is 20,872 mt. Staff recommends that the trigger approach also apply to 2015/2016 but use 5906 mt (2014 landings) as the trigger for potentially adding 5,000 mt to the initial 18,245 mt for 2016. So the ABC for 2016 would be 18,245 mt unless the commercial fishery caught at

least 5,906 mt in 2015, in which case it would increase to 23,245 mt in 2016. The rationale for the 5,000 mt increase interval is that even if three increases occur, the total in 2018 would be 33,245. Staff has previously noted that 33,400 is the approximate average total (U.S. plus Canada) catch from 1992-2001, a period of 10 years when catch was relatively stable and spawned the 1999 year class that facilitated more robust catches in the early- and mid-2000s. So even if catch ramped up, it could only increase to approximately the 1992-2001 stable level, and only if the U.S. fishery was consistently catching higher amounts.

River Herring and Shad (RH/S) Cap for the Mackerel Fishery

Since 2013 there has been a RH/S cap on the mackerel fishery and setting the cap is a term of reference for the RH/S Committee of the Council:

- c. Develop RH/S cap recommendations for the Council and regularly evaluate the overall operation of any Mid-Atlantic (or joint) RH/S catch caps including: cap determination, monitoring, data needs, enforcement, data interpretation, etc.

Another term of reference is to move from a cap that is based on historical catch ratios to a cap(s) based on the biology of the species involved:

- a. Develop approaches to recommending RH/S catch caps that are based on and appropriate for the abundance and/or population dynamics of RH/S rather than historic catch rates of RH/S.
 - Part of understanding this question will likely involve investigating the relative effects of catch in federal fisheries on RH/S stock health compared to other sources of mortality (habitat issues, inshore catch, climate, predation, etc.)
 - The Council's Scientific and Statistical Committee (SSC) will be engaged for this term of reference.

Accordingly, this memo is introducing the current procedures for setting the RH/S cap, and seeking SSC advice on moving forward. A summary of the current assessment and management situation with RH/S is available at: <http://www.asmfc.org/species/shad-river-herring>. Given the complex nature of the issue and species involved, it may be appropriate to develop an SSC workgroup for this topic.

The current procedures for setting the cap are described in the environmental assessment for the 2015 specifications, which are excerpted here: <http://www.mafmc.org/s/RHS-Cap-Specs-EA.pdf>. A worksheet that was used to calculate the current cap is also posted at <http://www.mafmc.org/council-events/2015/ssc/may-13-14>.

The goal for this meeting is to begin a dialogue on the RH/S cap topic and identify potential ways to move forward. Given NMFS and ASMFC have a Technical Expert Working Group (TEWG) looking at River Herring conservation (including a stock-status subgroup), it might also be useful for an SSC member to participate in the river herring TEWG.