



New England Fishery Management Council

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MEMORANDUM

DATE: August 23, 2018
TO: Tom Nies, Executive Director
FROM: Scientific and Statistical Committee
SUBJECT: **Overfishing levels (OFLs) and acceptable biological catch (ABC) recommendations for Georges Bank yellowtail flounder for fishing years 2019 and 2020**

The Scientific and Statistical Committee (SSC) met on August 15, 2018 in Boston, Massachusetts, to address the following terms of reference (TORs):

Considering the Council's Risk Policy Statement, provide an OFL and an ABC recommendation for fishing years 2019 and 2020 that will prevent overfishing and meet the management objective to rebuild the stock, and that are consistent with the Council's ABC control rule for groundfish stocks.

To address these TORs, the SSC considered the following information:

- The Council's Risk Policy Road Map (2016), that includes the Risk Policy Statement and Implementation Plan, see pp. 4-5 and 10-12.
- Presentation: Overview of the 2018 TRAC assessment of GB yellowtail flounder (NEFSC staff)
- Presentation: Groundfish Plan Development Team Report on GB yellowtail flounder (NEFMC staff)
- DRAFT TRAC Stock Assessment of GB yellowtail flounder for 2018 (July 2018)
- Transboundary Resources Assessment Committee (TRAC) Status Report for GB yellowtail flounder (expected July/August 2018)
- Memo from Groundfish PDT to SSC re GB yellowtail flounder ABCs, including a memo from the Scallop PDT (August 6, 2018)
- Risk policy matrix for GB yellowtail flounder (August 6, 2018)
- Background: Memo from Groundfish PDT to SSC re GB yellowtail flounder ABCs for FYs 2018 and 2019, including a Memo from the Scallop PDT (August 4, 2017)
- Background: 2018-2019 SSC ABC and OFL recommendations for GB yellowtail flounder (August 14, 2017 Memo from SSC to Tom Nies)
- Report from the SSC Sub-Group on Quantifying Substantial Change in the GB yellowtail flounder empirical assessment (August 4, 2017)

Background

Since the 2014 diagnostic benchmark assessment for Georges Bank (GB) yellowtail flounder, the stock has been assessed using an empirical approach based on the fishery-independent surveys conducted by DFO (winter) and NOAA (spring and fall), rather than an analytical model. This approach precludes formal estimation of reference points and status of the stock.

In 2017, the SSC recommended that ABC for the GB yellowtail flounder stock should not exceed 300 mt for fishing years 2018 and 2019, with the expectation that the fishing year 2019 catch specifications would be revisited and possibly adjusted following the 2018 Transboundary Resource Assessment Committee (TRAC) assessment.

In 2017, the SSC formed the Substantial Change Working Group (SCWG) and recommended to the Council that its work to develop a control rule for the GB yellowtail flounder stock should continue. However, the Council did not set this as a priority for 2018, therefore there was no new information to bring in to the conversation relative to this working group for the 2018 discussion.

SSC Discussion

The SSC reviewed the 2018 TRAC assessment. The 2018 TRAC stock assessment results for GB yellowtail flounder indicate low stock biomass and poor productivity, with low recent recruitment in all three surveys (Northeast Fisheries Science Center (NEFSC) fall and NEFSC spring trawl surveys and Department of Fisheries and Oceans (DFO) winter trawl survey). To generate catch advice, an empirical approach based on survey catches developed during the 2014 Georges Bank Yellowtail Flounder Diagnostic and Empirical Approach Benchmark and updated during the 2017 TRAC intersessional was applied. This approach takes an average of the area swept biomass of the three fishery independent surveys (noted above), and then applies an exploitation rate to the area swept biomass estimate to generate catch advice. The 2018 TRAC recommended an upper bound of 6% on the exploitation rate for catch advice, resulting in their recommendation of 68mt for 2019.

During the SSC's discussion of the assessment, it was noted that the 2018 spring survey results for GB yellowtail flounder were extremely low. While the survey timing did occur within the bounds of the times that it had occurred in the past, the 2018 spring survey occurred later in the spring than was usual. Additionally, there were fewer successful tows in the 2018 spring survey than usual, and few tows occurred in one of the key areas on Georges Bank where GB yellowtail flounder were known to occur.

The SSC also reviewed a report from the Groundfish Plan Development Team (PDT), which included a background memo provided by the Scallop PDT. As an alternative approach to the TRAC recommendation, the Groundfish PDT recommended setting the ABC for fishing years 2019 and 2020 at the recent three-year (2015-2017) average catch, which would result in an ABC of 86mt. The Groundfish PDT suggested that such an approach would be a reduction from the current quota of 300mt and would reduce bycatch on this stock, as the most recent catch estimate was 95mt in 2017. With respect to the empirical approach, this would result in an exploitation rate of 7.6 percent if the entire quota were taken. While not as conservative as the TRAC recommend upper bound on quota of 68mt, the lower quota of 86mt (rather than the current quota 300mt) would limit catches of the stock to encourage the potential for rebuilding while balancing operational aspects of non-target groundfish, scallop, and small-mesh fisheries.

The SSC appreciated the effort of the Groundfish PDT to provide an alternative view of how catch advice could be derived for 2019 and 2020. Despite the precedent of using a similar strategy for other groundfish stocks, the SSC was not comfortable with the approach, mainly due to the unknown fishery effects that were keeping catches lower than the allowed quota in recent years, and whether this may have changed in 2018 due to the rotational management of scallops and the opening of previously closed areas that may impact discarding of GB yellowtail flounder.

Recommendations

Based on the documents provided and the presentations made at the meeting, the SSC offers the following recommendations for GB yellowtail flounder. **The SSC reaffirms that the OFL for GB yellowtail remains unknown for FY2019 and FY2020.** With respect to an ABC recommendation, this was another difficult discussion for the SSC as it has been for the past several years. As a preliminary comment, some SSC members felt catch advice of 0mt would be the ideal recommendation, but this would not be practicable. There was at times support for remaining at 300mt for 2019 and 2020 given that some felt that this status quo ABC was adequate, and that fishing was not the main issue with the continued poor stock status. Others felt that while fishing may not be the main cause of the poor stock status, it was important to continue to protect the remaining spawning stock, and they therefore felt the recommendation from the TRAC would be the best catch advice.

After considerable discussion with other alternative catch advice options being offered, the SSC settled on the following. The SSC recommends a modified approach to the standard catch advice calculation for GB yellowtail flounder developed in the benchmark. Using the same approach of averaging the area swept biomass estimates and applying an exploitation rate to the area swept biomass, the modification was to drop the NMFS spring 2018 survey data from the averaging of the survey information, therefore only averaging NMFS fall 2017 and DFO winter 2018. The SSC felt deviating from the benchmark formulation was justified for this iteration because this survey segment produced an anomalously low estimate, equating to only 5% of the NEFSC fall survey estimates when, while normally lower, the NEFSC spring survey usually constitutes at least 50% of the fall survey estimate (Table 1). Adding to the justification for deviating from the benchmark formulation, there were fewer tows in the 2018 spring survey than usual and the survey did not enter areas that historically had GB yellowtail flounder. This deviation from the benchmark was done under the current justification as outlined above and is provisional. These justifications should be revisited and if the spring index in 2019 improves relative to the factors noted above, or the other survey information deteriorates in a similar fashion to the 2018 spring survey information, the SSC reserves the right to reengage the benchmark formulation.

The other modification from the 2018 TRAC recommendation was to the exploitation rate used. The TRAC did not recommend going above 6% as this was the average exploitation rate from fishing years 2010 – 2017, however the SSC decided to consider a larger range of exploitation rates. The SSC brought in some additional information at this point, which justifies this larger range. In addition to the economic information included in the GB yellowtail flounder Risk Policy Matrix and Groundfish PDT memo, economic impacts of a possible low quota were discussed during public comment. The possible negative impacts of GB yellowtail flounder as a constraining stock to the groundfish fishery and bycatch stock to the scallop fishery were discussed with public comment indicating potential negative consequences of a very low allocation to both fisheries. In addition, information brought forward by Council staff indicated that the accountability measures (AMs) for the scallop fishery recently changed from time and area closures to gear modifications if the AM is triggered, which are expected to have a neutral

impact on the scallop fishery if triggered. **The SSC found the economic information difficult to use and requested that more quantified economic information be provided in the future, even if it is historical in nature.** Economic information was presented, but the information was not synthesized to show how it might impact the SSC's recommendations, so this is a first order request with regard to how economic information should be presented. Other thoughts included producing a "Fishery Performance Report" as noted in the NEFMC's Risk Policy Roadmap as a mechanism for providing this synthesis, and a counterfactual analysis of the effect of lowering quotas on the groundfish and scallop fisheries. This would help the SSC understand the cost/benefit of the recommendations they are making.

In addition to the economic information, the SSC considered risk to fishing communities as presented in the Risk Policy Matrix. In FY2017, there were 33 ports with landings of yellowtail flounder (all stocks combined). Among these, New Bedford, MA, had the highest engagement with GB yellowtail flounder, with more than four times the next highest port (Gloucester, MA) in pounds landed and more than three times the total landed value in dollars, although GB yellowtail flounder accounts for less than one percent of total revenues landed in each of these ports. This information that was provided by the PDT was presented as relating to New Bedford having a high degree of social vulnerability because of this engagement in the GB yellowtail flounder fishery. **The SSC found this information helpful and meaningful in their deliberations, therefore encourages the inclusion of this social science information moving forward, even if it is qualitative in nature.**

The economic and social risks of low quotas was used to examine a broader range of exploitation rates than recommended by the TRAC. The SSC would like to better quantify the use of information such as this, but in this case, it was used qualitatively. To settle on an exploitation rate, the SSC reviewed the range of exploitation rates from fishing years 2010 – 2017 (Table 2), a range that goes from 3 – 11%, and settled on using an exploitation rate of 10%. This rate was not the maximum, it is at the higher end of the range (it is roughly the 85th percentile), but an exploitation rate of 10% was believed to strike a balance between the uncertainties in the approach being used and recommended by the TRAC, while mitigating potential negative economic and social risks.

Given these factors, the SSC combined the modified survey estimate which only averaged the DFO winter and NMFS Fall survey area swept biomass estimates, and then applied a 10% exploitation rate to that area swept biomass. Using this calculation, **the SSC recommends an ABC of up to 162 mt for FY2019 and FY2020. The SSC recommends keeping this ABC in place for FY2019 and FY2020, with the understanding that the TRAC process is annual and the 2020 recommendation will be revisited.**

In addition, given the continued difficulty developing catch advice for GB yellowtail flounder, **the SSC reaffirms the previous recommendation that the Council continue to work toward the development of a control rule for GB yellowtail flounder (and other "empirical approach" stocks as an extension) per the advice of the SCWG, and set this as a Council priority in 2019.**

Summary of recommendations

- 1. The ABC for the Georges Bank yellowtail flounder stock should not exceed 162 mt for FY2019 and FY2020, with the expectation that the FY2020 catch specifications will be revisited and possibly adjusted following the 2019 TRAC assessment.**
- 2. OFL for the stock remains unknown.**

3. The SSC reaffirms the previous recommendation that the Council continue to work toward the development of a control rule for GB yellowtail flounder (and other “empirical approach” stocks as an extension) per the advice of the SCWG, and set this as a Council priority in 2019.
4. The SSC requests that more quantified economic information be provided in the future, even if it is historical in nature.
5. The SSC encourages the inclusion of social science information moving forward as was done this year in the Risk Policy Matrix, even if it is qualitative in nature.

Table 1 – Area swept biomass from the three trawl surveys and the proportional difference between the NEFSC Spring and Fall surveys.

Year	Biomass (mt)					Proportional difference between NEFSC Spring and Fall
	DFO	NEFSC Spring	NEFSC Fall	Average of all surveys	Average of DFO and NEFSC Fall surveys	
2010	29452	68752	83490	60565	56471	0.823476
2011	12344	29621	27821	23262	20082.5	1.064699
2012	18113	46209	30354	31559	24233.5	1.522336
2013	2249	12766	31199	15404	16724	0.40918
2014	1654	8564	10828	7015	6241	0.790912
2015	2650	5861	12682	7064	7666	0.462151
2016	5569	3610	5811	4997	5690	0.621236
2017	1104	2819	5432	3118	3268	0.518962
2018	812	143	2424	1126	1618	0.058993

Table 2 – Quota, catch, and quota divided by the average area swept biomass (maximum potential exploitation rate) for fishing years 2010 - 2017.

Fishing Year	Quota (mt)	Catch (mt)	Quota/Average Area Swept Biomass
2010	1956	1170	3%
2011	2650	1171	11%
2012	1150	725	4%
2013	500	218	3%
2014	400	159	6%
2015	354	118	5%
2016	354	44	7%
2017	300	95	10%