



New England Fishery Management Council

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Eric Reid, *Acting Chairman* | Thomas A. Nies, *Executive Director*

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To: Tom Nies, Executive Director
From: Scientific and Statistical Committee
Date: XXXXX, 2021

Subject: Terms of Reference – (1) Specify overfishing levels (OFLs) and develop acceptable biological catches (ABCs) recommendations for Georges Bank (GB) yellowtail flounder for fishing years 2022 and 2023

The SSC met on August 24, 2021 via webinar, to address the following terms of reference (TORs):

1. Considering the Council's Risk Policy Statement, provide an OFL and an ABC recommendation for fishing years 2022 and 2023 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.
 - a. The Council requests that the SSC forward a "Summary of Recommendations" section of the SSC's report by the end of the SSC meeting on August 24 so that it can be considered in developing recommendations for the US/Canada Transboundary Management Guidance Committee meeting.

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

1. The Council's Risk Policy Road Map (2016), that includes the Risk Policy Statement and Implementation Plan, see pp. 4-5 and 10-12
2. Transboundary Resources Assessment Committee (TRAC) Status Report for GB yellowtail flounder for 2021, Draft for PDT and SSC
3. Presentation: Overview of the 2021 TRAC assessment of GB yellowtail flounder (NEFSC staff)
4. Presentation: Groundfish Plan Development Team Report on GB yellowtail flounder (NEFMC staff)
5. Memo from Groundfish PDT to SSC re GB yellowtail flounder OFLs and ABCs, including a memo from the Scallop PDT
6. FY2021-FY2022 SSC ABC and OFL recommendations for GB yellowtail flounder (September 23, 2020, Memo from SSC to Tom Nies)
7. State of the Ecosystem and Current Conditions. NOAA/NEFSC. Available at : <https://www.fisheries.noaa.gov/new-england-mid-atlantic/ecosystems/state-ecosystem-reports-northeast-us-shelf>

SSC ATTENDANCE

Anna Birkenbach, Yong Chen, Jeremy Collie, Adrian Jordaan, Lisa Kerr, Jean-Jacques Maguire, Conor McManus, Jason McNamee, Richard Merrick, Cate O'Keefe, Fred Serchuk, Kevin St Martin, Terry Stockwell, John Wiedenmann, Lindsey Williams

TORs

In response to **TOR 1**, the SSC is precluded from offering a formal estimation of reference points and status of the stock given that the assessment approach is not a comprehensive analytical population assessment. Therefore, the SSC reaffirms that **the overfishing limit (OFL) for Georges Bank (GB) yellowtail remains unknown for fishing year (FY) 2022 and FY2023.**

The SSC can provide advice on an ABC for this stock and **recommends an acceptable biological catch (ABC) of up to 200 mt for FY2022 and up to 200 mt for FY2023.** This catch advice follows from the advice of the Transboundary Resources Assessment Committee (TRAC) and the information provided by the Groundfish Plan Development Team (PDT). The SSC recommends keeping this ABC in place for FY2022 and FY2023, with the understanding that the TRAC process is annual and the FY 2023 recommendation will be revisited next year by both the TRAC and the SSC.

With regard to consistency with the Council's ABC control rule for groundfish stocks, the SSC is using "Option D" from the ABC control rule in deriving its catch advice, and therefore met this aspect of the TOR. Option D states: "Interim ABCs should be determined for stocks with unknown status according to case-by-case recommendations from the SSC." The rationale for the chosen ABC is provided below.

The SSC produced a summary of the catch advice to the NEFMC by the end of the meeting and fulfilled TOR 1a (see section below on *summary of recommendations*).

RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY

The SSC notes that its recommendation for the GB yellowtail flounder ABC of 200 mt is consistent with the recommendations from the conclusions of the 2021 TRAC integrated peer review. This TRAC did not recommend using the Empirical Approach that had been used in the past; they adopted a new approach to setting their advice, referred to as the GB Yellowtail Limiter Approach. This approach sets catch advice based on survey information used for GB yellowtail along with the uncertainty from the survey within upper and lower biomass boundaries informed by management. The TRAC's 200 mt catch advice is consistent with the SSC's previous advice of continuing low exploitation on the stock since stock conditions do not appear to have changed from the SSC's 2020 review of this stock. The SSC does not take lightly this change in process for setting catch advice and commented that it is hoped that this technique will be investigated and tested further if it will continue to be used. In the short term, the catch advice based on the approach approved by the TRAC appears to be the best scientific information available and is therefore supported by the SSC.

An important factor to consider with regard to this catch advice is that recent work by Miller et. al. (2021) indicated that the estimated survey biomass was lower than previously calculated. This increased the historical exploitation rate from 6% (which the previous advice was based on) to 7%.

This changes what would have been the Empirical Approach 2022 catch advice from 161 to 184 mt. Further, if the Empirical Approach were applied and took in to account missing survey information from the NEFSC Fall 2020 Bottom Trawl Survey, the catch advice would increase to 243 mt. By adopting the TRAC's new approach, the SSC restrains the catch advice to be this latter level. As such exploitation can be kept at a low level while this new approach's impact on the population is evaluated.

The SSC believes this relatively conservative approach to setting catch advice for 2022-2023 is reasonable given most of the survey information continues to indicate a downward trend with little sign of recovery. There are also uncertainties due to the COVID 19 pandemic with regard to missing surveys in 2020, therefore the survey information was generated with two surveys rather than three (with the use of all three surveys being the standard approach). In addition, based on the realized quota utilization rates and information from the quota change model provided by the PDT, the SSC believes the socioeconomic impact of this ABC to the industry is minimal.

The SSC does not expect there to be a dramatic response to different levels of catch advice at these very low ABC levels. It is not clear if a change of 75 mt (the change in catch advice from the previous recommendation) will significantly alter fishing behavior (e.g., groundfish fishery fleet avoidance of the stock). The SSC reaffirms its previous recommendations that the Council continue to work toward the development of a formal control rule for GB yellowtail flounder (and other "empirical approach" stocks as an extension) per the advice of the SSC's Sub-Group on Quantifying Substantial Change and elevate this as a Council priority for 2022. The SSC is encouraged by the development of the new tool by the NEFSC (the GB Yellowtail Limiter), which has the potential to offer some stability in management for stocks at low levels.

Another source of uncertainty is the relationship between the quota and the subsequent annual total catch. Although catches have been below the ABCs in recent years, if the relationship between the quota and the realized catch changes, the ABC advice recommended by the SSC may need to be reevaluated because there is uncertainty in how much of the ABC will be caught and what effect that realized catch will have on the stock. The quota change model had previously indicated a low probability of increasing utilization; therefore, the SSC had some evidence that the current catch to quota relationship will hold for the next fishing year.

A final uncertainty relates to the interaction of the groundfish fishery for yellowtail flounder with other fisheries including those targeting other groundfish stocks and those with yellowtail flounder bycatch, including the Atlantic sea scallop fishery and small-mesh trawl (mainly whiting and squid) fisheries. Given the relatively low expected bycatch for the upcoming scallop fishery and current accountability measures for scallops, as well as the groundfish fisheries ability to avoid yellowtail flounder in recent years, the SSC felt recommended catch advice would not constrain either fishery any more than they are currently constrained. It was unclear how setting catch advice at the level chosen would quantitatively affect these other fisheries beyond this.

ADDITIONAL COMMENTS

The SSC notes that the fishery does not appear to be limiting stock recovery in GB yellowtail flounder. It is well known that yellowtail flounder recruitment is subject to environmental factors (Miller et al. 2016); however, the mechanism governing the recruitment of GB yellowtail remains to be determined, though Tableau et al (2019) presented evidence of declining productivity of GB

yellowtail flounder. Furthermore, Hare et al. (2016) estimated a negative directional effect of changing climate on yellowtail flounder. Regardless, the continued low stock biomass and poor recruitment for this stock warrant the maintenance of low catch levels. The advice offered by the SSC is believed to be low enough to prevent overfishing and allow for rebuilding should environmental conditions become favorable for recruitment of yellowtail flounder on Georges Bank.

SUMMARY OF RECOMMENDATIONS

- 1. The SSC recommends that the OFL for the Georges Bank yellowtail flounder stock remains unknown due to the lack of an analytical assessment from which to generate biological reference points.**
- 2. The SSC recommends the ABC for the Georges Bank yellowtail flounder stock should not exceed 200 mt for FY 2022 and FY2023, with the expectation that the FY2023 catch specifications will be revisited and possibly adjusted following the 2022 TRAC assessment.**
- 3. The SSC reaffirms its previous recommendations that the Council continue to work toward the development of a control rule for Georges Bank yellowtail flounder (and other “empirical approach” stocks as an extension) per the advice of the SCWG and elevate this as a Council priority for 2022.**
 - a. Further, the new GB Yellowtail Limiter approach should be tested so that we may better understand performance of the method.**
- 4. The SSC recommends continuing to investigate the environmental drivers effecting this species at both the juvenile and adult stages.**
- 5. The SSC appreciated the work done on the quota change model and continues to encourage the inclusion of socioeconomic information, with an emphasis on information regarding the interaction of Georges Bank yellowtail flounder and sea scallops.**

REFERENCES

Hare JA, Morrison WE, Nelson MW, Stachura MM, Teeters EJ, Griffis RB, et al. (2016) A Vulnerability Assessment of Fish and Invertebrates to Climate Change on the Northeast U.S. Continental Shelf. PLoS ONE 11(2): e0146756. <https://doi.org/10.1371/journal.pone.0146756>

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Miller, T.J., Richardson, D.E., Jones, A.W., Politis, P.J. (2021) Relative efficiency of a chain sweep and the rockhopper sweep used for the NEFSC bottom trawl survey and biomass estimates for Georges Bank yellowtail flounder. Available at : <https://drive.google.com/drive/folders/1ZcdzrX8Vrl3THT9kAk6TjJWSqwmDtLL2>

Tableau, A., Collie, J.S., Bell, R.B. and Minto, C. (2019). Decadal changes in the productivity of New England fish populations. *Canadian Journal of Fisheries and Aquatic Sciences* 76(9): 1528-1540. <https://doi.org/10.1139/cjfas-2018-0255>

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