



## New England Fishery Management Council

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Dr. John F. Quinn, *Chairman* | Thomas A. Nies, *Executive Director*

**To:** Tom Nies, Executive Director  
**From:** Scientific and Statistical Committee  
**Date:** August 28, 2019

**Subject:** Terms of Reference – Specify overfishing levels (OFLs) and develop acceptable biological catch (ABC) recommendations for Georges Bank (GB) yellowtail flounder for fishing years 2020 and 2021

The SSC met on August 21, 2019 in Providence, Rhode Island, 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 2020 and 2021 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.
- 2) The Council requests that the SSC provide a final report (or at a minimum the “Summary of Recommendations” section of the SSC’s report) by August 27, 2019 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:

A.0 - GROUND FISH TORS SSC AUG 21 Nies

A.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.

A.2 - Presentation: Overview of the 2019 TRAC assessment of GB yellowtail flounder (NEFSC staff)

A.3 - Presentation: Groundfish Plan Development Team Report on GB yellowtail flounder (NEFMC staff)

A.4 - DRAFT TRAC Stock Assessment of GB yellowtail flounder for 2019 (July 2019)

A.5 - Transboundary Resources Assessment Committee (TRAC) Status Report for GB yellowtail flounder

A.6 - Memo from Groundfish PDT to SSC re GB yellowtail flounder ABCs, including a memo from the Scallop PDT

A.7 - Risk policy matrix for GB yellowtail flounder

A.8 - 2019-2020 SSC ABC and OFL recommendations for GB yellowtail flounder (August 23, 2018 Memo from SSC to Tom Nies)

### **TOR**

In response to TOR 1, the SSC approves the use of the empirical approach for setting catch advice in 2020 and 2021. 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 OFL for GB yellowtail remains unknown for FY2020 and FY2021.

The SSC can determine an ABC for this stock and **recommends an ABC of up to 162 mt for FY2020 and 162 mt for FY2021**. This catch advice follows from the advice of the Transboundary Resources Assessment Committee (TRAC), in that it is below the upper bound of 199 mt as recommended by the TRAC. The SSC recommends keeping this ABC in place for FY2020 and FY2021, with the understanding that the TRAC process is annual and the 2021 recommendation will be revisited. This advice holds static the catch advice recommended by the SSC for the 2019 fishing year.

With regard to consistency with the ABC control rule, 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.

### **RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY**

The SSC notes that its recommendation of 162 mt is consistent with the recommendations from the TRAC review as it is less than the TRAC advice of an “upper bound” of 199 mt. This is also consistent with the TRAC advice of maintaining an exploitation rate below 6%, as 162 mt represents a 5% exploitation rate for 2020. Additionally, the 162 mt catch advice is consistent with the SSC’s previous advice since stock and market conditions do not appear to have changed from the SSC’s 2019 review of this stock. The SSC made no modifications to the empirical assessment approach when setting catch advice as was done during the previous SSC review of this stock.

The SSC’s catch advice is lower than the upper bound from the TRAC because most of the survey information continues to indicate a downward trend with little sign of recovery. There are several other uncertainties the SSC considered in setting its catch advice below the maximum recommended by the TRAC.

One of these factors is that 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 ~30 mt will significantly alter fishing behavior (e.g. groundfish fishery fleet avoidance of the stock). Hence, the SSC felt catch advice that was consistent with its previous advice would help mitigate this uncertainty.

Additionally, the SSC considered whether there have been changes in the market for this species from the last time the stock was reviewed, concluding that conditions were unchanged. Whether these market conditions would persist is unknown. Given this additional source of uncertainty, the SSC felt changing catch advice was not warranted.

Another source of uncertainty is the relationship between the quota and the subsequent annual total catch. The current catch advice is based on an average calculated by dividing the quota (not the actual catch) by the survey biomass. 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.

A final consideration was 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 fisheries. Given the relative bycatch estimates 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 the consistent catch advice recommended 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, hence the SSC chose to maintain constant catch advice in 2020 and 2021.

Social science information presented to the SSC for fishing year 2019 was also used as a significant factor in formulating its catch advice, in particular the risk to fishing communities and social vulnerability of the port of New Bedford (see: SSC memo on Georges Bank Yellowtail Flounder, August 23, 2018). The updated information was not substantially different from that previously reviewed by the SSC, providing another reason to maintain constant catch advice for the next two fishing years.

Misreported landings and a recent review on observer information biases were discussed by the SSC, but no quantification of either of these factors was available. These were viewed as additional uncertainties and offered additional support for the rationale of maintaining the current catch advice.

#### **ADDITIONAL COMMENTS**

Given the continued difficulty in developing catch advice for the GB yellowtail flounder stock, the SSC reaffirms its previous recommendation that (1) the Council continue to work toward the development of a control rule specifically for GB yellowtail flounder (and other “empirical approach” stocks as an extension) per the advice of the Significant Change Working Group (SCWG), and (2) elevate this to a Council priority for 2020.

Additionally, the SSC notes that the fishery does not appear to be the main driver 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, although Brodie et al (2010) considered that “climatic conditions” contributed to the slow recovery of GB yellowtail between the 1970 and 1990s. 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.

#### **Summary of recommendations**

**1. OFL for the stock remains unknown.**

**2. The ABC for the Georges Bank yellowtail flounder stock should not exceed 162 mt for FY 2020 and FY2021, with the expectation that the FY2021 catch specifications will be revisited and possibly adjusted following the 2020 TRAC assessment.**

**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 elevate this to a Council priority for 2020.**

**4. The SSC appreciated the economic information provided and continues to encourage the inclusion of social science information moving forward, even if this is qualitative in nature. The SSC can describe what it used during its deliberations to make the work of the PDT more efficient.**

#### **REFERENCES**

Brodie, W. B., Walsh, S. J., and Maddock Parsons, D. 2010. An evaluation of the collapse and recovery of the yellowtail flounder (*Limanda ferruginea*) stock on the Grand Bank. – ICES Journal of Marine Science, 67: 1887–1895.

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>

Miller, T. J., Hare, J. A., & Alade, L. A. (2016). A state-space approach to incorporating environmental effects on recruitment in an age-structured assessment model with an application to southern New England yellowtail flounder. Canadian Journal of Fisheries and Aquatic Sciences, 73(8), 1261-1270.