



New England Fishery Management Council

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To: Tom Nies, Executive Director
From: Scientific and Statistical Committee
Date: September 23, 2020

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 2021 and 2022 and (2) Comment on the technical basis of draft rebuilding plan options for white hake

The SSC met on August 24, 2020 via webinar, to address the following terms of reference (TORs):

1. For Georges Bank (GB) Yellowtail Flounder: Considering the Council’s Risk Policy Statement, provide an OFL and an ABC recommendation for fishing years 2021 and 2022 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 provide 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.
2. For White Hake: Comment on the technical basis (i.e., is it technically sound and reasonable?) of the draft rebuilding plan options developed by the PDT for white hake.

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
2. Presentation: Overview of the 2020 TRAC assessment of GB yellowtail flounder and Groundfish Plan Development Team Report on GB yellowtail flounder (NEFMC staff)
3. Transboundary Resources Assessment Committee (TRAC) Status Report for GB yellowtail flounder for 2020
4. Memo from Groundfish PDT to SSC re GB yellowtail flounder ABCs, including a memo from the Scallop PDT
5. State of the Ecosystem and Current Conditions.
6. 2020-2021 SSC ABC and OFL recommendations for GB yellowtail flounder (August 28, 2019 Memo from SSC to Tom Nies)
7. Presentation: Groundfish Plan Development Team Report on Rebuilding Strategies for White Hake (NEFMC staff)
8. 2019 Groundfish Operational Update Reports (see white hake on pp. 139-150, pre-publication copy, NEFSC (Jan 7, 2020)).
9. Memo from Groundfish PDT to SSC re Rebuilding Strategies for White Hake

10. 2020-2021 SSC ABC and OFL recommendations for groundfish stocks (Nov 22, 2019 Memo from SSC to Tom Nies)
11. Letter GARFO to Council re 2019 stock status (March 5, 2020)

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 OFL for GB yellowtail remains unknown for FY2021 and FY2022.**

The SSC can determine an ABC for this stock and **recommends an ABC of up to 125 mt for FY2021 and 125 mt for FY2022.** This catch advice follows from the advice of the Transboundary Resources Assessment Committee (TRAC) and the information provided by the PDT. The SSC recommends keeping this ABC in place for FY2021 and FY2022, with the understanding that the TRAC process is annual and the 2022 recommendation will be revisited.

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.

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*).

In response to **TOR 2**, the SSC offers the following input and recommendations. The SSC agrees with the assumptions and set-up proposed by the Groundfish PDT (documented in the PDT memo to the SSC) for white hake. The SSC felt that these were all reasonable assumptions to make for the projections and covered a reasonable set of possibilities for this species.

Additionally, the SSC recommended developing a set of sensitivity runs regarding recent (1995-2016) low recruitment for comparison purposes with runs using the full recruitment stanza. To accompany these low recruitment scenarios, the SSC went on to recommend running these simulations through to an updated set of biological reference points that use a consistent assumption for recruitment. This would provide valuable context to the existing set of biological reference points using the full recruitment timeseries.

This discussion met the TOR for white hake. The rationale is embedded in the discussion; therefore, no further rationale is provided in the section below.

RATIONALE INCLUDING SIGNIFICANT SOURCES OF UNCERTAINTY

The SSC notes that its recommendation for the Georges Bank yellowtail flounder ABC of 125 mt is consistent with the recommendations from the TRAC integrated peer review by maintaining an exploitation rate at 6% as an upper bound, as 125 mt represents a 6% exploitation rate for 2021. For Georges Bank yellowtail flounder, the TRAC considers quota divided by average survey biomass to define the exploitation rate and applies the average rate from 2010-2017 to derive the 6% upper bound. Additionally, the 125 mt catch advice is consistent with the SSC’s previous advice of not increasing catch, and in fact lowering it in the current advice, since stock conditions based on survey

information, and market conditions based on the quota change model presented by the PDT, do not appear to have changed from the SSC's 2019 review of this stock.

The SSC's catch advice is at the upper bound from the TRAC. This represents a decrease from previous advice, which 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 the spring survey in 2020, therefore the survey information was generated with two surveys rather than three, which is the standard approach. In addition, based on the realized quota utilization rates and outcomes of the quota change model, the SSC believes the socioeconomic impact of this ABC reduction 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 37 mt (the change in catch advice from the previous recommendation) will significantly alter fishing behavior (e.g., groundfish fishery fleet avoidance of the stock). This discussion triggered some additional comments from the SSC on how to approach stocks with empirical analyses rather than analytical assessments. The SSC reaffirms its previous recommendations 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 Substantial Change Working Group and elevate this as a Council priority for 2021. The SSC recognizes that some work will be forthcoming from the index-based stocks research track assessment process. Additionally, the SSC reviewed a second approach for visualizing and setting catch advice based on survey information and the uncertainty in those estimates (i.e., "GB yellowtail flounder limiter"). An overview of this approach was presented by Dr. Chris Legault of the Northeast Fisheries Science Center (NEFSC) during the meeting. The SSC is encouraged by the development of potential tools by the NEFSC towards this goal.

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 based on the predictions of the quota change model. Whether these market conditions would persist is unknown. Given this additional source of uncertainty, the SSC felt the change in catch advice was 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, corrected for catchability. 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 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 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 (mainly whiting and squid) 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 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.

ADDITIONAL COMMENTS

The SSC adds an important note that there will be more uncertainties to contend with in 2021 due to missing spring and fall 2020 NEFSC bottom trawl surveys, and fisheries dependent datasets stemming from the COVID-19 restrictions in 2020. Thought should be given to these uncertainties early in the process so they can be adequately dealt with.

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 as was provided for this year's review.

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, 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.

SUMMARY OF RECOMMENDATIONS

Georges Bank Yellowtail Flounder

- 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 125 mt for FY 2021 and FY2022, with the expectation that the FY2022 catch specifications will be revisited and possibly adjusted following the 2021 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 2021.**
 - a. The SSC recognizes that some work will be forthcoming from the index-based stocks research track assessment process and is encouraged by the development of additional potential tools by the NEFSC towards this goal.**
- 4. The SSC adds an important note that there will be more uncertainties to contend with in 2021 due to missing survey and fisheries dependent datasets stemming from the COVID-19 restrictions in 2020. Thought should be given to these uncertainties early in the process so they can be adequately dealt with.**
- 5. The SSC recommends continuing to investigate the environmental drivers effecting this species at both the juvenile and adult stages.**

6. 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.

White Hake Rebuilding Strategies

1. The SSC confirms agreement with the assumptions and set-up proposed by the Groundfish Plan Development Team (documented in the memo) for white hake.

2. The SSC also supports developing the sensitivity runs regarding recent (1995-2016) low recruitment for comparison purposes with runs using the full recruitment stanza, and with that also recommends running the simulations through to an updated set of biological reference points that use this assumption.

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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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>