New England Fishery Management Council
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Daniel Salerno, *Chair* | Cate O'Keefe, PhD, *Executive Director*

MEMORANDUM

DATE: November 12, 2025

TO: Cate O'Keefe, Ph.D., Executive Director

FROM: Scientific and Statistical Committee

SUBJECT: Response to Terms of Reference - Overfishing Limits and Acceptable Biological Catches for Several Groundfish Stocks for FY 2026 to FY 2030

The Scientific and Statistical Committee (SSC) met in person and via webinar on October 21-22, 2025, to address Terms of Reference (TOR) for several Northeast multispecies stocks.

SSC members in attendance: Dr. Edward Camp (Vice-Chair), Dr. Anna Birkenbach, Dr. Adam Delargy, Dr. Adrian Jordaan, Dr. Lisa Kerr, Dr. Gareth Lawson, Dr. Jason McNamee, Dr. Richard Merrick, Dr. Mateja Nenadovic, Dr. Kevin St. Martin, Dr. Michelle Staudinger, Dr. Hiro Uchida, and Dr. John Wiedenman. Other SSC members contributed to the review of this report.

TERMS OF REFERENCE

A. Consider the results of the most recent stock assessments for groundfish stocks and information provided by the Council's Groundfish Development Team (PDT).
B. Recommend overfishing limits (OFL) and acceptable biological catches (ABC) for the following groundfish stocks for FY 2026-2030 that will prevent overfishing, be consistent with the Council's groundfish ABC control rule and rebuilding plans and consider the Council's Risk Policy Statement and Concept.
    a. Acadian redfish
    b. Winter flounder: Georges Bank, Gulf of Maine, Southern New England/Mid-Atlantic
    c. White hake
    d. Yellowtail flounder: Cape Cod/Gulf of Maine and Southern New England/Mid-Atlantic

CROSS-STOCK COMMENTS

Across stocks, the SSC feels that an important area of research is how to best deal with increased uncertainty in setting OFLs and ABC over longer periods. The SSC was asked to provide five years of catch specification advice in response to recent and expected continued changes in NOAA capacity. The SSC discussed the challenges of providing longer-term and inherently less-certain catch advice that can credibly be expected to prevent overfishing without being

systematically conservative with respect to the catch recommended. A substantial component of the increased uncertainty of longer-term catch advice are the projections upon which they rely. Best practices for projections–especially across different life history/fishery types–remain an active area of research. This research area could have been explored by the Projections Research Track Working Group, but the work from that group was halted soon after its formation due to layoffs and reduced capacity at NOAA. The SSC feels that this work is of great importance and should be resumed as soon as possible.

ACADIAN REDFISH

The SSC received a presentation from Council staff on the 2025 management track assessment by the Northeast Fisheries Science Center (NEFSC) for Acadian redfish (Level 3) and the Groundfish PDT's development of possible OFLs and ABCs for FY 2026-2030. The SSC accepts the Woods Hole Assessment Model (WHAM) approved by the Peer Review Panel including the change in the assessment start year, change in recruitment model, use of age-specific fishery and survey selectivity, and change in fishery and survey age composition likelihoods. Additionally, the SSC concurs that a rho adjustment is not needed for this assessment when setting catch advice.

Terms of Reference Findings

The SSC recommends an OFL of 7,519 mt and an ABC of 5,665 mt for FY 2026, an OFL of 7,203 mt and an ABC of 5,427 mt for FY 2027, an OFL of 6,999 mt and an ABC of 5,273 mt for FY 2028, an OFL of 6,723 mt and an ABC of 5,065 mt for FY 2029, and an OFL of 6,513 mt and an ABC of 4,907 mt for FY 2030 for the Acadian redfish stock. The recommended OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

Rationale Including Significant Sources of Uncertainty

The SSC's decision to recommend ABCs following Option A of the groundfish control rule and without a rho-adjustment was based largely on comparatively low uncertainty, stock status, and previous work.

The SSC considered the Acadian redfish projections to have relatively low uncertainty because the species' long lifespan, slower growth, and size-based selectivity resulted in projections through 2030 being based mostly on year class sizes which are already being observed in the data. The projections are not sensitive to recruitment in the short term (i.e., 5 years). Incoming redfish recruitment does not enter the fishery until older age classes, so the projection time period does not become overly reliant on recruited fish that have not yet been seen in the data (so-called "paper fish"). The model-projected decreases in SSB therefore largely derive from empirically-informed signals of lower productivity.

The current status of redfish is good; the stock is not overfished and overfishing is not occurring. Therefore, the SSC believed that recommending ABCs based on Option A of the control rule would not increase any risk of overfishing.

The SSC appreciated the presentation of the rho-adjusted information even though this was not used for setting catch advice, as it offered some perspective on the effect of that uncertainty. However, the SSC agreed with the Peer Review Panel that the rho adjustment was not needed, because the retrospective pattern was not severe (a judgement made about the magnitude of the retrospective bias), with the estimates of rho being within the bounds recommended as acceptable by other fisheries authorities (e.g., ICES 2020), though it does violate the current guidelines used by NOAA for some other stocks. Additionally, the adjustment does not alter stock status, and not using the rho adjustment could mitigate some of the negative socioeconomic consequences of the declining catch advice. The SSC concluded that the unadjusted, Option A catch projections represent a reasonable upper-bound by which to set catch advice.

The SSC discussed the lack of fit of the assessment model to the survey data. This diagnostic improved in the current assessment, but there is still a lack of fit in the terminal year of the assessment. This issue was identified by the SSC previously and continues to be an uncertainty in the assessment. The dearth of age data is still a concern for the SSC and was also noted by the Peer Review Panel. Improvements on this topic were made, and the SSC supports continuing to bolster this data element in the assessment. The SSC was also comfortable with the recruitment assumption but recommends exploring survey fitting and the incorporation of more age data as these become available in future assessments.

A final uncertainty noted by the SSC and discussed with some public in attendance was the variations in catch over the time series. Some of this was driven by a need for bait in some fixed gear fisheries, but there are also federal programs (e.g., USDA) that incentivize increased harvest in some years. The SSC felt this trend should be closely monitored given that catch advice may be impacted if the current dynamics of the fishery change more consistently in the future.

Additional Comments and Research Recommendations

As noted above, utilization of this stock is generally low, though that could change based on external factors. Therefore, it seems as if the projected ABCs are protective against the risk of overfishing and decrease through the specification setting period. If harvests go up in the coming years, the ABCs are in place and can curtail harvest going up rapidly.

The SSC discussed that the projections are not overly reliant on recruitment but also discussed that there does not appear to be an accumulation of fish in the plus group either; therefore, this was another factor in the SSC using the projections for setting catch advice for this species without any modifications.

Additional recommendations included continuing working with WHAM and testing the other features available in that software, namely applying random effects on the numbers-at-age, experimenting with some of the other available methods in the software to improve survey fits, testing possible environmental effects on things like recruitment, exploring alternate selectivity blocks, and accounting for sexually dimorphic growth and weight-at-age which is a biological characteristic of this species.

Some final recommendations from the SSC are to better understand migration dynamics between the Gulf of Maine and the Scotian Shelf as this may be important to understand for this stock, so this is an area of research that could be explored in the future. Also, bolstering the age data is an area where some investment can be made for this stock. This can be accomplished by: 1) completing aging of structures that exist in the archives or 2) incorporating length-frequency modeling into the redfish WHAM model. The age data is important in the case of redfish to make sure the age dynamics are well understood as this is a long-lived species. The SSC agrees with the Peer Review Panel that investigating state survey data may be a good exploration for future versions of the redfish model. Finally, there was discussion that it is not possible to do a rho adjustment directly in WHAM. While state-space models tend to mitigate retrospective patterns, in cases where the WHAM model will be configured to behave like a standard age-structured model, it may be necessary to have this feature, therefore this should be added to the capabilities of WHAM.

Summary of Recommendations

1. **The SSC recommends an OFL of 7,519 mt and an ABC of 5,665 mt for FY 2026, an OFL of 7,203 mt and an ABC of 5,427 mt for FY 2027, an OFL of 6,999 mt and an ABC of 5,273 mt for FY 2028, an OFL of 6,723 mt and an ABC of 5,065 mt for FY 2029, and an OFL of 6,513 mt and an ABC of 4,907 mt for FY 2030.**

2. **The SSC recommends using some of the available features in WHAM to account for some of the diagnostic issues in the current assessment structure.**

3. **The SSC recommends continuing to bolster the age information for this stock by aging existing structures and/or modeling length age data in WHAM.**

4. **The SSC recommends investigating migration patterns between the GOM and Scotian Shelf.**

Fishing Year	OFL (mt)	ABC (mt)
2026	7,519	5,665
2027	7,203	5,427
2028	6,999	5,273
2029	6,723	5,065
2030	6,513	4,907

GEORGES BANK WINTER FLOUNDER

The SSC received a presentation from Council staff on the 2025 management track assessment by the NEFSC for Georges Bank (GB) winter flounder (Level 3) and the Groundfish PDT's development of possible OFLs and ABCs for FY 2026-2030.

The 2025 management track assessment for Georges Bank winter flounder was an update of the state space WHAM with data through 2024. The assessment update corrected estimates of catch from 1982-2003 which were used in the previous assessment. This correction reduced the estimated catch over this period, which rescaled estimates of biomass and recruitment over this period. The updated assessment shows an increase in spawning biomass in recent years and indicates that the stock is not overfished (spawning stock biomass (SSB) in 2024 is estimated to be 5,477 mt, which is 6% above the SSB_{MSY} target of 5,182 mt), nor is overfishing occurring (fishing mortality (F) in 2024 is estimated to 0.177, which is 41% of the F_{MSY} limit of 0.431). The reference points for this stock were based on the spawning potential ratio (SPR) proxy estimates assuming a target SPR of 40%. No retrospective adjustments were made to the assessment results.

Terms of Reference Findings

The SSC recommends an OFL of 2,279 mt and an ABC of 1,785 mt for FY 2026, an OFL of 2,148 mt and an ABC of 1,681 mt for FY 2027, an OFL of 2,079 mt and an ABC of 1,627 mt for FY 2028, an OFL of 2,061 mt and an ABC of 1,613 mt for FY 2029, and an OFL of 2,060 mt and an ABC of 1,612 mt for FY 2030 for the Georges Bank winter flounder stock. The recommended OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

Rationale Including Significant Sources of Uncertainty

The SSC was presented with five-year projections (2026-2030) of SSB and catch at a target F of 0.32, which is 75% of F_{MSY} under option A of the Council's groundfish control rule. Two options were discussed for setting the OFL and ABC. In the first option, the target catch was based on 75% F_{MSY} in all five years of the projection (2026-2030). In the second option, the target catch was based 75% F_{MSY} for the first three years (2026-2028), and the ABC was fixed at the 2028 estimate in years 2029 and 2030. The rationale for the second option was the increasing uncertainty in the projections in later years.

The SSC discussed at length the uncertainty of using projections over long time periods, and depending on the life history of the species, the projected stock size and target catches become increasingly composed of paper fish. "Paper fish" refers to the fish cohorts in the projections that are based on the estimated recruitments from the terminal assessment year onward during the projection. As noted above, this is less of an issue for long-lived species like redfish, but more so for winter flounder. For GB winter flounder, most of the target catches from 2028 onward were composed of paper fish, with the fraction increasing year over year.

The SSC decided to recommend the estimated ABC and OFL fishing at 75% F_{MSY} under Option A of the groundfish control rule. The SSC decision not to recommend holding the ABC constant in the final two years, despite these projected catches being considered uncertain based on their reliance on paper fish, was based on several reasons. First, the stock was assessed to be above SSB_{MSY}, and the SSC believes the Option A ABCs will limit sufficient risk of overfishing and not pose a risk to the stock. Second, the Option A ABCs are above current catch levels, and well above recent catches, thus the SSC believed that following Option A of the control rule is unlikely to cause socioeconomic hardship to the fishery. Finally, there were only small

differences in the ABCs for FY 2029 and 2030 between Option A and using constant values. In total, the SSC did not believe there was sufficient justification to deviate from Option A of the groundfish control rule for Georges Bank Winter Flounder.

Additional Comments and Research Recommendations

Natural mortality (M) for this stock is assumed fixed across ages and years and is an important source of uncertainty in the assessment model and in the estimation of reference points. The SSC recommends exploration and potentially updating M for this stock.

The SSC recommends further research into environmental influences on productivity for Georges Bank winter flounder.

There are two other winter flounder stocks (Gulf of Maine and Southern New England / Mid-Atlantic), and all three were part of a Research Track Assessment that was recently halted. The Research Track process can provide a more holistic view of the population dynamics across stocks, which might identify common drivers for this species in the region. The SSC feels that the Research Track Assessment for these stocks should be resumed as soon as possible.

Summary of Recommendations

1. **The SSC recommends an OFL of 2,279 mt and an ABC of 1,785 mt for FY 2026, an OFL of 2,148 mt and an ABC of 1,681 mt for FY 2027, an OFL of 2,079 mt and an ABC of 1,627 mt for FY 2028, an OFL of 2,061 mt and an ABC of 1,613 mt for FY 2029, and an OFL of 2,060 mt and an ABC of 1,612 mt for FY 2030.**

2. **The SSC recommends resuming the work of the Projections Research Track Working Group and the Winter Flounder Research Track Assessment as soon as possible.**

3. **The SSC recommends revisiting natural mortality assumptions and research to better understand environmental drivers of stock productivity.**

Fishing Year	OFL (mt)	ABC (mt)
2026	2,279	1,785
2027	2,148	1,681
2028	2,079	1,627
2029	2,061	1,613
2030	2,060	1,612

GULF OF MAINE WINTER FLOUNDER

The SSC received a presentation from Council staff on the 2025 management track assessment by the NEFSC for Gulf of Maine winter flounder (Level 1) and the Groundfish PDT's development of possible OFLs and ABCs for FY 2026-2030.

An Empirical 30+ Area-Swept model was used to determine current stock status. It was determined that overfishing is not occurring, although overfished status remains unknown. Surveys show some signs of increase in area-swept biomass estimates. Proposed catch advice was based on 75% of E40%[1] (75% E_{MSY} proxy), specifically using the average of the 2023 and 2024 fall survey data using updated catchability coefficients. The PDT recommended a constant approach using 75% of E40%, employed to derive proposed catch advice (OFLs and ABCs) for SSC consideration, in part because there is no information on recruitment available for projections. Recent commercial and recreational landings and discards have been stable at lower levels, and the GOM winter flounder stock has been underutilized for some time, maintaining similar patterns in the most recent five years. Notable recreational and commercial catches occur in state waters, but these fisheries lack accountability measures and are included in expected catches. Socioeconomic findings show that inter-sector annual catch entitlement (ACE) leases prices have been $0 in recent years, in part because utilization is low and the stock is not constraining other fisheries.

Terms of Reference Findings

The SSC recommends an OFL of 1,064 mt and an ABC of 798 mt, held constant for FY 2026-2030 for the Gulf of Maine winter flounder stock. The recommended OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

Rationale Including Significant Sources of Uncertainty

The SSC catch recommendation was based on Option A of the groundfish ABC control rule, where the ABC is the catch associated with 75% of F_{MSY}. In the case of Gulf of Maine winter flounder, E40% is the overfishing exploitation threshold proxy for 75% of F_{MSY}. The empirical framework used for Gulf of Maine winter flounder used the average of the 2023 and 2024 fall survey data to project OFLs and ABCs for 2026-2030 under a constant approach. The SSC discussed that this constant approach was well-justified for this stock. What is known about the life history of winter flounder suggests that there will be a large proportion of fish in 3-5 years that have yet to be recruited (and thus are not observed). This means the projected catch, especially in out years, is subject to the "paper fish" issue referred to above for Georges Bank winter flounder. This uncertainty, the empirical approach limitations, and the consistency with past recommendations and PDT findings all warranted the constant catch advice for fishing years 2026-2030.

[1] E40% is the overfishing exploitation threshold proxy.

Additional Comments and Research Recommendations

Regarding stock status, the SSC remains uncomfortable with assigning an overfishing status using an empirical method, although this has been carried over for some years. The lack of stock status could be solved by pursuing ongoing work to move into a WHAM framework.

The SSC recommended several improvements to data collection and integration. There is a need for better catchability estimates for state surveys, requiring some coordination between the States. Research into the phenology of winter flounder and survey timing might help understand patterns in survey indices. A fixed survey timing with a migrating species impacted by climate change could impact the catchability within the survey over space and time. There has been a lot of tagging of winter flounder sporadically through time that could be leveraged to better elucidate the stock structure of this species.

The SSC discussed that resumption of the Research Track Assessment for this and other winter flounder stock should be beneficial. New tools are available to integrate stocks into a single synthetic stock assessment which could be especially helpful for stocks. The SSC recommended exploring this option, which would likely require transitioning from empirical to analytic assessment approaches like WHAM. The SSC expects that transition to WHAM and exploration of multi-stock assessments would remain on the task list if the research track were resumed.

Finally, the SSC recommended work to understand and improve overall marketability of the winter flounder stock. Marketability is perceived as being low, and improving marketability could increase utilization by the fishery.

Summary of Recommendations

1. **The SSC recommends an OFL of 1,064 mt and an ABC of 798 mt, held constant for FY 2026-2030.**

2. **The SSC recommends resuming the work of the Winter Flounder Research Track Assessment as soon as possible and/or work to transition assessing all winter flounder stocks with WHAM.**

3. **The SSC recommends coordination across data collection efforts to elucidate questions about stock structure and survey catchability.**

Fishing Year	OFL (mt)	ABC (mt)
2026-2030	1,064	798

SOUTHERN NEW ENGLAND/MID-ATLANTIC WINTER FLOUNDER

The SSC received a presentation from Council staff on the 2025 management track assessment by the NEFSC for Southern New England/Mid-Atlantic (SNE/MA) winter flounder (Level 1) and the Groundfish PDT's development of possible OFLs and ABCs for FY 2026-2030.

Terms of Reference Findings

The SSC recommends an OFL of 961 mt and an ABC of 507 mt for FY 2026, an OFL of 1,009 mt and an ABC of 532 mt for FY 2027, an OFL of 1,055 mt and an ABC of 556 mt for FY 2028, an OFL of 1,101 mt and an ABC of 556 mt for FY 2029, and an OFL of 1,101 mt and an ABC of 556 mt for FY 2030 for the Southern New England/Mid-Atlantic winter flounder stock. However, the SSC recommends that the PDT recalculate the OFL for FY 2030 to achieve the constant ABC at 50% F_{MSY}, and the SSC would accept the updated OFL value. The recommended OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

Note: This stock is one of the few in which the SSC recommended that OFL in the out-years be recalculated (see below). To be able to complete these calculations, the SSC acknowledges that the PDT requires the expertise of its members from the NEFSC staff, staff who are currently under the federal furlough.

Rationale Including Significant Sources of Uncertainty

The PDT provided a range of options for the SSC to consider, including ABCs based on: 1) 75% F_{MSY}, 2) 75% F_{MSY} with year 3 advice held constant for years 4 and 5, 3) 50% F_{MSY}, and 4) 50% F_{MSY} with year 3 advice held constant for years 4 and 5. The range of options presented reflects advice given by the SSC in the previous advice setting process. The SSC recommended Option 4, 50% F_{MSY} held constant with year 3 ABCs (but not OFLs) held constant for years 4 and 5. The SSC justified this recommendation based on substantial uncertainty in out-year projections, uncertainty associated with reference points, and poor indicators of stock health.

The SSC considered the projected catch to be especially uncertain and potentially overly optimistic. Projected catch, especially for out years 2029 and 2030, would be based largely on the "paper fish" mentioned for previous stocks–i.e., year classes that have not yet been observed. Further, estimated recruitment has remained low and steady over the past decade with only a slight increase at the end of the time series. The projected catch appears to assume continued improvements in recruitment that have not yet been observed.

In the 2022 stock assessment, there was a revision to the recruitment stanza (i.e., truncated period of 2002-2021) that informed the calculation of reference points. This revision made the assessment more responsive to changes in productivity. However, because of the use of an F_{MSY} proxy (F40%) in this case, this change in productivity assumption revised the $SSB_{threshold}$, while the corresponding F_{MSY} was unaffected. The adjustment of an $SSB_{threshold}$ to reflect decreased productivity without coincident adjustment to the F_{MSY} management targets can have the inadvertent result of higher exploitation rates on stocks under stress. This led to SSC questions as to whether F40% remains a good proxy for F_{MSY} in this situation. These questions align with past Assessment Oversight Panel (AOP) and Peer Review Panel discussions regarding the need to

reevaluate whether F40% remains a good proxy under a lower productivity assumption or if F_{MSY} should be directly estimated.

The change in reference points in 2022 led to the stock being considered rebuilt despite no changes in indicators of stock health. The assessment reflects an overall declining trend in SSB over the time series, with the current estimate being the second lowest in the time series, and observed survey indices are at or near time series lows. These changes in the 2022 stock assessment challenged the SSC's ability to recommend the stock's ABC, and the SSC noted that using the ABC control rule Option A (75% F_{MSY}) for the stock would have doubled the ABC.

Concern over the substantial uncertainty in projections, continued poor stock condition, and uncertainty regarding the F_{MSY} proxy led to the SSC recommending continued use of 50% F_{MSY} to inform ABCs for this stock with year 3 held constant for years 4 and 5. The SSC believes that the OFL and ABC recommendations will prevent overfishing and meet the Council's management objectives for this stock.

The SSC also recommends allowing the OFLs to continue to increase for FY 2029 and 2030 even as ABCs are held constant, to reflect increases in the projections and to be consistent with recommendations made in previous years. This is a departure from the 50% F_{MSY} sensitivity run provided by the PDT where both the ABCs and OFLs were held constant at the FY 2028 level for FY 2029 and 2030. The value for the SSC's preferred OFL for FY 2030 was thus not available at the time of the meeting. In its absence, the SSC recommends the OFL for FY 2030 be held constant at the FY 2029 level with the intent that, if possible, it will be recalculated based on projections assuming catches at the recommended FY 2029 ABC.

Additional Comments and Research Recommendations

The SSC recommends continued exploration of best practices for integrating prevailing biological conditions to inform projections and reference points to provide realistic management targets. The SSC recommends exploration of fitting a stock recruitment model to test whether F40% remains an appropriate proxy for F_{MSY}. There is evidence that the productivity of this stock has and will continue to be impacted by warming ocean conditions. The SSC recommends continued investigation of environmental drivers affecting the productivity of this stock. Work was ongoing to transition to a WHAM model for this stock and to explore the utility of environmental covariates within the model in the context of the research track, which is now paused. Therefore, the transition in model platform and the treatment of environmental influences on stock dynamics will need to be explored through an alternative pathway, such as the next management track. Furthermore, the SSC suggested the possibility of considering all three winter flounder stocks together in a WHAM multi-stock assessment. Several surveys are used to inform this stock assessment which can present challenges in model fitting. Future work could explore application of a spatial-temporal modeling framework (e.g., a vector autoregressive spatial-temporal (VAST) model) that can integrate the surveys to estimate a comprehensive index of abundance.

Summary of Recommendations

1. **The SSC recommends an OFL of 961 mt and an ABC of 507 mt for FY 2026, an OFL of 1,009 mt and an ABC of 532 mt for FY 2027, an OFL of 1,055 mt and an ABC of 556 mt for FY 2028, an OFL of 1,101 mt and an ABC of 556 mt for FY 2029, and an OFL of 1,101 mt and an ABC of 556 mt for FY 2030. However, the FY 2030 OFL should be recalculated if possible.**

2. **The SSC recommends resuming the work of the Winter Flounder Research Track Assessment as soon as possible and/or work to transition assessing all winter flounder stocks with WHAM.**

3. **The SSC recommends research to better understand environmental drivers of stock productivity.**

4. **The SSC recommends modeling that can incorporate data from multiple surveys to estimate a comprehensive index of abundance.**

Fishing Year	OFL (mt)	ABC (mt)
2026	961	507
2027	1,009	532
2028	1,055	556
2029	1,101	556
2030	1,101*	556

* Recalculate OFL if possible.

WHITE HAKE

The SSC received a presentation from Council staff on the 2025 management track assessment by the NEFSC for white hake (Level 3) and the Groundfish PDT's development of possible OFLs and ABCs for FY 2026-2030. Based on the presentations from the PDT, which included information from the 2025 Management Track Peer Review Panel, and discussion within the SSC, it is recommended that the catch advice for FY 2026-2030 be based on model projections approved during the SAW56 benchmark assessment and using the control rule option B (70% F_{MSY}) to set ABCs as this species is still in a rebuilding plan.

Terms of Reference Findings

The SSC recommends an OFL of 1,943 mt and an ABC of 1,393 mt for FY 2026, an OFL of 1,760 mt and an ABC of 1,261 mt for FY 2027, an OFL of 1,640 mt and an ABC of 1,174 mt for

FY 2028, an OFL of 1,618 mt and an ABC of 1,157 mt for FY 2029, and an OFL of 1,698 mt and an ABC of 1,215 mt for FY 2030 for the white hake stock. The recommended OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

Rationale Including Significant Sources of Uncertainty

The white hake stock is neither overfished nor experiencing overfishing. It had been making progress on rebuilding, though this rebuilding seems to have stalled in recent years. Utilization of white hake by the multispecies groundfish fishery is high, and it can be a constraining stock. The assessed stock status and condition do not well match industry perceptions of white hake populations per written correspondence and public comment received by the SSC. The SSC weighed these issues during their deliberations. The SSC's recommended ABCs follow the groundfish rebuilding control rule (70% F_{MSY}). The SSC considered there to be moderate uncertainty in the projections, but the SSC did not find sufficient biological nor socioeconomic justification to deviate from control rule by holding any out-years constant.

White hake life history and fishing practices predisposes them to less severe "paper fish" issues (projected catch composed of projected and yet unobserved recruits) than winter flounder stocks, though still by 2028, 25% of projected white hake SSB is from projected recruits. The SSC did not find this amount of uncertainty sufficient justification for holding out-years constant. Further, it was not obvious that holding out-years constant would have increased biological risk or alleviated socioeconomic hardship (the SSC-recommended ABC's at 70% F_{MSY} would allow marginally more catch 2028-2030 than holding 2029 and 2030 ABCs constant at 2028 levels). The SSC also recognized that the stock status (rebuilding) and trends (declining with especially low recruitment in recent years) presented challenges to recommending ABCs greater than those specified by the control rule.

As discussed by the SSC and as presented by the PDT, the major sources of uncertainty for this stock are the catch-at-age information not being well characterized throughout the assessment time period, the use of pooled and survey age-length keys to age commercial catch, possible seasonal movement of white hake out of defined stock area, and inconsistency between recruitment methods used in the long-term and short-term projections.

The SSC appreciated the inclusion of the autocorrelated recruitment (AR1) sensitivity projection run with a different recruitment assumption as it provided good context regarding the rebuilding of the stock. Recruitment is one of the major uncertainties with this assessment. Even though the SSC felt that using the autocorrelated recruitment was a plausible basis for projections, the SSC continued to support the SAW56 methods for the projections used for specification setting, consistent with the recommendations of the 2025 assessment peer review panel. There is not a biologically meaningful difference between standard projection (SAW56 method) and AR1 projection (sensitivity run) in the first three years, so the SSC agreed with the peer review panel in using the standard projection until more investigation of best practices for projections can be conducted. This is an issue that should continue to be considered for future white hake assessments where both sets of consultant analyses should be considered for biological reference point development as well as for projections. These analyses could be simulation-tested to see which might perform better for a stock like white hake in the long term.

Additional Comments and Research Recommendations

The SSC continues to be concerned about the lack of recent white hake recruitment. There was considerable discussion during the meeting concerning the lack of apparent recruitment despite low harvest, and whether this was signaling a longer-term change for stock productivity. The SSC decided to recommend ABCs that follow the projections in this case because the stock dynamics as they are understood by the model continue to decrease through 2029. If the SSC had followed the process of holding the out years at a static ABC, the risk of overfishing would have increased during the specification period. Therefore, the SSC decided that following the projections mitigated this risk since the specification time period was long (5 years) and holding the ABC constant as the biomass declined was more risk prone than letting the ABC follow the projection directly.

The SSC recommends moving the assessment from the current Age Structured Assessment Program (ASAP) assessment model into WHAM, which would allow for the exploration of various effects like the apparent environmental effects on the population and for more experimentation with the recruitment options that were discussed by the SSC. Additionally, the SSC recommends continuing to work on the recruitment assumptions in long-term and short-term projections. The Peer Review Panel provided a good starting point for this exploration with the strength and weakness analysis that they provided in their report.

Summary of Recommendations

1. **The SSC recommends an OFL of 1,943 mt and an ABC of 1,393 mt for FY 2026, an OFL of 1,760 mt and an ABC of 1,261 mt for FY 2027, an OFL of 1,640 mt and an ABC of 1,174 mt for FY 2028, an OFL of 1,618 mt and an ABC of 1,157 mt for FY 2029, and an OFL of 1,698 mt and an ABC of 1,215 mt for FY 2030.**

2. **The SSC recommends moving the assessment from its current ASAP model into WHAM so that some of the uncertainties that were identified by the SSC and Peer Review Panel can be tested using the features of WHAM.**

3. **The SSC recommends that the question of how recruitment is specified in white hake short-term projections and reference points continue to be evaluated in the next assessment for white hake, using the strength and weakness analysis offered by the peer review panel in their 2025 Management Track Assessment report.**

Fishing Year	OFL (mt)	ABC (mt)
2026	1,943	1,393
2027	1,760	1,261
2028	1,640	1,174
2029	1,618	1,157
2030	1,698	1,215

CAPE COD/GULF OF MAINE YELLOWTAIL FLOUNDER

The SSC received a presentation from Council staff on the 2025 management track assessment by the NEFSC for Cape Cod/Gulf of Maine (CC/GOM) yellowtail flounder (Level 2) and the Groundfish PDT's development of possible OFLs and ABCs for FY 2026-2030.

The 2025 management track assessment for Cape Cod/Gulf of Maine yellowtail flounder was an update to WHAM developed during the Yellowtail Flounder Research Track Assessment that concluded last year. This is the first management track assessment using the WHAM model for this stock. Relative to the previous 2022 Virtual Population Assessment (VPA) model, the scaling of SSB and recruitment, as well as both reference points, shifted upwards in the 2025 WHAM assessment. This reflects differences in signals from the data as well as changes in model formulation in the new assessment, including time-varying maturity, age-specific natural mortality, age-structured random effects on abundance, and a separation of the NEFSC survey indices by vessel (Albatross vs. Bigelow).

The 2025 assessment indicates that SSB in 2024 was 4,795 mt, which is 44% of the SSB_{MSY} proxy target of 10,907 mt, and the stock is thus overfished. Overfishing is not occurring; F in 2024 was estimated to be 0.144, which is 29% of the overfishing threshold proxy (F_{MSY} proxy = 0.497). Estimated SSB has been overall gradually increasing since 1985 but remains below the new SSB_{MSY} proxy even though fishing pressure has been at historically low levels in recent years. The updated assessment indicates this stock is projected to be above the SSB threshold and not expected to be overfished in 2025 but also not to have reached the rebuilt target. The reference points for this stock were based on the spawning potential ratio (SPR) proxy estimates assuming a target SPR of 40%. No retrospective adjustments were made to the assessment results.

The SSC was presented with OFLs and ABCs based on five-year projections (2026-2030) of SSB and catch at a target F of 0.373, which is 75% of F_{MSY} under Option A of the Council's groundfish ABC control rule. A sensitivity run was also presented with OFLs and ABCs based on 75% F_{MSY} for the first three years (2026-2028) and then holding the OFLs and ABCs constant at the FY 2028 levels for FY 2029 and 2030. The rationale for the sensitivity run was the increasing uncertainty in the projections in later years.

TERMS OF REFERENCE FINDINGS

The SSC recommends an OFL of 2,224 mt and an ABC of 1,736 mt for FY 2026, an OFL of 2,638 mt and an ABC of 2,062 mt for FY 2027, an OFL of 2,984 mt and an ABC of 2,335 mt for FY 2028, an OFL of 3,225 mt and an ABC of 2,335 mt for FY 2029, and an OFL of 3,225 mt and an ABC of 2,335 mt for FY 2030 for the Cape Cod/Gulf of Maine yellowtail flounder stock. However, the SSC also recommends that the PDT recalculate the OFL for FY 2030 based on catch at the recommended FY 2029 level, and the SSC would accept the updated OFL value. The recommended OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

Rationale Including Significant Sources of Uncertainty

The SSC had reservations about the assessment, including the large change in scale and aspects of the biological realism, such as large swings in SSB (e.g., the large decreases and increases in 2019-2021) despite overall low fishing mortality. Recruitment in this stock has been weak to moderate, and overall declining since 2017. Recruitment variability and associated uncertainty leads to large confidence intervals around projected SSB.

The SSC was concerned with the projections, particularly in 2029 and 2030. As with the winter flounder stocks discussed above, most of the projected catch from 2028 onward are composed of fish cohorts based on projected recruits (i.e., "paper fish"), with the fraction increasing year over year. Given these uncertainties, the SSC recommended ABCs using the sensitivity run fixing the ABC constant in the latter two years. The stock is below SSB_{MSY} and the SSC believes these ABCs will limit the risk of overfishing on an overfished stock and promote rebuilding. The recommended ABCs are approximately double current levels and well above recent catch levels under current low utilization, thus holding the latter two years constant is unlikely to cause socioeconomic hardship to the fishery.

The SSC also recommended allowing the OFLs to continue to increase for FY 2029 and 2030 even as ABCs are held constant, to reflect increases in the projections and to be consistent with recommendations made in previous years. This is a departure from the sensitivity run where both the ABCs and OFLs were held constant at the FY 2028 level for FY 2029 and 2030. The value for the SSC's preferred OFL for FY 2030 was thus not available at the time of the meeting. In its absence, the SSC recommended the OFL for FY 2030 be held constant at the FY 2029 level with the intent that, if possible, it will be recalculated based on projections assuming catches at the recommended FY 2029 ABC.

Additional Comments and Research Recommendations

The SSC recommends work on the assessment to better attribute process errors. While WHAM can better account for time- and age-varying processes and environmental covariates than other approaches, the Numbers At Age (NAA) random effects are agnostic with respect to process vs. observation error. This can make it challenging to disentangle the relative contributions of multiple processes such as natural mortality, movement, or other natural variations in dynamics that affect populations, and overall may make it difficult to decipher the relative influence of natural and fishery processes on stocks. The SSC has previously discussed how some assessments may inadvertently improve model diagnostics at some cost to biological realism of the outcomes, and that may be the case with this assessment.

There are multiple stock units for yellowtail flounder and there would be value in looking at them synthetically in a single modeling platform. Even if movement between stock areas is small, that could explain some variance and potentially reduce process errors.

Continued examination of environmental drivers of recruitment and population distribution is warranted. The Research Track Assessment found a correlation between recruitment and bottom temperature, although no environmental correlates were included in the final model. A pause in the rapid warming of the Gulf of Maine (GOM) is expected over the next few years, and it will

be instructive to observe how recruitment and population distribution responds. The stock is thought to be shifting in distribution to deeper offshore waters. The rate of that shift should be compared to Atlantic cod to assess the interconnectedness of those two species, particularly given the way in which low cod quotas have limited CC/GOM yellowtail flounder catch, as noted during public comment.

Summary of Recommendations

1. **The SSC recommends an OFL of 2,224 mt and an ABC of 1,736 mt for FY 2026, an OFL of 2,638 mt and an ABC of 2,062 mt for FY 2027, an OFL of 2,984 mt and an ABC of 2,335 mt for FY 2028, an OFL of 3,225 mt and an ABC of 2,335 mt for FY 2029, and an OFL of 3,225 mt and an ABC of 2,335 mt for FY 2030. However, the FY 2030 OFL should be recalculated if possible.**

2. **The SSC recommends additional work on the assessment to reduce process errors and ensure the biological realism of outcomes.**

3. **The SSC recommends continued examination of population distribution and environmental drivers of recruitment.**

Fishing Year	OFL (mt)	ABC (mt)
2026	2,224	1,736
2027	2,638	2,062
2028	2,984	2,335
2029	3,225	2,335
2030	3,225*	2,335

*Recalculate OFL if possible.

SOUTHERN NEW ENGLAND/MID-ATLANTIC YELLOWTAIL FLOUNDER

The SSC received a presentation from Council staff on the 2025 management track assessment by the NEFSC for Southern New England/Mid-Atlantic (SNE/MA) yellowtail flounder (Level 2) and the Groundfish PDT's development of possible OFLs and ABCs for FY 2026-2030.

The 2025 management track assessment for SNE/MA yellowtail flounder was an update to the Woods Hole Assessment Model (WHAM) developed during the Yellowtail Flounder Research Track Assessment that concluded last year. This is the first management track assessment using the WHAM model for this stock. In addition to the transition to the state-space model, other major changes between the previous 2022 ASAP model and the current 2025 WHAM model

include model specification changes, inclusion of the Gulf Stream Index (GSI) as an environmental correlate informing recruitment and dropping larval survey indices.

The 2025 assessment indicates that estimates of SSB and recruitment remain at historical lows, as do catches. SSB in 2024 was estimated to be 38 mt, which is 14% of the biomass target (SSB_{MSY} proxy of 270 mt). The stock thus remains overfished and is in a rebuilding plan with a rebuilding date of 2029. Overfishing is not occurring and fishing mortality in 2024 was estimated to be 0.051, representing 14% of the overfishing threshold (F_{MSY} proxy = 0.374). The reference points for this stock were based on the spawning potential ratio (SPR) proxy estimates assuming a target SPR of 40%. No retrospective adjustments were made to the assessment results.

The SSC was presented with OFLs and ABCs based on five-year projections (2026-2030) of SSB and catch at a target F of 0.26, which is 70% of F_{MSY} as indicated by the rebuilding plan and hence consistent with Option B of the Council's groundfish ABC control rule. A sensitivity run was also presented with OFLs and ABCs based on 70% of F_{MSY} for the first three years (2026-2028) and then holding the OFLs and ABCs constant at the FY 2028 levels for FY 2029 and 2030. The rationale for the sensitivity run was the increasing uncertainty in the projections in later years.

Terms of Reference Findings

The SSC recommends an OFL of 46 mt and an ABC of 33 mt for FY 2026, an OFL of 56 mt and an ABC of 33 mt for FY 2027, an OFL of 56 mt and an ABC of 33 mt for FY 2028, an OFL of 56 mt and an ABC of 33 mt for FY 2029, and an OFL of 56 mt and an ABC of 33 mt for FY 2030 for the Southern New England/Mid-Atlantic yellowtail flounder stock. However, the SSC also recommends that the PDT recalculate the OFLs for FY 2028-2030 based on the recommended constant ABCs, and the SSC would accept the updated OFL values. The recommended OFLs and ABCs aim to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy Statement.

Rationale Including Significant Sources of Uncertainty

The SSC deliberated at length about the use of the control rule or the sensitivity run and the additional possibility of holding ABCs constant across all five years at the FY 2026 level, like the approach taken during the last ABC setting cycle for this stock in 2022 (for a three year time period). The SSC had strong concerns about the assessment and projections. With no age data available for the past five years, the terminal year starting point for projections is highly uncertain and recruitment in the terminal year is based on the long-term average influenced by the recent decrease in the Gulf Stream Index. Uncertainty is compounded by WHAM not being able to handle zero values, i.e., values of zero in survey data as missing and indistinguishable from missing data due to survey gaps. Recruitment has been chronically low, and the reliance of setting future catch limits based on projected recruitment and "paper fish" is especially acute for this stock. SSB in the terminal year of 2024 was estimated to be 38 mt, and thus similar in magnitude to the catch for FY 2026 at 70% of F_{MSY} of 33 mt, which relies heavily on an assumption that projections materialize. The stock is in a rebuilding plan and even if the projections did materialize, the stock will not rebuild on time (based on projected SSB from the PDT memo under catch levels indicated by the rebuilding plan's 70% of F_{MSY}). The SSC

recognized that all the ABCs being considered are extremely low and to some degree in the noise relative to historical levels, that the projected increases are likewise small in absolute magnitude, and that given low utilization the realized catches will likely continue to be very low. Nonetheless, the SSC had concerns about even the constant ABC of 33 mt approach given the profoundly poor status of the stock and its flatlined SSB trend.

Given these strong reservations, and following the suggestion from the Council's Executive Director, the SSC ultimately elected to follow Option C of the Council's groundfish control rule, wherein catch is based on incidental bycatch only. At the time of the meeting, suitable estimates of bycatch were not available and delaying recommendations until such estimates could be produced would inappropriately delay the management process. In the absence of other values, the SSC therefore recommended holding ABCs constant for FY 2026-2030 at the FY 2026 level of 33 mt based on 70% of F_{MSY}. The SSC believes these ABCs will limit the risk of overfishing on a severely overfished stock and ideally, if environmental conditions allow, promote rebuilding. The recommended ABCs are well above recent catch levels given extremely low levels of utilization. Thus, holding ABCs constant and making the fishery bycatch-only are unlikely to cause socioeconomic hardship.

By following Option C, the intent of the SSC is that the stock will be made bycatch-only, reflective of its continued poor status and the consensus that there is no catch level for a targeted fishery that is appropriate. The SSC thus additionally recommends that the Council consider setting ABCs lower than the 33 mt recommended here, at levels based on bycatch and that avoid negative socioeconomic impact, as appropriate estimates become available from the PDT. The SSC also requests that in the future ABCs based on bycatch will be provided the next time this stock is considered.

As was the case of Cape Cod/Gulf of Maine yellowtail flounder and Southern New England/Mid Atlantic winter flounder, the SSC recommended that OFLs be allowed to increase following the projections based on the constant ABC of 33 mt. At the time of the meeting, suitable values for such OFLs were not available for FY 2028 onwards. The SSC thus recommended the OFLs for FY 2028-2030 be held constant at the FY 2027 level of 56 mt with the intent that, if possible, they will be recalculated based on projections assuming catches at the recommended constant ABCs.

Additional Comments and Research Recommendations

A few other comments about the stock assessment were made. An average value for the Gulf Stream Index (GSI) over recent years (2012-2024) is currently used to inform recruitment for projections. Methods for making GSI predictions, drawing on other disciplines, should be explored. As suggested elsewhere, appropriate treatment of zero values in WHAM should be evaluated; as noted in the assessment report, zero values occur frequently in recent years for this stock. The SSC struggled to understand the concurrent strong decrease in the SSB_{MSY} proxy and slight increase in F_{MSY} in the 2025 assessment and suggested investigation into whether yield per recruit has changed and the possibility that the 40% spawning potential ratio proxy should be revisited.

Summary of Recommendations

1. **The SSC recommends an OFL of 46 mt and an ABC of 33 mt for FY 2026, an OFL of 56 mt and an ABC of 33 mt for FY 2027, an OFL of 56 mt and an ABC of 33 mt for FY 2028, an OFL of 56 mt and an ABC of 33 mt for FY 2029, and an OFL of 56 mt and an ABC of 33 mt for FY 2030. However, the FY 2028 through 2030 OFLs should be recalculated if possible.**

2. **The SSC recommends the fishery be made bycatch-only and that the Council consider setting ABCs at lower levels than recommended here based on bycatch values, as those become available.**

Fishing Year	OFL (mt)	ABC (mt)
2026	46	33
2027	56	33
2028	56*	33
2029	56*	33
2030	56*	33

*recalculate OFL if possible.

DOCUMENTS

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

1. Presentation on the status of regional science and management by Council Executive Director
2. Presentation by Council staff
3. Groundfish PDT memo to SSC re FY 2026 – 2030 OFLs and ABCs for several groundfish stocks, October 14, 2025
4. September 2025 Management Track Assessment
    a. *2025 Management Track Assessment Peer Review Report*, October 4, 2025
    b. Stock Assessment Support Information portal*
5. Risk Policy Matrices for groundfish stocks (combined)
6. Framework Adjustment 69, Affected Environment Human Communities (Section 5.7), March 11, 2025
7. Previous SSC recommendations
    a. Acadian redfish and white hake
        i. Meeting materials, October 27, 2023

ii. SSC report, November 13, 2023

b. Cape Cod/Gulf of Maine yellowtail flounder and Southern New England/Mid-Atlantic yellowtail flounder
   i. Meeting materials, November 9, 2022
   ii. SSC report, November 23, 2022

c. Gulf of Maine winter flounder and Georges Bank winter flounder
   i. Meeting materials, October 26-27, 2022
   ii. SSC report, November 23, 2022

d. Southern New England/Mid-Atlantic winter flounder
   i. Meeting materials, August 25, 2022
   ii. SSC report, September 13, 2022

8. Correspondence (if any)

Background Documents

1. The Council's Risk Policy Statement and Concept, implemented January, 2025
2. NOAA/NEFSC 2025 State of the Ecosystem Reports for the Northeast U.S. Shelf

* The NEFSC Stock Assessment Support Information portal includes reports, presentations, and supporting materials for all NEFSC stock assessments.

REFERENCES

ICES. 2020. Workshop on Catch Forecast from Biased Assessments (WKFORBIAS; outputs from 2019 meeting). ICES Scientific Reports. 2:28. 38 pp. http://doi.org/10.17895/ices.pub.5997