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

MEMORANDUM

DATE: October 23, 2026

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 Atlantic sea scallop for fishing year 2027 and FY 2028 (default)

The Scientific and Statistical Committee (SSC) met in person and via webinar on October 7, 2026, to address Terms of Reference (TOR) for Atlantic sea scallop.

SSC members in attendance: Dr. Conor McManus (Chair), Dr. Edward Camp (Vice-Chair), Dr. Lauran Brewster, Dr. Alex Hansell, Dr. Lisa Kerr, Dr. Gareth Lawson, Dr. Kai Lorenzen, Dr. Jason McNamee, Dr. Richard Merrick, Dr. Mateja Nenadovic, Dr. Fred Serchuk, Dr. Sam Truesdell, Dr. Hiro Uchida, and Dr. John Wiedenman.

TERMS OF REFERENCE

A. Consider information provided by the Scallop Plan Development Team on survey data and methods to develop fishing mortality reference points and targets based on the 2025 research track stock assessment, recommendations of the SSC made in October 2025, and updated data and modelling. Provide the Council with a recommendation as to whether these methods remain appropriate for this year's application.

B. Review assumptions used in the Scallop Area Management Simulation (SAMS) model to project biomass, including natural mortality assumptions. Provide the Council with a recommendation as to whether these methods are appropriate.

C. Recommend overfishing limits (OFL) and acceptable biological catches (ABC) for Atlantic sea scallop for fishing year (FY) 2027 and FY 2028 (default) that will prevent overfishing, are consistent with the Council's Scallop ABC control rule, and consider the Council's Risk Policy.

The SSC received presentations from the Northeast Fisheries Science Center and Council staff on stock status, projections and other information associated with the development of Atlantic sea scallop OFLs and ABCs for 2027 and the default values for 2028. The most recent stock assessment was the 2025 research track assessment that found that the stock was not overfished

and overfishing was not occurring. Spawning stock biomass and fishing mortality estimates were derived using the Catch-at-Size Analysis (CASA) assessment model and biological reference points were derived with the Stochastic Yield Model. The Scallop Area Management Simulator (SAMS) model is a size and area structured projection model used to produce area-specific projections of exploitable scallop biomass and analyze future harvest scenarios.

TOR Findings

The SSC considered the assumptions of the SAMS approach for determining current biomass and projecting future biomass and catch. These included changes to the use of survey information, adjustments to the shell height-meat weight relationship, changes in growth and natural mortality calculations, updated fishing mortality reference points, and expansion of the OFL footprint to include the backside of Cape Cod. The SSC found these changes to be justified and appropriate for use in projections.

The SSC recommends an OFL of 21,418 mt for FY 2027 and 22,137 mt for FY 2028. The SSC recommends an ABC of 16,668 mt for FY 2027 and 17,178 mt for FY 2028. This advice is based on combined Mid-Atlantic and Georges Bank reference points from the 2025 research track assessment (F_{OFL} = 0.49; F_{ABC} = 0.36), and the SAMS model's area-specific population projections. The Atlantic sea scallop ABC control rule generates advice that has a 75% probability that F is less than F_{MSY}; F_{ABC} is 0.36 for Georges Bank and the Mid-Atlantic combined. The Gulf of Maine OFL/ABC components were calculated using the Georges Bank F reference points ($F_{GB\ OFL}$ = 0.36, $F_{GB\ ABC}$ = 0.29). The recommended OFLs and ABCs are expected to prevent overfishing, are consistent with the Council's ABC control rules, and consider the Council's Risk Policy. The SSC considers these recommendations to be based on the best scientific information available.

Rationale Including Significant Sources of Uncertainty

The Council's Risk Policy calculations resulted in a recommended probability of 82.6%, which the Policy characterizes as intermediate risk tolerance. The recommended ABC was based on the Council's scallop ABC control rule, for which F_{ABC} has a 75% chance of being less than F_{MSY}. This ABC is consistent with an intermediate level of risk.

The Scallop PDT developed OFLs and ABCs using the SAMS model to project estimated 2026 biomass forward to 2027 and 2028. The 2026 biomass was derived from survey abundance and shell height-meat weight relationships; the 2027 and 2028 projected biomass was derived from annual growth and natural mortality estimates and assumed fishing at the F_{OFL} or F_{ABC} reference points that were derived during the 2025 research track assessment. Typically, reference points from research tracks are not used directly in management, but the 2025 scallop research track working group was tasked with providing reference points that could be used for decision-making.

Shell height-meat weight relationships used peer reviewed area-specific parameters, except for these updates: (1) in Nantucket Lightship-South where 2025 and 2026 dredge survey data were used, (2) throughout the Mid-Atlantic, where an updated equation that included revised year and depth effects was used, and (3) in the Gulf of Maine where 2026 dredge and optical survey data were used to update these equations. The PDT indicated that these adjustments improved model fits. Given the variability of shell height-meat weight relationships in time and space, the SSC supported these adjustments to the peer reviewed methods.

Annual growth generally used parameters used in the peer reviewed 2020 Management Track Assessment. The exception was in Nantucket Lightship-South, where the model used a growth parameterization specific to this area. The SSC supported this modification as it is consistent with the slow growth rates that have been observed there.

Area-specific natural mortality rates were based on those estimated in the 2025 research track assessment. The SSC supports continued use of these peer reviewed estimates. The NEFSC noted projected biomass on Georges Bank was biased (overestimated) during 2024-2026 and that this was likely due to increased predation by sea stars, such as *Asterias*. The SSC supported the PDT's decision not to make ad-hoc adjustments to natural mortality as it was unclear that this increased mortality would continue. Given recent bias in projection error, use of status quo natural mortality on Georges Bank represents a significant source of uncertainty.

The PDT increased the area of the sea scallop stock included in biomass estimates to include a region on the backside of Cape Cod that has been surveyed since 2021 and is an important scallop fishing ground. It is important to include this area in OFL calculations so that catch accounting is consistent with the methods used to develop catch limits. For projection purposes, this area was assigned the life history characteristics associated with the Gulf of Maine. The SSC agrees with this choice, as this area is more likely to be similar to the Gulf of Maine than Georges Bank.

During its 2025 deliberations, the SSC had extensive discussion regarding the appropriateness of reference points. The Mid-Atlantic F_{MSY} reference point of 1.56 is larger than that of Georges Bank which is 0.36. The combined reference point is 0.49. There was concern that an OFL calculated using the stock-wide reference point combined with effort directed primarily at Georges Bank could lead to overfishing on Georges Bank. This potential issue persists, but the SSC is bound to determine ABC on the scale of the unit stock. In addition, management tends to result in realized catches well below the ABC, so it is not definitive that localized overfishing would occur. However, the application of a global reference point to calculate catch limits across areas with known distinct life history differences for a fleet that does not fish the resource uniformly is a significant source of uncertainty. In addition, as in past years the PDT applied the Georges Bank F reference point to Gulf of Maine areas because those scallops are likely to have life history characteristics more similar to Georges Bank scallops; the SSC continued to support this decision.

The SSC's recommended ABCs are not expected to result in stock wide overfishing, because the PDT's projection methods were based on peer-reviewed science or important, reasonable updates to life history characteristics in particular areas.

Additional Comments and Research Recommendations

The SSC received correspondence prior to the meeting suggesting the importance of documenting uncertainty applied when determining the size of the difference between the OFL and the ABC. Public comment at the meeting suggested incorporating recent water temperature trends into projections and a question was raised about whether it was useful to include high natural mortality in the models for Mid-Atlantic areas that are not being fished. The SSC considers these issues to have been adequately addressed during deliberations, but recommends continued exploration of environmental drivers on sea scallops.

Multiple SSC members suggested further research on natural mortality at different spatial scales, including drivers of its variability such as food availability and temperature. Improved

mechanistic understanding of this rate could help generate more accurate projections given an understanding of future conditions. In similar situations in the future when there is evidence that the baseline natural mortality may not be the best estimate, it would be useful for the SSC and the Council to see sensitivity runs at candidate natural mortality rates to improve the characterization of risk.

An SSC member indicated that discussions on using the combined reference point for both regions should continue as this is a known risk that has not been resolved. This known inconsistency has not caused issues due to conservative downstream management decisions; however, if catch begins to approach the ABC, it will be critical to apply the appropriate mortality rates spatially to avoid local overfishing (growth and/or recruitment).

Fishing effort and gear selectivity govern yield. In cases where there is a large differential in the conditions for growth and recruitment, such as between Georges Bank and the Mid-Atlantic, yield could be maximized under different combinations of effort and gear selectivity. Given the discrepancy in conditions between the regions, alternative gear configurations that impact selectivity could be examined.

Summary of Recommendations

1. **The SSC recommends OFLs of 21,418 mt for FY 2027 and 22,137 for FY 2028 (default) for Atlantic sea scallop.**
2. **The SSC recommends ABCs of 16,668 mt for FY 2027 and 17,178 for FY 2028 (default) for Atlantic sea scallop.**
3. **The SSC recommends further research on the mechanisms governing natural mortality as well as the risks associated with unit stock-scale reference points.**

Fishing Year	OFL (mt)	ABC (mt)
2027	21,418 mt	16,668 mt
2028	22,137 mt	17,178 mt

INFORMATION

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

Atlantic sea scallop

1. Scallop Plan Development Team
    a. Presentation by Council staff
    b. Presentation by Dr. Dvora Hart, NEFSC
    c. Scallop PDT memo to SSC re FY 2027-2028 OFLs and ABCs for Atlantic sea scallop, September 30, 2026
    d. 2026 Risk Policy Report for scallops
2. Scallop fishery information

a. *Scallop Fishery Management Plan Framework Adjustment 40*, Human Communities (Section 5.4, p. 22-33), February 4, 2026

b. Advisory Panel discussion of fishery performance, AP meeting summary, June 2, 2026 (p. 2-3)

c. GARFO Fishery Performance Report – Scallop landings, grades, and other data, August 19, 2026

3. Previous SSC recommendations
    a. Meeting materials, August 19, 2025
    b. SSC report (reference points), August 31, 2025
    c. Meeting materials, October 8, 2025
    d. SSC report, October 28, 2025

4. Hart, D.R. 2013. Quantifying the tradeoff between precaution and yield in fishery reference points. *ICES Journal of Marine Science*, 70: 591-603.

Other Documents

- Risk Policy Statement and Concept, August 11, 2026
- Risk Policy Application
- NOAA/NEFSC State of the Ecosystem Reports for the Northeast U.S. Shelf
- NEFSC Stock Assessment Support Information portal
- Correspondence (if any)