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

MEMORANDUM

DATE: August 31, 2025

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

FROM: Scientific and Statistical Committee

SUBJECT: Response to Terms of Reference - Atlantic sea scallop biological reference points and specification setting

The Scientific and Statistical Committee (SSC) met in person and via webinar on August 19, 2025, to address Terms of Reference (TOR) for Atlantic sea scallops

SSC members in attendance: Dr. Conor McManus (Chair), Dr. Edward Camp (Vice-Chair), Dr. Anna Birkenbach, Dr. Adam Delargy, Dr. Lisa Kerr, Dr. Gareth Lawson, Dr. Kai Lorenzen, Dr. Jason McNamee, Dr. Mateja Nenadovic, Dr. Fred Serchuk, Dr. Kevin St. Martin, Dr. Michelle Staudinger, Dr. Sam Truesdell, Dr. Hiro Uchida, and Dr. John Wiedenmann.

TERMS OF REFERENCE

A. Consider the results of the 2025 research track assessment for Atlantic sea scallops and information provided by the Council's Scallop Plan Development Team (PDT) on developing specifications considering biological reference points.

B. Provide recommendations related to fishing mortality reference points and targets for developing specifications for fishing year (FY) 2026 and default FY 2027. The SSC will review catch specification methods when recommending overfishing limits (OFL) and acceptable biological catch (ABC) at the October 2025 SSC meeting.

DOCUMENTS

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

1. 2025 Atlantic Sea scallop research track assessment
    a. Presentation by NEFSC
    b. Assessment report
    c. Peer review report
2. Scallop Plan Development Team
    a. Presentation by Council staff

b. Scallop PDT memo to SSC re: Atlantic sea scallop reference points, August 8, 2025

Background Documents

1. SSC memo re: Atlantic sea scallop OFLs and ABCs, October 29, 2024
2. Scallop Fishery Information
    a. Affected Environment for Scallop Framework Adjustment 39 (Section 5.0, p. 54-109)
    b. Fishery Performance Report – Scallop landings grades and LPUE, GARFO
3. Relevant peer-reviewed scallop papers provided for the October 11, 2023, SSC meeting

The SSC received a presentation from Northeast Fisheries Science Center (NEFSC) staff on the recent 2025 research track assessment for Atlantic sea scallops. The assessment included eight terms of reference. Atlantic sea scallop population dynamics are modeled using the Catch at Size Analysis (CASA) model, and with the required data (e.g., landings, survey data), the model was run for three different regions: Mid-Atlantic Bight, Georges Bank Closed and Georges Bank Open. While scallops from the Mid-Atlantic Bight and Georges Bank regions are experiencing different biomass trends, fishing mortality, and ecosystem changes, scallops are considered one stock unit, and thus the reference points are produced based on a single stock. Yield- and stock-per-recruit analyses are used to derive region-specific reference points, which are then combined to produce stock-wide reference points. Based on the findings of the assessment, the current biomass is below its B_{MSY} target but above the $B_{threshold}$, so the stock is determined to not be overfished. The combined terminal fishing mortality was found to be below the combined F_{MSY} = 0.49, and as such overfishing was deemed to not be occurring. However, the terminal year fishing mortality for Georges Bank is higher than the Georges Bank-specific F_{MSY}, suggesting that if Georges Bank was considered its own stock, overfishing would be occurring in this region where most of the stock-wide biomass currently exists. The assessment passed peer-review, but some terms of references, including the Status Determination terms of reference, were deemed partially met. With regards to Status Determination, this was primarily because (1) the Mid-Atlantic Bight yield-per-recruit curve is ill-defined (i.e., exceptionally high F_{MSY} produced by the flat yield curve) and (2), the regional variation in environmental conditions, life history and fishing mortality are not fully captured when combining the region-specific reference points to a single stock reference point, which risks not identifying or addressing overfishing in Georges Bank.

The SSC then received a presentation from the Scallop Plan Development Team (PDT) on developing specifications considering biological reference points. The PDT reviewed the concerns of the research track peer-review and conveyed caution with regard to implementing the single stock (combined) reference point. The PDT proposed three methods for producing FY 2026 and FY 2027 acceptable biological catch (ABC) for SSC review in October 2025:

1. Use the combined reference points as produced in the research track assessment to produce ABCs. This is considered the default method currently with the assessment passing peer-review. Caution regarding high levels of fishing mortality could be addressed through the specification process (e.g., setting days-at-sea).
2. Use the Georges Bank F_{MSY} and F_{ABC} in producing the stock-wide ABCs. This method would ensure that harvest remains below the Georges Bank region-specific levels.

3. Use combined F_{MSY} from the stock-wide approach, but modify p* to calculate an F_{ABC}. Currently, ABC is determined as the catch associated with a fishing mortality rate that has a 25% chance of exceeding the overfishing limit. A lower p* value and thus chance of exceeding overfishing would be another method for a more conservative catch advised compared to that produced by Option 1, and lessen the probability of overfishing Georges Bank.

The PDT noted the challenges with Methods 2 and 3 would in theory require changes to the ABC control rule and thus require a Council action to change the fishery management plan, which is not possible prior to FY 2026.

TOR Findings

The SSC found that the PDT's caution was warranted, and that developing several different options for setting FY 2026 and FY 2027 ABCs (and the associated yield lost) for the SSCs consideration in October 2025 would be highly valuable. The SSC requested that ABCs calculated using Methods 1 and 2 be produced, and Method 3 assuming a p* of 20%. In doing so, the SSC will be able to evaluate the catch advice under these scenarios as it relates to the impact of using a combined reference point for setting catch advice. If time is a limiting factor, the SSC recommends prioritizing Methods 1 and 2.

Rationale Including Significant Sources of Uncertainty

Similar to the research track peer-review, the SSC noted the contrasting nature of the Mid-Atlantic Bight and Georges Bank Atlantic sea scallop resource and fishery: the fishing effort has been quite different for these regions (particularly in recent years), the scallops have been shown to have different growth rates, and have different sources and magnitudes of natural mortality under a changing environment within the Northeast U.S. Shelf. The SSC asked whether there is evidence that the regions should be considered different stocks or not.

Similar to the PDT, the SSC noted that the landings for Atlantic sea scallops are historically well below the ABCs, suggesting that the legal catch limit is not what is restricting the fishing effort. As such, the SSC questioned how a reduced ABC would correspond to realized landings, and whether adjustments to effort controls (e.g., days at sea) would better address the uncertainty from the reference points.

Summary of Recommendations

1. The SSC recommends the PDT produce FY 2026 and FY 2027 ABCs and yield lost estimates using Methods 1, 2, and 3 assuming a p* of 20% probability. If time is a limiting factor, the SSC recommends prioritizing Methods 1 and 2.