SSC Report to NEFMC Scallops

SSC Vice-Chair, Dr. Edward Camp

NEFMC Meeting

December 3, 2025

Atlantic Sea Scallops

TERMS OF REFERENCE

The SSC met in person and via webinar on October 8, 2025, to address Terms of Reference.

A. Consider information provided by the Scallop Plan Development Team (PDT) on survey data and methods to develop fishing mortality (F) reference points and targets based on the 2025 research track assessments and recommendations of the SSC made in August 2025. Provide the Council with a recommendation as to whether these methods are appropriate.

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 OFLs and ABCs for Atlantic sea scallops for FY 2026 and 2027 (default) that will prevent overfishing, are consistent with the Council's scallop ABC control rule, and consider the Council's Risk Policy Statement.

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TOR B RESPONSE

- Sedentary nature of scallops and spatial variability in environmental conditions make it important to account for heterogeneity in population dynamics.
- Assumptions and changes in SAMS approach developed by PDT are appropriate:
  - Adjusted 2025 survey data in the Southern Flank to account for extreme heterogeneity.
  - Revised shell height-meat weight relationships (correcting an error).
  - Revised natural mortality assumptions for areas at the southern end of the range.

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TOR A RESPONSE

- PDT presented two options for setting stock-wide OFLs and ABCs, using:
  - Combined Mid-Atlantic and Georges Bank reference point (F_{OFL} = 0.49).
  - Only Georges Bank reference point (F_{OFL} = 0.36).
- SSC recognized peer review concerns regarding the combined reference point: values driven by Mid-Atlantic F_{MSY} = 1.56, which is poorly defined yet increases fishing intensity on Georges Bank.
- SSC ultimately recommended the combined approach:
  - Consistent with 2025 research track assessment outcomes and control rule
  - F_{ABC} = 0.36 with just a 25% chance of overfishing. Catch is likely to be well below ABC due to spatial management, further preventing overfishing.
  - Uncertainty if regulations allow flexibility in deviating from combined approach.

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TOR C RESPONSE

- **Assessment**: 2025 research track assessment using:
  - Catch-at-Size Analysis (CASA) model for SSB.
  - Stochastic Yield Model (SYM) for reference points
  - Scallop Area Management Simulator (SAMS) model for projections, a size- and area-structured model.
- **Stock Status**: not overfished, overfishing not occurring.
- **Note**: F rate associated with OFL decreased from 0.61 to 0.49.
- **Recommendation**: the following OFLs and ABCs, decreased from prior levels:

Fishing Year	OFL (mt)	ABC (mt)
2026	19,645 mt	15,412 mt
2027 (default)	21,741 mt	17,060 mt

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RATIONALE

- Used ABC control rule: ABC where F has 75% probability of being less than F_{MSY}.
- Informed by peer-reviewed research track assessment and PDT advice.
- Accepted use of SAMS model for stock projections; area-specific adjustments under TOR B are expected to improve projections.
- Catch advice is expected to prevent overfishing at the scale of management.
  - Discussed if the stock-wide F could result in overfishing in GB.
  - No analyses have shown that yet, and SSC's remit is to prevent overfishing at the scale that the stock is managed at.
- Due to further restriction of catch limits through rotational management and specifications (Days at Sea) catch expected to be under the ABC.

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SIGNIFICANT SOURCES OF UNCERTAINTY

1. Discrepancy between spatial resolution of reference points and catch advice.
    - Reference Points: detailed and fine-scale (survey and biological data, catch projections, spatial management).
    - Catch Advice: single values and large scale (OFL and ABC for Gulf of Maine, Georges Bank, and Mid-Atlantic combined).
    - Combined reference point partially influenced by the Mid-Atlantic F_{MSY} = 1.56, which is poorly defined yet influences (increases) the F applied to Georges Bank.
    - SSC expressed concern that application of the combined F_{MSY} could prove sub-optimal for Georges Bank: acceptable but not ideal.

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SIGNIFICANT SOURCES OF UNCERTAINTY

2. Drivers of declining trends in scallops, at the stock and regional scales.
    - More severe in the Mid-Atlantic than Georges Bank.
    - Factors differ across space, time, and metrics (e.g., landings, recruitment, assessed natural mortality).
    - More direct evidence of declining recruitment and increasing natural mortality; less certainty on the magnitude and spatial scale of trends.
    - Drivers remain uncertain; if environmental or ecological (e.g., warming bottom temperatures and/or increased predation pressure), these will have implications for the sustainability of fishing.

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ADDITIONAL COMMENTS and RESEARCH RECOMMENDATIONS

- Reconsider the spatial structure of the stock, and whether managing the species as one stock is still warranted.
- Continue pursuit of GeoSAMS; explore options for spatially explicit management even if the stock structure is unchanged (e.g., setting catch and/or days-at-sea assignments separately for different regions).
- Develop decision-support tools that support finer-scale spatial or temporal (e.g., in-season) management. Agreed with the PDT on a need for tools that could help:
  - Explore more flexible approaches
  - Consider uncertainty and socioeconomic implications of alternative decisions.

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SUMMARY OF RECOMMENDATIONS

1. **Caution is appropriate given the uncertainty regarding stock spatial structure, concerns over the reference points from the research track assessment, and declining trends in the stock.**
2. **Reconsider the spatial stock structure and to develop tools to aid flexible management at finer spatiotemporal scales.**

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Questions?