



New England Fishery Management Council

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John F. Quinn, J.D., Ph.D., *Chairman* | Thomas A. Nies, *Executive Director*

MEMORANDUM

DATE: October 9, 2019
TO: Scientific and Statistical Committee (SSC)
FROM: Tom Nies, Executive Director
SUBJECT: **Terms of Reference – Overfishing levels (OFLs) and acceptable biological catch (ABC) recommendations for Atlantic scallops for fishing year 2018 and 2019 (default)**

Terms of Reference

1. Review changes to meat weights used to develop 2019 survey estimates, and growth and selectivity parameters used in the SAMS model to project biomass in portions of the Nantucket Lightship. Provide the Council with a recommendation as to whether these changes are appropriate.
2. Review the Scallop PDT's updated projections for the scallop resource, and provide the Council with OFL and ABC recommendations for fishing years 2020 and 2021 (default).

Background

Framework 32 to the Scallop FMP will include fishery specifications for 2020, as well as default measures for 2021. The Council requests that the SSC provide OFL and ABC recommendations for these years, to be included in Framework 32.

The SSC final report from last year has been included for reference (Doc. 2), as has the summary report from the 2018 scallop benchmark assessment which was reviewed through SARC 65 (Doc. 4) In addition, a paper by Dr. Dvora Hart has been included that summarizes how tradeoffs can be quantified related to setting fishery reference points (Doc. 5). A summary of the alternatives under consideration in Framework 32 is included for background (Doc.6).

The 2018 benchmark assessment updated biological reference points for the scallop resource. The current ABC control rule sets ABC at a level that has a 25-percent probability of exceeding OFL (*i.e.*, a 75-percent probability that it will not exceed OFL). The F rate associated with OFL increased from $F=0.48$ to $F=0.64$ in SARC 65. The ABC F rate with a 25% chance of exceeding OFL is estimated at $F=0.51$. In 2018, the stock was not overfished and overfishing was not occurring.

The Scallop PDT met on October 1st, 2019 and finalized recommendations for updated estimates of OFL and ABC for fishing years 2020 and 2021 (default only) through correspondence.

Document 3 will address several data treatment issues raised by the scallop PDT following completion of the 2019 surveys (optical and dredge). Dredged efficiency continues to be an issue as there were differences between the individual survey estimates of biomass in portions of the Nantucket Lightship area. In two specific instances, the optical (Habcam and drop camera) survey estimate of biomass were similar, but several times larger than the dredge survey

estimates. The Scallop PDT has recommended using finer scale meat weight estimates based on data from the 2016, 2017, 2018, and 2019 VIMS dredge survey in areas of the Nantucket Lightship. The PDT has also recommended reducing the length infinity (L_{∞}) and changing fishery selectivity assumptions for animals in high density areas of the Nantucket Lightship region to account for anomalous slow growth.

It should be noted that OFL and ABC estimates are based on projections of exploitable biomass across the entire resource, and that allocations to the fishery are based on projected landings from areas open to the fishery. The partial approval of the Omnibus Habitat Amendment 2 by NOAA Fisheries in early 2018 facilitated the re-opening of several areas as part of scallop rotational management through Framework 29.

Members of the PDT will present updated values, including a review of any modifications that have been made to relevant models used to set fishery allocations.

Information

- 1.1 Terms of Reference for Sea Scallops for October 17 & 18, 2019, SSC Meeting
- 1.2 SSC Final Report on OFL and ABC for Scallop Framework 30, November 20, 2018
- 1.3 Scallop PDT recommendations for 2020 and 2021 (default) OFL and ABC
- 1.4 Sea scallop assessment summary for 2018 (SARC 65, August 2018)
- 1.5 Hart, D.R. Quantifying the tradeoff between precaution and yield in fishery reference points. ICES Journal of marine Science, doi.10.1093/icesjms/fss204.
- 1.6 Draft Framework 32 measures under consideration
- 1.7 Risk Policy Matrix - Atlantic Sea Scallops

Additional Background Documents

- 1.8 Scallop PDT recommendations for 2019-2020 (default) ABC, dated October 4, 2018
- 1.9 Yochum, N. and DuPaul, W.D. Journal of Shellfish Research, Vol. 27, No.2, 265-271, 2008.
- 1.10 Hennen, D.R. and Hart, D.R. Shell Height-to-Weight Relationships for Atlantic Sea Scallops (*Placopecten magellanicus*) in Offshore U.S. Water. Journal of Shellfish Research, 31(4):1133-1144. 2012.
- 1.11 Hart, D.R. and Chute, A.S. 2009. Estimating von Bertalanffy growth parameters from growth increment data using a linear mixed-effects model, with an application to the sea scallop *Placopecten magellanicus*. ICES Journal of Marine Science, 66: 2165-2175.
- 1.12 Miller et al. Estimation of the capture efficiency and abundance of Atlantic sea scallops (*Placopecten magellanicus*) from paired photographic-dredge tows using hierarchical models Canadian Journal of Fisheries and Aquatic Sciences, 2019, 76:847-855, <https://doi.org/10.1139/cjfas-2018-0024>
- 1.13 SARC 65 – Scallop Appendix A1 – Sea Scallop Growth
- 1.14 SARC 65 – Scallop Appendix A2 – Scallop Shell Height/Meat Weight Relationships (Draft report for peer review)
- 1.15 Scallop PDT Meeting Summaries
 - a. August 27-28, 2019
 - b. September 4, 2019
 - c. October 1, 2019
- 1.16 [SARC 65 Full Report \(link only\)](#)