



New England Fishery Management Council

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MEMORANDUM

DATE: October 12, 2016
TO: Scientific and Statistical Committee (SSC)
FROM: Council
SUBJECT: **October 18, 2016 SSC Meeting Terms of Reference for Sea Scallops**

Terms of Reference

- 1. Review the work of the Scallop PDT on updated projections for the scallop resource and provide the Council with OFL and ABC recommendations for fishing years 2017 and 2018 (default).**

Framework 28 to the Scallop FMP will include fishery specifications for 2017, as well as default measures for 2018. The Council requests that the SSC provide OFL and ABC recommendations for these years, to be included in Framework 28.

- 2. Review changes to the growth and meat weight parameters used to estimate and model biomass in portions of the Nantucket Lightship area, and provide the Council with a recommendation as to whether or not these changes are appropriate.**

The Scallop PDT has recommended using finer scale weight estimates based on data from the 2016 VIMS dredge survey, and reducing the length infinity (L_{∞}) assumption for animals in a deep portion of the Nantucket Lightship area to account for anomalous slow growth observed in these areas. These changes represent a departure from the current model configuration, and the Council requests that the SSC advise whether or not they are appropriate.

Background

Amendment 15 to the Scallop FMP included an ABC control rule that was approved by the SSC and implemented in 2011. 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 is currently 0.48 and the ABC F rate with a 25% chance of exceeding OFL is estimated as 0.38, based on the recent benchmark assessment completed in 2014.

The SSC final report from last year has been included for reference (Document 2). In addition, a paper by Dr. Dvora Hart has been included that summarizes how tradeoffs can be quantified related to setting fishery reference points (Document #3). The methods presented are similar to analyses used by the Scallop PDT to develop the ABC control rule approved in Amendment 15. In addition, the summary report from the 2014 benchmark assessment has been included

(Document #4), as well as a summary of the alternatives under consideration in Framework 28 is included for background (Document #5).

The Scallop PDT met on October 6, 2016 to finalize updated estimates of OFL and ABC recommendations for fishing years 2017 and 2018 (default only) based on the same ABC control rule approved in Amendment 15, the catch equivalent to the fishing rate that has a 25% probability of overfishing (Document #6).

In 2016, there were large differences between the individual survey estimates of biomass in portions of the Nantucket Lightship area where high densities of animals have been observed by previous surveys. In some, but not all cases, the HabCam survey estimate of biomass was several times larger than the other surveys. The PDT has not had an opportunity to fully examine the reasons for these differences, but plans to continue looking into potential issues such as dredge efficiency in high density areas, biomass estimation techniques from optical surveys, and alternative methods for combining survey estimates after the completion of this framework action. It should be noted that OFL and ABC estimates are based on projections of exploitable biomass, and the majority of the overall biomass in these high density areas is not considered to be exploitable in the commercial dredge.

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.

Documents:

1. October 12, 2016 SSC Meeting Terms of Reference for Sea Scallops
2. SSC Final Report on OFL and ABC for Scallop Framework 27, November 17, 2015
3. Hart, D.R. Quantifying the tradeoff between precaution and yield in fishery reference points. ICES Journal of marine Science, doi.10.1093/icesjms/fss204.
4. Sea scallop assessment summary for 2014 (SARC59, July 2014)
5. Draft Framework 28 measures under consideration
6. Scallop PDT recommendations for 2017-2018 (default) ABC
7. Risk Policy Matrix - Atlantic Sea Scallops

Background:

8. Scallop PDT recommendations for 2016-2017 (default) ABC, dated October 9, 2015.
9. 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.
10. 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.
11. Yochum, N. and DuPaul, W.D. Journal of Shellfish Research, Vol. 27, No.2, 265-271, 2008.