



New England Fishery Management Council

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To: Tom Nies, Executive Director
From: Scientific and Statistical Committee
Date: November 17, 2015

Subject: Overfishing levels (OFLs) and acceptable biological catch (ABC) recommendations for Atlantic sea scallops for fishing years 2016 and 2017.

The SSC met on October 13, 2015 in Providence, Rhode Island, to address the following term of reference (TOR):

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 2016 and 2017 (default).

To address this TOR, the SSC considered the following information:

1. October 13, 2015 SSC Meeting Terms of Reference for Sea Scallops
2. SSC Final Report on OFL and ABC for Scallop Framework 26, September 15, 2014
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 27 measures under consideration
6. Scallop PDT recommendations for 2016-2017 (default) ABC

The Scallop PDT recommended to the SSC that the OFL for 2016 should be set by applying the fishing mortality target (0.48) to the projected biomass, and that the ABC for 2016 should be set by applying the fishing mortality rate that will result in a 25% probability of overfishing (0.38) to the projected biomass, per current ABC control rule. The SSC agreed with these recommendations, and therefore recommends that OFL for 2016 is 68,418mt and ABC for 2016 should not exceed 55,737mt, both of which include estimates of discards.

The PDT also recommended that the default OFL and ABC for 2017 should remain at the 2016 value due to the influence of a recent strong set of juvenile scallops on the population projection. Past experiences suggest that the model underestimates mortality of juvenile scallops at high densities, which results in overestimation of biomass. This effect would be stronger for 2017 than 2016 due to continued growth of the strong cohort. Retaining the 2017 OFL and ABC at the 2016 value would provide an additional buffer against this important uncertainty. The SSC concluded that the PDT's logic is sound. Therefore, OFL for 2017 is 68,418mt and ABC for 2017 should not exceed 55,737mt.

In providing these recommendations for 2017, the SSC notes that the figures are expected to be revisited with the 2016 survey results in hand, and those data will provide insights into the extent of potential overestimation in the biomass projections. Those insights might compel modification of the default recommendations for 2017.

Finally, the SSC recommends that models incorporating different assumptions about natural mortality based on empirical data (i.e., the estimated mortality of the last strong cohort in the Elephant Trunk area from 2003-2007) be provided to allow a more detailed exploration of the implications of those different assumptions. This is important because the SSC sees value in consistent application of the ABC control rule whenever possible, and that deviation from the control rule should be as well-justified as possible.

Summary of recommendations

- 1. OFL for 2016 and 2017 (default) is 68,418mt, and ABC for 2016 and 2017 (default) should not exceed 55,737mt, which include estimates of discards.**
- 2. Future setting of ABCs should consider model runs that incorporate different assumptions about natural mortality under high density conditions to ensure that deviations from the control rule are as well-justified as possible.**