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New England Fishery Management Council
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Ernest F. Stockwell III, *Chairman* | Thomas A. Nies, *Executive Director*

To: Tom Nies, Executive Director
From: Scientific and Statistical Committee
Date: September 21, 2015

Subject: Terms of Reference – Overfishing levels (OFLs) and acceptable biological catch (ABC) recommendations for the Northeast Skate Complex for fishing years 2016 and 2017.

The SSC met on September 1, 2015 in Boston, Massachusetts, to address the following terms of reference (TORs):

1. Approve method for estimating scallop dredge discard mortality to be used in ABC specifications for fishing years 2016-2017.
2. Review and approve revised estimate of MSY resulting from preliminary discard mortality updates.
3. Recommend an ABC for the Northeast Skate Complex consistent with the fishing mortality limit (FMSY or its proxy) and the ABC control rule or rebuilding program for fishing years 2016-2017 contingent on the use of the approved method for finalizing discard mortality estimates.

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

2.1 August 24, 2015 memo from Skate Plan Development Team to SSC – NE Skate Complex ABCs for FY 2016 - 2017

2.2 Memo from William A. Karp, Ph.D. Re: Update of Skate Stock Status Based on NEFSC Bottom Trawl Survey Data through Autumn 2014/Spring 2015

2.3 Rudders et al. 2015. Final Report to the Scallop RSA program: Evaluating the condition and discard mortality of skates following capture and handling in the sea scallop dredge fishery.

In response to TOR1, the SSC agreed that the new estimates of discard mortality of little skates (48%) and winter skates (34%) caught by scallop dredges provided in the report by Rudders et al. (2015) to NMFS (document 2.3) are suitable for use in assessment of the skate complex and development of catch advice. Although the work has not yet been thoroughly peer-reviewed and published, the SSC was provided with a detailed report on the work. A similar methodology applied to otter trawl gears has been published by several of the same authors, and that methodology was previously explained to the SSC in a detailed presentation. The resulting estimates have been incorporated into the scientific basis for management of skate fisheries, and the SSC likewise approves use of the new estimates.

Following TOR1 and in response to TOR2, the SSC approves the updated estimate of MSY for the skate complex of 36,860 mt, calculated using the new discard mortality estimates.

Similarly, in response to TOR3, the SSC approves the ABC of 31,081 mt for fishing years 2016 and 2017, incorporating the new discard mortality estimates.

The SSC also discussed the performance of skate science and management in light of the status of the skate complex, and merits of aggregating skate species for the purposes of science and management. Overall, management seems to be relatively effective, given that five of the seven species (winter, little, barndoor, clearnose, rosette) are near or above their species-specific biomass targets, and a sixth (smooth) is above its biomass threshold. However, the status of thorny skate remains poor, and calls into question the overall effectiveness of the management approach.

The lone management measure implemented in response to the poor status of thorny skate is a prohibition on landings. The status of the species suggests that this management action is insufficient for rebuilding the stock. The status of thorny skates may reflect some other stressor or environmental change apart from fishing. For example, environmental change might be causing the distribution of thorny skates to contract, which could affect the population dynamics of the species. The SSC recommends that a more thorough discussion of the scientific and management issues related to thorny skate be scheduled with the Skate PDT in order to develop recommendations for improved approaches to science and management.

Summary of recommendations

1. **The new estimates of discard mortality of little (48%) and winter (34%) skates caught by scallop dredges should be used in assessment and development of catch advice.**
2. **The updated estimate of MSY incorporating the new estimates of discard mortality is 36,860 mt.**
3. **ABC for fishing years 2016 and 2017 incorporating the new estimates of discard mortality is 31,081 mt.**
4. **A more detailed examination of the scientific and management issues affecting thorny skate involving the SSC, PDT or other relevant entities is warranted in light of the continued poor status of the species, in contrast with the rest of the skate complex.**