



New England Fishery Management Council

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
John Pappalardo, *Chairman* | Paul J. Howard, *Executive Director*

MEMORANDUM

DATE: January 26, 2009
TO: Scientific and Statistical Committee
FROM: Paul J. Howard, Executive Director
SUBJECT: Terms of Reference for skate review

The Council is asking the Scientific and Statistical Committee (SSC) to review and approve updated Skate Acceptable Biological Catch (ABC) to be implemented through Amendment 3 (Amendment 3) to the FMP for the Northeast Skate Complex (FMP). ABCs are required under the Magnuson-Stevens Act and must be specified using best available science, taking into account uncertainty to prevent overfishing. In addition, the ABCs may be specified such that they have an acceptable probability of rebuilding overfished species.

Please consult the attached memo from the PDT about their attempts to estimate an ABC and their recommendations. Also, the PDT memo has a list of technical documents that are available to describe how the analyses were conducted. All but Document 1 and the discard species allocation in Document 3 have been peer reviewed by the DPWS and are provided as background information only.

In the attached memo, the Skate PDT offers five choices for setting a Skate ABC, with related pros and cons for each choice. These choices were presented instead of the catch/biomass median, because the technical foundation for using the median is apparently much weaker than once thought. Other analytical models also did not perform well and therefore do not offer any guidance with respect to identifying MSY or overfishing levels (OFL).

Unlike the SSC review in April 2008, the emphasis on setting an ABC has shifted from rebuilding smooth, thorny, and winter skate to preventing overfishing due to proposed changes in the biological reference points. The problem with a revised purpose behind the ABC limit is that no mortality rate or catch level can yet be identified (except of course zero) that is unlikely to exceed a level causing overfishing. The overfishing definition reference points are based on a maximum rate of decline in the three-year moving average for survey biomass. Although 'overfishing' has occurred in the past¹, the catch level that caused these events is anything but obvious. In fact, the signal to noise ratio of the available data is very low and changes in survey biomass may be more reflective of environmental events and survey variability than by various levels of catch.

¹ Since 1992, 'overfishing' has occurred four times for winter skate, once for little skate, once for barndoor skate, and three times for thorny skate.

Although the new catch time series are considerably more reliable than were the past estimates, changes in biomass seem to be unrelated to excessively high catch. Relationships between the catch/biomass ratio and changes in biomass are either (counter-intuitively) positive, non-existent (a scatter plot), or negative (as expected) but non-significant. In lieu of an ABC recommendation with an empirical foundation, the PDT is proffering some reasonable substitutes or proxies, with pros and cons for each choice (see Table 3 in the attached PDT memo).

Background

In November 2006, the SSC did not approve the Skate PDT's first proposal to use a demographic model for setting ABCs that had a sufficiently high probability of rebuilding thorny and winter skates. Instead, the SSC recommended doing a new benchmark assessment using analytical models since new skate life history data has become available, despite significant uncertainties about the catch. Unfortunately, conflicts with the GARM III assessment prevented doing new skate assessments and the Council directed the PDT to develop ABC recommendations.

Using a new method to allocate landings to species from exploitable biomass fractions in the fall survey², the PDT proposed an aggregate skate ABC. This ABC was calculated by applying the median catch/biomass relative exploitation ratio to the latest three-year moving average for skate biomass, accounting for a partially-effective prohibition on barndoor, smooth, and thorny skate landings (90% effectiveness assumed) and an assumed 50% discard mortality rate. The SSC approved using the discard/catch fraction from 2004-2006 to calculate total allowable landings (TAL). An interim catch limit derived from 75% of the median catch/biomass ratio was also recommended to the Council to account for uncertainty and incorporated into Amendment 3 as an Annual Catch Target (ACT).

These recommendations and an approved interim catch limit (later applied as an ABC to comply with the proposed National Standard 1 guidelines), enabled the Council to define the required catch reductions and proceed with Draft Amendment 3, including alternatives calculated to achieve the TALs for the skate bait and wing fisheries. The Council approved the alternatives in June 2008 and submitted a final draft amendment document in September 2008. Public hearings were held in October 2008 and the Council was slated to approve a final alternative in November 2008.

A discrepancy between the survey statistical design and the species allocation method was however identified during the public comment period, which was to be addressed and possibly corrected during the December 2008 Data Poor Assessment Workshop (DPWS). During the DPWS, new discard estimates also came forward that were substantially different from previous estimates that the PDT had used to calculate a Skate ABC. Also, the DPWS recommended that the biological reference points should be updated with new data collected since 1998/1999.

Because of this new information, the Regional Administrator recommended and the Council concurred that final action on Amendment 3 should be postponed until the new DPWS data could be incorporated into the ABC estimate.

² Spring survey for little skate.