



New England Fishery Management Council

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C. M. "Rip" Cunningham, Jr., *Chairman* | Thomas A. Nies, *Executive Director*

To: Tom Nies, Executive Director
From: Scientific and Statistical Committee
Date: May 29, 2013

Subject: Review of Monkfish Biological Reference Points and Interim Acceptable Biological Catch (ABC) control rule and develop updated Recommendations to Council

The SSC met on May 16, 2013 to address the following terms of reference (TORs):

- 1) Review the 2010 Monkfish April 8-9, 2013 Operational Assessment documents, including any updates to biomass and overfishing reference points, for the purpose of developing Acceptable Biological Catch (ABC) recommendations for the monkfish resource for fishing years 2014 – 2016 for both the northern and southern monkfish management areas.
- 2) Review the Monkfish Plan Development Team's calculations for ABCs based on the most recent assessment using the default ABC control rule for monkfish and develop updated ABC recommendations for both management areas for fishing years 2014 – 2016 that account for uncertainty in the estimates of the overfishing levels (OFLs).

The SSC considered the following documents in its deliberations:

- 1.1. Monkfish 2013 Monkfish Assessment Update (Pre-publication copy, May 9, 2013)
- 1.2. Memo from the PDT to the SSC (May 2013) re PDT calculations and comments on monkfish reference points
- 1.3. Memo from the SSC to the Council Executive Director (Sep. 2010) re Monkfish Biological Reference Points and Interim Acceptable Biological Catch Monkfish Review Panel Summary
- 1.4. The Monkfish Fishery and its Management (Haring, P., and Maguire, J-J. 2008)

The SSC received a summary of the recent monkfish operational assessment from Dr. Anne Richards of NEFSC, which helped to fulfill TOR1.

The SSC also received an overview of OFL and ABC options developed by the Monkfish PDT from PDT Chair Phil Haring to begin meeting TOR2. However, the SSC determined that additional analyses are needed before OFLs and ABCs can be established. Upon advice from Council staff and the Council Chair that the management timeline allows scope for the SSC to revisit monkfish OFLs and ABCs at a later date, the SSC decided to postpone OFL and ABC decisions, and to request additional analyses from the assessment team and the PDT.

The primary reason for the decision to request additional analyses and revisit monkfish OFLs and ABCs is the following statements from the assessment review panel report:

Projections of biomass and catch are likely over-optimistic due to the retrospective patterns in both stocks.

Considering consistency of retrospective pattern demonstrated in 2010 and 2013 assessments, the Panel agreed that an adjustment for the retrospective pattern should be made. However, the Panel expressed concern that the adjustment to the initial stock size for projections without change to reference points creates an inconsistency in determination of stock status.

The SSC agrees that options employing a retrospective adjustment should be considered. The current monkfish ABC control rule uses values of F_{ABC} derived from recent periods of stable or increasing biomass. Because those F_{ABC} values are derived from the assessment results rather than through an independent method (e.g., yield-per-recruit analysis, which is used to estimate $F_{threshold}$), an adjustment to the terminal year biomass alone without an adjustment to the fishing mortality time series used to calculate F_{ABC} would create the inconsistency identified by the peer review panel. **Therefore, the SSC requests that OFL/ABC options be developed after applying adjustments for retrospective bias, per the advice of the peer review panel.**

The SSC was advised by NEFSC staff that producing a retrospective-adjusted fishing mortality time series needed to re-calculate F_{ABC} might be beyond the scope of what can be done after completion of the operational assessment. NEFSC and the PDT should therefore use their discretion in determining how to meet this request. However, the SSC cautions that it might confront difficulties if presented with options that utilize retrospective-adjusted biomass estimates but not fishing mortality rates.

The SSC is also interested in considering ABC options that utilize fishing mortality estimates derived independent of the assessment. Such options will avoid the expected inconsistency inherent in options that incorporate retrospective adjustments for biomass estimates but not fishing mortality. **Therefore, the SSC requests ABC options developed using alternative values of F_{ABC} such as $75\%F_{MAX}$, $F_{40\%MSP}$, and others that the PDT would like to propose.**

The SSC did not express a preference between the two methods proposed by the PDT, i.e., ABCs based on the terminal year biomass carried forward or those based on biomass projections from the terminal year. **Therefore, additional analyses based on retrospective-adjusted biomass and alternative values of F_{ABC} should be developed using both the terminal year biomass carried forward and projected biomass.**

An advantage of postponing final OFL/ABC decisions until the assessment team and PDT can complete the requested additional analyses is that updated catch data can be included in biomass and catch projections. The SSC noted that the terminal year of the assessment at present is 2011, but TOR2 requests catch advice through 2016, meaning there would be 5 years from the most recent data to the catch limits upon which it is based. Adding 2012 catch data will lessen that deficiency. This is especially important because there are indications that Hurricane Sandy altered monkfish distribution and catch patterns, and those effects are not yet captured in the analyses. **Therefore, the SSC requests that the additional analyses include updated catch data through 2012.**

The SSC also expressed concern about trends and uncertainties in the assessment beyond the retrospective patterns. Lack of confidence in the ability to accurately age monkfish remains a concern. This calls into question estimates of growth and mortality used in the assessment, and

could lead to overestimation of stock productivity. The SSC supports continued and increased efforts to resolve the ageing difficulties.

The SSC also expressed concern that recent recruitment is at near all-time lows for both the north and south management areas. This concern is lessened somewhat by the fact that the biomass is estimated to be above the target level in both areas, the potential for retrospective patterns notwithstanding. This led some SSC members to conclude that catch should not increase from recent levels, and instead that catch should decrease in anticipation of forthcoming stock declines following low recruitment. Others felt that the recruitment trends meant that any catch increases considered should be modest, but that the seemingly healthy biomass level at present meant that any decreases considered should be modest as well. These views, while not in strong opposition to one another, were not resolved through SSC consensus in light of the decision to revisit OFL/ABC decisions at a later date.

Finally, the SSC is interested in considering status quo ABCs in light of the concerns discussed and depending upon the outcomes of the additional analyses requested.