



New England Fishery Management Council

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**To:** Paul J. Howard, Executive Director  
**From:** Dr. Steve Cadrin, Scientific and Statistical Committee Chairman  
**Date:** November 18, 2008

**Subject: SSC Recommendations on Skate Amendment 3**

The SSC was asked to provide advice to the Council on whether the analyses identified below are adequate to support Council selection of management measures to achieve biological objectives such as ABCs, target fishing mortality rates and rebuilding. Amendment 3 is intended to address and provide remedies for the following four issues:

- Overfished status of smooth, thorny and winter skates
- Overfishing of thorny skate
- Implementation of annual catch limits (ACLs) and accountability measures (AMs)
- The need to revise the baseline review process

The SSC was asked to pay particular attention to the "two-bin" and the "possession limit" models used to analyze the time/area closures and possession limits needed to achieve the catch targets.

On October 6 and November 17, 2008 meetings, the SSC reviewed the Council request, an overview presentation, Amendment 3, the Draft Environmental Impact Statement (DEIS) and a Stock Assessment and Fishery Evaluation (SAFE) Report.

**SSC Recommendations:**

1. **The overfished status determination of smooth, thorny and winter skates is an appropriate application of the biomass threshold.**
2. **The overfishing status determination of thorny skate was confirmed.**
3. On the issue of implementation of annual catch limits (ACLs) and accountability measures (AMs), the SSC reiterates its previous advice from April 2008: *"Given the available information the SSC supports the PDT's findings that there is not a scientific basis to precisely evaluate the effectiveness of catch advice with respect to meeting the rebuilding targets. Until more explicit guidance for data poor resources such as this one becomes available, we recommend that catch/biomass for skate species should be maintained at less than the median level."*
4. With respect to the "two-bin" model and the "possession limit" model, the PDT and SSC have several technical concerns that limit their utility for evaluating management alternative (Table 1). Most of these limitations would be addressed by applying the NEFSC Closed Area Model. The Closed Area Model would take into account limitations on days-at-sea (DAS) allocation and accounting, other closed areas, other possession limits, availability of other species, and distance from port to maximize net revenue from fishing. The SSC agrees

with the PDT that **the NEFSC Closed Area Model would be more reliable than the 2-bin and possession limit models to evaluate skate alternatives.** Furthermore, the SSC suggests that a combined analysis of demersal fisheries (groundfish, monkfish, skates) would more appropriately represent fishermen's response to alternative regulations, and an integrated analysis of demersal species may improve evaluations of groundfish alternatives.

5. The SSC recognizes the technical issues on the draft EIS that were raised by NEFSC (9-Sep 2008), including 1) improper post-stratification of survey data, 2) commercial landings data cannot support pro-ratio to statistical areas, 3) assumption that proportional catch of skate species by surveys is the same as by the fishery may not be valid, and 4) use of an index method (AIM) may be more appropriate than median catch/biomass, and 5) recommendations from the Data-Poor Stocks Working Group may differ from the Amt 3 DEIS analyses. Initial reports are that estimates of discards from Data-Poor Stocks Working Group are approximately twice those estimated in DEIS. Results from the Working Group were not available, and these concerns were not specifically reviewed by the SSC for the recommendations above. However, **technical concerns by the NEFSC do not affect our confirmation of status determination (#1 and #2), the basis for catch advice (#3), or our advocacy for applying the Closed Area Model to the entire demersal assemblage (#4).**

Table 1. Shortcomings of the Skate PDT possession limit and two-bin models:

	<b>Model</b>	
	<b>Possession limit model</b>	<b>Two-bin effort displacement model</b>
Assumptions	1. Vessels on trips that do not cover expenses with revenue from non-skate species will stop fishing; vessels that cover their variable fishing costs by discarding skates and landing their remaining catch will continue fishing in the same manner.	1. Vessels that landed 500 or more pounds of skates on a trip will fish elsewhere in open area of the region, taking on the catch characteristics of other vessels using the same gears and fishing in the same calendar quarter. Existing closed areas are by implication taken into account.
Biases	2. Overestimates landings reduction, because it does not account for vessels making more frequent and shorter trips to target skates. 3. Underestimates landings reductions when trips targeting skates becomes unprofitable and the vessel begins targeting other species.	2. Overestimates the effectiveness of time/area closures because vessels may fish along the closed area edge or other areas that may allow them to continue fishing for skates. 3. On the other hand, it may underestimate the skate catch reduction because the model does not account for switching behavior to target other species, except that the alternative behavior is implied in the region-wide mean applied to the displaced trip.
Limitations	4. Does not account for availability of DAS. 5. Cannot account for pending regulations in other fisheries. 6. Does not account for changes in fishing target species.	4. Does not account for changes in trip length caused by displacement. 5. Cannot account for pending regulations in other fisheries. 6. Does not account for alternative fishing behavior of similar vessels when fishing elsewhere.
Sensitivities	7. Results are subject to regulations and fishing characteristics that existed in 2007.	7. Results are subject to regulations and fishing characteristics that existed in 2007.