



SSC Review of Butterworth and Rademeyer Report

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Request to SSC

Review the paper based on the following issues

- a. Pope vs. Baranov dynamics
- b. Estimation of the starting numbers-at-age vector
- c. The selection of the starting year for the assessment
- d. Allowance for additional variance in fitting to the time series of abundance indices
- e. Fitting abundance indices expressed in terms of mass or of numbers
- f. The form of the term for catch-at-age proportions in the log-likelihood
- g. Domed vs. flat selectivity-at-age for the NEFSC surveys
- h. Estimation of a stock-recruitment curve

Background

- Version 1 November 2011
- Not reviewed during SARC
- Version 2 (additional analyses) January 2012
- Brief discussion at Jan 25 SSC meeting
- SSC review March 28

Acknowledgements

- The SSC thanks Doug Butterworth, Rebecca Rademeyer, Liz Brooks, and Mike Palmer for their work and efforts to communicate results over the past two SSC meetings
- Jake Kritzer for chairing the review

Meeting Overview

- Liz Brooks, chair of working group, presented overview of how the working group operated
- For each topic
 - Doug Butterworth brief summary
 - Liz Brooks brief response
 - SSC discussion
- Only topics c (starting year), h (stock recruitment), and to a lesser extent g (selectivity) were identified as having significant implications and therefore were the focus of the discussion

SSC Conclusions I

a. Pope vs Baranov

There is little difference in results, not important

b. Starting numbers-at-age vector

SSC agreed with approach used in SAW/SARC 53 to estimate abundance at age

d. Additional variance in fitting indices

Both models allow for this, not a major issue

SSC Conclusions II

e. Indices in mass or numbers

Comparatively small effects, SSC reiterated conclusion of past assessments that this should be considered further

f. Fit catch-at-age proportions

Butterworth and Rademeyer analysis did not directly compare their approach with ASAP, further exploration needed

SSC Conclusions III

g. Domed vs. flat selectivity for surveys

More work needed, but comparatively little effect on the outcome of the GOM cod assessment

Issue has arisen in many assessments

Basic issue is domed selectivity creates cryptic biomass

SSC Conclusions IV

c. Starting year for the assessment

SSC expresses no preference for the starting year of the GOM cod assessment

Historical productivity should be evaluated

- Statistical decision criteria
- Trade-offs between information content and uncertainty
- Understanding historical conditions

SSC Conclusions V

h. Estimation of stock-recruitment curve

Stock-recruitment relationships and alternative modeling approaches should be explored further

- Same issues as starting year of assessment
- Consider first principles

The SSC proposed 3 questions to frame the issue:

1. Is there evidence for a stock-recruitment relationship?
2. What is its most likely form?
3. What factors should be considered and approaches should be employed in estimation?