

Key questions for the panel and a brief summary of documents provided pertaining to the squid resource

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ABSTRACT

This paper reports on the 2023 Panel's review and recommendations of the proposed changes to the assessment model of the squid resource.

KEYWORDS: IWS panel, key questions, excerpts, recommendations

QUESTIONS TO THE PANEL

The 2023 Panel recommended several improvements to the simple monthly age-structured model used in a simulation exercise to replicate historical industry binned catch-at-length data. The present simulation model seems to have been able to reasonably replicate the pattern in the catch-at-length of the observed average over all available years, though the prediction for each year separately is not as good. The structure/parameters of this model include natural mortality at age, the pattern of recruitment over the year reflected by three Gaussians, a knife-edge selectivity-at-length, the proportion of the exploitable component of the resource harvested by the industry and a gender-dependent von Bertalanffy growth curve with normally distributed length-at-age.

- 1) Need the simulation exercise be taken further to seek better prediction of the observed catch-at-length pattern before extending it to serve as the basis for an assessment model?
- 2) In extending the current model to serve as an annual assessment model, a year factor reflecting the aggregated recruitment each year will need to be estimated; given that annual catches by year are known, this will be equivalent to allowing yearly variation in the proportion of the exploitable component of the resource harvested each year. Beyond that, which of the parameters of the model developed above should be treated as fixed and which estimated as varying from year to year, given the limited information content of the data?
- 3) What is the best approach to make use of the sex-disaggregated proportions of pack data in an assessment model? Are these data, which are available for a limited number of months and years only, sufficient to assume to reflect proportions for other months?

LIST OF DOCUMENTS PROVIDED

Primary papers

MARAM/IWS/2024/Squid/P1: A. Brandão and D.S. Butterworth. Key questions for the panel, and a brief summary of documents provided pertaining to the squid resource.

MARAM/IWS/2024/Squid/P2: A. Brandão and D.S. Butterworth. Excerpts from the 2023 IWS panel report, together with responses pertaining to the squid resource.

MARAM/IWS/2024/Squid/P3: A. Brandão and D.S. Butterworth. Available pack data for the chokka squid (*Loligo reynaudii*) resource of South Africa.

Lists the catch-at-length data for each pack category and results from a sampling exercise to sex-disaggregated the pack data.

MARAM/IWS/2024/Squid/P4: A. Brandão and D.S. Butterworth. Adaptations to the simulation procedure to generate pack data for the chokka squid (*Loligo reynaudii*) resource of South Africa.

Provides updated results for generating pack data for squid, taking the recommendations of the 2023 IWS panel into account.

MARAM/IWS/2024/Squid/P5: A. Brandão and D.S. Butterworth. Methodology to adapt the simulation model to an assessment model for squid.

Still to come.