



Technical changes in the MP to account for missing aerial survey data

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CCSBT-OMMP/1509/4

Prepared for the 6th CCSBT Operating Model and Management Procedure meeting held in Incheon, Korea 30th–31st of August 2015.

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Abstract

Given the absence of an aerial survey in 2015, and the fact that this is one of the two input indices to the Bali MP, this paper details how this missing data point is dealt in an updated version of the MP code. The methodology is simple, and is the same approach as used to deal with the missing 2000–2004 data that is already a key feature of the existing aerial survey index. The underlying harvest control rule and MP parameters do not change, so this minor alteration simply needs noting in the already existing MP description text, and the code simply needs updating with the revised version.

1 Background

This paper details the technical changes required in the existing MP code to accommodate the fact that the 2015 aerial survey was not undertaken. We do not focus on whether or not the missing data point triggers exceptional circumstances but only on how it can be dealt with in the MP code itself and in the SBT OM version of the MP.

2 Missing 2015 aerial survey datum in the MP

From a purely technical perspective, it is quite simple to deal with missing data in the Bali MP. Indeed, we already do deal with missing data as the aerial survey index, while spanning the 1993–2014 period, is already missing data in the years 2000–2004. The state-space relative abundance delay-difference model in the Bali MP (see Attachment 10 in [1]), fitted to both the aerial survey and the CPUE data, predicts values of both indices even if they are absent in some years. The only change required in the code is to tell the code not to expect any aerial survey data in 2015. The same change is applied to both the standalone Bali MP code (used to calculate the TAC) and the version of the MP that is called by the SBT OM when performing projections. The OM is free to simulate the survey in 2015 (and this in itself is useful) but the code has been altered so that, even if it is simulated, it is ignored in the estimation process.

What will actually happen in the estimation part of the MP is that, in the absence of direct data on the juvenile biomass (from the aerial survey) in a given year, the main determinant of the estimate will be the prior, which shrinks the estimate to the long-term average relative recruitment. There *could* be some information in the CPUE in later years, but not historically, and given the CPUE always lags the aerial survey in this regard it is not going to be an issue in either our simulations for this year or the next TAC decision, if the MP is used.

The final point to make is that there are **no** changes required in the harvest control rule in the Bali MP as a result of missing data. The mathematical form and parameter values and specifications of the HCR stay exactly as they were adopted in 2011 [1].

3 Acknowledgements

This work was funded by AFMA, the Department of Agriculture and CSIRO's Oceans and Atmosphere flagship.

References

- [1] Anonymous. (2011) Report of the Sixteenth Meeting of the Scientific Committee of the CCSBT in Bali, Indonesia. *CCSBT*.

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