

OMP-13: Initial sardine bycatch limit

C.L. de Moor* and D.S. Butterworth*

Correspondence email: carryn.demoor@uct.ac.za

The current simulation testing framework accounts for the possibility of the revised normal season sardine TAB with anchovy being reached and the subsequent closure of the anchovy fishery. In these situations the sardine TAB limit is assumed caught and the anchovy juvenile catch is reduced from the TAC by the same proportion that the sardine juvenile catch would have exceeded the TAB were it not for the limit (Equations A.24 and A.25 of de Moor and Butterworth 2012).

In practice, if the initial sardine TAB were reached before the post-recruitment survey revisions were announced, the anchovy fishery should be closed until a revised normal season TAC/B is allocated after the survey. The current simulation testing framework does not, however, simulate any closure to the anchovy fishery if the initial sardine TAB were reached.

- i) The current framework models the assumption that although the anchovy fishery is closed prior to the survey, the full revised normal season anchovy TAC is still caught in the remainder of the normal season (subject to any limits imposed by the revised sardine TAB). This situation is unlikely to arise in years of high anchovy TAC, although it could do so in years of low anchovy TAC.
- ii) The juvenile anchovy catch cannot simply be decreased by the proportion of initial anchovy TAC remaining once the initial sardine TAB with anchovy is reached. For example, if anchovy recruitment is poor, but sardine recruitment is good, the revised normal season anchovy TAC would be the same as the initial normal season anchovy TAC, but there would be an increase in the normal season TAB. This would allow for the re-opening of the anchovy fishery, following the announcement of post-recruitment survey revisions, to catch the remainder of the initial= revised normal season TAC given the additional sardine TAB.

Some further details

The initial normal season TAB is 10-20% of the initial anchovy TAC. The simulated juvenile sardine catch before the survey is based on the simulated juvenile sardine:anchovy ratio in November of the previous year. Thus in years where this ratio is high (sardine recruitment is high compared to anchovy recruitment), it is possible to reach the initial normal season TAB before the post-survey revisions are announced.

The revised normal season TAB is based primarily on the observed juvenile sardine:anchovy ratio during May, and that proportion multiplied by the revised normal season anchovy TAC. The simulated juvenile sardine catch during the normal season is based on monthly ratios, the medians for which increase in June and then decrease from July. If

* MARAM (Marine Resource Assessment and Management Group), Department of Mathematics and Applied Mathematics, University of Cape Town, Rondebosch, 7701, South Africa.

the juvenile sardine:anchovy ratio remained unchanged throughout the year, given the simulated random error, the juvenile sardine TAB would be expected to be achieved about 50% of the time. This occurrence decreases, however, due to the decrease in the simulated ratio from July onwards.

Some discussion on what would happen in practice were the initial sardine TAB with anchovy reached is requested at the forthcoming PWG TT meeting, in order to account for this appropriately in future projections.

References

- de Moor, C.L. and Butterworth, D.S. 2012. The simulation testing framework used during the development of OMP-
13. Department of Agriculture, Forestry and Fisheries Document FISHERIES/2012/NOV/SWG-PEL/58. 24pp.