

ISSUES THAT NEED TO BE ADDRESSED IN REVISION OF ESTIMATES OF BIRD KILLS IN TRAWLING OPERATIONS

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Watkins *et al.* (2008) estimate for 2006

- 1) The representativeness of the sampling conducted needs to be established to justify extrapolation of the results obtained to the whole trawl fishery. Thus, to the extent that these factors are not already adequately taken into account through stratification in the extrapolation exercise, there needs to be demonstration that the spatio temporal distribution of sampling was random with respect to all hake trawling operations (or at least did not preferentially occur in areas or at times of high bird density).
- 2) The extrapolation needs to be conducted making allowance for all co-variables identified as significant in the GLM exercise conducted; in particular this includes wind speed and direction.
- 3) Bootstrap variance estimates need to be calculated using larger sampling units to avoid the negative bias introduced through positive auto-correlation for the current selection of successive 10 minute observation intervals.
- 4) If the resultant estimate of black-browed albatross kills is not compatible with the estimate of kills for all trawl fisheries by Thomson *et al.* (2009), some account will be needed of how this discrepancy might be explained.

Estimate for a subsequent period quoted by SASSI

- 1) The analyses to determine this estimate must be fully documented in a paper tabled at the DWG.
- 2) The issues raised under 1) – 3) in the text section above must be addressed.
- 3) Account should be taken in the analyses of the effectiveness estimated for tori lines in other fisheries for example through a Bayesian approach where this information is incorporated through specification of an appropriate prior. If taking such account is considered inappropriate, the reasons need to be provided.

References

- Thomson, R.B., Phillips, R.A. and Tuck, G.N. (2009) Modelling the impact of fishery bycatch on black-browed albatrosses of South Georgia. Document presented to the ICCAT Sub-Committee on Ecosystems. Recife, Brazil. June 2009. SCRS/2009/077.
- Watkins, B.P., Petersen, S.L. and Ryan, P.G. (2008) Interaction between seabirds and deep-water hake trawl gear: an assessment of impacts in South African waters. *Animal conservation* 11. 247-254