

## A short comment on Weller et al. (2014)

C.L. de Moor\*

Correspondence email: [carryn.demoor@uct.ac.za](mailto:carryn.demoor@uct.ac.za)

As Weller *et al.* (2014) is to be discussed during the March 19<sup>th</sup> Small Pelagic Scientific Working Group meeting, I would like to add a further short comment in addition to other documents already circulated.

My main concern relates to the inability of the model used by Weller *et al.* (2014) to reproduce historically observed data. Weller *et al.* (2014) attempt to show that their model is, in fact, able to reproduce historically observed data by comparing Figures 4 and 5B. However, firstly (assuming the authors take the number of total adults to be the same as the number of moulting adults), the peak in moulting adults observed in 2003 is around 17 000, while the upper confidence interval in Figure 5B is around 12500; the 25-75%ile ranging between 4000-7000. Secondly, it seems this “fit” (poor as it is) has been obtained by switching off some parameters and modifying others – likely via trial and error until a “reasonable fit” was obtained. However, this combination of parameters used to obtain Figure 5B are in themselves unreasonable since it assumes no oiling, when in fact catastrophic oiling events are known to have occurred during this period. The inclusion of such catastrophic oiling events would serve to decrease the projections further away from that historically observed. Finally, in a model where the authors seem comfortable including “expert guesses”, and state that immigration is vitally important to be able to reproduce the historical time series, it seems strange that they state immigration could not yet be included due to the lack of suitable data.

I have other more minor concerns, but won't include them here at this late stage of circulation.

### References

Weller, F., Cecchini, L., Shannon, L., Sherley, R., Crawford, R.J., Altwegg, R., Scott, L., Stewart, T., and Jarre, A. 2014. A system dynamics approach to modelling multiple drivers of the African penguin population on Robben Island, South Africa. *Ecological Modelling* 277:38-56.

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