

## ***Interactive comment on “Spatially explicit estimates of stock size, structure and biomass of North Atlantic albacore Tuna (*Thunnus alalunga*)” by P. Lehodey et al.***

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The presented study describes the application of an ecosystem based modeling approach to the stock assessment of Atlantic albacore tuna. The paper represents a useful and potentially important step forward, as fisheries scientists strive to do a complete job in incorporating environmental data in stock assessments. As such, the paper should be published.

There are, however, a few general criticisms that could/should be addressed.

The first is that the work has been presented and peer-reviewed

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during the 2013 Albacore stock assessment conducted by IC-CAT. The detailed report of the assessment may be found at [http://www.iccat.int/Documents/Meetings/Docs/2013\\_ALB\\_ASSESS\\_REP\\_ENG.pdf](http://www.iccat.int/Documents/Meetings/Docs/2013_ALB_ASSESS_REP_ENG.pdf).

The scientists conducting the review of various methods for conducting the stock assessment concluded that the results from the SEAPOPDYM model were not ready to be used for management advice, noting that "... there are still a wide range of uncertainties in the present analysis and results should be more carefully explored before being considered for providing advice." It would be very helpful if the authors acknowledged this earlier review, and reported on the criticisms and recommendations for further research made in 2013.

I also found that the rationale for selecting a maximum size of albacore based on species identification was surprising to me. Trained observers should have no difficulty identifying albacore, I would have thought. Further complicating the logical development of the analyses was the assumption that Linfinity of 137 cm, which was greater than the 130 cm cutoff for the fishery samples. This apparent discrepancy needs to be explained.

The authors also advocate the "rescue" of earlier catch and effort data that have incomplete spatial information, by raising the complete dataset by the sampling fraction that contains georeferenced information. While it is potentially useful to do this, there are some difficulties with this recommendation, as in many years, the available samples are small, and weighted towards only a few fleets. Thus, raising to the entire fishery could produce biased results.

The paper is generally quite well-written, but a critical review of the English would be helpful, I believe. Some suggestions follow below:

P. 172. Remove references to models that have skills, as this is jargon. Please rephrase.

"Spatialized" (P. 173, line 14) catch effort data. Please use geo-referenced catch effort

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data, or (better) catch effort data with positional information. “Spatialized” is not plain English.

P. 173 line 26, replace “wrong data” with “errors”.

P. 174 line 19, omit “The”

P. 175 line 6, add “the” in front of ICCAT.

P. 175 line 7, remove “above”

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