Geosci. Model Dev. Discuss.,
https://doi.org/10.5194/gmd-2017-209-RC2, 2017

Geoscientific Model Development Discussions

Interactive comment on "A protocol for the intercomparison of marine fishery and ecosystem models: Fish-MIP v1.0" *by* Derek P. Tittensor et al.

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Received and published: 15 November 2017

This manuscript presents a framework for comparing marine fisheries and ecosystem models. This is clearly an important topic, given the great diversity of modeling approaches, general lack of standard process formulations and documentation, and high role of modeler decisions in model development and implementation. Previous large-scale comparisons mainly focused on paper-based comparisons, while this manuscript lays out an approach for quantitative comparisons. Thus, the topic of the manuscript is of wide interest and broad utility, and the manuscript is well organized and well-written.

I will focus on my major comment because it is substantial in nature and, in my opinion, needs to be addressed for the manuscript to be published and for the manuscript to

maximize its impact. It appears (page 16) that the protocol was actually implemented for multiple models in historical and future runs, but no results are presented. Indeed, the supplemental material has one figure (Figure S4) showing one output for 3 of the models. Furthermore, there is no discussion in the manuscript on lessons learned or potential issues or guidelines when the proposed protocol is actually implemented. In my opinion, the lack of presentation of at least a demonstration that the protocol can be implemented is a major missing aspect of the manuscript. Comparing multiple models, especially with the great diversity of models as accommodated in the proposed protocol, is very much dependent on the details of the implementation. Protocols that propose averaging input values from a common source for the different models and comparing common outputs (a much oversimplified description of the approach used in the manuscript) are intuitive and appear viable. It is when the protocol is actually attempted to be used with actual models and specific scenarios that implementation issues and other details emerge. Thus, the proposed protocol sounds good in theory, but I would suggest that the existing text can be shortened and a new section that demonstrates that the protocol can be effectively implemented be added to the manuscript.

It seems such results for a demonstration example are already available based on the text in the manuscript. One does not need to add an example with all of the models under many scenarios. A demonstration that uses 3-5 models (strategically selected) that cover the major model types (species-distribution, trophodynamic, size or age-based, composite) and spatial scales (global, regional) for 2 scenarios would be sufficient to show the reader that the protocol can actually be implemented and useful comparative results obtained. The actual results of the models are less important than showing the models can be usefully compared using the protocol.

Inclusion of a demonstration will move the manuscript from a proposed protocol (albeit well thought out and presented) to a protocol whose results and approach would much more likely be used by others. I encourage the authors to do this because a protocol,

like the one proposed, is desperately needed to ensure the information generated from models is robust and effectively conveyed among research groups and to managers.

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