

## ***Interactive comment on* “Physical processes mediating climate change impacts on regional sea ecosystems” by J. Holt et al.**

**J. Holt et al.**

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We thank you for your consideration of this paper. These are our responses to the specific issues you raise. We provide a detailed plan to revise the paper in the Authors Response.

*Section 2 is a kind of review of different mechanisms important for the areas in question. This is interesting reading, but seems only loosely motivated from the rest. Section 3 gives some example results of the models, with reference to a MEECE report for more details. While there are three models and 6 areas available, the focus is mainly on one of them (POLCOMSERSEM).*

*As the manuscript appears it seems like three independent parts put together. There*

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*is a lack of focus combining the review in Section 2 to the results in Section 3.*

As this reviewer correctly points out section 3 does not successfully support section 2. The primary point of this paper is to better identify and understand some potential bio-physical interaction mechanisms linking climate change and marine ecosystems. The way to address this short coming, while remaining true to this point, is to better use the model results to support (or question), the conceptual framework developed in section 2. Hence, to address the issue of the paper being somewhat disjointed (as identified by this review), we aim to develop supporting, and where possible quantitative, evidence that processes identified in section 2 are at play in these simulations. This is described further in our plan for revision. For processes where this is not possible, this will be dropped from this section and included briefly in the discussion as recommendations for future work.

*If the discussion in Section 4 are to be interesting more experiments are to be done discussing the different approaches. Since most of the paper is only focusing on one model, I also question why the other two are included.*

These issues are addressed in our response to Reviewer 1.

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Interactive comment on Biogeosciences Discuss., 11, 1909, 2014.

**BGD**

11, C1394–C1395, 2014

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