

Interactive comment on “Drivers of trophic amplification of ocean productivity trends in a changing climate” by C. A. Stock et al.

Anonymous Referee #1

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General comments: The manuscript (bg-2014-325) addresses a key issue to anticipate the impacts of global warming in the ocean ecosystem and fish stocks: the potential causes and patterns of trophic amplification in lower trophic levels under climate change using a global coupled model of the ocean biogeochemical system. It is also well written and structured. I have some minor comments: 1) the study uses a single model, while consensus in climate change projections is to use an ensemble of models (eg. Steinacher et al., 2010 *Biogeosciences* 7:979–1005.; and Bopp et al., 2013 *Biogeosciences* 10:6225–6245). I suggest including in the discussion this limitation and that findings are subjected to be confirmed by using other models. 2) The way to assess negative and positive amplification should be explicitly explained in methods. You can find also proportional effects, which threshold have you used? Amplification is bottom up control, what about top-down control? 1) The author refers to Dunne et al.

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2012 for a comprehensive evaluation of the climate model ESM2M. I suggest providing a brief model evaluation description.

Specific comments: Line 1 Page 11340. The following sentence is vague “Planktonic food web properties exhibit temporal trends and spatial patterns suggestive of a role in the trophic amplification apparent in Fig. 3.”

Interactive comment on *Biogeosciences Discuss.*, 11, 11331, 2014.