Biogeosciences Discuss.,
https://doi.org/10.5194/bg-2020-229-AC1, 2020

Biogeosciences
Discussions

Interactive comment on "Global climate response to idealized deforestation in CMIP6 models" *by* Lena Boysen et al.

Lena Boysen et al.

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Received and published: 10 August 2020

Dear referee,

thank you for your valuable feedback to our manuscript. In the following I will address your points and how we want to improve the manuscript.

General comments: We understand that it can sometimes be difficult to follow the model and variable analyses throughout the text. We will improve the readability further by better streamlining models according to their behavior with regard to observed phenomena and appreciate your suggestion. The reason behind the current structure is that for the particular result sections under 3.2. we had much more complex analyses to present than under 3.3.. The biogeophysical analysis required us to evaluate

many variables for different concepts e.g. surface energy balance decomposition, time of emergence or responses normalized by tree fraction. Analyzing the 'main variables of interest' such as near surface temperature or precipitation, we naturally had to draw the link to many other variables. This is easier achieved when analyzing carbon variables which are less numerous in the LUMIP protocol. We therefore structured around phenomena across models instead of the whole picture for each model separately as done in the carbon section. Apart from this pragmatic reason, we found the structuring around phenomena for biogeophysical effects helpful, because it better reveals common features across models, which in fact quite often exist for the climatic impacts.

We will add a paragraph on how results change if only the protocol-conform models are included.

We like to keep MIROC in the analyses. We account for the divergence to the protocol when discussing the results. Such weak responses are still an interesting model feature because forest regrowth does not happen instantly either.

Thanks for your close observations regarding the text readability and clarifications, linking figures and typos. We will work through them during the revision process.

With kind regards, Lena Boysen & co-authors

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