

Interactive comment on “Critical impacts of global warming on land ecosystems” by S. Ostberg et al.

Anonymous Referee #2

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Ostberg et al. offers an interesting analysis of the global warming impact on terrestrial ecosystems using emission climate scenarios and a dynamic vegetation model LPJmL. A key advance is the use of a global change metric that simultaneously consider biogeochemical and vegetation structural changes. It appears that the authors have given this method a lot of thought and tests. The results will be useful in that they provide clear and concise pictures of ecosystem changes and shifts. The colors remind reader 'dangerous climate change' maps of IPCC, and they clearly have the potential to serve such purpose.

A major question is how this new metric connects with other traditional indexes. Is it possible to reduce this metric to the Holdridge Diagram, or the Koppen-Geiger climate classification under certain assumptions? What are you losing by sacrificing complexity to come to a single number for ecosystem change? If you can demonstrate this, it will support your new metric. Another question is that how does your result depend on

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the specific model (LPJmL)? On a related note, if you can provide the code to the community in user-friendly formats, so others can test it, it will then help to establish its usefulness.

Overall, I think this paper provides valuable information and I would recommend the publication if the above questions are addressed satisfactorily.

Interactive comment on Earth Syst. Dynam. Discuss., 4, 541, 2013.