

December 23<sup>rd</sup>, 2025

egosphere-2025-2163

Authors' response to minor revision (in bold).

The authors have made several further revisions to the manuscript, which has helped clarify a number of issues raised in the last review. In particular, the authors have made the hypothetical nature of a Holocene to Hothouse runaway scenario clearer, as well as the model-dependence of the results. Additionally, further details and linkages across conceptual foundations of PBs, TPs, and resilience have been added, including a useful new conceptual figure (although I think the authors should consider including both the new and original Figure 1s for showing both the conceptual background and the interim, resilience-free results, which I found useful for comparison with Figure 2), providing a clearer background for general readers as to what Earth system resilience entails and how the model replicates that, as well as most of the minor comments.

**We thank the reviewer for the positive feedback and appreciate to see that our changes (including the new figure) have made the paper clearer.**

- A few things were stated as addressed but don't appear to actually be in the text (e.g. adding "in this model" to previous draft L249), or are in a different place & context than suggested (e.g. responses added re. previous L222-224 & 226-228).

**"In this model" has now been inserted (L. 229)**

- I'd also question there being any signs of large-scale tipping yet for Amazon on L309 (carbon source transition in some parts yes, but not self-sustaining dieback yet).

**Fair point. This sentence has now been changed to (L. 308):**

***"Given that tipping in some major ecosystems constituting the Earth System is already being observed, such as in Pacific coral reef systems, and that other tipping elements including the Amazon rainforest and the polar ice sheets may be approaching the threshold of self-reinforcing tipping dynamics (Lenton et al. 2025), a critical question arises as to whether irreversible damage to the Earth System has already occurred, or is imminent."***

Lenton et al. 2025 has been added to the reference list.

Overall though, the latest revisions have sufficiently addressed my concerns and improved the manuscript for it to be published with only minor further tweaks.

**We thank the reviewer for the commitment throughout the entire review process, which has greatly contributed to improve the quality of the paper!**

Best wishes,

Magnus Nyström and Orfeu Bertolami