

Reviewer response letter

We thank the editor and reviewer's for their valuable feedback and constructive suggestions that have helped us further improve the clarity, consistency, and accessibility of our manuscript. In this revised version, we have implemented the following major updates:

1. Colour accessibility improvements (Figures 6 and 7):
In response to the editor's comment, we revised the colour schemes in Figures 6 and 7 to ensure they are fully accessible for readers with colour vision deficiencies
2. Minor textual and figure adjustments:
Following the reviewer's detailed feedback, we have refined the manuscript by ensuring terminology consistency, added new figures (Figure A4) and improving the coherence of figure captions. These revisions collectively enhance the clarity, precision, and presentation of our findings.

Below, we provide specific point-by-point responses outlining how each comment has been addressed.

General comments

Editor's comment

Please ensure that the colour schemes used in your maps and charts allow readers with colour vision deficiencies to correctly interpret your findings. Please check your figures using the Coblis – Color Blindness Simulator (<https://www.color-blindness.com/coblis-color-blindness-simulator/>) and revise the colour schemes accordingly with the next file upload request. -> Fig. 6, 7

Response: We thank the Editor for this important reminder. Figures 6 (Line 410-411) and 7 (Line 425-427) have been fully revised using a color-blind friendly palette to ensure accessibility for readers with color vision deficiencies. Line styles and contrasts have also been adjusted to improve clarity.

Reviewer 2

General comment

I appreciate that the authors have adequately addressed all previous comments. From my perspective, no major issues remain, only a few minor corrections are needed to further improve the clarity and consistency of the manuscript. I would also like to thank the Editor for managing the review process of this manuscript efficiently and professionally. Please refer to the minor comments listed below for final adjustments.

Response: We appreciate the positive feedback and for acknowledging our revisions. We also appreciate the editor's management of the review process. We have carefully addressed all the minor comments below to further enhance the clarity and consistency of the manuscript.

Minor Comments

L256-261 In my opinion, it is not necessary to include these sentences, as they describe basic and well-known technical procedures especially for scientific audience. Therefore, I recommend deleting the following lines "These time periods were chosen ..."

Response: We thank the reviewer's suggestion. The indicated sentences have been removed from the revised manuscript to improve conciseness and avoid redundancy of well-known information. [Lines 256–260]

L710 The term “GPP Index” is still present in the manuscript. Please revise it to maintain consistency with the agreed terminology, “Monthly Ecosystem Productivity Index (MEPI)”, throughout the entire text.

Response: Thank you for noticing this oversight. We have carefully reviewed the entire manuscript and replaced all remaining instances of “GPP Index” with “*Monthly Ecosystem Productivity Index (MEPI)*” to ensure consistent terminology throughout the text and figures. [Line 710]

L719 (See L370, previous review round). Since the global burned area comparison does not exhibit a strong correlation, and Figure 4 already presents a comparison between predicted and observed burned area (GFED5) using GFED regional boundaries, I suggest maintaining consistency in the analysis. Specifically, please revise Figure A4 by changing it from an interannual global comparison to an interannual comparison by GFED regional boundaries, to better complement and strengthen the results shown in Figure 4. Accordingly, Figure A4 about “Interannual comparison by GFED regional boundaries”, and Figure B5 as “Seasonal Comparison by GFED5 Regional Boundaries” for clarity and coherence.

Response: We appreciate the constructive suggestion. Following the recommendation, Figure A4 caption has been revised to “*Scatter plots illustrating interannual comparison by GFED regional boundaries between observed burnt area fraction (GFED5) and predicted burnt area fraction for the period between 2002 and 2018*”, and new figures for different GFED regions were added (see Line 720-728). Likewise, Figure B5 caption has been updated and renamed as “*Shows the seasonal comparison by GFED5 regional boundaries between observed burnt area (in red), predicted burnt (in blue), fire weather index (in green)*” to improve clarity. [Lines 723–725]