

Response to Review 1 : A global fuel characteristic model and dataset for wildfire prediction

The authors would like to thank both reviews for their detailed feedback highlighting several key points for improvement on the manuscript. The suggested changes have been made and we believe they improve the quality of the manuscript. Below is a point-by-point response to each comment, including the changes made within the manuscript.

This work presents a model that is capable of predicting fuel characteristics. Fuel load and moisture is divided into live and dead fuels, and also includes wood and foliage components. One of the main outcomes of this work is a dataset of these variables on a daily scale and at ~9 kilometer spatial resolution. Overall, I found this work to be original and a much-needed contribution to the science.

However, I believe the manuscript may be improved if the following changes are made:

Lines 130-140: Didn't understand what SW_live represented fully. May you please elaborate on what "the remaining component of live wood" means?

This was not very clear, sorry about that; we have amended the text to correct this. TW_live represents seasonal wood mass (branches/twigs) that comes with seasonal plant growth and is typically converted to dead wood in the dormant season. SW_live represents the long-lived wood component that is not seasonally dependent (trunk).

Line 156: Should this be +4.6 Pg yr⁻¹ based on the numbers presented?

This was an issue with the rounding, the value is correct when the values are rounded to 1 decimal place. We also forgot to include the table with all this data, this has been added now!

Section 2.2: Is it possible to add a table that summarizes everything outlined here? While it is well-written, I feel that the density of information is quite high and may benefit through using a table to organize all the numbers and where they come from.

Great idea, this has been included in the Supplementary Material.

Figure 6: Great figure! I would suggest placing the text at the top of each panel so the text is not in the way of the figure.

Done

Figure 8: Same comment as Figure 6 (text is a bit hard to read in the bottom four panels).

Done

Figure 9: Same comment as Figure 6 (text is a bit hard to read in the bottom two panels).

Done

Figure 10: Same comment as Figure 6.

Done

Figure 11: Same comment as Figure 6.

Done

Figure 12: Would it be possible to increase the font size of the names and numbers along the x-axis and y-axis? Also for the legends? I found these figure panels a bit difficult to read due to small size.

Done

Figure 13: Same comment as Figure 12.

I have also added some of my edits/comments as a track changes document in the supplement file.

Thank you, these changes have been made.

After these changes are made, I believe this manuscript may be accepted for publication.