

Responses to Reviewers

Comment: The title page of *.pdf. manuscript file must include the full institutional addresses of all authors. However, country name is missing from the affiliations. Please, add it for the next revision.

Response: We have added the country names.

Comment: Regarding your figure #8: 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.

Response: We have revised the color schemes in the figure.

Comment: Regarding your figure #1: with the next revision, please add the copyright icon as follows: "Image: © Google Earth" to the caption of this figure.

Response: We have added it.

Comment: Line 489 : provide the links for Inciweb or cite it as a reference.

Response: Unfortunately, the Inciweb links have expired. Therefore, we have inserted links from alternate sources that provide the same information. Please see the following:

Lines 486-488: *"The 100% containment date for the fire was reported to be August 25, 2019, and it burned an estimated 44,446 Acres (<https://data.statesmanjournal.com/fires/incident/6493/williams-flats-fire/>)"*

Lines 493-495: *"The Horsefly fire started on August 5, 2019, 15 miles east of Lincoln in the Lewis and Clark County (Montana) and burned 1274 acres in the first 24 hours (<https://data.redding.com/fires/incident/6502/horsefly-fire/>)."*

Lines 495-497: *"The fire was reported to have burned 1350 acres till August 23, 2019, with zero growth reported in the prior week (<https://data.redding.com/fires/incident/6502/horsefly-fire/>)."*

Also, the statement (Line 559-561 in the revised submission): *"The Williams Flats fire increased from 10,438 560 acres to 40,000 acres during August 3 -8 (source: Inciweb August 4 and August 9, 9:00 am update) which is reflected in the increase in BC and OC emissions."* has been changed

to “*The Williams Flats fire increased significantly in size during August 3 -8 (Ye et al. 2021)*” due to the Inciweb update link not being available (Lines 549-550 in the current version).

Comment: Figure 10: the labels are too small to be identified clearly. Other figures that have similar problems also need to be revised for clarity.

Response: We have reviewed the figures in the manuscript. We have increased the label size in all the figures and modified the figure captions (Figure 4 and Figure 9) for clarity. We have also re-verified the figure references in the text. There were a few cases where the figure references had to be updated so that they are pointing to the correct figure in the panels.

Lines 650, 652, 653, 665: References changed to Figure 7 instead of Figure 4

Line 841: Figure (10 (a), (b)) to Figure (10 (a), (d))

Line 865: Figure (10 (d), (e)) to Figure (10(b), (e))

Line 887: Figure 10 ((g), (h)) to Figure 10 ((c), (f))

Minor corrections:

Line 136: Corrected the section number: “described in Section 3” to “described in Section 2”

Line 471: Corrected the sentence “*Ye et al. 2021 also reported the current inability of models to represent the simulate pyro-Cb events*” to “*Ye et al. 2021 also reported the current inability of models to simulate pyro-Cb events current inability of models to simulate pyro-Cb events*”