

Interactive comment on “Contiguous United States wildland fire emission estimates during 2003–2015” by Shawn P. Urbanski et al.

Anonymous Referee #1

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General Comments

The manuscript describes calculating the emissions for the contiguous US (CONUS) for 2003-2015. The authors rigorously describe a methodology and present the calculation

Having read through this manuscript, I am satisfied that it is complete and thorough and from my perspective, is acceptable in its current form. With that said, it is a very dense paper with a lot of data management and handling. Some discussions I fully grasped and were confident they used appropriate methods (e.g. fire areas and dates), while others sections (e.g. fuel loads) appear adequately handled but I cannot say for sure.

Specific Comments

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In the introduction, the authors describe the various emissions inventories for the US (page 1, third paragraph). They may wish to mention

Larkin, N. K., Raffuse, S. M., & Strand, T. M. (2014). Wildland fire emissions, carbon, and climate: US emissions inventories. *Forest Ecology and Management*, 317, 61-69.

Also, the authors may wish to mention the work by Canadians, which follows a similar methodology to that presented in this manuscript

De Groot, W.J., Landry, R., Kurz, W.A., Anderson, K.R., Englefield, P., Fraser, R.H., Hall, R.J., Banfield, E., Raymond, D.A., Decker, V. and Lynham, T.J., 2007. Estimating direct carbon emissions from Canadian wildland fires¹. *International Journal of Wildland Fire*, 16(5), pp.593-606.

Anderson, K., Simpson, B., Hall, R.J., Englefield, P., Gartrell, M. and Metsaranta, J.M., 2015. Integrating forest fuels and land cover data for improved estimation of fuel consumption and carbon emissions from boreal fires. *International Journal of Wildland Fire*, 24(5), pp.665-679.

On page 2, line 26, when the authors state “each burned grid cell is burned in its entirety”, I assume the authors are referring to spatial extent (ha) and not fuel load (tonnes).

Under 2.2 Land cover, are there not several US land cover maps (NFDRS, Hardy, LANDFIRE, Ok-Wen, FCCS), that produce different fuel loads? The authors may wish to reference these and justify their choice.

Under 2.3.3 Unburned and lightly burned grid cells, the authors describe the 6 BSEV categories inside the fire polygon. I am not clear on how a category of increasing green would be mapped inside a fire polygon. Presumably this would have been described in the referenced paper (Eidenshink et al., 2007) but it would be helpful to briefly describe the process (perhaps in 2.3.1).

Technical Corrections None

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