

Interactive comment on “A classification scheme to determine wildfires from the satellite record in the cool grasslands of southern Canada: considerations for fire occurrence modelling and warning criteria” by Dan K. Thompson and Kimberly Morrison

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Overall, I think this paper is trying to advance natural hazards - specifically fire science - in using remote sensing and data science to attribute and predict wildland vs. human-caused fire. I would recommend the authors refine the terminology. I look forward to reading a revised version.

General comments: 1. Landsat 8 is not an acronym and should not be capitalised.

2. Referring to all non-wildland fires as agricultural fires becomes confusing later on, especially when trying to explain how the curing data set was included in the regression tree [much of the agricultural landscape was exempted from the curing assessment because < 40% open fuels].

The term 'responsible use of fire' is used to encompass a large amount of human-caused burning. Is this a legal or statute-based definition? This is not a common term in fire science. Also, burning of crop residues is not necessarily considered an appropriate thing for this ecosystem. The Province of Alberta has shifted to no-burn management of crop residues, treating burning as a last resort: <https://open.alberta.ca/dataset/dd5ca66a-09f6-4aeb-8bb9-21babad92780/resource/3b67de8e-7377-406c-94d7-25f3efae710/download/mar-2017-unharvested-crops-fs.pdf>

Why was 2002 (Terra only) MODIS active fire product included when the combined (Aqua and Terra) MODIS active fire product is available starting in 2003? How were these differences in number of detections accounted for when determining the clusters? Was the 2002 Terra-only MODIS active fire useful?

Paragraph 265: The thesis statement of this paragraph may need to be re-written "The thresholds at which agricultural fire detections are overtaken by wildfires occurs at fire intensity thresholds that correspond to the limits of ground-based wildfire suppression." Is this a result or a qualitative observation or an assumption that fits into the description of the CFFDRS is the following sentence? Please consider re-phrasing this paragraph. I do not understand how this fits into the study or the findings. Perhaps, again, it is an issue with referring to grass fires as agricultural fires. This reads as the CFFDRS for native grasslands. Is that correct?

Is the last paragraph in the discussion section implying increasing agricultural fires with climate change? Did this study find increasing agricultural fires? And if so, in grasslands or croplands?

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