

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC1
<https://doi.org/10.5194/nhess-2021-143-RC1>, 2021
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Comment on nhess-2021-143

Anonymous Referee #1

Referee comment on "Past and future trends in fire weather for the UK" by Matthew C. Perry et al., Nat. Hazards Earth Syst. Sci. Discuss.,
<https://doi.org/10.5194/nhess-2021-143-RC1>, 2021

Major comments

In my view, there is currently one major flaw in the authors' work. This is relevant to the absence of any attempt to relate changes seen/projected in fire weather to changes in weather. For instance, what is driving the deterioration of fire weather conditions in the UK? Is it the wind? Is it temperature? I strongly advise the authors to try to identify the drivers of the increases seen in the indices. This would improve significantly the added-value of their work. For instance, they could use statistical methods, such as GAMs or neural networks, to attribute changes seen in the indices to changes in the basic meteorological variables.

Minor comments

Sect. 1.2: I think that the title of this section is misleading. By reading "Causes of wildfire", I expected to read more on ignition sources (e.g., arson, lightning). Instead, this section focuses on what we often call the fire environment (fuels, weather, topography) and how it influences wildfire activity. Consider revising the title (e.g., "Drivers of wildfire activity"?)

L65-69: This paragraph does not really fit in this place. I would suggest adding a new section describing the concept of fire danger in more detail. I believe this is necessary, since this study focuses on fire danger.

L155-156: A reference and some notes on how the thresholds were adapted for the UK would be highly welcome.

L155-166: I believe that some references would enhance the manuscript, along with maybe more details on how the Canadian FWI system was adapted to the pyric environment of the UK. Simply saying, for example, that FFMC is a good indicator for the UK in spring does not really say much to the interested reader. More information would be appreciated.

Sect. 2.3: It is not really clear if FWI was computed from the ERA5 data or the authors employed the readily available ERA5-based FWI dataset. If the first option was followed, why the use of the readily-available ERA5 FWI dataset was excluded?

Figures 1-3: Burnt area should be reported in ha.

Technical corrections

L132: "was calculated".
L268: Revise the sentence.