

Interactive comment on “Forest fire risk assessment in Sweden using climate model data: bias correction and future changes” by W. Yang et al.

Anonymous Referee #3

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“Forest fire risk assessment in Sweden using climate model data: bias correction and future changes” by W. Yang et al. is a good paper, clearly constructed and giving full details for a better bias correction in the weather inputs of the national FWI assessment system. References are rich, pertinent and updated, so no objection from the point of view of exposed methodology.

I have in any case some marginal comments to express:

1. Sweden is a member State in the UE28 since 1995 so its territory is included in EFFIS, the European Forest Fire Information System (EFFIS), which daily provides

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values of FWI for EU28, European non member States and MENA countries of Northern Africa, i.e. for 42 countries. Its performances are considered very positively by all countries and help in more efficient activity of prevention and suppression .

I am therefore warning why the authors do not mention EFFIS results nor make a comparison with them, whereas they speak of an operational use of FWI in Sweden by the SMHI since 1988; in addition their thresholds for the 6 classes of FWI (which see a value of extreme for a FWI > 28) are very different from those adopted at EU level by EFFIS and also from those firstly adopted by FWI in Canada. How can this difference be explained? Why not commenting differences, if any, among the results of the two different procedures?

2. Their explanation of FWI is interesting but excessive: it is a well known item, covering hundreds of titles in specialized literature, so it seems useless to explain its components and the algorithms for their assessment , which cover the whole section 2.1; also the image of FWI is useless for the same reason.

3. P.839, L. 1” Forest fire activity is strongly affected by two factors: weather conditions and availability of fuels” but why do fire occur? where are they concentrated and, above all, are their origin mainly human caused or natural? Is fuel availability influenced by human activity? Do fires occur in forests, in shrub land? Do they exhibit specific characters of concentration, seasonality? Sweden is not among the countries with relevant occurrence of fires but the results of paper indirectly propose a markedly seasonal surge of events without giving information about it, just mentioning a recent large fire of which no size parameter is expressed. Some details could be of interest, also given the changing scenario of wildfire distribution as a consequence of climate change in northern latitudes

4. Nothing is said about the origin of forest fires in the country and text itself looks rather abstract and neutral, as though fire occurrence is natural caused, which appears as the natural conclusion inferred from the read, indirectly confirmed by the statement in point

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3. A short explanation of such facet could improve the paper and better capitalize its interest, since the procedures proposed and adopted by the authors could certainly be introduced in EFFIS evaluation and further improve its performances.

Final consideration: the paper is interesting and well written; I suggest to the authors to make their country better known under the aspect of forest fire occurrence, in which it is not among the most important participants, and more clearly express the role of national system of FWI assessment (alternative or opposite to EFFIS?)

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