

Interactive comment on “Temporal variations and change of forest fire danger in Europe in 1960–2012” by A. Venäläinen et al.

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Dear Dr J. Martínez-Fernández

Firstly we would like to thank you for commenting the manuscript ‘Temporal variations and change of forest fire danger in Europe in 1960–2012’

1) Why do you use only burned area and not “also” fire ignition or fire occurrence expressed as number of fires, number of fires larger than 100 ha or 500 ha, etc? Have you tried to check how the relationship of FWI with the number of fires is? In Discussion I like how you present examples about the relation between weather and area burned, but I miss also some reference about the relation to fire occurrence (over the total number or over the number of large fires)

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Reply: Analysing more expressions of various fire statistics (including fire occurrence expressed by the number of fires or the classification of fires in size classes) could provide further insights in our data. While acknowledging its significance, we decided to focus on area burned because this variable is the best one capturing the overall significance and potential impacts of fires. Additionally, the number of forest fires is more sensitive not only to fire weather or fire climate aggregates, but also to the various degrees in which forest service collect the data. A number of studies have shown that area burned is less sensitive to such artifacts.

2) Perhaps in material and methods could be included some short explanation about how the national burned area statistics in Greece and Spain are spatially georeferenced in fire reports (10x10 grids, provinces, municipalities: : :) and how burned areas are calculated or summarized into ERA grid cells (2.5_ or 1.5_) in order to allow correlation with FWI data

Reply: National burnt area statistics in Greece were not available in a format that would allow us to georeference them. Data included total sums of area burnt and number of fires at the national scale without information regarding their spatial occurrence (region, prefecture etc). Thus, it was the FWI data that were aggregated (as mean values of the grid cells intersecting with Greece) to the country level (Greece). By contrary, in Spain forest fires statistics are collected assigning each fire to a 10x10 km UTM grid. Anyhow, the data used in this study were whole aggregates of national statistics, as in the case of Greece. We agree with the reviewer that it would be interesting to make such correlations at different scales (sub-regions), having aggregated data at more detailed spatial reference for both the fire occurrence statistics and FWI, but that could be the focus of a different paper, with greater focus on regional and local issues than this paper more focussing on the larger regions of Europe.