



Performances of fire risk indices in a Mediterranean region

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Meteorological conditions greatly affect fire danger favoring both the development and spread of wildfires. Several non dimensional indices can be used for estimating the contribution of weather in determining fire risk. Although these indices were developed and calibrated in specific regions, they are usually utilized in other regions without any preliminary evaluation study. In this work, a climatic time series (1980-2006) from Sardinia, Italy, was used to calculate the most common fire risk indices (Canadian FWI, Australian McArthur, Portuguese PORT, American KBDI, Italian IMPI) and a newly developed index (IFI-Ichnusa Fire Index) and their performances were determined. Results showed a large time variability in the occurrence of fire events during the study period, with the number and the burned surface areas strongly correlated with meteorological conditions. In general, a good correlation between the values of all indices and fire event occurrence was observed. However, the best performances were obtained using the IFI index, which includes a specific code developed taking into account fuel characteristics typical of Mediterranean vegetation.