



Fire weather in the last five years fire seasons in Portugal

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Portugal loses annually a vast forested area due to fires that occur mainly in the warm and dry summer season. It is known that this is a phenomenon mainly related to the climatic and meteorological conditions and so it can happen in any time of year, depending on the occurrence of meteorological conditions favourable to fires.

Usually those favourable meteorological conditions are observed between May and October, however in some years they can occur in other time of year.

Uncommon situations of occurrence of forest fires that occur in some years are generally associated to unusual climatic phenomena such as above average rainfall, heat wave episodes or severe drought.

Based on climatic and meteorological data from the past decade and on fire occurrence data for the same period the establishment of a relationship between both sets of parameters on a territorial basis will be attempted in order to assess the relevance of weather conditions on the number of fire ignitions and on burned area. The components of the Canadian Fire Danger System that are extensively used in Portugal shall be applied as well as other climatic parameters to characterize weather conditions for the study period (2003 – 2007).

The years of 2003 and 2005 were the two worst in the existing record of fire history in Portugal. Besides some structural factors, related to the overall management of the fire problem by the existing agencies, climatic and meteorological conditions played

a relevant role on the extension and intensity of the forest fires that occurred in the Country during these years.

These two years are of particular interest to study not only because they were the worst in terms of burned area but also because each one of them was associated to uncommon climatic phenomena namely heat wave episodes in 2003 and a severe drought in 2005. These factors affected some regions of the Country more than others and apparently this is strongly associated to fire occurrence in both years.

In 2003, 2004 and 2005 Portugal experienced 24 fires larger than 5000 ha while in the decade from 1993 to 2002 there were only 5 fires in the same class. All factors put in evidence the uncommon character of those 2 years showing that analysis of fire danger based only on past average conditions can be misleading, as natural conditions seem to be changing and having a larger variability.

The year of 2007 is of interest as well due to the fact that it registered a record low burned area in the decade. The Summer of 2007 was very wet, but on the contrary the months of October and November had below average rainfall and as a consequence a relatively high number of out of season fires were observed.