Regional variations in wildfire preference for land cover types in Portugal: implications for landscape management to minimize fire hazard.

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Abstract

Patterns of fire occurrence at landscape level were characterised using 5591 burned patches larger than 5 ha, corresponding to wildfires during the period 1990-1994, in Portugal. Using selection ratio functions to measure fire preference or avoidance for different land cover types in 12 regions of the country, it was found that shrublands were the more fire-prone land cover, whereas annual crops, permanent crops and agro-forestry systems were the more avoided by fire. In terms of forest management, conifer plantations were more susceptible to fire than eucalyptus, and broadleaved forests were the less fire-prone. There were regional variations in land cover susceptibility to fire, which could be explained by differences in climate, ignition patterns, management, and regional availability. A cluster analysis of regional variations in selection ratios for all land covers allowed the identification of three main geographical areas with similar fire selection patterns. These results can be used for planning landscape-scale fuel management in order to create landscapes with lower fire hazard.

Proposed for *oral presentation* in Thematic session 7 – "Efficiency in wildland fire management (prevention, preparedness, suppression) ".

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