



## **Analysis of the relationship between landscape heterogeneity and wildfires distribution: evidence of selective burning in Sardinia (Italy).**

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Understanding the spatial pattern of wildfires is a key issue for predicting fire occurrence and understanding the role of fire in landscape processes. This requires a good preliminary understanding of the landscape features that affect the wildfires spatial distribution. In this perspective the aim of this study is to quantify, at the landscape level, the fire occurrence patterns in Sardinia (Italy) during the period 2000–2004, in order to determine to what extent fires are selective regarding landscape patterns and to identify the landscape typologies where fire incidence is higher (preferred) or lower (avoided) than expected from a random null model.

The working hypothesis of this study is that the number of fires and the burned area are two fire pattern components independent of each other: fire number is generally connected with socioeconomic causes whereas fire size is largely controlled by fuel continuity. Therefore, in this study, we analyzed fire selectivity keeping both variables separate from each other.

In order to take into account both the cultural and the natural aspects of the landscape, we analyzed fire selectivity respect to two different territorial classification schemes of the study area: the CORINE land use map and the potential natural vegetation map.

The results obtained show that fire behaves selectively respect to the different landscape categories (land use types and potential vegetation units), with marked preference (or avoidance) in terms of both fires number and size. The information derived by this study contribute to fire risk assessment on the landscape scale, indicating that

the risk of wildfire is closely related to landscape structure and function.