



Multiscale characterization of spatial pattern over 1996-2006 wildland fire events in the Basilicata Region

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Information on the spatial pattern of forest fire locations is a key point in the study of the dynamics of fire disturbance. The growing availability of forest fire data archive with detailed information on individual fires (where, when, how fire occurs) provides valuable data source for investigating spatial/temporal pattern of fire occurrence. Many studies have found that fuel availability, characteristics (type, loading, moisture, and inflammability) and status (moisture content) along with topographical features (elevation, slope, and aspect) are prominent factors in shaping fire spatial patterns. Nevertheless, the effects of these factors on fire occurrences can vary among ecosystems and across spatial and temporal scale.

In this study we investigated the spatial patterns in fire occurrences in the Basilicata Region focusing on a multiscale characterization. Two important issues are addressed in this study: (1) how are the fire events distributed across different areas? (2) how are the fire events clustered across space?

Fire data were obtained from the Italian National Forestry Service. This national database is comprised of information contained in individual fire reports completed for every fire that occurs on public lands in the Italian peninsula. Complete data were only available for 1996–2006 at the time we accessed the database, which determined the years we analysed. The primary fire history variables that we reported were number of fires, area burned, and fire size (average size of individual fires).

Spatial point pattern (SPP) data analysis was used for modelling the spatial pattern of fire locations.