Geophysical Research Abstracts
Vol. 19, EGU2017-13324, 2017
EGU General Assembly 2017

Spatial and temporal selectivity patterns of fires in Attika, Greece from 1984 to 2015 delineated from Landsat time series satellite images

Zoi Stamos (1) and Nikos Koutsias (1,2)

(1) Department of Environmental and Natural Resources Management, University of Patras, G. Seferi 2, GR-30100 Agrinio Greece (zoistm91@gmail.com), (2) Community Ecology, WSL Swiss Federal Institute for Forest, Snow and Landscape Research, a Ramél 18, Cadenazzo, CH-6593, Switzerland nkoutsia@upatras.gr

The aim of this study is to assess spatial and temporalfire selectivity patterns in the region of Attica - Greece from 1984 to 2015. Our work is implemented in two distinct phases: the first consists of the accurate delineation of the fire perimeter using satellite remote sensing technology, and the second consists of the application of suitable GIS supported analyses to develop thematic layers that optimally summarised the spatial and temporal information of fire occurrence.
Fire perimeters of wildland fires occurred within the time window 1984-2015 were delineated from freely available Landsat images from USGS and ESA sources.More than three thousands satellite images were processed in order to extract fire perimeters and create maps of fire frequency and fire return interval. In total one thousand and one hundred twenty fire perimeters were recorded during this thirty years' period.
Fire perimeters within each year of fire occurrence were compared against the available to burn under complete random processes to identify selectivity patterns over (i) CORINE land use/land cover, (ii) fire frequency and (iii) time since last firemaps.
For example, non- irrigated arable lands, complex cultivation patterns and discontinuous urban fabrics are negative related with fires, while coniferous forests, sclerophyllous vegetation and transitional woodlands seem to be preferable by the fires. Additionally, it seems that fires prefer their old burnings (two and three times burned) and also places with different patterns of time since last fire depending on the time needed by the type of vegetation to recover and thus to re-burn.