



Assessing differences in phenology patterns between burned and non burned areas using MODIS and Landsat time series satellite images. A case study in Peloponnisos (Greece) and Sardinia (Italy)

Nikos Koutsias (1) and Sofia Bajocco (2)

(1) University of Patras, Department of Environmental and Natural Resources Management, Greece (nkoutsia@upatras.gr),

(2) Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria - Council for Agricultural Research and Economics, Unit Research of Agricultural Climatology and Meteorology, Rome, Italy

Vegetation phenology is an important element of vegetation characteristics that can be useful in vegetation monitoring especially when satellite remote sensing observations are used. In that sense temporal profiles extracted from spectral signal of time series satellite images can be used to characterize vegetation phenology and thus can be helpful for assessing, for example, phenology patterns between burned and non-burned areas. The aim of this study is to define phenological patterns for the fire ignition points in two Mediterranean study areas located in Italy (Sardinia) and Greece (Peloponnisos) and compare them with control points created after random sampling techniques restricted to certain buffer zones. Remotely sensed data from MODIS (2000-2015) and LANDSAT (1984-2015) satellites were acquired and processed to extract the temporal profiles of the spectral signal of fire ignition points and of control points. Apart of the use of the original spectral data, we used vegetation indices commonly found in vegetation studies as well as in burned area mapping studies. Different metrics linked to key phenological events have been derived and used to assess vegetation phenology in the fire-affected areas.