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Wildfires in Europe: The analysis of past and future trends within the European Forest Fire Information System

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Forest fires are an integral part of forest dynamics. They have been largely influential in shaping the forest landscape of Europe, especially in the Mediterranean region. Fire event data collected by the countries in the region date back to the 1980s, although longer time series, although less accurate, can be reconstructed on the basis of major events in the region.

At the European level, efforts of the countries and the European government to set up forest fire information systems were initiated in the early 1980s; these allowed the collection of base information on forest fires and the creation of what was referred to as common core database on forest fires. These data were mainly collected by the five EU Mediterranean countries, although interest on the analysis of forest fires was also expressed by central and northern European countries. Common core fire data included information on the time and duration of the fire, time for intervention, extent of the fire, and the presumed fire cause. The data were transferred to the European Commission Joint Research Centre in 1998, when the first steps for the establishment of the European Forest Fire Information System took place. Since then, the time series of fire statistics have been rebuilt for most European countries. The EFFIS network is currently made up of 26 countries, and the European Forest Fire database within the system contains nearly 2 million records provided by 21 of these countries.

In addition to the data collected by the European countries and included in the European Fire database, EFFIS produces, since the year 2000, information on forest fire danger and estimates of forest fire damages on the basis of meteorological data and satellite imagery, respectively. Through out the years, new modules on the estimation of forest fire emissions and post-fire soil erosion have been added to EFFIS in order to provide a holistic view of forest fire regimes and impacts in Europe.

This presentation describes the current status of the EFFIS and its on-going developments. It analyzes the trends of forest fire events stored in European Forest Fire database of EFFIS for the last 20 years, including the spatial and temporal distribution of fires at the country and European levels. Furthermore, current trends of forest fire danger and fire damage in terms of affected forest areas and post-fire effects (e.g.
emissions) are analyzed and compared to potential trends of these variables under foreseen climate change scenarios.