

European Forest Fire Information system (EFFIS) Rapid Damage Assessment: appraisal of burnt area maps in southern Europe using MODIS data (2003 to 2006)

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Abstract

The European Commission, Directorate General Joint Research Centre (DG-JRC) has established within its Institute for Environment and Sustainability (IES) the European Forest Fires Information System (EFFIS). A number of exceptionally large uncontrolled fires that occurred during 2003 and destroyed important parts of the land resources led to the development of the Rapid Damage Assessment (RDA) module within EFFIS. In this paper we present the different steps of the implementation of the RDA module that was built in order to map the extent of burned areas during the summer fire season. Burned areas of at least 50 ha were mapped from 2003 to 2006. The data used for the burned area mapping are both TERRA and AQUA MODIS images at 250 meters resolution, although the use of the 500 meters short-infrared bands is also foreseen. During 2003 only a selected number of images were used and the burned areas were visually classified. From 2004 to 2006 the system was improved in terms of image downloading and pre-processing, and a complete daily time series for most of Europe has been compiled since 2006. The results of the burned area mapping in southern Europe are presented and compared with official statistics from each analysed country (Portugal, Spain, France, Italy and Greece). Currently an alternative to the visual classification is being developed that will allow for a better and less user-dependent classification of the burned areas. This method is based on abrupt post-fire vegetation change detected from MODIS daily time series.

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