



WebGIS Platform Addressed to Forest Fire Management Methodologies

Nuno André Ramos-Simões (1), Helena Maria Neto Paixão (2), Fernando Miguel Granja Martins (3), Celestina Pedras (4), Rui Lança (5), Elisa Silva (6), António Jordán (7), Lorena Zavala (8), and Cristina Soares (9)

(1) Faculty of Science, University of Algarve, Faro, Portugal (nuno_simoes58@hotmail.com), (2) Institute of Engineering, University of Algarve, Faro, Portugal (hfernand@ualg.pt), (3) Institute of Engineering, University of Algarve, Faro, Portugal (fmmartin@ualg.pt), (4) Faculty of Science, University of Algarve, Faro, Portugal (cpedras@ualg.pt), (5) Institute of Engineering, University of Algarve, Faro, Portugal (rlanca@ualg.pt), (6) Institute of Engineering, University of Algarve, Faro, Portugal (esilva@ualg.pt), (7) MedSoil Research Group. Department Crystallography, Mineralogy and Agricultural Chemistry, University of Seville, Spain (ajordan@us.es), (8) MedSoil Research Group. Department Crystallography, Mineralogy and Agricultural Chemistry, University of Seville, Spain (lorena@us.es), (9) Faculty of Science, University of Algarve, Faro, Portugal (cmsoares@ualg.pt)

Forest fires are one of the natural disasters that causes more damages in nature, as well as high material costs, and sometimes, a significant losses in human lives. In summer season, when high temperatures are attained, fire may rapidly progress and destroy vast areas of forest and also rural and urban areas. The forest fires have effect on forest species, forest composition and structure, soil properties and soil capacity for nutrient retention. In order to minimize the negative impact of the forest fires in the environment, many studies have been developed, e.g. Jordán et al (2009), Cerdà & Jordán (2010), and Gonçalves & Vieira (2013). Nowadays, Remote Sensing (RS) and Geographic Information System (GIS) technologies are used as support tools in fire management decisions, namely during the fire, but also before and after.

This study presents the development of a user-friendly WebGIS dedicated to share data, maps and provide updated information on forest fire management for stakeholders in Iberia Peninsula. The WebGIS platform was developed with ArcGIS Online, ArcGIS for Desktop; HyperText Markup Language (HTML) and Javascript.

This platform has a database that includes spatial and alphanumeric information, such as: origin, burned areas, vegetation change over time, terrain natural slope, land use, soil erosion and fire related hazards. The same database contains also the following relevant information: water sources, forest tracks and traffic ways, lookout posts and urban areas.

The aim of this study is to provide the authorities with a tool to assess risk areas and manage more efficiently forest fire hazards, giving more support to their decisions and helping the populations when facing this kind of phenomena.