



## **Soil erosion in Mediterranean forests after wildfire: a global regional variant?**

R.A. Shakesby

Department of Geography, School of the Environment and Society, Swansea University, UK  
(r.a.shakesby@swansea.ac.uk/Fax: +44 1792 295955)

In a recent review of wildfire effects on hydrology and soil erosion, it was suggested (Shakesby and Doerr, 2006) that our view of post-fire erosion being typified by a large post-fire peak followed by a gradual reduction in the soil erosion rate until 'background' levels of soil loss are reached some years later had arisen from the North American research base, and specifically from the research base of the western USA. Whilst the considerable contribution of this US-based research was recognized, it was argued that improved future understanding might best be achieved by adopting a concept of locally and regionally distinctive post-fire responses at a global scale. This concept was subsequently explored for south-east Australian eucalypt forests (Shakesby *et al.*, 2007), where a distinctive post-fire soil erosion behaviour was attributed to a combination of unique erosion-limiting soil characteristics, post-fire faunal activity and the rapidity of post-fire vegetation recovery, on the one hand, and the climatic characteristics tending to result in extreme rainfall events not occurring during the relatively short post-fire 'window of disturbance', on the other. Consequently, following devastating wildfires in recent decades, post-fire erosion has been less than would be expected given the highly erodible nature of the soils. It was also briefly suggested that Mediterranean forests, and particularly plantations of highly flammable pine and eucalypt forests, characterized by a high fire frequency and often stony, thin, degraded soils, represented another region with a distinctive post-fire response. This suggestion, however, was not explored in any detail. This paper examines whether the distinctiveness of the response warrants regarding these Mediterranean forests as a global regional variant and how such a view may help in improving our understanding of

post-fire soil erosion behaviour.