



Ash depth and ash cover evolution after forest fire in Eastern Iberian Peninsula

Artemi Cerdà, Merche B. Bodí, and Félix Ángel González-Peñaloza

SEDER (Soil Erosion and Degradation Research Group), Department of Geography, University of Valencia, Valencia, Spain.
artemio.cerda@uv.es

After forest fire the hydrological and erosional behavior of the soils, slopes and watershed depends on the ash cover and ash depth. When a layer of thick ash covers the soil a reduction on the runoff rates and soil loss is expected (Cerdà and Doerr, 2007). Also the wettability of the ash is a key factor already studied (Bodí et al., 2011). Although the ash cover and depth is a key factor on the post-fire ecosystem evolution, very little research was done in this topic.

A survey of the ash cover was done in the Bixquert and Serra forest fire in 2004 and 2005. The survey showed the changes in the ash cover and depth from the day of the fire to two years later. In both research study sites the ash evolution was contrasted and controlled by the rainfall intensities and volumes. In Serra, the intense thunderstorms of few weeks after the fire triggered a fast removal of the ash, meanwhile in Bixquert the ash last for longer due to the low intensity rainfall events.

The effect of ash on the post-fire evolution is related to the ash behavior, as when ash is lost nutrients are lost and erosion is enhanced due to the bare surfaces.

Key words: Ash, Depth, Cover, Fire, Spain

Literature

Bodí, M.B., Mataix-Solera, J., Doerr, S.H. & Cerdà, A. 2011. The wettability of ash from burned vegetation and its relationship to Mediterranean plant species type, burn severity and total organic carbon content. *Geoderma*, 160, 599–607

Cerdà, A. & Doerr, S.H. 2008. The effect of ash and needle cover on surface runoff and erosion in the immediate post-fire period. *Catena*, 74, 256- 263. doi:10.1016/S0341-8162(02)00027-9