



Superficial soils horizons changes after fire in sub-Mediterranean ecosystems. A mid-term approach

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The objective of this contribution is to analyse differences, at mid-term, between burned and non-burned soils associated with sub-Mediterranean plant communities. The analysis was carried out in 24 test areas located in areas burned between 1985 and 1986 in a sector of the Pre-Pyrenean range (1000 km²), in the north of Huesca province (Aragón, Spain). The climate can be defined as a sub-Mediterranean type with different levels of continental influence. The mean annual rainfall ranges from 750 to 1000 mm and has an equinoctial rainfall pattern. The mean annual temperature ranges from 10° C to 12° C, with warm summers and high risk of freezing in the winter. Two kinds of plant communities were considered: (1) woodlands dominated by *Pinus sylvestris*, and (2) shrublands constituted by *Buxus sempervirens* with *Echinopartum horridum*. From a methodological point of view, different soil parameters such as thickness of the organic horizon, content of organic matter, pH, soil aggregates size, carbonates, texture and structure of the horizon-A, were registered by means of a paired sampled design (burned and non-burned soils). Soils samples were collected close to the border (radius ranging from 75 to 100 cm) of non-burned and burned trees or shrubs. T-student test was applied to find statistically significant differences between burned and non-burned samples. In addition, vegetation inventories were performed in order to test post-fire vegetation recovery, specially quantifying vertical layers distribution. Generally speaking, it can be concluded that, at mid-term, effects of fire on sub-Mediterranean plant communities have been deaden due to the rapid vegetation recovery. However, remaining degradation signs are still observed. The thickness of the organic horizon has been reduced in burned areas, especially in *Pinus sylvestris* communities. Less significant decreases have been observed regarding the content of organic matter, soil aggregates size and structure. There have not

been changes in remaining soil parameters.

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