



Short term effects on some soil variables after a prescribed fire. The Montgrí Massif case study.

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Fire is a natural agent of the Mediterranean ecosystem, which - when used in a controlled manner - can as well be an effective tool for managing the vegetal fuels present in forests. The procedure for carrying out this management is based on a planned prescribed fire, so that the fire remains within the limits of the capacities of fire extinction and allows reaching previously fixed and assessed effects. This task is carried out by the units specialised in prescribed fires, integrated in Catalonia's fire department. The GRAM's main aim is to measure the changes which occur in the most important soil variables (i.e. pH, Electrical Conductivity, Organic Matter, Calcium, Magnesium, Potassium and Sodium) and their effects on the ecosystem. The 42 samples, for the study, were taken from a plot located in the Montgrí massif (NorthEast Iberian Peninsula), and were analysed before, just after and one year after the controlled burn. During the burning, the external fire temperatures were measured with a laser thermometer. The average values obtained for each soil variables were, pre- fire, post-fire and 1 year later: pH = 7.03  7.08  7.25; EC = 125.98 μ S/cm  198.52 μ S/cm  104.67 μ S/cm; OM = 14.74 %  17.19 %  13.22%; Ca²⁺ = 5225 ppm  4056 ppm  5056 ppm; Mg²⁺ = 361 ppm  281 ppm  309 ppm; K⁺ = 457 ppm  393 ppm  379 ppm; Na⁺ = 152 ppm  112 ppm  154 ppm. An increase of pH, conductivity and O.M. can thus be observed through the post-fire samples and a decrease in the cations values. Samples taken one year after fire present a decrease in the electrical conductivity and the organic matter and a recovery of all the cations with the exception of the K⁺. Otherwise, the pH presents a positive increase.

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