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## Effects of prescribed burning on soil fertility and carbon dynamics in pre-littoral Mediterranean mountain pastures

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Prescribed burning is a management tool used in the last years to prevent the invasion of woody vegetation in pastureland, decreasing the risk of extensive wildfires in vulnerable areas. Nevertheless, the effect of this practice in the soil is not yet fully understood, and more information is needed to ameliorate management practices. In order to understand how prescribed fire affect soil fertility, and the carbon (C) and nitrogen (N) cycles in pastures invaded by shrubs in Mediterranean areas, we carried out an experiment in Montseny, an acidic pre-littoral mountain range northern Barcelona (NE Iberian Peninsula). This area has experienced a decrease in traditional sheep stocks and therefore pastures endure strong shrub encroachment. We wanted to know: 1) what are the effects of prescribed burning on soil fertility in acidic Mediterranean pastures? and 2) are there legacy effects of the previous vegetation patches on the soil C and N cycles after prescribed burning? To answer those questions, we sampled soils before and after prescribed burning of a pasture heavily invaded by shrubs. Soils were sampled under six canopy types: *Erica scoparia*-dominated patches, *Calluna vulgaris*-dominated patches, *Cytisus scoparius*-dominated patches, *Pteridium aquilinum*-dominated patches and *Cladonia*-dominated biological crusts. The exact soil sampling point was recorded by a highly precise GPS, and each point resampled few days and six months after burning. As expected, soil fertility parameters varied with burning, including losses in soil phosphorus and nitrogen. In addition, several soil C and N parameters responded to the previous vegetation patches, including shifts in soil C and N concentration.