

Land-use history and vegetation regeneration in a recently reburned area in Central Spain

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Abstract

Land-use change has been one of the main drivers of landscape change in the Mediterranean region during the last decades due to afforestation and abandonment of cultivated or grazed areas. Forest fires are another of the main drivers of landscape changes in Mediterranean region, acting upon and in interaction with land-use change. During the last decades fires have burned and reburned areas that starting in the middle of the XXth century underwent different land-use or fire history. It is little known how repeated fires can affect areas that differed in past history. Our aim was to determine how land-use history could affect postfire vegetation in a reburned area in Central Spain. In 1986, a large fire occurred in Sierra de Gredos (Central Spain) and affected an area of 6652 ha which had had different land-uses histories in the preceding decades. In 1991, areas that had undergone different land-use histories were sampled for their vegetation. Metal sticks were left in the area so that, should the plots burn again, they could be found. Indeed, in September 2000, most of the area burned once again. In 2004, the vegetation was resampled on the same plots and using the same methods as before (Pérez *et al.* 2003: *Forest Ecology and Management* 182: 273-283). Some plots of the first sampling could not be resampled. After the 1986 fire, *Cytisus eriocarpus* was the dominant woody species and *Cistus psilosepalus* was the second important species. However, after the 2000 fire, the dominant woody species was *Cistus psilosepalus*. *Rubus ulmifolius*, a species with low cover after the 1986 fire, was the third important species. In general, *Cytisus eriocarpus* mean cover decreased 25% and *Cistus psilosepalus* increased 25% after the second fire. The total number of species (herbaceous and woody) decreased markedly after the 2000 fire in relation to the previous study. In general, as in the first study, land-use histories had not significant effects on the postfire vegetation. However, unlike after the first fire, the area showed clear signals of degradation after the second one.

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