

Chapter 2

DIFFERENCES IN THE RESPONSE TO FIRE OF MEDITERRANEAN SHRUBLAND

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ABSTRACT

The response of shrubland species to burning was studied over fifteen years in a shrubland community dominated by *Erica australis* in NW Spain. Throughout history, fire has been the perturbation most frequently imposed by man on these shrub communities. Post-fire recovery in these areas occurs via an autosuccession process because the species appearing after the disturbance are the same as the one that occupied the area previously. The woody species that appear immediately after burning are sprouting species, namely *Erica australis* and *Arctostaphylos uva-ursi*. In general, the dominant species, *Erica australis*, influences the regeneration patterns of all other species which make up the community. There is a significant increase in the cover of woody species until the fourth year after burning. Highest values for annuals and perennials herbaceous were observed in the third and fourth years. Subsequently, *Erica australis* attains dominance, regaining its original spatial occupancy and cover values, reducing herbaceous species and negatively affecting the growth of woody taxa like *Halimium umbellatum* and *Halimium alyssoides*. The quantity of herbaceous species present is in inverse proportion to the quantity of woody taxa. Richness and diversity values attain a maximum between the fourth and fifth years post-fire, coinciding with the greater presence of herbaceous species. Subsequently, woody species are strongly dominant and this produces a reduction in both parameters. *Erica australis*, *Chamaespartium tridentatum* and *Arctostaphylos uva-ursi* regenerate by sprouting. *Halimium alyssoides*, *Halimium umbellatum*, *Erica umbellata* and *Calluna vulgaris* regenerate by germination. Differences in cover values during the first years of succession tend to be eliminated twelve-fifteen years after burning and most of the species tend to recover their initial cover values. These shrubland communities have a high degree of resilience due to the strong sprouting potential of the component species.

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