Recruitment collapse induced by traditional management and land use changes in a population of *Pyrus bourgaeana* in Sierra Morena (Spain)

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ABSTRACT

Centuries of human intervention upon the ancient Mediterranean forests have produced a landscape in which the density of trees has decreased markedly, favouring the growth of herbaceous species for raising cattle. In Spain, the transformation of the indigenous forest, resulting from its use for livestock and timber, has produced characteristic open forests, dominated now by *Quercus rotundifolia* or *Q. suber*, with *Olea europea* subsp. *sylvestris* scattered, forming the commonly known "Dehesas". Moreover, the intensification of the crop of olive trees in the last decades has induced the transformation of Mediterranean forest in monoculture parcels. This kind of human intervention has had a significant affect upon the structure, dynamic and functions of the tree stratums, which plays a crucial role in the "Dehesas" such as promoting the specific composition of pastures or reduces soil compaction, among others. In addition, there are still significant gaps in knowledge about certain tree species, also present in the "Dehesas", which could be playing an important trophic and functional role in this landscape. A paradigmatic example is the wild pear (*Pyrus bourgaeana*, D.), which produces edible leaves and abundant fleshy fruits, necessary for the stability of both vertebrates and invertebrate phytophagous during the arid Mediterranean summer when

other trophic resources are very scarce. In this work, we present the results of an analysis of the impact of human management and land uses on a local population of *P. bourgaeana* in Sierra Morena (Spain). The age structure of this population indicates that this population has been greatly influenced by traditional management, and by the intense grazing of sheep during the last fifty years. These traditional management techniques have prevented any meaningful regeneration of new wild pear trees, resulting in a marked decline in age structure of the younger trees of this population. The consequence of such has endangered the survival of these populations and, consequently, the gene pool of this species.