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Open2preserve, SUMHAL, Pyriclab and COMPAS: four pyric herbivory projects in South Spain.

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Abstract

In South Spain, the abandonment of traditional agricultural and forestry practices, together with the new climatic scenarios, is endangering the response capacity of many mountain ecosystems, increasing the probability of large forest fires and the loss of biodiversity. New approaches for fire prevention and forest management, as extensive grazing, are being implemented within the fire prevention services. Nonetheless, above a certain amount of fuel load, grazing is not an effective tool. In this case, pyric herbivory (PH) could be an alternative. This is a preventive forestry tool against fires that combines prescribed burning followed by targeted grazing. This practice emulates the disturbance regime of natural ecosystems, where fire and herbivores control the cycle of terrestrial plant matter. In South Spain, among other sites, this was a traditional practice used by shepherds for improving pasture quality, which also contributes to fuel load control. However, it has been abandoned for more than 60 years, due to rural exodus and legislative issues. In Andalusia since 2018, four research projects (R+D+i) have addressed PH as a central topic: Open2preserve (Interreg SUDOE-UE), SUMHAL (LIFEWATCH-2019-09-CSIC-13, POPE 2014-2020), Pyriclabs and COMPÁS (Spanish Government: MICINN and MITECO-Fundación Biodiversidad, respectively). Globally, they aim to prevent big forest fires, and to promote resilient landscapes, biodiversity and local economies. In Andalusia, Pyriclab continued on the Open2preserve's pilot experience as a livinglab. Vegetation, soil and insects are monitored before the burning and over three years after it, in order to provide information for decision-making to forest

managers. COMPAS goes one step forward and aims to define the legal, social and technical framework necessary to use pyric herbivory in preventive forest and environmental management in Spain (including Andalusia), while promoting green employment. Specifically, it will focus on: 1) research and development of new PH models, 2) new technologies for PH (GPS collars, virtual fences, drone monitoring of the vegetation), 3) proposal of new regulatory and legislative frameworks that allow PH as management tool in natural areas, 4) new business models that include private investment to create resilient landscapes, and 5) education and training on PH for technicians to enhance employment in rural areas. In Andalusia, the pilot experiences are located in Sierra de Gádor and Sierra de Filabres (Almería). These projects pretend to set solid foundations for PH as an additional tool for fire prevention in Andalusia, by providing relevant scientific knowledge and by promoting the necessary legal changes and the green employment.

Keywords: Andalusia, extensive livestock, fuel control, Mediterranean natural areas, prescribed burning

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