

Land stewardship as a tool for forest management and plant conservation in Mediterranean environments. The case of Finca Buixarró in the Valencian Community (Spain)

Introduction

There is currently a strong scientific and technical interest in the study of vegetation, as well as in its protection and enhancement. Thus, private participation in the conservation of land and natural areas is conceived as a complementary tool to public protection. So, the main objective of this work is to describe the current situation of a private estate under land stewardship management, focused in habitat management, species conservation, training and research activities, as well as environmental education and awareness, in order to carry out a proper integrated management of the territory and plant conservation.

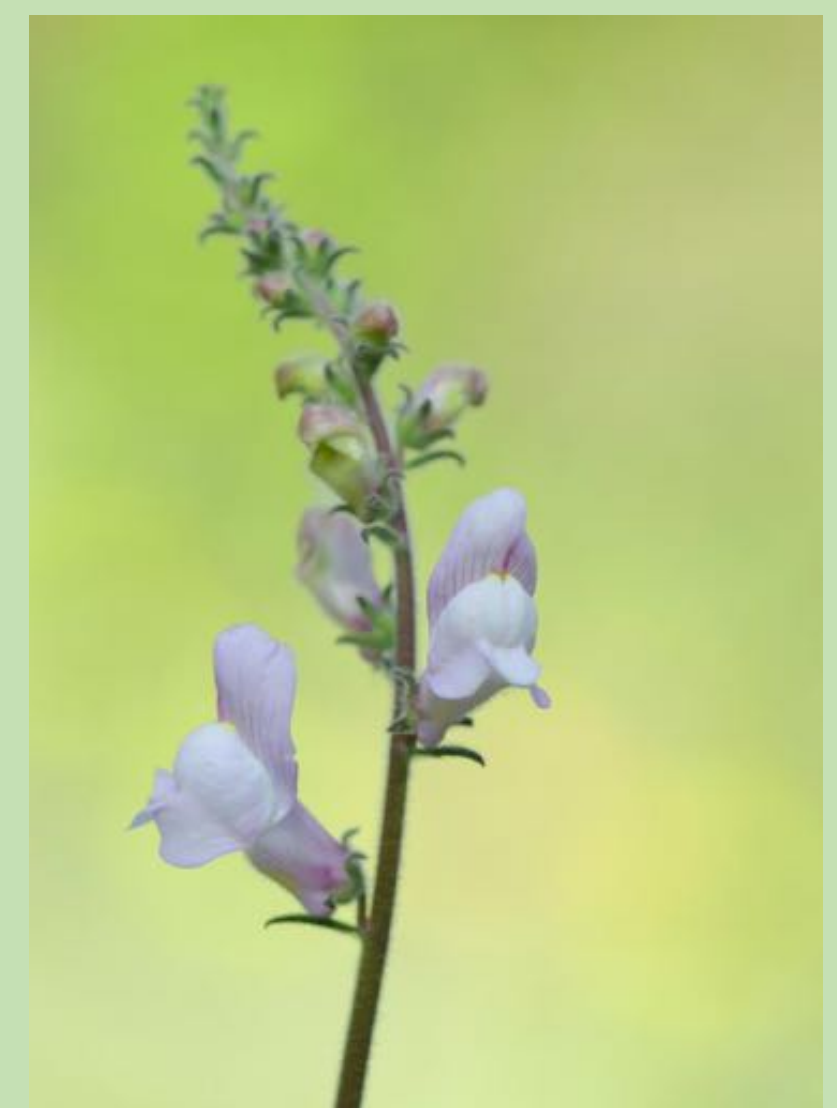
Since the beginning of the activity of the Victoria Laporta Foundation, land stewardship was identified as an adaptable but very interesting philosophy to involve private property in the management and preservation of natural heritage, the FVLC is one of the founding members and most active partners of Avinença (Associació Valenciana de Custòdia i Gestió Responsable del Territori) https://www.facebook.com/avinencacdt/?locale=ca_ES and not only in the management of the Buixarró reserve (Serra de Mariola N.P. and Wildlife Reserve) but also in advising other entities and similar initiatives, land stewardship helps us to recognise the value and importance of the owners and managers of the territory.



Methodology

The Reserve of Buixarró is a natural area of 658 hectares located in the Valencian Community (Spain), in the south-eastern sector of the Serra de Mariola National Park (UTM 702000N-4288000E). In 2003, a non-profit foundation (Fundación Victoria Laporta Carbonell) was created to recover environmentally the state, after the succession of several fires and many years without management. Since then, FVLC has been working to improve the ecosystems and preserve habitats and species. Land stewardship has made it possible to manage a degraded natural space with management problems and with the aim of self-sufficiency.

The foundation in collaboration with the Department of Earth and Environmental Sciences of the University of Alicante has been working for many years in areas such as sustainable forest management, mainly focused on achieving more mature and resilient forests and at the same time more diverse and capable of harbouring biodiversity. Of the botanical species identified in Buixarró, we find very interesting species when it comes to forming habitats, producing trophic resources for different groups of fauna (great diversity of pollinators), improving our soils, also avoiding erosive processes and at the same time a good state of health of the forest masses ensures a reservoir of carbon fixation to combat Climate Change.



Results



The research tasks include: 10 research projects, 8 agreements with Institutions, Universities and Educational Centres, 9 scientific articles have been published, 489 plant species have been cited in the plant inventory with a total of 37 species catalogued with some degree of protection (habitat directive, national or regional catalogues), 18 odonates, 56 birds, 13 mammals, 6 amphibians, 120 nest boxes for forest passerines (occupied by 7 species) and up to 6 nest boxes for nocturnal birds of prey, as well as 15 nest boxes for forest bats. Regarding environmental education/awareness: 10 beekeeping workshops (120 participants), nature photography workshops (350 participants), 8 mycology workshops (120 participants), 15 interpretation activities within the framework of the Fauna and Climate Change project (nest box placement, scientific bird ringing, study of micro-mammals, coleopteran "bioblitz", interpretation of nocturnal nature and light traps for butterflies and moths (500 participants) and environmental education itineraries (4. 800 schoolchildren), field practices (300 university students), training in specific forestry modules (400 students)). Finally, sub-products obtained: 80 kgs of organic honey per year, in the future we expect a good production of organic pistachios and two informative publications.



Specific plantings with seed selection to favour pollinator populations, plantings of species that produce fruits or berries or samaras to complement the trophic availability of fauna in general, plantings of *Echium* species, *Silene*, pipas to favour some species of granivorous birds in decline such as the European Turtle Dove (*Streptopelia turtur*), naturalisation of ponds and artificial lagoons through the planting or fixing of algae meadows and banks of reed-lilies and tree species of riparian vegetation (genera *Populus*, *Salix*, *Fraxinus*, ...) are some of the active management actions related to the conservation of plant diversity that we have carried out.

Conclusions

The land stewardship has been a key tool for the management of the Buixarró property in the Sierra de Mariola Natural Park (Spain), highlighting natural resources and contributing to the conservation of nature, especially the plant heritage. This strategy has allowed students and researchers to develop their work in a forest environment with excellent results and making them known through environmental dissemination.

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