

The Portuguese *Montado* as a High Nature Farming System: an Interdisciplinary Methodology Linking Grazing Management to Biodiversity Value

Carla AZEDA^{1,a)}, João E. RABAÇA^{1,2,3b)} and Teresa PINTO-CORREIA^{1,4, c)}

¹ Instituto de Ciências Agrárias e Ambientais Mediterrânicas, Instituto de Investigação Avançada, Universidade de Évora, Núcleo da Mitra, 7002-554 Évora.

² LabOr - Laboratório de Ornitologia, Universidade de Évora, 7002-554 Évora.

³ Departamento de Biologia, Escola de Ciências e Tecnologia, Universidade de Évora, 7002-554 Évora.

⁴ Departamento de Paisagem, Ambiente e Ordenamento, Escola de Ciências e Tecnologia, Universidade de Évora, 7002-554 Évora.

^{a)} Corresponding author: cmazeda@uevora.pt

^{b)} jrabaca@uevora.pt

^{c)} mtpc@uevora.pt

Abstract

The Portuguese *montado*, an agro-silvo pastoral system derived from the Mediterranean forest ecosystems, is broadly considered a High Nature Value Farming System (HNV). These semi-natural systems significantly depend on the agricultural management. Consequently, its natural value and environmental qualities are closely related to the different farming practices adopted by land managers. Within these, grazing has a particular relevance since extensive livestock production is currently one of the most important economic activities associated with these systems, presenting a pronounced variability, both in terms of intensity and variety of animal species and breeds.

In the region of Alentejo, Southern Portugal, there are several types of *montado* in different natural conditions (soils, climate, and topography) and managed, currently and over time, in very distinct ways. The high variability underlying these systems, both in biophysical and management contexts, can result in an impact of completely different levels on the sustainability of the system and consequently, on its natural values.

Using birds as models for assessing the levels of biodiversity and starting from the research question: How to differentiate between a *montado* with and without HNV? In this paper we intend to present an innovative interdisciplinary methodology built up to assess the relationship between grazing management and biodiversity values, in a case study - a specific type of *montado*.

Considering the complexity and fuzziness of these Mediterranean systems, defining a grazing management compatible with the existence of a high biodiversity value, poses a great challenge which requires the integration of different scientific perspectives and cross disciplines. However, the greatest difficulty in implementing this new approach probably lies in adopting the methodologies arising from these distinct fields of knowledge in a coherent manner.

Keywords: *Montado*, Agro-silvo pastoral system, High Nature Value Farming System, Grazing management, Birds, Interdisciplinary methodology.