

Project

RECOVERING

TRADITIONAL HUSBANDRY PRACTICES TO REDUCE WOLF PREDATION ON FREE-RANGING CATTLE IN IBERIA

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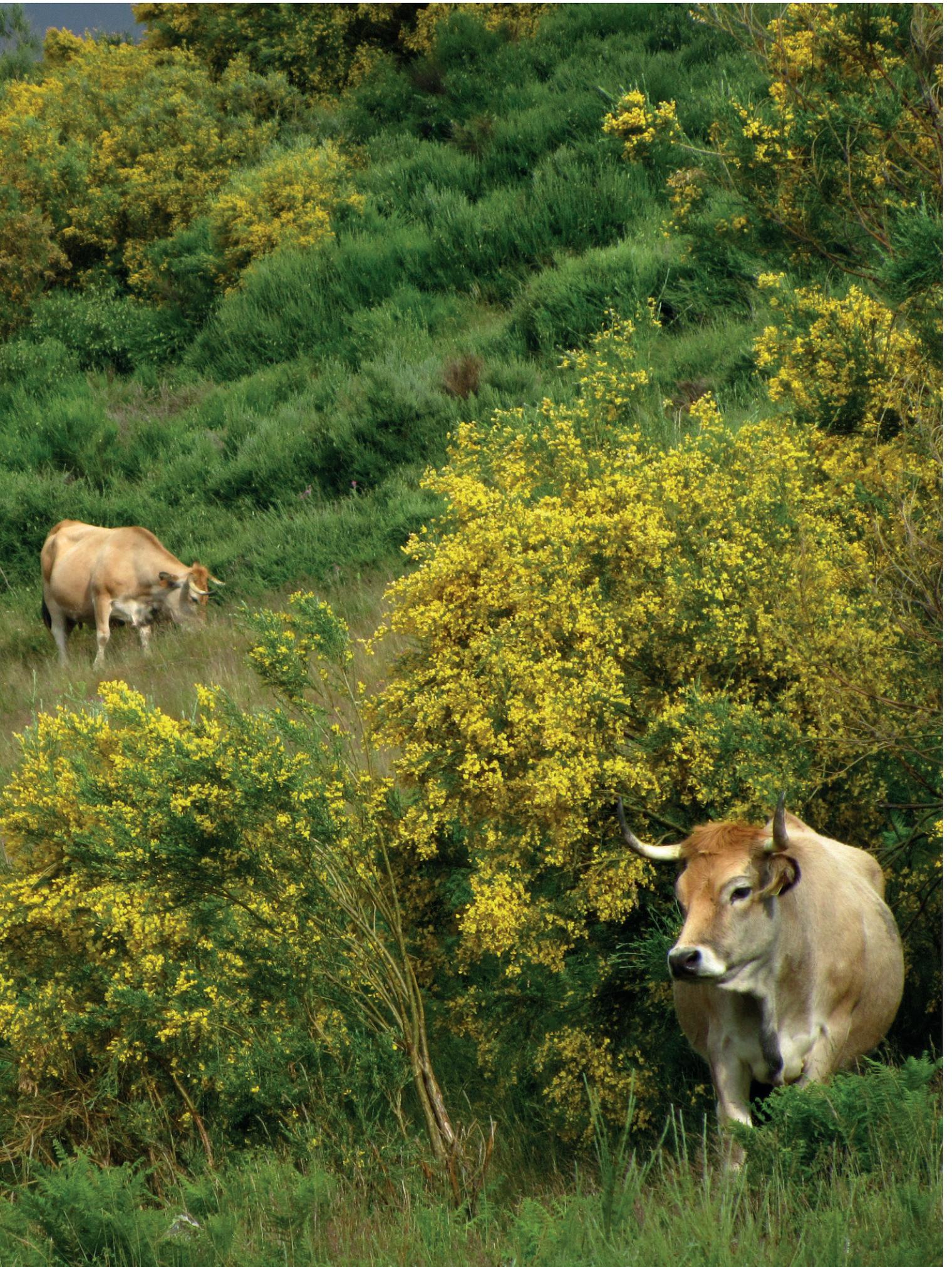
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In large carnivores, the frequency of livestock depredation is inversely related to availability and vulnerability of natural prey and directly related to availability and vulnerability of livestock (Polizar et al., 2003). The vulnerability of livestock depends mainly on the husbandry methods, which determine the patterns of depredation in different areas (Swenson and Andrén, 2005). This can lead to unexpected patterns of livestock depredation. For instance, in Spain wolves cause proportionally much more damages on livestock in the Cantabrian Mountains, where there are large natural forests and the wild ungulates are very abundant. In contrast, in some agricultural habitats, where the natural prey is very scarce, the damages are proportionally much lower because the livestock is better protected (Blanco and Cortés, 2009). Thus, the degree of conflict arising from wolf damages to domestic animals is mostly ruled by human-related factors, such as the economic impact of wolf attacks, the

sociocultural background of livestock owners and the efficiency (or lack of it) of the practices used to prevent wolf damages (Fritts et al., 2003). Management and conservation implications of these issues are particularly relevant when wolves occur in human-dominated landscapes, such as the Iberian Peninsula, and in scenarios where wolf depredation affects livestock species with high socioeconomic value, such as cattle.

More than any livestock species, cattle have a high socioeconomic value among rural communities in the Iberian Peninsula. For centuries, cattle have been a traditional working animal highly appreciated in rural areas, most of them belonging to autochthonous breeds, well-adapted to local conditions and with a high market value. Besides, cattle owners have a strong emotional connection with these animals, often naming or blessing their own cows or bulls, in contrast to other livestock species. Consequently, cattle breeders invest considerable effort and care to guarantee the

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wellbeing of their animals, allowing them to graze in the most productive pastures under different husbandry practices. In mountainous areas, cattle are grazed under an extensive grazing system for most of the year. They can be either confined in fields and pastures next to villages, especially during the day or in winter, or completely free-ranging on mountain meadows without protection, normally from late spring to early autumn, which makes them, particularly calves, highly vulnerable to wolf predation.

Cattle breeders have traditionally invested in prevention measures to minimize predation by wolves, namely by equipping grazing herds with shepherds and livestock guarding dogs during the day, and by employing different regional types of constructions for livestock confinement and protection during the

night (Fig. 1). In particular, in highland pastures far from villages across the northern mountains of the Iberian Peninsula, simple stone corrals with adjacent stone igloo shaped huts were commonly used as nocturnal shelters for cattle and shepherds in order to ensure a more efficient protection and surveillance of cattle herds and calves from wolf predation, during seasonal grazing in the summer. The use of all these procedures for the prevention of wolf damages was widespread up to few decades ago. However, due to the decline and socioeconomic changes of traditional rural life, cattle breeders have been investing less time and effort to efficiently and actively protect their livestock from wolf attacks, and currently it is not rare for cattle to be free-ranging all year round, with irregular or no surveillance at all.

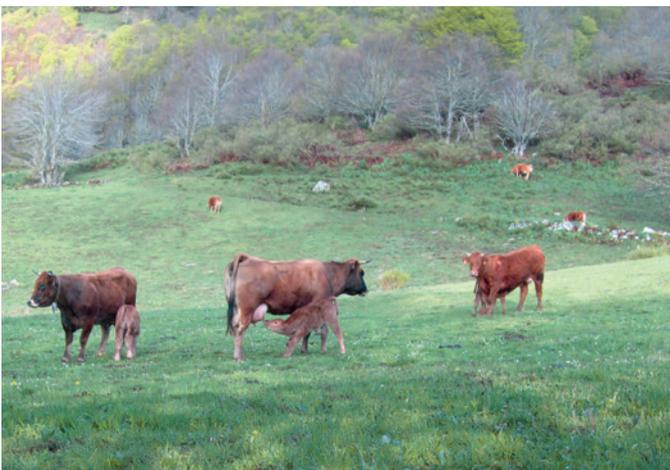


Fig. 1. Extensive grazing of cattle under different husbandry conditions. **A:** diurnal surveillance with presence of shepherds and livestock guarding dogs; **B:** traditional stone-made shelters for nocturnal cattle surveillance in mountain meadows; **C:** semi-confinement next to villages during the day; **D:** free-ranging all year round with irregular or no surveillance. Photos: A, D-Francisco Álvares, B-José Domingues, C-Juan Carlos Blanco.

Two mountainous regions in northern Iberian Peninsula, located in the Peneda-Gerês National Park (Portugal) and Cantabrian Mountains (Spain) are a clear example of areas with cattle-wolf conflicts. In both regions, high wolf densities of up to 6 individuals/100 km² occur in a human-dominated landscape where livestock husbandry, and especially cattle production, is an important cultural and economic activity (Blanco et al., 1992; Álvares, 2004). As a consequence, wolf damages on livestock are frequent, with cattle constituting a significant share of wolf kills and

compensation values due to their greater economic importance (Fig. 2). Moreover, probably due to recent economic subsidies for cattle production from the EU, cattle numbers are getting proportionally higher among livestock species and, consequently, the share of this species in wolf damages is showing an increasing trend during the last decades. For example, in Peneda-Gerês, even though the number of wolves has been stable, cattle represented 13% and 33% of wolf damages on livestock in 1997 and 2012, respectively (Álvares, 2011; Pimenta/ICNF, unpub. data).

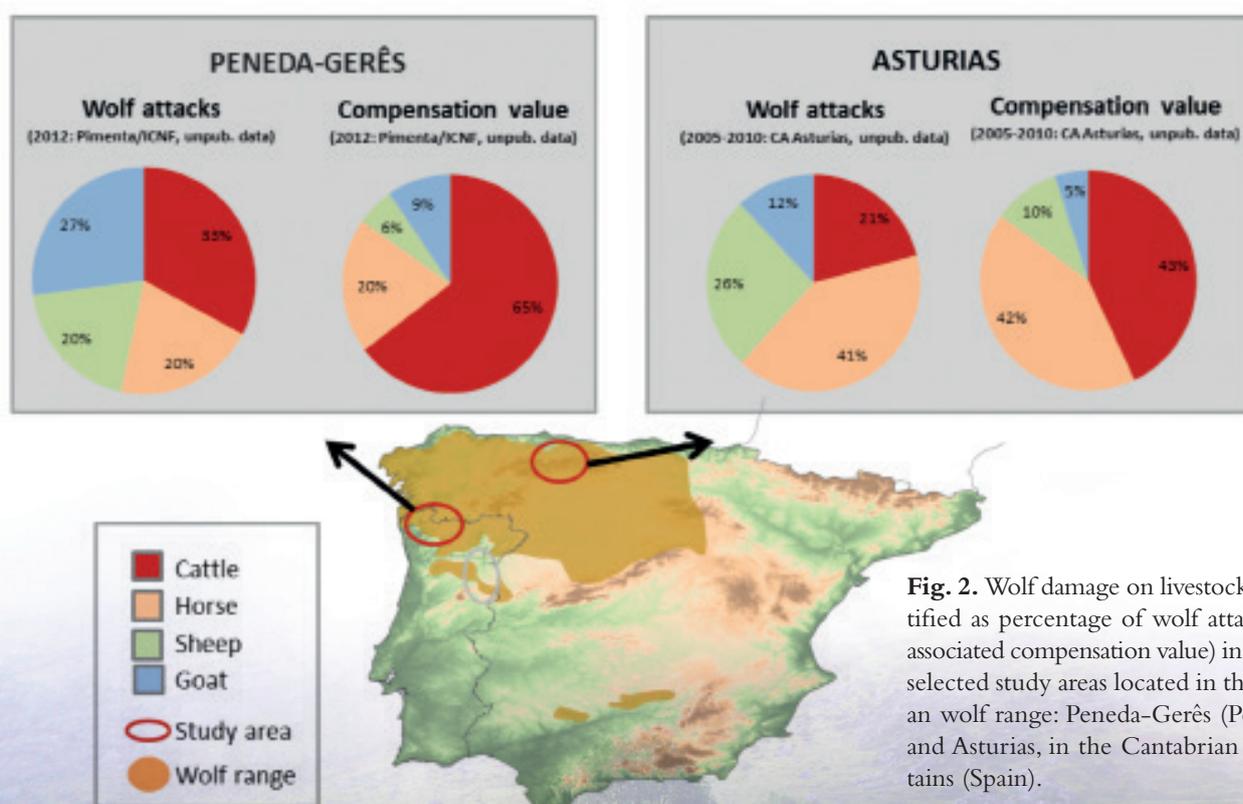


Fig. 2. Wolf damage on livestock (quantified as percentage of wolf attacks and associated compensation value) in the two selected study areas located in the Iberian wolf range: Peneda-Gerês (Portugal) and Asturias, in the Cantabrian Mountains (Spain).



Although wolf damages are generally compensated, Peneda-Gerês and Cantabrian mountainous are characterized by one of the highest levels of conflict across all of the Iberian wolf range, with strong sociopolitical implications resulting in intense wolf persecution, both legal and illegal (Blanco and Cortés, 2009; Álvares, 2011). However, wolf predation risk, resulting either from variation in wild prey availability or cattle vulnerability, seems to vary across the diversity of cattle husbandry practices currently employed among breeders. For instance, in an area of Peneda-Gerês where cattle are confined during winter, adult cows represent 13% of wolf kills, while in a neighbouring region where cattle are free-ranging all year round, adult cattle constitute 44% of wolf kills, leading to a much higher economic impact (Álvares, 2011). Furthermore, in spite of artificial selection, cattle from autochthonous breeds are well adapted to the ecological conditions of their grazing areas – including natural predators like wolves – and several studies have suggested that wolf predation risk can be influenced by cattle spatial and social ecology, such as habitat use, group size, herd composition and anti-predator behaviour (Meriggi and Pagnin,

1994; Rio-Maior et al., 2005; Laporte et al., 2010). This evidence underlines the need for an integrative approach where social, economic and ecological aspects should be taken into account to recommend best methods and procedures to prevent wolf damages to cattle and promote experience transfer between cattle herders regarding best practices.

In this framework, a recent study has been developed in order to address the conflict that arises from wolf damages on cattle in the Iberian Peninsula. This study, started in October 2013 and with one-year duration, is one of the pilot actions on Large Carnivores at the population level to be developed within the project entitled “Support to the European Commission’s policy on large carnivores under the Habitats Directive – phase 2” (contract nr. 07.0307/2013/654446/SER/B.3), financed by the European Commission and executed by “Istituto di Ecologia Applicata” with the guidance of “Large Carnivore Initiative for Europe (IUCN/SSC LCIE)”, and in collaboration with the Institute of Nature Conservation and Forest (ICNF), Grupo Lobo and the LIFE MedWoff project. The Iberian wolf pilot action is focused on the tra-

ditional knowledge of cattle husbandry practices that are compatible with the wolf's presence. By involving local cattle herders from both Portugal and Spain, the project explores how this traditional knowledge can be adapted and applied to a modern day context for conflict management related to wolf depredation on free-ranging cattle.

The work developed in this project will cover four different tasks:

1) Identifying and characterizing the conflict by conducting a review of compensation statistics and bibliography on wolf damages to cattle and on current and traditional husbandry/protection methods. We aim to characterize this conflict in both a socio-economic (e.g. economic and social impact, compensation programmes) and ecological perspective (e.g. kill rates, wolf-prey relationships), and whenever available, to analyse the data at both national (Portugal/Spain) and regional levels (pilot areas);

2) Field evaluation of cattle depredation and husbandry methods by conducting local interviews with cattle breeders to characterize socio-economic parameters, such as: i) intensity of wolf depredation; ii) traditional and current prevention measures and corresponding effort; iii) main source of economic profit (subsidies/meat marketing); iv) willingness to change prevention methods;

3) Workshops for knowledge and experience transfer, namely a national workshop per country and one international workshop to involve and inform stakeholders and achieve a guided discussion between all participants on the best practical solutions;

4) The production of two documents directed to different audiences: a guide of best practice management, addressed to local and national managers; and a manual for best practice implementation, addressed to livestock producers and focusing on technical details of damage prevention and mitigation measures that are known to be efficient.

Furthermore, this project will make an effort to involve NGOs and national/regional administrations from Portugal and Spain in order to assure their active participation, especially in the organization of the workshops, and will promote the involvement of other current projects aiming to address similar topics in the Iberian Peninsula (such as the LIFE MedWoff project). With this approach, we intend to bring together several stakeholders and maximize efforts for a common goal: achieving a sustainable coexistence between wolves and the livestock industry, by exploring traditional knowledge and practices.

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