

STUDY AREA DESCRIPTION

MONTAÑA PALENTINA

PALENCIA, SPAIN



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1 INTRODUCTION

The Montaña Palentina, located in the north of Palencia province (Castilla y León, Spain), is a mountain region forming part of the eastern flank of the Cantabrian Mountains. Its landscape combines river valleys, mountain agriculture, as well as natural and seminatural pastures and forests. This area is of great ecological and cultural importance and has been shaped by centuries of pastoralism. It harbours significant populations of wildlife, particularly the Iberian wolf (*Canis lupus*) and Cantabrian brown bear (*Ursus arctos*). Its unique natural and human heritage makes it a great area for studying the coexistence of pastoral livestock farming and large carnivores.



Figure 1: Landscape of Montaña Palentina study area within the Cantabrian Mountains, an emblematic mountain grazing area that supports pastoral livestock systems and rich biodiversity (Photo: Daniel Martín Collado).

2 OVERVIEW

- ▶ **Municipalities:** Cervera de Pisuerga, Dehesa de Montejo, Triollo, and La Pernía, representing valley and high-mountain environments.
- ▶ **Geographical size:** The total area spans approximately 3,053 km².
- ▶ **Human population:** The 4 municipalities host approximately 2,806 residents.

- ▶ **Number of livestock farmers:** The area is home to approximately 139 livestock farmers. This number may increase by several dozen in summer, due to the transhumance of sheep flocks from southern regions. However, this figure likely overestimates the actual number of professional farms, as it also includes hobby farmers and holdings with only a few animals.
- ▶ **Livestock farming systems:** Extensive grazing systems are predominant, including beef cattle, sheep, and horses. Vertical transhumance (vertical migration between valley and mountain pastures) remains important, with some Merino sheep flocks migrating seasonally from southern Spain to graze in the mountain pastures.
- ▶ **Wild large carnivore species:** The wolf (*Canis lupus*) and Cantabrian brown bear (*Ursus arctos*).
- ▶ **Wolf population:** According to official census data, Palencia province is home to 35 wolf packs, 28 of which are centered in the province. Within the municipalities, there are likely 4–5 resident packs, with at least two other packs patrolling the area from nearby.
- ▶ **Bear population:** In 2019, it was estimated that the Cantabrian bear population had increased to around 324 bears. In the eastern sector, around 50 bears were recorded in 2017. The study area is located within this eastern sector's core region.



Figure 2: Sheep grazing on mountain pastures in Montaña Palentina, part of the traditional transhumant livestock systems of the Cantabrian Mountains (Photo: Bruna Embún).

3 SOCIOECONOMIC CONTEXT

- **Environment:** Montaña Palentina is located in the southern Cantabrian Mountains and has a temperate oceanic mountain climate, with cool summers, cold winters and 900–1,200 mm of annual precipitation, which often falls as snow. Elevations range from 1,000-metre valleys to 2,500-metre peaks. The landscape is largely protected within the 78,000-hectare Fuentes Carrionas y Fuente Cobre–Montaña Palentina Natural Park, and oak, beech, juniper and pine forests predominate.
- **Local economy:** The area combines traditional mountain pastoralism with a diverse rural economy. Extensive grazing and forestry remain important sectors, while Aguilar de Campoo's agri-food industries, such as Galletas Gullón and Grupo Siro, provide significant employment opportunities. LEADER and tourism initiatives support small businesses, with seasonal tourism centered on Romanesque heritage, landscapes, wildlife and gastronomy.
- **Social description:** The region is sparsely populated, with most municipalities having fewer than five inhabitants per km², reflecting long-term depopulation since the mid-20th century. The population is ageing and concentrated in the valleys. However, strong community bonds and traditions linked to a pastoral and forestry heritage help to preserve the local identity.



Figure 3: Cattle on high-altitude pastures in Montaña Palentina, illustrating the extensive cattle grazing systems of the Cantabrian Mountains (Photo: Daniel Martín Collado).

4 FARMING CONTEXT

Most farms are family-run, practicing extensive livestock grazing adapted to mountainous terrain. Beef cattle graze freely, moving between lowland winter pastures and alpine pastures in summer. Some herds are transhumant, and Merino sheep arrive seasonally from southern Spain. Horse herds for meat production are also present in large numbers. Livestock is mainly composed of cattle, followed by horses, while sheep represent the smallest share.

Main Challenges:

- ▶ Ageing farming population and low generational renewal.
- ▶ High production costs, low profitability, and dependence on CAP subsidies.
- ▶ Predation by large carnivores (especially wolves) and related emotional or administrative burdens.
- ▶ Sanitary and animal health regulations, particularly tuberculosis and brucellosis.
- ▶ Additional pressures arise from EU agricultural policy and land-use regulations linked to the Natural Park.



Figure 4: Homemade double-fencing system in Montaña Palentina used for wolf protection: the inner fence holds the livestock, while the space between the outer and inner fences houses mastiff guardian dogs to deter predators (Photo: Bruna Embún).

5 LOCAL CONFLICT ASSOCIATED WITH LARGE CARNIVORES

Number of attacks:

Palencia recorded 369 wolf attacks on livestock in 2024, underscoring both the intensity and the widespread impact of wolves on extensive pastoralism.

- ▶ In 2024, wolf predation left a tangible mark across the 4 municipalities. Altogether, around 127 animals were lost.

Bear attacks on livestock are rare in the Cantabrian Mountains, as the species generally avoids human settlements and domestic herds. However, isolated incidents do occur. For example, in 2025, a brown bear killed a cow on a farm in Valberzoso, Brañosera, Palencia.

- ▶ In the study area, bears remain a minor source of conflict, causing negligible damage compared to wolves.

Social conflict:

- ▶ **Emotional and psychological stress among farmers:** Feelings of frustration, and helplessness are widespread.
- ▶ **Perceived insufficiency of compensation systems:** Payments are seen as slow, incomplete, or unfair, failing to reflect real losses or the full scope of the problem.
 - Many attacks remain unregistered or unconfirmed due to the rugged terrain and evidence being removed by scavengers.
- ▶ **Limited effectiveness or feasibility of preventive measures:** Measures such as guard dogs and electric fencing are often ill-suited to extensive mountain systems, with terrain and costs limiting feasibility.
- ▶ **Growing polarisation and tension between different social positions:** The conflict goes beyond material damage, mirroring broader societal divides between control-oriented and protection-oriented approaches.
 - Conflict intensified after legal changes: prohibition of lethal control (2021-2025) and new management authorisations (2025–2026).



Figure 5: Homemade anti-bear system in Montaña Palentina: the beehive is surrounded by a protective fence and mounted on a pole with a rotating element to prevent bears from climbing and accessing the hive (Photo: Daniel Martín Collado).

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