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The Cañadas Reales of the UNESCO Global Geopark *Volcanes de Calatrava. Ciudad Real* (Spain): a backbone of Geomorphological Heritage and Geotourism

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1. INTRODUCTION & AIM

The **Cañadas Reales** ('Royal Cattle Paths') have been transit routes for transhumant cattle from northern Spain to central and southern Spain on their annual winter pilgrimage, from their creation in the 13th century to the present day, whose origin dates to the Roman roads and tracks in *Hispania*.

These paths are regulated by the *Ley de Vías Pecuarias de Castilla-La Mancha* (Law 9/2003), derived from the Spanish national Law 3/1995. The **transhumance was declared as a UNESCO Intangible Cultural World Heritage in 2023**.

They have a great importance in the territory of the **UNESCO Global Geopark *Volcanes de Calatrava, Ciudad Real*** (Castilla-La Mancha, Spain) where the Campo de Calatrava and Valle de Alcudia have been wintering areas for northern cattle. Three **cañadas converge and form the backbone of the geopark**: Segoviana (or Toledana), Soriana Oriental and Conquense (or Los Serranos), together with other secondary cattle paths (*cordeles*, *veredas* and *coladas*).

This work presents an inventory of resources of the **geomorphological heritage** (Geoheritage), **natural protected areas** at regional and European level (Natura 2000 network), and other resources of **historical-cultural and ethnographic heritage** linked to Cañadas Reales (sour-water fountains, hotsprings, baths, transhumance architecture, abandoned mines...). The aim is **to promote geotourism through sites of geotourism interest** (natural and cultural) and actions to be carried out by the Geopark management body.

2. METHOD

The UNESCO Global Geopark *Volcanes de Calatrava, Ciudad Real* shows a high geodiversity and geoheritage in an area of 4,383 km^2 and 40 municipalities, linked to **two Spanish Geological Contexts of International Relevance** (Law 33/2015): the no.14, Neogene-Quaternary Volcanism of the Iberian Peninsula and the no.18, Mercury Mineralisations.

A compilation of published information on the territory's geomorphological and historical-cultural was made.

With the support of geological and topographical cartography, orthophotographs and previous inventories on geoheritage resources, the **resources associated with the Cañadas Reales have been located and displayed on a map** (Fig. 1) to group them and define **Sites of Geotourism Interest (SGIs).**

3. RESULTS

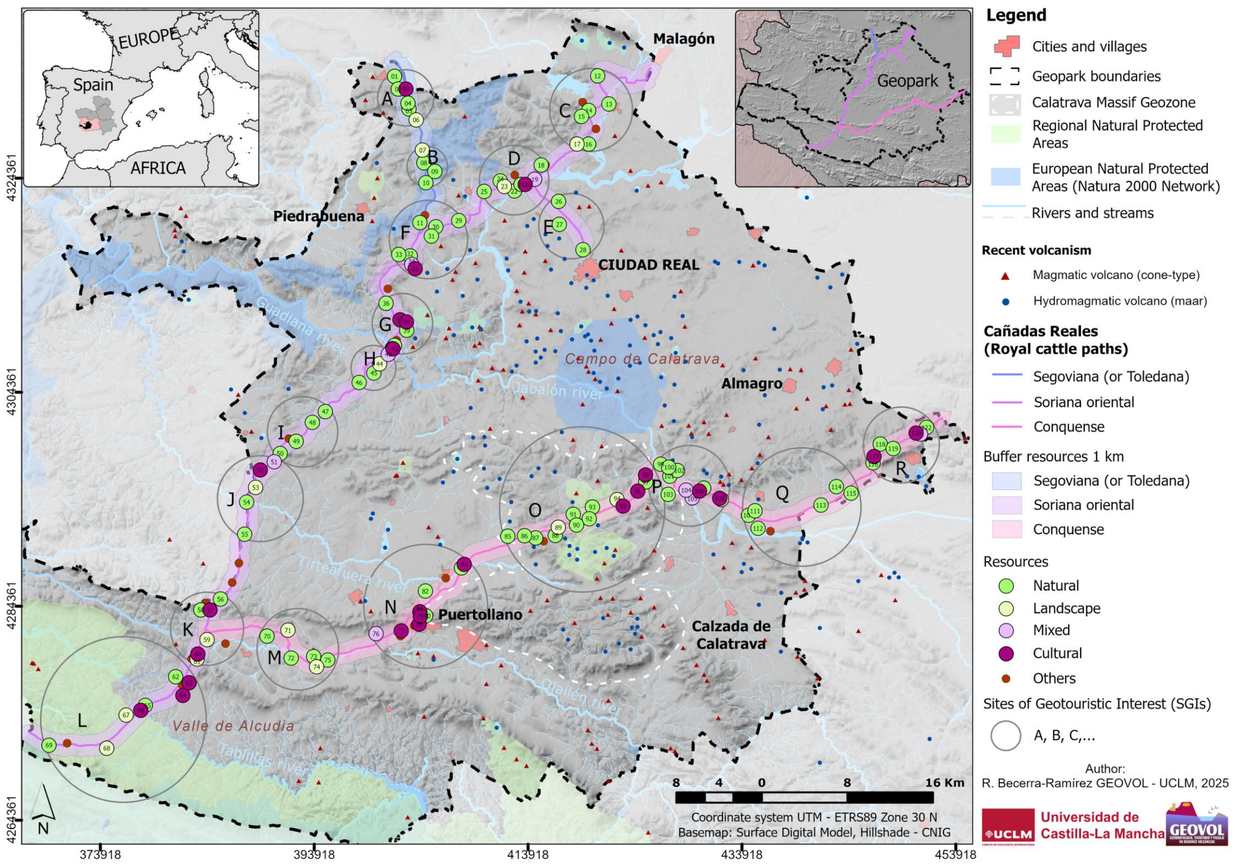
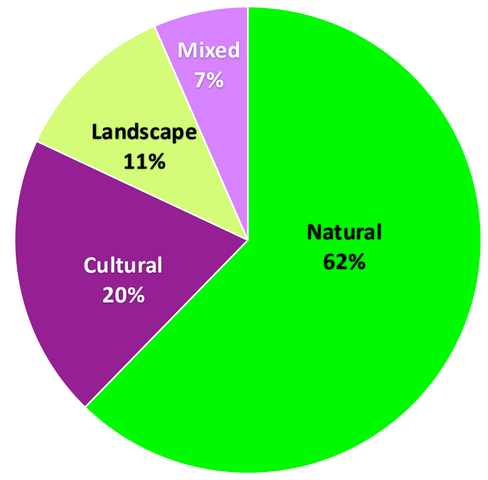


Figure 1. Map of the Cañadas Reales, resources and Sites of Geotouristic Interest in the UNESCO Global Geopark *Volcanes de Calatrava, Ciudad Real* (Castilla-La Mancha, Spain).

A selection of **122 geoheritage** resources was made, using a 1 km buffer on each side of each cañada real (Fig. 2):

- 76 natural resources;
- 24 cultural resources;
- 14 landscape resources;
- 8 mixed resources.

This inventory served for grouping of resources to identify **18 Sites of Geotouristic Interest (SGIs) along the Cañadas Reales:** 2 in the Segoviana (A and B), 10 in the Soriana oriental (C to L), and 6 in the Conquense (M to R).



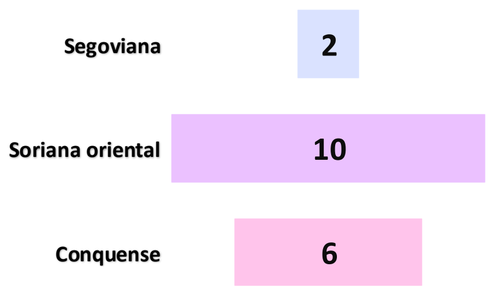


Figure 2. Distribution of the resources by type (top) and Sites of Geotouristic Interest in each cañada real (bottom).

SGI A. Porzuna maar

SGI B. La Encebra volcanoes and Sierra de Picón

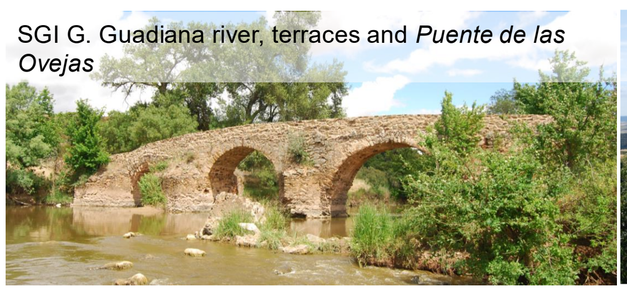
SGI H. La Cabeza volcano

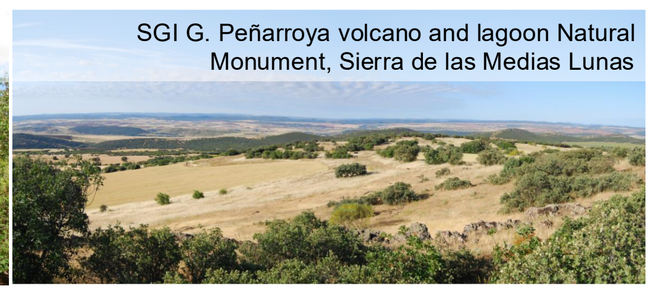
Hikers along Cañada Real Soriana oriental

SGI K. Puerto de Veredas

SGI O. Monumento Natural Volcanes Macizo de Calatrava

SGI P. Baños del Barranco


SGI G. Guadiana river, terraces and *Puente de las Ovejas*


SGI G. Peñarroya volcano and lagoon Natural Monument, Sierra de las Medias Lunas

4. CONCLUSSION AND FUTURE WORK

The **Cañadas Reales are the backbone of this territory**, as they are historical-cultural routes that cross the Geopark from N to S and can be used to **discover, interpret, geoconserve and protect** the extremely important geomorphological and historical-cultural heritage associated with them.

These are interpretive resources that should be exploited for the development of geotourism, following the principles of UNESCO Global Geoparks, and should take advantage of the synergies of the transport network (highways, high-speed trains, airport) to revitalise population centres demographically and economically, based on their territorial heritage.

Future Work

- **Complete the inventory of geomorphological heritage resources** along the Cañadas Reales and their historical-cultural and ethnographic heritage;
- Complete the **list of Sites of Geotouristic Interest** in the Cañadas Reales.
- **Assessment of the geotouristic interest** of these places, based on different quantitative assessment methods;
- Propose the refurbishing of the **official hiking trails** along the Cañadas, providing them with informative content;
- Propose the **creation of interpretation centres for the Geopark** ("Volcanoes House") and transhumance, taking advantage of historic or disused buildings (such as the Airport Visitor's Centre);
- Resuming **training courses for geopark guides staff.**

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