Las Loras Unesco Global Geopark stems from a local initiative focused on three main aims: the sustainable development of tourism resources, the protection of natural and cultural heritage and the research and dissemination of this heritage.

Las Loras are spread out over a vast territory within the provinces of Burgos and Palencia dominated by high moors and monadnocks separated by impressive river canyons drawing horizons broken by a mosaic of steppes, meadows and gallery forests of enormous biodiversity.

So far seven trekking routes accessing sites of high geological interest have been prepared and signposted. A guidebook describing most of these places along with other sites of environmental and cultural interest has also been published.

This region does not only hold scientific and landscape interest but also extended archaeological (Palaeolithic sites, Neolithic dolmens and mounds, Iron Age forts), architectonic (Romanesque and Pre-Romanesque monuments) and historical heritage. An undisclosed place confining the time between its stones.

UNESCO



What is a geopark?

On 17 November 2015, the 195 Member States of UNESCO ratified the creation of a new label, the UNESCO Global Geoparks, during the general Conference of the Organisation expressing governmental recognition of the importance of managing outstanding geological sites.

A Geopark is a territory, which includes both a particular geological heritage and its own sustainable strategy. It must have clearly defined boundaries and sufficient surface area to generate its own economic development. It is not legally protected, although it should contribute for the conservation and dissemination of the geological territory and, therefore, the quality of life of its inhabitants and the geological wealth are both very important.

The mineralogical, geophysical, geomorphologic, paleontological and landscape resources specific to each Geopark are intended to be used as the basis for the dissemination of that geological heritage in order to promote environmental education, reassure a sustainable development based on geotourism and contribute for the protection of those elements of geological interest that may be threatened.

The current concept of Geopark involves various natural and cultural facets as to reach the goals for the development of a territory: education, geosciences research, natural and cultural heritage acknowledgement and dissemination, communication between the Geoparks and the society and dissemination of natural sciences.

In short, a Geopark is based on its geological peculiarities but it is not all about geology. Its goals must explore, develop and enhance the relationship between its geological heritage and all other heritage elements in the area, whether they are natural, cultural or intangible.

Geoparks in the World

GLOBAL GEOPARKS NETWORK EUROPEAN GEOPARKS NETWORK SPANISH FORUM GEOPARKS



Jeju (Korea)



Geoparks in Spain

CABO DE GATA-NÍJAR (ALMERÍA) SIERRAS SUBBÉTICAS (CÓRDOBA) SOBRARBE-PIRINEOS (HUESCA) LANZAROTE E ISLAS CHINIJO (LAS PALMAS, STA. CRUZ) EL HIERRO (ISLAS CANARIAS) www.geoparqueelhierro.es COSTA VASCA (GIPUZKOA) MOLINA-ALTO TAJO (GUADALAJARA) SIERRA NORTE (SEVILLA) www.sierranortedes VILLUERCAS-IBORES-JARA (CÁCERES) CATALUNYA CENTRAL (BARCELONA) LAS LORAS (BURGOS-PALENCIA) **ORÍGENS (LLEIDA)** MONTAÑAS DO COUREL (LUGO)



Seven reasons to visit Las Loras

Peña Ulaña (Humada)



Oil Museum (Sargentes de la Lora)

1. To experience the awe provoked by large open and inhabited spaces.

2. To discover the history of our planet from a stunning geological landscape created during the last 215 million years.

3. To enjoy the rediscovery of a rural world still genuine in its architecture and popular customs and traditions.

4. To appreciate and understand the biodiversity, which is here respected and preserved in monuments and protected natural areas and that thrives in caves and undergrowths, in vertical cliffs, in high karstic moorlands, in open fertile valleys like the tortuous gorges of the Ebro, Rudrón, Odra and Pisuerga rivers.

5. To trek around the hidden sites settled by the primitive villagers, hunters and gatherers from the

Palaeolithic and follow the Megalithic traces of the first Neolithic shepherds and farmers and step into the life scenery of the Cantabrian people who fought the Roman legions.

6. To feel thrilled with the organic simplicity of the rural Romanesque art, here represented as nowhere else, emerged in each village in times of medieval repopulation alongside the old paths travelled by European pilgrims since the 9th century, long before the big cathedrals existed.

7. To surprise yourself with the quality and warmness of the reception and support services, geotourism for sensitive and demanding visitors, a trip with a sense of the territory, predisposed to the emotion arising from the experience and the knowledge.





Ebro and Rudrón canyons

Las Tuerces (Villaescusa de las Torres)

GEOLOGICAL LANDSCAPE

Reception Centre of the Geopark in Villadiego.

ASSOCIATED CENTRES

- Municipal museum of Villadiego (ethnography, painting). - Parish museum of sacred art (Villadiego). - Comic museum "Fabulantis" (Villadiego).

CULTURAL LANDSCAPE

ASSOCIATED CENTRES - Los Franceses cave (Revilla de Pomar). www.lacuevadelosfranceses.es - ROM, Romanic museum and Monastery of Santa María la Real (Aguilar de Campoo). www.santamarialareal.org - Sacred art colection of Colegiata de San Miguel - Sculptor Ursi museum (Aguilar de Campoo).





Canto Hito menhir (Revilla de Pomar)

NATURAL LANDSCAPE

- ASSOCIATED CENTRES
- Interpretation centre of Valle de Sedano (Sedano). - Archaeological classroom (Sedano)
- Holiday resort of Burgos University
- Miguel Delibes (Sedano). www.residenciasedano.com - Interpretation centre of Natural Park Alto Ebro and
- Rudrón canyons (Quintanilla-Escalada, in project).
- Oil museum (Sargentes de la Lora).
- Ethnographic museum Félix Arroyo (Basconcillos del Tozo).



Rebolledo de la Torre y Peña Mesa

GEOTRAILS

WITH A GEOPARK SPECILIZED GUIDE Modalities:

The whole Las Loras. A one-day-trip on a minibus with short walks around sites and villages of high geological, environmental and cultural interest in each area of the Geopark.

ices. Half-day visit and walk through places of special landscape relevance and high geological, natural and cultural interest.

Historical Paths. on foot or by mountain bike through the old pilgrim and transhumance routes across the Geopark territory. Routes: Old Santiago Way (Nestar-Salinas de Pisuerga), Pissoraca Road (Alar del Rey-Nestar), The Muleteer Path (San Martín de Elines-Villadiego)

nce. Half-day route with local heritage specialists of different fields of scientific knowledge. Geology, botany, ornithology and archaeology routes. Pathways and Landscape: itineraries throughout sites of heritage and landscape interest which can only be reached on foot. Linear or circular, half or full day routes

SELF GUIDED WITH MARKERS AND **INFORMATION PANELS**

The Forces of the Earth. From Rebolledo de la Torre. Folds and thrust faults from the Alpine Orogeny throughout a stunning path taking us to Peña Mesa.

ry of the Moorland. From Los Franceses cave in Revilla de Pomar. A walk through the karst of Valdivia high altitude moorland to discover caves, sinkholes, limestone pavements and a large menhir.

The Time Staircase. From Villaescusa de las Torres. The Mesozoic sedimentary rocks, which explain a geological history of more than 200 million years and guide us to Las Tuerces ruinform landscape, a small "enchanted town". From Aguilar de Campoo. A stratigraphical formation of great scientific importance in a short route marked by

monuments. nte Bernorio archaeological route. From Villarén de Valdivia. An important pre-Roman site of a Cantabrian fortified town and its Roman military camps.

Cueva del Agua georoute. From Basconcillos del Tozo. Short route to the Hurón River sink (Water cave).

Sargentes de la Lora historical route. From the Oil Museum. Itinerary throughout the buildings of the Civil War (Cantabrian Front) and Neolithic dolmens.

Odra springs georute. Waterfalls and streams through a structural landscape

Preview of the general programme of activities

MY WAY

Information and tourist services guide. Villadiego Visitors Reception Centre.

Routes on foot, by bicycle and by road. Signposted or not, to be made by own means and with the help of maps. Las Loras Geotour. Discover the Geopark and its sites of interest using geocaching and GPS technology (under work, available from June 1st 2018

GEOTOURISM

Programme of activities guided by specialists:

Escapes. Activities for short stay visits guided from the Geopark Visitors Centre and the network of associated centres (half day to three days) and guided Geotrails Programme (departures from Aguilar de Campoo, Villadiego and Sedano).

Active holidays. School and college campus. Family activities combining coexistence, entertainment and culture. In Sedano, winter, spring and summer holiday time. Social Tourism. Activities programme directed to local population, for deeper understanding of the territory.

Scientific tourism. Programme of visits and residence for academic groups of teaching and research.

On demand. Special programmes designed for individuals or groups, dates as well as contents, services and budgets can be arranged according to convenience. **GEOLODAY & GEOWEEI**

Workdays for dissemination of geological heritage in Las Loras (Geolodays of Palencia and Burgos) and European Geopark Network (Geoweek).

Organisation of local producers and craftsmen sharing a joint strategy of promotion and distribution of local products through an agreement of excellence and a label of quality and geographical indication.

Courses and seminars. Learning about knowledge, techniques and skills related to heritage and local development.

Academic meetings. Research and scientific papers about different features of Las Loras territory.

Public meetings. Presentation and communication of academic works on scientific research of geological, natural and cultural heritage.

Setting up an informal space formed by people with artistic concerns somehow linked to the territory, as a node of the Arte&Territorio Forum, along with Espacio Tangente Contemporary Creation Centre and the Contemporary Art Museum of Castilla y León (MUSAC).

EDUCATIONAL PROGRAM

Production of learning material. Reinforcement of the continuous training of local teachers. Scientific training activities and experiences in Las Loras territory coordinated with school centres. Support for exchange programmes with schools from other national and European Geoparks (Erasmus Plus Programme).

Participation actions of Las Loras Geopark in the Geoparks networks (National, European and Global): meetings, exchanges, congresses, spreading and dissemination, collaboration agreements, economic contribution, etc.

ENVIRONMENTAL VOLUNTEERING & FRIENDS OF THE **GEOPARK**

Social volunteering groups for geological, natural and cultural heritage conservation and custody in Las Loras territory and to support the Geopark.

PROMOTION AND DEVELOPMENT OF TOURISM

Encouragement of tourism-business associations around Las Loras brand as a tourism destiny. Support for staff and companies in the tourism sector.

Enhancement of institutional tourism cooperation. Participation in fairs and other events of tourism to promote the territory. Communication plan and advertising.

PUBLICATIONS, MAPS & GUIDES

Maps and general tourism guide. Communications, resources, infrastructures and tourism services in the territory (visitors centre, information, transports, lodging and meals).

Alaps and specific guides of the geological, natural and cultural territory.

Geotourism maps. Routes on foot and by bicycle, active tourism. Guidebooks of the Geopark activities.





SITES OF GEOLOGICAL INTEREST

- GEOMORPHOLOGY
- La Lora de Valdivia karst
- O Las Tuerces karst
- Lora de Pata del Cid karst
- O Las Loras structural reliefs
- Rudrón y Alto Ebro canyons
- Active geological processes
- **MINING HERITAGE** O Ayoluengo oil field

STRATIGRAPHY, PALEONTOLOGY

O Mesozozoic sedimentary paleoenvironment O Basque-Cantabrian stratigraphic secuences

TECTONICS, STRUCTURAL GEOLOGY Alpine structures from B-C Belt O Ubierna fault and associated structures Diapiric structures



Sites of Geological Interest

The geological interest of the territory provided the basis for UNESCO to declare Las Loras a Global Geopark. 94 geological elements have been catalogued in less than 1000 km² and they were grouped around 12 geosites, some of them of international interest. Their distribution can be seen in the map illustrated alongside.

Most of them can be classified in the field of geomorphology and correspond to the most important reliefs in the northern half of the region, like the deeply karstified moorlands and the limestone rocks transformed into canyons by the main rivers, Pisuerga and Ebro. The contrast between the arid high plateaus and the rough forests confined between the cliffs gives rise to landscapes of great beauty.

Some outstanding points are the Cave of the French, Las Tuerces and the Canyons of Horadada and Rudrón and Alto Ebro. Other places are characterised by their structural component like the reliefs that are the source of outstanding horizons, which seem to come out of a Western, and take the significant name of high altitude moorlands. These hills have been modelled by water erosion over the last million years but owe their shape to the alternation of different resistance materials and to their deformation due to the effort provoked by the compression of the Iberian Plate against the Eurasian continent as a consequence of the shifting of these tectonic plates. This collision between continents gave rise to the formation of the Pyrenees and

the Cantabrian Mountain Range during a process called Alpine Orogeny that went from 55 to 24 million years ago. As a consequence of this collision, the sedimentary rocks underwent some folding and fracturing that can be observed from many points of the Geopark, where the limestone, marlstone and sandstone layers are to be found in vertical position or strongly folded.

protection

Bilbao

The rock fracturing system that crosses the region from east to west is not so striking but holds great scientific interest and it is part of a great fault that divides the whole of the Cantabrian Mountain Range. The plentiful marine and continental fossil remains found in the shape of coral reefs or dinosaurs between layers of rock registered over 215 million of years continuously are also important. There is also one of the world's thickest accumulations of limestone deposited in palustrine environments.

The Ayoluengo oilfield deserves a special focus for the singularity that its onshore towers represent in the region, for its history and for being in active until recently allowing its extraction machines to be standing today

Lastly, some active geological processes scattered all over the territory have been highlighted. Among them there are numerous cascades, upwellings and caves which are not included in the places of interest under Karst designation.

Places of Environmental Interest

The diversity of Las Loras natural environment and its good state of conservation enable the maintenance of a remarkable representation of habitats, some of them very singular and rare in the Iberian Peninsula and which are home to several threatened species of flora and fauna. This biological wealth has worked in favour of the designation of 10 figures of environmental protection overlapping in the enclaves of highest ecological value in the territory (7 sites of 2.000 Natura Network and 3 Natural Protected Spaces from Castilla and León Network, check map)

After historical periods with high degree of human occupation, depopulation and abandonment of the traditional activities in the last decades have led to the regeneration of the forest in wide slopes, moorlands and canyons. The steep relief and its strategic biogeographical position in the transition area between the Eurosiberian and Mediterranean regions are two determining factors for the remarkable wealth of habitats and species in Las Loras.

The holm oaks, Pyrenean oaks, gall oaks and beeches cover large areas, although other singular forests can be found, they are specific to more Northern latitudes, hidden in the shades, like stands of yews, lime tree and hazelnut tree groves, while in more heated areas there are tree formations typical of the Mediterranean weather, like kermes trees, strawberry trees and junipers.

The steppe ecosystem of Las Loras moorlands is the most characteristic and the one with highest environmental value. These are high, plain and rocky areas subjected to the cold, wind and roughness where only creeping bushes can flourish, dominated by gorses, bearberries and heather with scattered holm oak groves and rocky meadow areas. These landscapes have been modelled by the ancestral livestock activities and present an uncertain future due to the recent regression and changes of these uses.

The monotony of the moorland is interrupted by the multiple manifestations of the karstic relief, with sinkhole fields, limestone pavements and ruinform landscapes, which hold thick formations of bushes and ferns. The systems of caves and pit caves originated by the modelled underground are home to communities of cave fauna of great interest, such as bats and invertebrates. The active karstic dynamic allows the development of several Tufa upwellings which are able to create authentic terraced buildings and represent an extremely rare and threatened habitat.

Other typical formations are deep canyons carved in the limestone by the rivers Pisuerga, Rudrón, Ebro and Úrbel, where thick and exuberant groves of ashes, willows and alders thrive with multitude of colourful bush species. The presence of peat bogs with different types of specialized flora and fauna should also be highlighted.

PLACES OF ENVIRONMENTAL INTEREST

PN Alto Ebro and Rudrón canyons **ENP Las Tuerces ENP** Covalagua **ZEC Las Tuerces** ZEC Covalagua ZEC Humada-Peña Amaya ZEC Alto Ebro and Rudrón canyons ZEC Riberbank of Arlanzón ZEPA Humada-Peña Amaya ZEPA Alto Ebro and Rudrón canyons

Code: PN (Natural Park), ENP (Protected Natural Space), ZEC (Special Area of Conservation), ZEPA (Special Protection Area for Birds)







PLACES OF CULTURAL INTEREST

ARCHAEOLOGICAL SITES

- Dolmen, burial and menhir
- 🛞 Castro of the Iron Age
- ↔ Other archaeological sites

MONUMENTAL

ARCHITECTURE

- Church and Romanesque Monasteries
- Medieval rock hermitages
- Medieval tower and castle
- m Monumental village



Places of Cultural Interest

A Geopark is not only a group of places of geological interest. Above all it is a territory devoted to telling stories to the visitor. Like those stories told by the numerous archaeological sites, which host Las Loras: from the funerary monumental set composed by the Neolithic mounds and dolmens to the traditional paths through which the goods travelled on the backs of mules until less than 50 years ago.

The recently restored La Cabaña dolmen in Sargentes de la Lora or the Canto Hito menhir in Revilla de Pomar are some of the region's oldest buildings, but there are many more which are recognized by the archaeologists, who consider this to be a privileged area for the study of the Neolithic due to its great concentration of sites particularly in Valdivia and Pata del Cid high altitude moorlands.

The forts of the Celtiberian people from the Iron Age are located at the top of the highest hillocks witnessing a tumultuous past. The remains of these fortified towns tell us about a period of wars which started with the development of metalworking and finished with the Roman occupation in the Peninsula.

One of the largest forts in Europe is extended along the Peña Ulaña moorland on a surface of about 285 hectares. Other important forts are those who crown Peña Amaya, Castro Cildá or Monte Bernorio, where the presence of an important Roman settlement during the Cantabrian Wars was also reported.

The traces of Roman presence are scarce, but there are still some sections of the strategic roadways of Northern Hispania, as well as archaeological remains of the first settlements after the wars, like Huerta Varona next to Aguilar de Campoo.

Several necropolises from the late medieval period stand out. It was here that the early Christian communities buried their deceased. There are also some churches excavated directly in the rock, like Olleros de Pisuerga, considered as one of the most beautiful Romanesque rock hermitages.

For religious architecture lovers Las Loras keep one of the best sets of Romanesque churches in Spain. The Santa María la Real Foundation in Aguilar de Campoo is at the present one of the most important study centres of the Romanesque in the Peninsula. Authentic jewels like Santa María la Real Monastery itself, Santa Cecilia church in Vallespinoso de Aguilar or San Julián and Santa Basilisa church in Rebolledo de la Torre welcome the visitor with a touch of sobriety and rotundity in style.

The network of traditional roads is more recent. An example of these roads is the one connecting the livestock production centres in Valderredible valley to the market in Villadiego, crossing the canyons of the rivers Ebro and Rudrón by Santa Coloma, or the still conserved sections of the walkways and paths crossed by sheep between Burgos and Aguilar de Campoo.







DIPUTACIÓN DE BURGOS

Junta de Castilla y León







Más información sobre el proyecto en:

www.geoparquelasloras.es Facebook: Geoparque Las Loras Youtube: geoparquelasloras Twitter and Instagram: geoparguelasloras / @geoloras Contacto: info.geoloras@gmail.com 1 +34 659 046 747

PLANT HAR SHALL

Peña Amaya y Albacastro desde La Ulaña