

NATURAL PARK LAS ARRIBES DEL DUERO



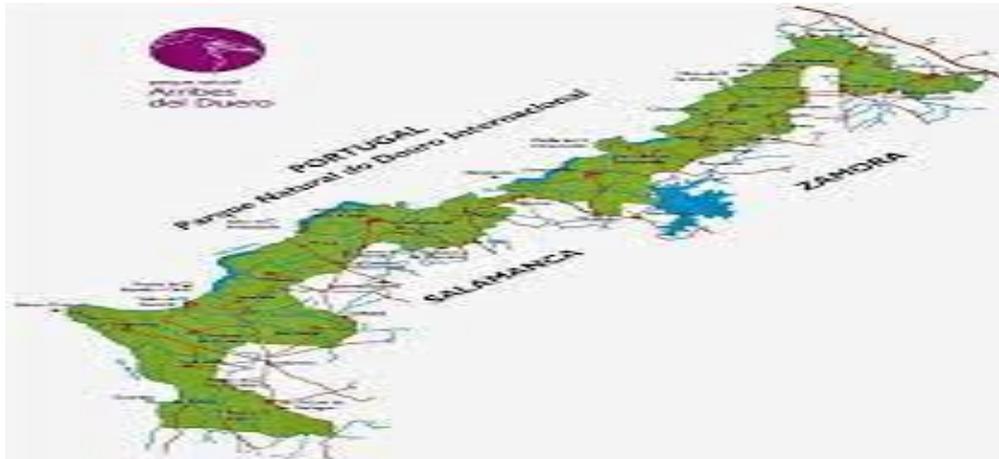
1º BACHILLERATO

IES TIERRAS DE ABADENGO 2020-21

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1. THE PARK

1.1. GEOGRAPHICAL FEATURES – Patricia Moro-



Entering a very beautiful part of Spain and the world is the Arribes del Duero Natural Park. It is a protected area at the western end of Castilla y León that borders Portugal. It has an area of 37 municipalities in the provinces of Zamora and Salamanca with a territory of 1,065 square km.

It is a unique and singular space and ideal to disconnect, it is included in the Plan of Protected Natural Spaces of Castilla y León under the name Arribes del Duero. Its main river courses are the Duero, Huebra, Tormes and Uces rivers.

The Arribes or also called arribas or arribanzos mean "next to the shore" they name the canyons through which the Duero and its tributaries flow. The river broke and gave way to the canyons in which today a community of animals and plants are located.

It is one of the coldest regions in Spain with an average daily maximum temperature of only 19 degrees. Due to the warmer temperatures, the best time to travel is from June to September. Almost unattractive for tourists are the cold months from November to March.

It has a mild annual average temperature, the absence of frosts throughout the year, and certain humidity conditions, these features give rise to a very rich plant

community, characterized by the great abundance of typically Mediterranean species, where crops that are not suitable for this latitude stand out such as: olive, vine, almond tree, fruit trees. Next to the "arribe" proper, appears the peneplain, destined to the cultivation of cereal.

In this park the species with the highest fauna value that correspond to birds are located like raptors, also we find some amphibians. Also note worthy is the presence of a great wealth of fish.

Since the beginning of the 20th century, we have been in a period of demographic, economic and territorial change characterized mainly by depopulation, aging, agricultural abandonment and cultural deterioration. This process is a direct consequence of the industrialization and urbanization processes because it went from being an agrarian and rural economy to being an industrial economy, this produced the increase of people to the cities to have more opportunities.

Some of the rural areas, mainly mountainous in nature, have become a focus of conservation but at the same time are very depressed on a social and economic level. Being difficult conditions and terrain, this causes the use of traditional techniques that are incompatible in the current market and generate an extra cost that does not help the occupation of more population.



1.2. THE CONTEXT -Manuel Pérez-

In this landscape of the Arribes you can see the integration between nature and culture, because supporting the recovery of rural heritage supposes the preservation of the essence of the Arribes.

There was the result of the collision of water with the rocks, giving canyons in which the fauna and flora were integrated, favored by the climate and the difficult access of predators and giving in this way the reservation of animals such as the black stork or the Egyptian vulture and thus managing to attract people to its visit. This set of animals, plants, landscape make up the Parque de las Arribes.

The peculiar thing is that this area had been unknown until relatively recently, until 3 people at the beginning of the 20th century brought them to light. They were Unamuno with his poems and Joaquín Costa and Jose Orbegozo who influenced the hydroelectric potential.

Later, Father Cesar Moran and Malurquer carried out archaeological excavations, leaving their mark.

In 1990 it was classified as a special protection area for birds. At that time, it was realized that nature and culture were closely linked and



that much of the heritage was a reflection of the relationships between man and the environment.

Its landscape has ponds that allow the life of amphibians, streams, banks, and stone constructions are difficult to differentiate from the environment.

The cultivation of vineyards began in the 16th century, with wine, oil and some fruits being important commercial products, its agriculture with its livestock enhance diversity too.

1.3. POPULATION – Alicia López-

The depopulation of the municipalities that make up the Arribes del Duero Natural Park occurs due to the economic transformation, based on industrialization and urbanization.

In the depopulation process of rural areas, stages are distinguished according to their cause and incidence. From the middle of the 20th century until 2016, the territory has suffered a 64% decrease in population, from 40677 inhabitants in 1960 to 14646 in 2016.

The rural municipalities have one of the highest average ages in Spain, this phenomenon is aggravated if we analyze it at the Arribes del Duero Natural Park level, the average age is 57.3 years. Some exceed the average age of 60 years, registering a value that exceeds the national average by almost 30 years.

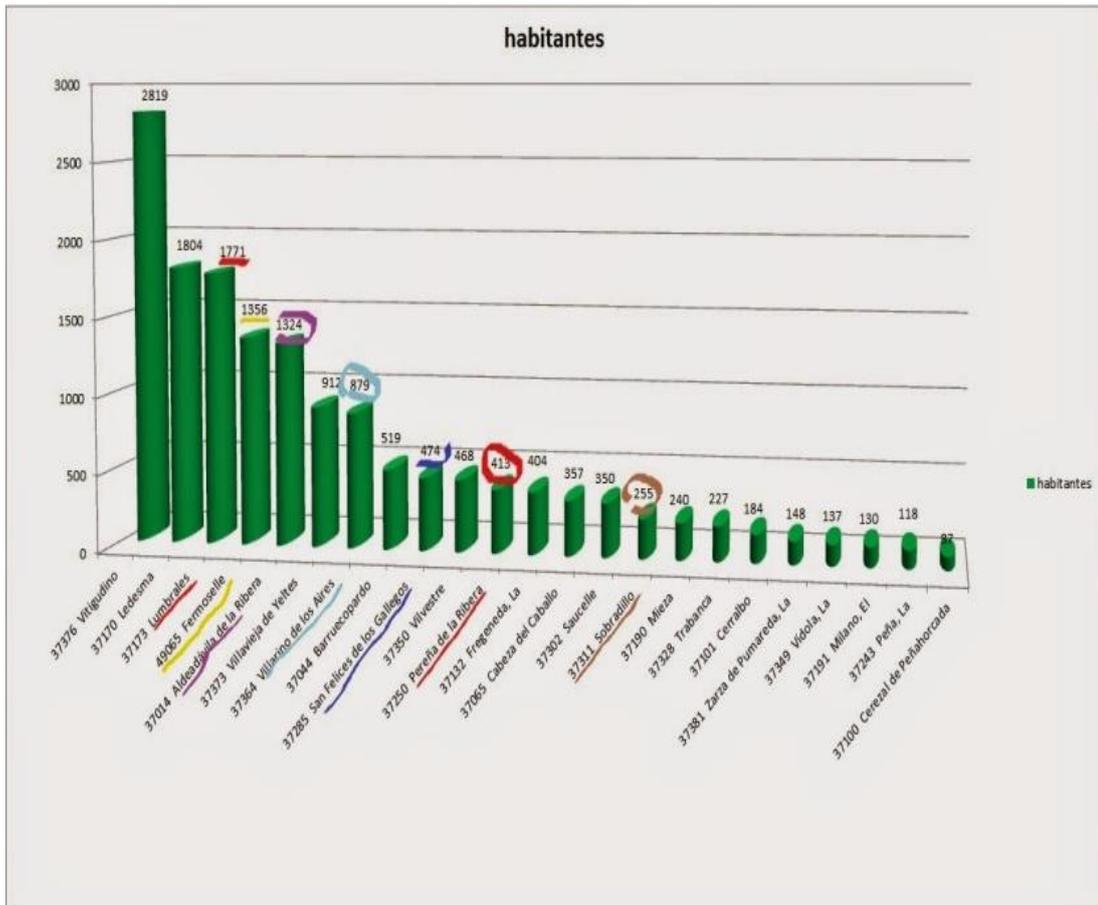
The young and adult population decides to emigrate from this unprecedented territory, of the 14646 inhabitants of the municipalities that make up the park in 2016, only 704 are under 15 years of age, or 4.8% of the population young. The old population whose age equals or exceeds 65 years is 43.69%, reaching 6389 inhabitants.

Finally, the age group between 15 and 65, corresponding to the adult population, represents 51.6% of the total with 7553 inhabitants. A very unfortunate demographic future of exodus in search of new opportunities is assured from the low birth rate and high death rate as a consequence of the depopulation.

Isolation has also consolidated one of the factors that has caused the decline of the depopulation. The geology and topography have determined that the road network has had to adapt to the territory, making it impossible to create high-speed roads and where the sinuosity is necessary to be able to circulate through the slopes. Since the middle of the 20 the century it is one of the explanations for the demographic decline.

It is impossible to obtain all the data at the municipal and regional level, so it is not possible to know for sure the emigration rates. The demographic change took place between the 60s and 80s, between the 15 and 24 year old age groups, which saw their

population reduced by 41.5%. This has meant the loss of a whole young generation of working age having children and the consequence of this is the current demographic situation that happens in the Arribes del Duero Natural Park. The population under 15 and 15 to 34 only represents 4% and 14% respectively.



2. NATURAL SPACES

2.1. HISTORICAL ARCHITECTURE -Aitor Galante-

The stone marks the history of Las Arribes because behind them it is possible to know what the life of the ancestors was like, they can be remains lost on earth, small monuments of different forms ...

Las Arribes, thanks to the abundant places of tourism, reflect the good conservation of the environment and the maintenance of cultural diversity. The most recognizable monuments in this area are the picketed animals, that is, the boar, which meant the protection of livestock. Also when Christianity arrived, great omnipresent crosses were made, reflecting the greatness of God.

The walls used to be around the forts (small towns with moats, stonewalls, they were located in high places ...), in this area the most recognizable is the Castro de las Merchanas or Castro de Lumbrales, also in these towns there are castles like that of San Felices de los Gallegos, which remember the great commercial wars. The stones have also marked communication routes such as roads and bridges, facilitating trade and transport, all this when it was in the Roman Empire in Spain. For the citizens of this area, these structures are a source of pride, it is the past of their family, and for us it is a source of satisfaction and that is why we show it with pride.



2.2. THE STONE – Cristina Fregeneda-

Within the natural park of Las Arribes del Duero we find traditional architecture based on stone. The first point is why the stone and not another material? The answer is that stone was the most accessible and cheap material in the area, because in the field we can find diversity like slate board or granite. In addition, stone allows to make durable constructions because the stone prevents the floods.

The stone constructions in the area work as symbols of the vetones, Christians ... (boar, dolmen ...) as protection for crops, animals and even people in another era (huts and dry walls) and also as communication routes since many constructions allow the passage from one place to another (bridges).

In addition, these constructions have a big sentimental component working as a source of pride for the ancestors since it shows a collective identity, forms spaces for coexistence for neighbors, supports local employment and helps reduce the feeling of abandonment when they are restored.

How is the construction? Interview with Julio Calderón Diego.

There are two types of constructions that are the huts and the walls that are habitually used to delimit the farms. They are built with a dry wall that is achieved with the placement of stones without any type of putty and it could be one-sided or two-sided in the latter, the outer part looks aligned and flat.

For the finish it will depend on:

-In the case of the walls, they end with a rise that consists of placing the last stone on top so that they cover the width of the wall at about 40°.

-In the case of the huts, they have a width of about 80cm and a height of 1.30 m and it will end up placing stones in the shape of a dome with a void that grows in such a way that most of the weight is at the height of the wall. It will be finished with a covering of earth to prevent water from entering and right in the center of the dome by placing a single stone.

In the photos we can see the construction of a hut.



2.3. RESTORATION – David Castro-



To properly restore the heritage of the Natural Park, we must think about the people that are going to enjoy said heritage; a focus on the visitors is needed, so the best way to handle this would be remodeling the old buildings and spaces to make them accessible to everyone, no matter their age, height, or physical state. Our goal is to keep the original parts as intact as possible, while providing a good quality restoration to go along with it. No environmental damage should happen in the process, since this is a protected area where our fauna and flora matters and should be kept safe at all costs.

Of course, we are in different times to the era when these spaces were built. New, modern technology is a must for everyone that wishes to improve the quality of a trip to our park, and so, it should be installed everywhere according to the needs of the visitor. Once again, this technology should not harm the surrounding ecosystem in any way.

Local workers are a key part of the Park, meaning they must be given a chance to participate in the restoration of their heritage, something they understand better than a foreign business. Our people know the functionality of each building and should restore it to make it work as it originally did.

In addition to local workers, the authorities of the surrounding area must work with the owners to provide information on said places, giving leeway to experts who desire to explore the spaces and analyze them to ensure the “first visit” is safe. After this, the local business responsible for the restoration will start the process, collaborating with other artisans or experts.

When all is finished, the heritage is ready to be visited again, thanks to the hard work of a lot of people in this Natural Park.

2.4. HUTS AND DOVECOTES -Irene Fregeneda-

- The most representative construction of the area are huts, small stone houses where the shepherds were on rainy or cold days while taking care of the cattle.
- “Los chiviteros” they are huts to keep goats from their predators. They are usually found in areas near rivers as goats eat the grass on these slopes. They have two different forms:

“Chiviteros” with a circular plant: They are round and small.

San Felices de los Gallegos (Salamanca)



“Chiviteros” with a rectangular plant: They are rectangular and larger.

Aldeadávila de la Ribera (Salamanca)



- Fools are structures made of stone or wood where oxen, cows, horses and donkeys were tied to put horseshoes on or heal them, with the animal's head under a yoke and ropes to lift the animal.
- Dovecotes are stone buildings with many nests inside. Each nest is on a stone so it can have a large number of them.



La Fregeneda (Salamanca)

2.5 POTTERY AND OBSERVATORIES -Cintia Fuentes-

POTTERY

The pottery activity has been very abundant in the surroundings of the Arribes del Duero Natural Park, and in many places they have dedicated themselves to this activity, but with the passage of time we have seen it disappear in towns such as: San Felices de los Gallegos, Barruecopardo, Hinojosa de Duero, Bañobarez, Bogajo, Lumbrales, ...

We also know that this is a job that requires enormous effort and a lot of concentration since you have to be very aware of the mud. And we can observe all this work in the Fornillos ovens.

The works carried out by the Natural Park began in 2001 to rebuild them and be able to adapt them to visit them and avoid accidents.

OBSERVATORIES AND LOOKOUTS

-What most influences the landscape of the Duero canyons?

The fight between the water and the rock; when it beats the current, cathedrals surrounded by water and vegetation can be seen, but if the river wins, the valley opens and then the olive and almond trees appear. This landscape contains the history of two countries united and separated by the river, the oldest, when these leveled mountains arose, and the recent appearance of dams and electricity lines, the abandonment of crops and the recolonization by the forest and vegetation.

Also through these landscapes we can see remains of crops, roads that went down to mills that are now submerged by the river, restored dovecotes, ...

And of course to see this landscape from surprising places you can go to “Peña del cura”, “las Janas”, “el Picón de Felipe” and from there you can enjoy a wonderful kingdom where rocks, water and living beings they offer different spaces. To create these viewpoints, many factors are taken into account, such as the tradition in its use, the lack of species sensitive to the impact of visitors, good access, a large and safe area and of course a beautiful and spectacular view.



All these requirements are met by the viewpoints that can be visited in Arribes:

Castro de Saldeana (on the bank of the vertical walls of the Huebra River), the Fermoselle Stairs (next to the old border guard post) or the Barrancas Viewpoint.



OTHER RESTORATIONS

Old hermitages, simple as shepherds' huts or more monumental. The hermitages are the place where the religion and the arribaña nature meet, where the pilgrims gather carrying virgins and banners with aromas of thyme, metallic cries of coughs or vultures. The Hermitage of San Cosme and San Damián stands out, in Tudera, which is located in the rocks next to the town and in it the roof was repaired and the access was improved with stairs to be able to visit it.

The improvement of urban environments has been addressed in several localities of the Natural Park, and in the province of Salamanca several interventions have been carried out to improve urban areas. For example, the restoration of the Bermellar playground or the restoration of the traditional bread oven in Ahigal de los Aceiteros, ...



3. THE DUERO RIVER

3.1. FLORA –Marta Olivera-

Arribes, is a park very wellknown for its landscape and vegetation. This vegetation is abundant because it grows in all the hills and valleys that are surrounding the Duero River. In addition, this vegetation has been manipulated and used by man, sometimes for activities such as agriculture.



The vegetation in this natural park is a Mediterranean, where the junipers, which form large forests throughout this area, stand out as old and exclusive vegetation.

The most abundant vegetation in this park is undoubtedly the holm oak forests; they are found throughout the territory, especially in areas where agricultural activities are not carried out . Another type of vegetation, less abundant are the cork oaks. Over time they are found in small quantities due to forest fires and other factors. On the other hand, we have the QuercusPirenaica oak groves that are found in isolated forests, divide plots of cereal crops.

Hydrophilic forests of alder, willow, ash, hackberry are found on the banks of rivers One of these forests is located north of the Aldeadávila dam and is one of the largest in Europe in a natural state. Finally, we would have forest shrubs like the yellow flowered broom and other types of broom. These are some examples of vegetation, but there is much more so it is a park very rich in vegetation and interesting to visit.

3.2. FAUNA I –María Francisco-

One of the most important characteristics of the descent of the Duero River is the great richness and diversity of the different forms of animal life.



Much of the descent of the Duero passes through the border areas between Spain and Portugal, known as "Las Arribes del Duero" (although also known in Portugal as "Douro Internacional"). The great wealth of the different ways of life of "Las Arribes del Duero" and the great landscape value of the area, is what has led to the denomination of the area as "Natural Park".

The distribution of the fauna is marked by the climate of the area, of the Mediterranean type and especially of Atlantic influence. And as a result, there is a great diversity of species of the different climates that coexist among them. It is an area of great ecological value, which in addition to the variety has many protected species, some in danger of extinction.



The river courses, represented by the Duero River and its tributaries, are both Spanish (Esla, Tormes, Huebra, Águeda) and Portuguese (Coa, Sabor, Tâmega). There are abundant species such as carp or barbel for example. However, it has suffered problems such as the construction of dams in some populations and also the introduction of foreign or exotic species. The most numerous amphibians and reptiles are the salamander, the common green frog lizard, the San Antonio frog, and also snakes and vipers.

The most common mammals are the wolf, otter, weasel, badger, and lynx. And even in excessive numbers and with irrigation of plagues if it is not controlled, are the fox and the wild boar.

Birds occupy the main protagonist on their own merits, with both species in danger of extinction and of considerable rarity. Some are the water blackbird, the hoopoe or the "woodpeckers" but one of the most representatives is the black stork, a true gem. But birds of prey share the limelight with them, such as the golden eagle, the Egyptian vulture, the vulture and the peregrine falcon.

In conclusion, there are more than 200 different species with great complexity and diversity. In addition to having a high potential conservation value and well represented links in the food chain. That is why we must take care of it and protect it.
WE HAVE A TREASURE!

3.3 FAUNA II – Andrés Agudo-

In the Arribes we find a huge number of species, from numerous fish, emblematic birds and incredible mammals which will be explained below.

Fish

In the Arribes we have several rivers, all of them will give the emblem of the Arribes, the Duero River. In these rivers live numerous species of fish, among the smaller ones we find the bogas, of medium size the most abundant can be the pike-perch or the



tench, these being found in small lakes called "ponds" and finally those of Barbels and carp could be larger in size even though they are not extremely large fish. In addition to these species, in the Arribes we find several introduced species such as pike or black-

bass. In Las Arribes, fishing for many of these species makes this activity very common among the inhabitants of the park who enjoy one of the best places in Spain to practice this sport since if there is something that Arribes del Duero is characterized by, it is for its rivers.

Mammals

In the Arribes we have a very high level of species since being a place of steep slopes that make easy agriculture impossible and numerous hectares of mountains are abandoned, numerous plants, trees and the like have been born that serve as a refuge for these animals. From smaller to larger we find, among others, hares, rabbits, marten or genets, with a medium size we find foxes, badgers or wildcat, finally, the largest mammals would be the wild boar, the roe deer (introduced from the 2010s) and the wolf, the latter creating numerous problems for local livestock since they were not common in this area and in recent years several specimens have been located here.

Many of the animals of the Arribes lack natural predators so they must be managed by hunting, being a very important social-economic activity in the Arribes since livestock and local agriculture are harmed by pests of animals such as wild boar or wild boar.

Fox.

Reptiles

In the Arribes there are numerous amphibians and reptiles. Amphibians include newts, salamanders, toads and the common frog and the adorable San Antonio frog. On the other hand, among the reptiles, the ocellated lizard, the lizard or the gecko stand out. Finally, among the snakes, the bastard snake, or the viperine snake, stands out, the latter lives only in the water, we also find a species of "turtle" called the galápagos.

Birds

There is a huge variety of bird species in the Arribes, practically innumerable, from endangered species such as the black stork or the golden eagle, birds with a very colorful plumage such as the bee-eater, also fishing species such as the aquatic blackbird and in the last years the cormorant. On the other hand, migratory birds such as thrushes, turtle doves or wood pigeons can be observed. Finally, it is worth highlighting rupicolous birds, that is to say that they live in the large rock cuttings that are in the Arribes as vultures, Egyptian vultures or swifts, in addition the Arribes stands out for its raptors since it is here where 60% of the birds of prey make their nests. All the Iberian Peninsula some examples of these species are Bonelli's eagle, Egyptian vulture, vultures either tawny or black, the peregrine falcon or the eagle owl. Undoubtedly this group of animals is the most representative of the Arribes since more than 200 different species have been counted.



Eagle

Vulture



3.4. RESERVOIRS –Iván Chico-

Rivers are of great importance in our natural park. Although the water is temporary



because although there are many ponds and rivers, when summer arrives in June, they begin to dry up. Conserving water is one of the most important roles of architectural elements. For example, fountains and ponds

are very important to people and many living beings.

Although it may not seem like it, the Arribes are true stone aquariums where there are many aquatic animals of which there is little awareness. In addition, there are some constructions to protect them, these constructions even come from Roman times.

Some fountains have been covered because they are in populated area for example the Bishop's Fountain in Hinojosa de Duero and another restored fountain is found in Bermellar, a town near Lumbrales.

Other built elements associated with water are the water troughs, for livestock, in order to help agricultural activity in the natural park and create suitable places for the reproduction of some species of amphibians, thanks to the stone and earth ramps that facilitate their access inside.

Apart from all this, there are also mills in the natural park. They are small stone buildings with a roof covered in Arabic tiles, except for some southern representatives such as the castles of Sobradillo and San Feliz de los Gallegos.

Finally, the last elements related to water are the weirs that retain it in streams and banks. Before they were associated with mills and now their value serves to increase the time of availability of water to livestock and to a community of animals and plants, insects, storks, amphibians, gallipatos, galapagos, otters.

As for the dams and reservoirs, the Saucelle waterfall takes advantage of the Duero river bed, It is located in the municipality of Saucelle in which it was decided to build a

hydroelectric power station in the 1950s. The reservoir is located about 8 km from Saucelle. The almond dam, another of the great engineering works of the Arribes de Duero region, is also a hydroelectric work on the Tormes river. It has a height of 202 meters and finally in the Aldeadávila dam is located in the town of Aldeadávila de la Ribera.

Saucelle Waterfall



4. SUSTAINABLE DEVELOPMENT

4.1. EXTENSIVE AGRICULTURE I – Javier de la Prieta-

Extensive agriculture is the crop production system that tries to take advantage of the soil and its resources. Natural resources are combined with those of agricultural work. There are extensive crops: cereals such as oats and wheat, legumes such as peas, fruit trees such as olive trees and vineyards.

Extensive agriculture is developed in large areas, its production per hectare is less than that of intensive agriculture and it also requires little labor and machinery to carry it out. In addition, it does not cause a strong impact on the environment and as most of the extensive cultivation is rain-fed, it does not require large investments to establish an irrigation system.

Extensive agriculture has several advantages over other farming systems. As it requires few people and technical resources for its work, it offers a good profit margin. Also with these crops, ecological agriculture can be carried out since, as most crops are rain-fed, water is saved by avoiding desertification as well as soil erosion caused by irrigation.

In contrast to intensive agriculture, extensive agriculture requires larger plots to obtain good results, but intensive agriculture requires more personnel. As extensive agriculture is based on the use of natural resources, its dependence is much less. In general, extensive agriculture is cheaper than intensive agriculture, but intensive plantations can give a higher profit margin.

After all, extensive and intensive agriculture are two opposing views regarding soil treatment, water use and the elements necessary for its development.



4.2. EXTENSIVE AGRICULTURE II –Omar Sánchez-

This type of agriculture is a type of agriculture such as dry farming that takes advantage of the dirt and natural resources, some of the most common crops are usually: cereals, legumes, fruit trees, vineyards and some vegetables.

Some characteristics of this type of agriculture are its does not need much work or machines and causes less impact on the environment. Some advantages of this type of agriculture can be ecological agriculture because extensive agriculture pollutes less, the good quality of the products and the care of the dirt.

In Spain and especially in Castilla y León this kind of agriculture is very important, cereals, olives, almonds and other crops are planted for animals.

The differences with extensive agriculture are to take advantage of the land, take advantage of natural resources, the economic impact and care for the environment.

My father is a farmer and he cultivates barley, wheat and grapes. He has a small orchard in which he plants all this, although most of the products from the Arribes are collected from the valley through which the Duero River passes where olives, vines and figs are located.

Some of the most famous Arribes products are Ahigal wine and oil. Ahigal is a small town in the Arribes area that is characterized by making good oil.



4.3. OLIVES AND WINES –Lucía García-

One type of agriculture that is practiced in the Arribes is extensive agriculture, which consists of the use of large lands to maximize production. The most common crops on these farms are vines and olives, which resist summer heat and low winter temperatures.

The vine: a deciduous climbing plant that can have a long life; you can find a vine with more than 100 years. The leaf is the most important organ because acids and sugars are formed in them that give the fruit flavor. This crop in the whole process requires some care such as: plowing, pruning, fertilizing sulfate and plowing again. They begin to ripen in the heat of March and are harvested in September; the time of harvest is called the vintage, it is when the farmer's family gathers to begin to cut the bunches and deposit them in large or tubular drums that are transported in trailers to the traditional wineries. In the press, the grapes are pressed with the feet to obtain the sweet grape juice that will be transformed into wine over the months. Once made, it is preserved in clay jars or oak barrels, in cool cellars for years, and is finally bottled. Grapes can be used to make grape juice, wine, marmalade and brandy. Several varieties of wine are typical in the Arribes area: red, rosé and white.

The olive tree: it is a small tree 15 meters high. It is typical of the Mediterranean climate that exists in the Arribes. It has small flowers from which the fruit that is the olive comes out and its skin varies in color as it matures from a bright green to a dark



garnet. Olives collected at the beginning of the season (October) are used to eat them as a snack after having sweetened them; and at the end of the season (January) the fully ripe is collected and they are used to make oil are collected. This type of olives are taken to an oil mill where they are dedicated to crushing the fruit, having previously removed the pit and leaves; When it is completely liquid, it is decanted and stored in stainless steel tanks for its good quality, and finally it is bottled for sale and consumption. The most prominent oil mill in the Arribes is that of Ahigal de los Aceiteros with such good and ecological quality, that they make international shipments, of the Arribera, Zorzal and Arade brands.

4.4. EXTENSIVE LIVESTOCK FARMING –Laura Méndez-

Extensive cattle ranching is the one that takes place in large areas. Thus, these spaces are used for raising animals, in order to obtain an economic benefit. To implement this type of livestock, the producer limits the environment in which the species usually lives, trying that its development as natural as possible.

The objective of this livestock is that the animals can move more freely instead of being limited to a small space.



ADVANTAGES AND DISADVANTAGES OF EXTENSIVE LIVESTOCK

ADVANTAGES:

- The soil is less eroded, compared to intensive livestock.
- Less energy resources, labor and materials are used.
- They allow to preserve ecosystems and the diversity of species.
- According to experts, higher quality products are obtained.
- Animals receive more ethical care and have greater well-being.

DISADVANTAGES

- It is more inefficient (requires higher costs) than intensive livestock.
- The production cycle is longer than in intensive livestock farming, and does not necessarily meet consumer requirements.
- By not concentrating on cost reduction, such as intensive livestock farming, their products tend to be more expensive and less price competitive in the market.
- The products are not homogeneous, making them less attractive in the market.
- It requires large areas, and in some cases deforestation is used to dispose of them.

EXAMPLES OF EXTENSIVE CATTLE RANCHING

- A. Extensive cattle farming. It is about raising cattle in large areas of land, taking advantage of the frequent grass vegetation in those latitudes as food.
- B. The farms. In traditional farms, of minority production, animals such as cows, pigs and chickens roam in a kind of local ecosystem, which allows them to develop in an

ecological way, taking advantage of waste material to fertilize the land and without the presence of large massive technologies or genetically engineered foods for fattening.

- C. Domestic cattle and goats. The domestic livestock of sheep and goats is common to many rural sectors of Europe, for which the surrounding territory is used and few material or energy inputs are used. It is a subsistence or locally valued livestock model.

AN ALLIANCE BETWEEN EXTENSIVE LIVESTOCK FARMING AND NATURE

Extensive ranching uses the resources of its natural environment with animals that graze on large areas of land. Scientific knowledge shows us every day the importance of this type of productive activity for the biodiversity of Spanish ecosystems whose future depends, to a large extent, on all of us. Cows and sheep not only produce meat or milk, they also offer very important environmental and social services. We will review their contributions:

- A. QUALITY, UNIQUE AND SUSTAINABLE PRODUCTS: Meat, dairy products, wool or extensive eggs are material productions, palatable, but which also offer sustainability, quality, uniqueness and history, which must be transmitted to buyers.



- B. GENETIC DIVERSITY AND LOCAL RACES: Spain is home to a very large number of local livestock breeds (for example, 44 sheep, 24 goats, 39 cows and 16 horses). Genetic diversity implies adaptation to the variety of territorial resources, in the face of environmental changes and the use of foods that do not compete with the human diet.

C. CONSERVATION OF BIODIVERSITY:



Extensive livestock farming and diversity of plants and animals are explained by several factors:

- Because cows and sheep currently exercise the role that their wild ancestors did, opening clearings in the forests, limiting the scrub, maintaining pastures, dispersing seeds, fertilizing and generating food in the form of placenta or carrion.

- The slow implantation of livestock activity (a process lasting thousands of years) allowed the adaptation of the species that accompany it to the dependence of human management and their livestock on the characteristics of the territory.

- Finally, extensive livestock farming does not radically alter the functioning of ecosystems: it does not extract all the water, it does not pollute ... In many parts of the planet, the production of meat and milk generates significant environmental impacts, associated with pollution by waste, the great consumption of water, etc. Against all of them, the scarcity of impacts generated by non-intensive livestock models contrasts with it.

D. CREATION AND CONSERVATION OF CULTURAL LANDSCAPES: The meadows of holm oaks and oaks are one of the clearest examples of cultural landscapes created by livestock activity, which depend on it for their conservation and which coincide with our aesthetic preferences for the natural environment.

E. ACCESSIBILITY TO THE TERRITORY: Access a place from the intellectual point of view: understanding it, knowing its species of trees, knowing the usefulness of its corners, the time of its productions ... and also accessing it physically, walking its paths, reaching where we want to go.

F. FIGHT AGAINST CLIMATE CHANGE AND DESERTIFICATION: The permanent grasslands used by extensive livestock are essential in the face of climate change and the advance of desertification, as they fix a lot of carbon in the soil, and keep the precious fertile layer with its roots, preventing it from being carried away by water or wind. and the land becomes barren. That is why it uses the term climate-smart agriculture (ACI).

G. FOREST FIRE PREVENTION: Free fire brigades, which produce as they work to remove dry vegetation, limit brush, maintain roads and create natural firebreaks.



H. LIVESTOCK CULTURAL HERITAGE: Networks of livestock trails, local roads and trails, of varying lengths, in some cases thought to have been created by herds of wild herbivores before the arrival of livestock. Here the wide network of streams and strings of Spain stands out, unique in the world for its extension and cultural importance:

- Farm closure: stone and mud walls, boundaries, wooded hedges that affirm ownership and prevent the entry and exit of domestic animals.
- Livestock constructions made with the materials offered by the environment and with very old techniques.
- Ethnographic elements made with wood, branches, cork, stone, such as carts, baskets, tools, etc.
- Traditional activities, fairs and celebrations (slaughter, cattle fairs ...).



I.MANAGEMENT, CONSERVATION AND DEVELOPMENT: Also livestock systems linked to autochthonous breeds: They offer products, activities, celebrations or buildings that provide identity and make the territory unique.

They facilitate the meeting and work in common between groups with diverse interests and points of view: managers, businessmen, etc.

They allow the creation of business initiatives, new jobs and the establishment of the population in rural areas.

They help the management of natural spaces in the control of incentives, conservation of biodiversity or links between the visitor and the territory that facilitate their understanding.

Also they support an exceptional offer of inland tourism: offering networks of trails, beautiful and inhabited landscapes, etc.



5. TOURISM AND PUBLIC USE

5.1. TOURISM –Marcos Martín-

Introduction

The Arribes del Duero is composed of 10,650 hectares, they have a large plant community, which is very important for the declaration of protected natural park. The declaration as a Natural Park of Los Arribes del Duero was on April 11, 2002. In order to "Contribute to the conservation and improvement of its natural ecosystems and landscape values "The river embedding causes a microclimate. This favors Mediterranean crops.



In the Arribes there is great cultural heritage, based on fortifications, constructions, archaeological sites. In the Arribes there is great cultural heritage, based on fortifications, constructions, archaeological sites, like the Castro de las Merchanas in Lumbrales, which attracts many tourists in a mix of artisanal and traditional architecture.



Tourism

Tourism has become a great engine for the development of natural spaces. Economic development has been achieved with the granting of financial aid, in order to increase income, mainly agricultural and thereby try to maintain population. There are projects for the rehabilitation or creation of rural accommodation, advertising, educational, sports, ornithological, botanical or, oil-tourism projects.



Agrotourism that is subdivided into two branches. Oleotourism and wine tourism, based on the different processes of making oils and wines, popular places for this type of tourism are Vilvestre and Ahigal de los Aceiteros. Other types of tourism such as geological, ornithological, botanical, cultural, agricultural, gastronomic, sports. They have been supported with the creation of the Enviromental Centre.



In 2016, there were 63 rural establishments, triple the number in 2005. This could have to do with the increase in the number of visitors to the Natural Park. Examples of businesses such as Embutidos Herrero located in Lumbrales, their development is



improving a lot over the years, they invoice large amounts of money. In 2006, the year of inauguration of the second Environmental Centre, the visitors counted were 16064. In 2016 it reached 22783. These data counted by the houses of the park could not be real since, it is estimated that about 130,000 visitors come to this Natural Park annually.

5.2. CONSERVATION AND INTERPRETATION –Magaly Gutiérrez-

The restored constructions must be taken into account in the activities of public use of the Arribes del Duero Natural Park. It is pursued motivating so that the restored elements are visited, that they are used appropriately, and there is a good process of communication of the information and a high level of satisfaction.

What are we trying to achieve?

The main objective is to find visits to the architectural monuments in the villages.

Two types of routes are distinguished:

1. There are routes on local roads with small walking tours.
2. Walks to know urban centers knowing the popular architecture.



What does heritage show us?

The buildings are made with different materials from the immediate environment that are characterized by a series of construction needs: resistance, impermeability, lightness ...

Heritage is characterized by several factors: weather, type of stone, altitude, cultural influences ... Many buildings have been discontinued over time.

An example is the dovecotes. These structures have two functions: create spaces for pigeon nests, protect them from the weather and predators.



5.3. INTERPRETATIVE EXAMPLES –David Corral-

The interpretation of heritage is the art of revealing the cultural legacy to the public using techniques that have been improved over time, such as interacting directly in learning: "perception requires involvement" "there are no facts but interpretations" Interpretive activity can be done using a person or graphic materials. The current methodology is based on channeling the positive thoughts of the public towards the environment; it helps to learn values towards this. It begins by simplifying the information in such a way that the public finds it entertaining and interesting, it is told a complete story related to the activity and finally the outcome that has to coincide with the end of the tour.

There are many possibilities of activities, involving a greater or lesser number of people, but it is not necessary to spend a lot of money since a well-qualified person can be totally effective. Some examples of interpretation are:

- a) The Alfar of screws / the furnaces: These are old ovens that can be reached by a path but this consists of permanent elements on which the main discourse is based and the temporary ones that are a complement to the main one since you may not find them. They are about kilns where the clay was worked, but it does not have a guide, so it has posters in which the extensive information provided on this subject is simplified.



- b) The Colts of the plows: These are molds sculpted in the Rock in the shape of Colts that were used to mold wet wood.



- c) The rock presses of Mámoles: It is a path surrounded by orchards that passes next to some old wineries and a slightly more modern one, that has as its purpose an old Carabineer settlement with wide views.

5.4 EL ABADENGO ROUTE –Óscar Herrero-

Villages: **Lumbrales- Sobradillo- San Felices de los Gallegos**

In this itinerary the visitor will be able to discover the historical region of El Abadengo.

Lumbrales, one of the most important towns in the Park Natural Arribes del Duero and capital "of Abadengo, where we will visit the environmental centre " Territorio Vetón "located in the Casa de Los Condes next to the Church, and also visit the ethnographic museum. Later the visitor will be able to approach the Castro de las Merchanas and observe this defensive structure and the nearby mill.

We will get to **Sobradillo**, a historic town where one of the two houses of the Arribes del Duero Natural Park is located. In the tower of the castle is the interpretation center of the park and next to it is another building destined to host exhibitions.

We will follow the road to **La Redonda**, where the path of the "Magic Stones" is found, rocks of irregular and very striking shapes.



Then we arrive at **Ahigal de los Aceiteros**, which, as its name indicates, has a great tradition in the production of olive oil, and where we recommend taking a guided tour of the organic oil mill, where the visitor can learn about the process of making olive oil, "liquid gold" plus a tasting of oils. It is a must to go to the "Púlpito de las Monjas", a viewpoint from which to contemplate one of the most beautiful views of the Duero.



We will continue to **San Felices de los Gallegos**, a medieval town of singular beauty and where we can walk through its streets and contemplate its historical aspect. In the square we will visit its majestic church and the arcades of the town hall, also its castle-museum rebuilt into a historical classroom, the oil museum "El Lagar del mudo" that obtained the "Europa Nostra" medal for traditional reconstruction in 2002 and the museum of La Canteria. In addition, in San Felices you will find the multi-adventure center to discharge adrenaline by going down zip lines, going up the climbing wall and doing active tourism activities. Besides, from San Felices you can take one of the most impressive hiking routes to reach the "Puente de los Franceses", a large bridge over the Águeda river.

5.5 SOUTH ARRIBES ROUTE –Vega Pintado-

In the southern part of the park of the Arribes, where the Duero leaves Spain and enters Portugal, there are a series of villages with great tourist attractions formed by viewpoints, museums, chapels...

Starting in the southern part of the park, we will visit Vilvestre, taking a boat in "La Barca" along the width of the river Duero. We can go to Barruecopardo and Saucelle, where we will have the views from the different viewpoints of the dam of Saucelle. From the dam, continuing the road we will pass to Portugal until we arrive to Barca d'Alba. We will then cross the international bridge to reach Vega Terron, returning to the Spanish side. We will go up to La Fregeneda arriving at the viewpoint of Mafeito observing the width of the river with olive trees and vineyards in the part of Portugal. Following the road we will arrive to Hinojosa de Duero where we will visit spectacular museums and monuments or we can take again direction to Portugal where we will find the viewpoint of Contrabando, La Peña la Vela, Pajeros de Gonzalez and enjoy some walking routes.

VILVESTRE

Vilvestre is a municipality with prehistoric monuments such as a castle from the border fights with Portugal. The visitor can enjoy many natural viewpoints.

A recommended activity is a river cruise on the Duero river, where you can also buy cheese at the artisan cheese factory "Garcia Calvo". We also recommend a visit to:

- MUSEUM "CASA DE LOS FRAILES": the museum shows a collection called La Prehistoria en Las Arribes. It gives us information about the formation of the Arribes and its natural resources.



- BOAT TRIPS ON THE ARRIBES DEL DUERO: in La Barca, situated on the banks of the Duero, a boat goes upstream to La Code (Mieza). The trip lasts 2 hours.



SAUCELLE

Saucelle is a pretty village situated near the waters of the reservoir. The waters of the rivers Camaces and Huebra give rise to charming waterfalls such as the Cachón del Camaces and Carranzo, watched over by large birds of prey and carrion eaters.

Visitors can enjoy:

- SALTO DE SAUCELLE: next to the Saucelle dam, this village was built to provide housing for the families of the workers who built the dam.
- EL MIRADOR DEL SALTO: there is a wide view of the valley where the river Huebra flows into the Duero.



- EL MIRADOR DE LAS JANAS: from here you can enjoy spectacular views of the landscape in the area of the Molinera pass, which is ideal for birdwatchers.

It has several tourist routes, including the Senda del Duero, which forms part of the GR-14 (long-distance footpath that follows the course of the Duero river).

Cycling enthusiasts can enjoy the mountain bike centre. From here there are 7 routes

for mountain biking, more than 115 km of signposted trails classified according to their difficulty. The centre offers the possibility of playing Geocaching, a simple adventure game for GPS users focused on the search for hidden treasures.



HINOJOSA DE DUERO

Hinojosa de Duero is one of the best known villages in the Arribes del Duero, mainly because of its cheese-making tradition. It has two cheese dairies that produce a cheese known throughout Spain. It is a municipality with an extensive historical, cultural and scenic heritage. Lovers of hiking can take one of the most impressive routes of the Arribes "La Ruta del Contrabando", which can also be done on horseback and mountain bike. On this route we highlight the viewpoint of La Peña la Vela, with an impressive panoramic view.

Visitors can enjoy :

One of the best preserved necropolis in the whole province.

- MUSEO INETERPRETATIVO DEL DUERO: where fragments of the origins are collected, such as images of some moments that marked its past, with several collections in 3 rooms:

-Ground floor: collection of Roman funerary stelae together with other archaeological objects.

-1st floor: a large model railway.

-3rd floor: domestic and agricultural objects.



- THE RAILWAY LINE LA FUENTE DE SAN ESTEBAN- BARCA D'ALBA: considered the greatest engineering work of the 19th century.



- MIRADOR DEL CACHÓN DE CAMACES: located on the road that joins Hinojosa with Saucelle where you can see a magnificent panoramic view of the imposing waterfall, encased between blocks of granite. In winter and spring the view of the waterfall is spectacular.



- MIRADOR DEL CONTRABANDO: this is the starting point of the hiking route "Ruta del Contrabando" towards the village of Saucelle and ending at the Peña la Vela.

This year one of the new tourist attractions has been opened. It is called "**Camino de Hierro**" and, from 23 April, it can be enjoyed. It corresponds to the last 17 kilometres of the Duero railway.

After the closure to rail traffic in 1985, this place was declared an Asset of Cultural Interest (BIC) in 2000. It is a most attractive route, as it is a dream landscape. The canyon formed by the Águeda river, just before it flows into the Duero river at Vega Terrón, leaves no one indifferent.

This place has 20 tunnels and 10 bridges. What is a fact is that this opening to the public of the "Caminito de Hierro" was one of the most eagerly awaited in recent times, this peculiar section is between the station of La Fregeneda and the international bridge at the river dock of Vega Terrón. Therefore, in this way, this "Caminito de Hierro" crosses a large part of Hinojosa de Duero, one of the most spectacular municipalities in the province.

To enjoy this "Caminito de Hierro" you must purchase tickets through its official website: caminodehierro.es. The price is 5 euros, and includes accident insurance, safety waistcoat, torch and shuttle back. There is also a reduced price of 4 euros for students, large families and pensioners.



LOGOS

