

FUNDACIÓN NATURALEZA Y HOMBRE



The Pasiega and Eastern Mountains of Cantabria

The Pasiega and Eastern Mountains of Cantabria, Castile -León and the Basque Country (in northern Spain) include the headwaters of the Pas, Miera, Asón and Soba valleys. They also include the southern and eastern slopes of the Cantabrian massif, in the provinces of Burgos and Vizcaya, with the valleys of Trueba and Cantabria, respectively.

These mountains are once again populated by an emblematic species of the high peaks, the chamois (*Rupicapra pyrenaica parva*). They look like goats, but have a lighter coat, smaller horns and a distinctive mask that makes them unmistakable. This species disappeared from the entire Pasiega Mountain, just one of the enormous changes that history and the elders tell us about. This area of forests, meadows and small villages favoured the existence of many different species of fauna and flora.

Gradually, the whole area was transformed by humans. Each area was altered according to its use. At the end of the 16th century, the Pasiega mountain suffered massive deforestation in order to provide wood for the construction of ships for the Invincible Armada. The wood (transformed into charcoal) was also used to melt the iron used to make the cannons for the ships. More than ten million trees were cut down.

As a result of this massive felling, the peasants who colonised the area - the Pasiegos - discovered that the absence of trees left more pasture available for their animals. They then began to burn the forest to keep the bush and undergrowth at bay. Sadly, this custom has survived to the present day. The territory was transformed in such a way that many of the animal and plant species that used to live here, such as bears, otters, capercaillies and chamois, dissappeared.

The Pasiega Mountains changed forever. Today, the Pasiega Mountain is one of our priority areas of action. Here we have managed to reintroduce the chamois, which is once again populating the high peaks.

A few years ago, we transferred some thirty specimens from the Picos de Europa: today there are more than two hundred specimens. This project has also improved the area by planting native flora such as oaks, birches, beeches, ashes, serval trees, etc. In total, 250,000 trees have been planted.

The foundation's guards, who are always on duty in the area, create firebreaks and extinguish fires when they threaten tree plantations. They are often accompanied by volunteers and schools from the province. Children, young people and grandparents clean, plant and join us in caring for the trees. These improvements have helped this place to become a migratory refuge for many species of birds and a breeding place for many others that inhabit it all year round. It has also improved the connectivity of wildlife from one valley to another: this allows many species to move with lower risk of being captured by their predators.

The rivers Asón, Miera, Pas-Pisueña, Trueba, Nela, Engaña and Carranza originate in the Pasiega Mountains. Three of them, the Asón, the Miera and the Pas-Pisueña, provide almost 50% of the drinking water consumed by the Cantabrian community. The reforestation of the area has contributed to the creation, formation and settlement of soil in the headwaters of these rivers. This favours the conservation of water, a fundamental resource which prevents erosion, runoff and flooding downstream.

Our actions in the Pasiega Mountains have reintroduced species that had disappeared from the area for centuries and reforested the area by planting more than 250,000 trees.

We also conserve, create and restore many other unique aquatic areas, such as ponds and peat bogs. In these, the red-legged frogs and midwife toads can lay their eggs and carry out their life cycle. This has also greatly favoured one of the rivers' most playful inhabitants, the otter. They can be seen moving from the top of the mountain from one valley to the next, hunting, playing with the stones and logs in their path, looking for their new home. •

The SDGs in our conservation projects

Direct relationship of our activity with the Sustainable Development Goals of the United Nations 2030 Agenda for all the areas of work contained in this report of 25 years of activity.





2. Zero hunger

6 GLEAN WATCH

6. Clean water and sanitation

2.4 By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality. **6.b** Support and strengthen the participation of local communities in improving water and sanitation management.

6.3 By 2030, improve water quality by reducing pollution, eliminating dumping and minimising the release of chemicals and hazardous materials, halving the proportion of untreated wastewater, and significantly increasing recycling and safe reuse globally.

6.6 By 2020, protect and restore water-related ecosystems, including forests, mountains, wetlands, rivers, aquifers and lakes.



11. Sustainable cities and communities

11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage.



12.b Develop and implement tools to monitor sustainable development impacts for sustainable tourism that creates jobs and promotes local culture and products.

12.2 By the year 2030, achieve sustainable management and efficient use of natural resources.

12.8 By 2030, ensure that people everywhere have the information and knowledge relevant to sustainable development and lifestyles in harmony with nature.



13.1 Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries.

13.2 Integrate climate change measures into national policies, strategies and planning.

13.3 Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning.



15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with the obligations under international agreements.

15.2 By 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally.

15.3 By 2030, combat desertification, restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land degradation-neutral world.

15.4 By 2030, ensure the conservation of mountain ecosystems, including their biodiversity, in order to enhance their capacity to provide benefits that are essential for sustainable development.

15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.

15.7 Take urgent action to end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products.

15.9 By 2020, introduce measures to prevent the introduction of invasive alien species, and significantly reduce their impact on land and water ecosystems and control or eradicate the priority species.



14. Life Under Water

14.2 By 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration in order to achieve healthy and productive Oceans.



17. Partnerships for the goals

17.17 Encourage and promote effective public, public-private and civil society partnerships, building on the experience and resourcing strategies of partnerships.

Our achievements in the Pasiega and Eastern Mountains of Cantabria

Two hundred years of solitude

The river is an element of connection between different habitats from its source to its mouth, crossing areas of high environmental value. To guarantee its capacity to interconnect different areas it is necessary to reduce current impacts such as dams, pollution, deforestation of riverside forests, and to mitigate future threats such as the climate change we are already facing.

Measures to guarantee the ecological and social functions of the rivers will not only guarantee connectivity between areas for the dispersion of species but also for the protection of the areas themselves. The presence of structural elements or obstacles along a river basin can represent an insurmountable barrier on the migratory route for a species such as the salmon. As a consequence, they cause the decrease of their populations and can lead to the disappearance of the species in a specific river.

FNYH has eliminated the dams or embankments that prevented the Atlantic salmon from going upstream from the town of Liérganes, in the middle of the River Miera. The installation of scales or crossing devices on these dams has finally made it possible to create a suitable habitat for the salmon, which has returned to Liérganes after 200 years of absence. The elimination of these obstacles in the River Miera has led to the expansion of the distribution of the species in the basin as these barriers prevented them from progressing upstream and completing their life cycle.

The dams not only hinder the passage of salmon and trout, but also encourage poaching. Many fish accumulate at the bottom of the dams, waiting to go up the river, waiting for the rainfall to increase the flow of the river. It is during this period that they are most vulnerable to illegal fishing. On the other hand, breeding areas upstream have been identified and improved, and an inventory of impacts such as pollution or water catchments in the river has been made, in order to contribute to an integrated management of the Miera river basin.



The removal of the dams that prevented the Atlantic salmon from going up the Miera at Liérganes allowed this species to return to the river after two centuries.



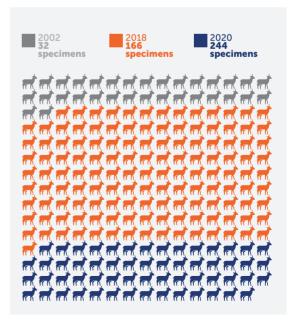
The chamois, back in the Pasiega mountains

Reintroduction of the chamois

The chamois is one of the characteristic species of the highlands of the Cantabrian Mountains. After being **disappeared from the Eastern Mountain of Can-tabria for more than 150 years**, FNYY reintroduced 32 specimens from Picos de Europa throughout this area in 2002. Nowadays it is easy to find these animals in these mountains as their number has already reached 166 specimens.

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The behaviour of the chamois shows its high degree of adaptation to the environment. The chamois maintains the pastures in these mountain areas in summer, an ecosystem that is essential for many other species of plants, insects, reptiles, amphibians and birds that are unique to these altitudes. Young chamois are common prey for golden eagles, foxes and bears. Adults also become prey to the wolf, preventing this controversial carnivore from attacking domestic livestock.





Plantation of native trees



The headwaters of the Miera basin are currently bare due to the historical loss of forest mass: caused by the construction of ships and artillery between the 16th and 19th centuries, and by the occupation of pastureland by livestock, without human beings having allowed the natural recovery of the ecosystem. This process is historically known as the "floating forests", in which **10 million trees were cut down and 50,000** hectares were destroyed.

The forest is a complex ecosystem formed by plants, animals and fungi, which live together on a substrate, where the tree is the main element.

The forest is considered to be one of the most relevant ecosystems for the planet, due to its capacity to host and shelter species of flora and fauna, and to the key role they play as a sink for greenhouse gases, storing significant amounts of carbon in the trees that make them up. The forest is home to a wealth of food an medicinal resources, and provides a multitude of environmental services, such as climate or flood regulation, protection of biodiversity or aesthetic, spiritual or recreational values.

FNYH has planted **more than 200,000 new trees in this ecosystem**, such as beech (*Fagus sylvatica*), oak (*Quercus petraea*), birch (*Betula alba*), rowan (*Sorbus aucuparia*), holly (*Ilex aquifolium*) and hawthorn (*Crataegus monogyna*), which populate the Eastern Mountain. Native livestock: Allies in forest conservation

Silvopastoral Mangement of native breeds

The Fundación Naturaleza y Hombre works to preserve not only the natural heritage but also the cultural and ethnographic heritage. To this end, **it works to conserve native livestock species** (sheep from the Carranza, lacha sheep, potoca horse, Spanish donkey) which, due to the abandonment and change in use of the mountains, are heading for extinction. The Foundation contributes to the recovery of these ancestral breeds, which are much more resilient and adapted to the area where they are found. These species also help in the conservation and maintenance of these natural areas.

The management carried out by the Fundacion Naturaleza y Hombre consists of making use of the valley's pastures as they grow, which is called "la muda". The cattle graze in the pastures where reforestation has taken place, so that if there is a fire in this wooded area, it passes superficially without damaging the tree as it does not have enough fuel. In this way, **native species are recovered and in turn contribute to the conservation of the forest in which they live.** 13

In May 2011, together with IUCN, we organised the Iberclima Festival, focused on the fight against climate change. Bringing together more than 20,000 people Fire surveillance and direfighting: 17 years, 17 campaigns

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FNYH team carries out surveillance and fire extinction work in the Eastern Mountain of Cantabria in order to **detect and control possible arson attacks.** These fires occur with the aim of renewing the pasture in areas where the cessation of livestock farming has fostered the growth of bush species, such as gorse (*Ulex europaeus*).

Provoqued fires, when out of control, have dverse consequences for the environment: erosion, loss of soil, reduction of natural regenerationforest capacity, loss of biodiversity and reduced pasture productivity.

For all these reasons, vigilance and fire prevention is essential to prevent small outbreaks of fire from devastating the Foundation's reforestation areas and to ensure

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LAND stewardship agreements

Land stewardship is a **tool for the sustainable management of natural areas** selected for their natural values that complements traditional forms of protection. It is based on the establishment of agreements between FNYT and the ownership of the land (public or private), in such a way as to promote the conservation of the space, and its natural, cultural and landscape values, as well as the sustainable use of resources. FNYH acts as the entity in charge of managing the site.

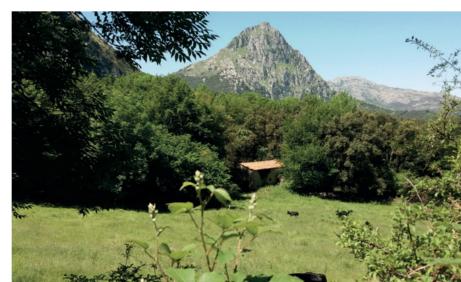


that the bushes of more than 200,000 specimens continue to grow and provide all the services they supply.



Sustainable hunting management: collaboration with 14 hunting preserves in 15 municipalities

In the Eastern Mountain, **19 agreements have been reached** with private owners, which mean that nearly 90 ha of natu**ral areas have been safeguarded.** And nearly 300 Ha are managed with Town Halls and Public Administrations.





Peatland restoration

Peatlands and bogs are wetland freshwater ecosystems, linked to areas of permanent waterlogging. Their characteristics **favour the presence of very particular flora**. They are very important as a fresh water reserve and as a drainage regulator. They also **contribute to the fight against climate change, capturing CO2 from the atmosphere**, the main component of emissions linked to the greenhouse effect.

The bogs of the Miera basin are located in areas of pastureland, so the main problems suffered by this fragile ecosystem are related to the presence of cattle: overgrazing that affects unique plant species, the presence of fires, erosion due to trampling, and contamination with nitrates due to excrement.

FNYH preserves and enhances the value of the Miera bogs in order to raise awareness among the regional population of the importance of this delicate ecosystem for biodiversity. It builds firebreaks for protection against fires, restricts access to the most sensitive areas for cattle and horses, and studies the evolution of the flora in the intervened areas, having restored a total of 6 hectares of this important ecosystem.

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Relict fern Woodwardia radicans

Woodwardia radicans is a fern that survives in archipelagos such as Madeira, the Canary Islands and the Azores. It is also present on the Cantabrian coast, and tends to appear in ravines on the banks of rivers and streams, riverside woods, gorges, always in the shade and at a low altitude. The state of conservation of the population in Cantabria is classified as unfavourable or inadequate.

Due to its uniqueness and evolutionary exclusivity, this fern is a **priority species for conservation programmes** that use techniques outside the natural habitat. For this reason, FNYY through the El Pendo Forest Nursery, has developed different tests for seed production and plant germination using material from natural populations. The specimens produced in the nursery



have been used to reinforce the populations located in the Miera basin, and to promote the settlement of new populations in favourable areas, preventing the loss of this species and fighting against one of the most pressing environmental problems we face, which is the loss of biodiversity.

Entomological reserves

Insects play a crucial role in ecosystems because they perform multiple functions such as the degradation and decomposition of organic matter or pollination. However, many of these animals are suffering from declining populations due to different causes such as degradation, fragmentation or general loss of habitat, and intensification of agriculture, etc.

In the Miera river, FNYH has created **two entomolog**ical reserves. In these areas the permanence of old trees with holes and fallen trunks is favoured. Dead wood pyramids or sawdust paths have been created. Specifically, the Fundación Naturaleza y Hombre has contributed to the conservation of the stag beetle (*Lucanus cervus*) and the damselfly (*Coenagrion mercuriale*), which are what's called umbrella species, that is to say, by protecting their habitat they favour many other species that live in the same ecosystem such as birds, mammals, amphibians or reptiles.







Do you want to know more? Would you like to support our actions? Contact us

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