



OREKA MENDIAN

LIFE15 NAT/ES/000805

*Balance between conservation
and livestock usage in Basque
mountain pastures*



Layman explanatory report



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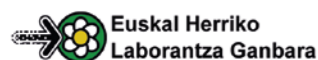
www.lifeorekamendian.eu

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Mountain pastures are one of the most threatened environments in Europe. According to the most recently published studies, such as the European Commission State of Nature Report to the European Council and Parliament, the abandonment of grazing systems and insufficient grazing resources are among the main problems affecting European terrestrial environments.

The Basque uplands have since time immemorial been shaped by migrating herds, with the livestock leaving the valleys where they spent the winter to be relocated to the slopes (common land in most cases). Mountain pastures are thus used to feed animals

which in turn provide high-quality and highly sought-after produce. Such extensive livestock farming, in which the animals graze freely and make use of mountain pastures, provides the reason, the driving force and the tool to maintain large areas of open countryside that form part of the identity of the Basque Country and its mountains.

Changes in traditional livestock farming techniques, the abandonment of certain areas and the high degree of exploitation of more accessible land, the replacement of sheep with larger livestock, are among the causes that have triggered conservation problems in mountain pastures: loss of grassland

area and development of scrubland, establishment of invasive species, increased likelihood of fire...

Faced with this situation, in 2015 the European Commission approved LIFE Oreka Mendian, a project with the main goal of developing a conservation strategy for these areas of pasture within 15 Natura 2000 sites in the Basque Country and 8 in Iparralde. The project implements actions intended to guarantee the conservation of mountain pasture based on maintaining the socio-economic use which created this countryside.

THE LIFE Oreka Mendian PROJECT



The goal of LIFE Oreka Mendian is to develop a mountain environment conservation strategy, based initially on maintaining the traditional livestock use of pastures... This would, within the Basque context, serve to restore a favourable state of conservation for 12 pasture habitat types in Annex I, and 2 species in Annex II of the Habitats Directive.

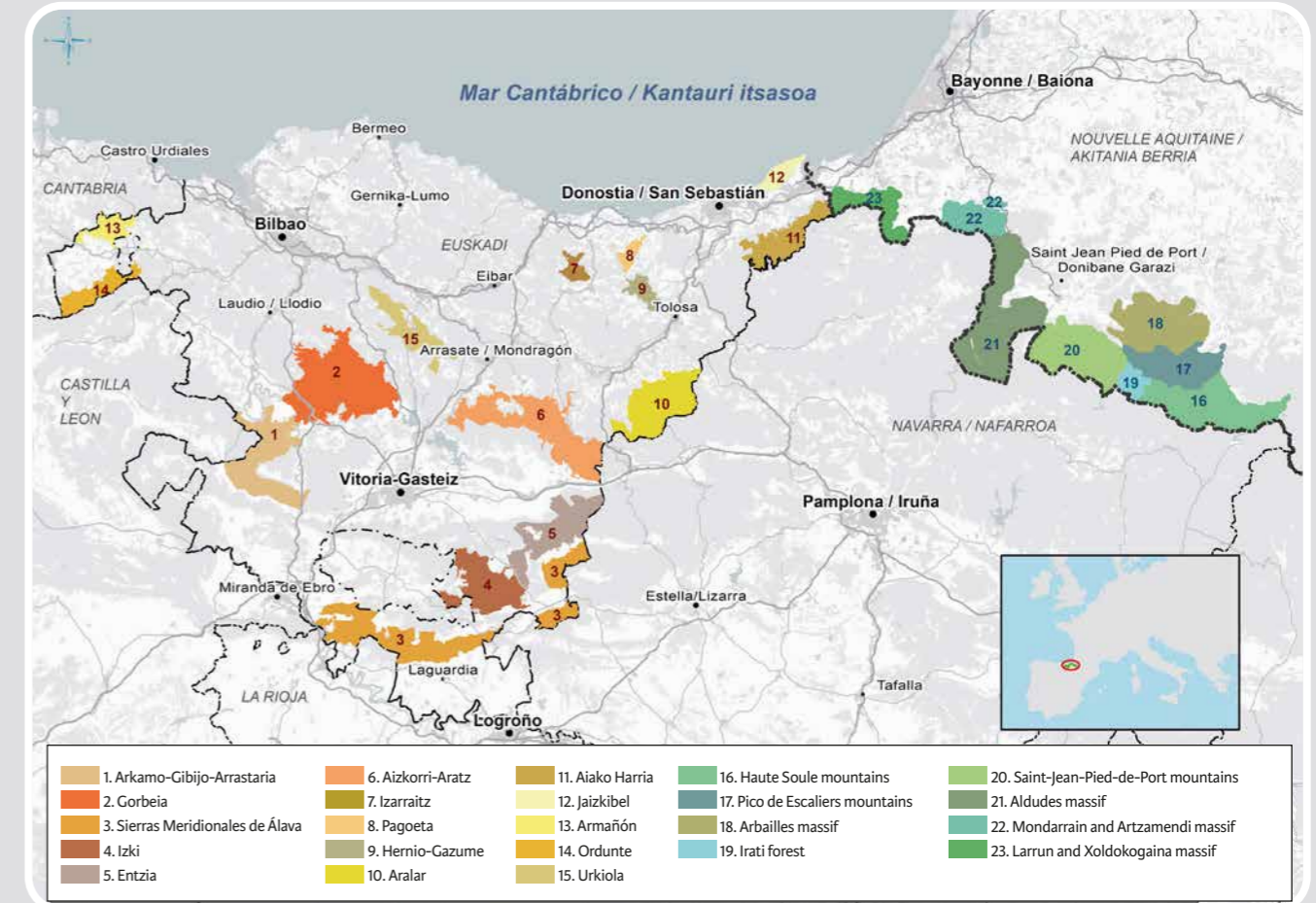


The project is undertaken across the main Basque mountain massifs (8 in Iparralde and 15 in the Basque Country). These sites, declared Special Areas of Conservation (SAC) and thus protected under Europe's Natura 2000 ecological network, are home to the best representations of open landscapes and mountain pastures, having been used for grazing over a period of centuries. With a budget of almost 4 million euros, 60% financed by the European



Union and the remainder by the other partners, LIFE Oreka Mendian conducted a prior participatory planning process, defining actions to restore pasture habitats as well as other habitats or vulnerable species to be found within grazing areas. The initiative is also committed to the use of new technological solutions, and has showcased the importance of mountain pastures in eco-systemic services and the social and economic development of rural areas.

BUDGET: 3.743.704€
EUROPEAN CO-FINANCING: 2.246.223€ (60%)
DURATION: SEPTEMBER 2016 – DECEMBER 2022



**SACs (Special Areas of Conservation)
where this project is developed**

Participatory planning for the management of pasture environments

Over the early years of the project a number of information gaps were resolved, while planning documents and tools were fine-tuned in order in each location to establish certain conservation goals and the required management actions to achieve them, whether through funding within the project or from other sources. Guidelines for each plan were successfully established thanks to a diagnosis derived from the review of flora in the open environments of these spaces and their changes over the last 10 years (in gen-

eral characterised by a decline in the surface area of mountain pastures and heathland, along with increases in the areas covered by Mediterranean false brome, ferns, broom and brambles), monitoring of the available pasture, based on grass production control cuttings in exclusion cages, and data on the livestock using the hillsides. The desired future scenario was based on this diagnosis, combined with the needs detected for the proper development of livestock activities.

The generation of these plans demanded the involvement of owners, users, managers of natural areas, experts and local agents in the integrated and sustainable management of mountain pastures, which involved generating opportunities for gatherings and debates.

In line with the plans drawn up, actions were then developed for the conservation of mountain pastures, prioritised in accordance with the pasture supply/demand equilibrium, trends in the evolution of flora and the potential livestock use of the areas in question.

In terms of their extent, these actions included in particular scrub clearance to control the spread of scrubland, either completely in areas covered by broom or ferns as a single species, or partial, leaving a percentage of scrub cleared in order to restore the pasture-scrubland patchwork, and improve the structure and functionality of the heathland. The resulting in-



crease in potential grazing land is furthermore serving to restore the target habitats, both to reduce pressure in areas with high livestock demand, and to limit the risk of fire. In order to encourage the livestock to acquire a degree of preference for these cleared areas, drinking troughs and other small infrastructures have been constructed (salt licks, scratching posts...) to fulfil their needs and function as a focus of

attraction. The idea is that this should encourage the livestock themselves to maintain the cleared areas as far as possible. Lastly, at individual locations that have been eroded by excessive trampling, or in copses with problems of regeneration, livestock exclusion fences have also been erected.

Meanwhile, it is known that large areas of grazing land include vulnerable

species and habitats that could be affected by, among other aspects, trampling and browsing by livestock, and work has therefore been performed to restore these areas, proposing specific actions in each situation (construction or opening of gaps in enclosures, elimination of non-local species from the area, scrub clearance, reinforcement of the population of threatened species...).





Birkaia



Araba-Alava



Gipuzkoa



Iparralde

Oreka Mendian

ORDUNTE SAC

ARMAÑON SAC

URKIOLA SAC

GORBEIA SAC

IZKI SAC

ARKAMO-GIBIJO ARRASTARIA SAC

ARABAKO HEGOALDEKO MENDILERROA SAC

ENTZIA SAC

AIZKORRI-ARATZ SAC

ARALAR SAC

AIAKO HARRIA SAC

JAIZKIBEL SAC

PAGOETA SAC

HERNIO-GATZUME SAC

IZARRAITZ SAC

SACs IN IPARRALDE

For the diagnosis and planning of actions, the SACs were divided into Management Units (MU), given the specific differences between areas within one single space.

ORDUNTE SAC

This SAC, located in the far west of Bizkaia, stands out for the considerable scenic and ecological value of its peak areas, with a number of the most distinctive pasture habitats to be found in the mountains of the Basque Country, with humid heathland, bogs, and the only blanket bog in the Basque Country.



Diagnostic keypoints...

- Pasture habitats in inadequate state of conservation (SC).
- Importance of the SAC for conservation of humid heathland and peat bog habitats. Highly vulnerable habitats.
- Loss of siliceous mountain meadows because of expansion of heath and fern cover.
- High livestock burden. Additional presence of livestock from Burgos.
- Almost single-species cattle farming.
- Importance of silvopastoral system in the Pando and Arcentales Management Units (MU) to meet current pasture demand.
- Sporadic presence of wolves, prompting decline/disappearance of herds of smaller livestock.
- Prior project: LIFE+ Ordunte Sostenible.

... and actions

SCRUB CLEARANCE:
around 40ha.

Purchase of **6 GPS COLLARS** to track animal behaviour.

CONSTRUCTION of:
1 drinking trough
4 salt licks/scratching posts
1 cattle chute
1 cattle grid

ENCLOSURE of various bogs in Salduero. Positive impact from this action on the habitats following 4 years of monitoring.



ARMAÑON SAC

SAC with alternating lithological substrates, giving rise to considerable contrasts in terms of both landscape and the associated habitats. Particular mention should be made above all the large karstic formations and the value of the rockland pasture interspersed within the limestone.



Diagnostic keypoints...

- Habitats in favourable or unknown SC, except areas covered by Mediterranean false brome.
- Trends indicate an increase in the area dominated by broom and ferns. Functional loss of acidophilous heathland because of the proliferation of *Ulex*.
- Sufficient livestock load in the SAC, albeit with imbalanced distribution, since it is close to the borderline of sustainability in the Karrantza MU, where a silvopastoral approach is needed in the woodland to meet the current demand levels, while livestock use in Turtzios is insufficient.
- Almost single-species cattle farming, of the Monchina breed.
- Impacts on the "Sopeña holm oak woodland" reserve area.

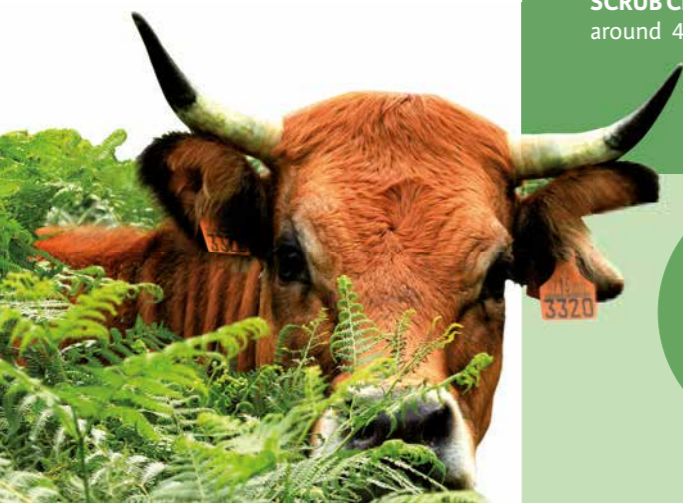
... and actions

SCRUB CLEARANCE:
around 65ha. Plot for the monitoring of effectiveness of fern clearance (4 years).

Purchase of **6 GPS COLLARS** for livestock.

CONSTRUCTION of:
1 drinking trough
4 salt licks/scratching posts
1 cattle chute
1 cattle grid

ENCLOSURE of the "Sopeña holm oak woodland" reserve area, to encourage regeneration. Monitoring of the effectiveness of this action over 3 years.



URKIOLA SAC

The limestone outcrops of the Anboto massif are a notable feature on the wooded slopes of this SAC. The main pasture formations in the area are to be found in the small space between the two environments.



Diagnostic keypoints...

- Large privately owned section of the SAC, with the project covering only the public utility land (PUL).
- Habitats with inadequate or unknown SC (except for areas of Mediterranean false brome, which are favourable) Worsening in comparison with previous diagnoses.
- Loss of mountain meadows because of expansion of broom, heath and fern cover.
- Large decline in authorised livestock load (goats, sheep and cows) in the PUL. 20% increase in horses.
- The limited area of public pasture available in Aramaio has led the area to be expanded through a number of conifer plantations, and grazing is common beneath the tree cover on private land.
- Substantial presence of daffodils.



... and actions

SCRUB CLEARANCE:
around 145ha.

Purchase of **14 GPS COLLARS** to track animal behaviour.

2 wetland protection ENCLOSURES.

2 EXPLANATORY PANELS about the impact of collecting daffodils.



Drone-Lidar flights to monitor flora associated with two silvopastoral plots of land.

GORBEIA SAC

In this SAC, the large meadows in the summit region and the upper part of the northern slopes, with extensive heathland cover, contrast with autochthonous woodland on the southern slopes, explained by the two different traditional usage models and current livestock farming demand.



Diagnostic keypoints...

- Two different livestock farming realities on either side of the Álava-Bizkaia border. Finely balanced in the areas in Bizkaia, and under-grazed in Álava. Livestock transferred between territories in the upper regions.
- Grassland habitats in an inadequate state of conservation; favourable for heathland.
- Loss of mountain meadows because of the expansion of fern cover and occasional impacts of over-grazing.
- The authorised livestock load remains steady, although the species vary. Large increase in horses.
- Substantial presence of daffodils, humid heathland and bogs.
- Problem with invasive cardoons on the northern slopes.
- Large number of wild herbivores.



... and actions

SCRUB CLEARANCE:
around 60ha.
Demonstration **TESTING** of the "fern-breaker" roller.

RESTORATION of bogs in Beraso, Larreder, Arraba. Monitoring for 4 years, alongside the humid heathland of Egurrolaga.

CONTROL of invasive species such as the cardoon.
.....
Purchase of **6 GPS COLLARS** for livestock.

CONSTRUCTION of:
2 drinking troughs
4 salt licks/scratching posts
1 cattle chute
1 cattle grid

Increase in area available for grazing (new meadows) at intermediate altitude based on cypress plantations.

REPLANTING of the edges of the Urizar track towards Manzarraga, planting small copses to provide shade, increase biodiversity and reduce the visual impact of the track.

IZKI SAC

This SAC/SPA is notable as one of the largest areas of Quercus pyrenaica woodland in Europe. The livestock in this area use these woods as a source of shelter and food. The main pasture habitats are found in the northern section, at higher altitudes than the woodland.



Diagnostic keypoints...

- Two clearly distinct areas: the depression wooded with *Quercus pyrenaica* and the mainly deforested uplands.
- Grassland habitats in a favourable/inadequate state of conservation, and inadequate/poor heathland. Only the mountain meadows are improving (because of prior scrub clearance).
- Scrubland is expanding in the upper section, with broom/juniper/bramble.
- The total livestock load remains steady, although the species vary. Cattle predominate. Sheep have declined.
- Problem in some silvopastoral areas because of trampling: deterioration of the soil in winter.
- Substantial presence of daffodils and acidophilous bogs with very limited species distribution.
- Fragile soil in the gap between the depression and higher passages; large areas of bare soil and erosion on the greatest inclines.

... and actions

SCRUB CLEARANCE: some 15 ha (in the upper section, to encourage use and reduce the burden on the *Quercus pyrenaica* woodland, as well as clearance to restore small clearings within the woods).

CONSTRUCTION of:
2 salt licks
2 scratching posts



ENCLOSURES to improve livestock management and livestock exclusion, in areas with eroded soil (Arlucea).



2 INFORMATION-PANELS about the impact of collecting daffodils (monitoring of the positive impact of this action regarding populations of the species over 4 years).

ARKAMO GIBIJO ARRASTARIA

SAC

This SAC covers a very large area, with a considerable diversity of landscapes and contrasts. Limited livestock usage in certain areas has in previous years prompted the development of a pre-wooded stage in former pasture land, with the corresponding increase in the risk of fire.



Diagnostic keypoints...

- Pasture habitats in poor SC, with a high degree of scrub encroachment.
- Distorted authorised data (in truth sheep have practically disappeared from the hillside because of the presence of wolves).
- Common land belonging to various owners registers greater demand. Shared land is mainly used, followed by own land.
- Significant grazing beneath tree cover (essentially in Arkamo).
- Higher and lower hillside areas with livestock all year round.

... and actions

SCRUB CLEARANCE: around 140ha.



CONSTRUCTION and RESTORATION of:
2 drinking troughs



ENCLOSURES and construction of dry stone wall to improve livestock management and woodland regeneration.

Small **INFORMATION PANELS** to be placed at points of access, as to how to behave on encountering mastiffs protecting the livestock.



ARABAKO HEGOALDEKO MENDILERROA

SAC

The mountains that make up this SAC/SPA represent a climatic barrier of the first order, clearly separating the northern slopes, dominated by beech, from the southern slopes, with a proliferation of holm oaks and Mediterranean flora. The mountain pastures are bordered by rocky walls in their upper reaches, with Mediterranean xerophilous pasture also being a key element of this SAC, located on the foothills of the Sierra de Cantabria.



Diagnostic keypoints...

- Highly wooded SAC, with beech woods to the north and holm oak to the south.
- Importance of Mediterranean false brome (inadequate SC) and xerophilous pasture (favourable SC).
- Livestock load on the increase (possible data distortion). Insufficient to avoid scrub encroachment.
- High risk of fire on southern slopes. Importance of maintaining fire break tracks.



... and actions

SCRUB CLEARANCE:

some 15 ha (new grazing area in La Recilla, with monitoring of butterfly populations).

1 INFORMATION PANEL

about the impact of collecting daffodils.

ENCLOSURES

to improve livestock management.

CONSTRUCTION

of:
1 salt lick
1 scratching post



Fire break MAINTENANCE

with shepherded flocks (2017 – 2021). Development of grazing woods alongside tracks: 26km.

ENTZIA SAC

Large SAC with wide variety of habitats and situations. Notable features are the plains of the Entzia-Iturrieta uplands, containing the largest open areas, in a patchwork with beech groves. Other parts of the SAC already have a notably significant Mediterranean influence, such as dry pasture and holm oaks.



Diagnostic keypoints...

- Different livestock realities by area. Parzonería land plays a significant role, with a distinctive ownership and management system, not controlled by one single municipality. It is here that the greatest livestock usage demand is to be found in the SAC.
- Heathland with favourable SC and inadequate grassland (development of bramble/juniper). In Legaire, fragile rockland pasture on rocky soil (areas with high risk of erosion).
- Fine balance in the Parzonería land of Entzia, Munain and Bitigarra. Need for production derived from wooded habitats to meet current grazing demand. Some regulations promote grazing in winter in holm oak woodland. Various under-grazed areas.
- Very substantial presence of daffodils and some bogs.

... and actions

SCRUB CLEARANCE:
around 40ha.

RESTORATION of a basin.

2 EXPLANATORY PANELS about the impact of collecting daffodils.



ENCLOSURE of summits and various bogs (Tasugos, Ullibarri). Monitoring of the effect of fencing over 4 years.



CONSTRUCTION of:
3 drinking troughs and improvements to another
3 (anti-vulture systems)
5 salt licks/5 scratching posts

AIZKORRI ARÁTZ SAC

This SAC is home to the highest peaks in the Basque Country, their limestone outcrops standing high above the extensive areas of pasture, which then give way to wooded slopes. This is one of the areas with the greatest grazing tradition and demand, still home to very large herds of sheep, which graze in the summer and autumn months.



Diagnostic keypoints...

- Two different livestock farming realities on either side of the Álava-Gipuzkoa border. Importance of Parzonería land. Existence of a large area with private land (Dekala), where the Gipuzkoa Provincial Council is promoting the signature of usage agreements between landowners and livestock farmers.
- Grassland habitats in favourable SC and inadequate heathland (worsening because of the thickening of broom growth).
- Large increase in authorised load. Importance of sheep (in decline).
- Fine balance in Aloña, Urbia, Apota-Ubarrundia. Under-grazing in some MUs of Álava. Silvopastoral practices very common in some MU.
- Substantial presence of daffodils, threatened Alpine flora and *Gentiana lutea* in some pastures in Álava.
- Problem: invasive cardoons which hamper the functionality of mountain meadows across large areas.
- Support for cheese production in the uplands by restoring equipment/infrastructure and promoting the Mendiko Gazta brand.

... and actions

SCRUB CLEARANCE:

around 350ha. Plot to monitor the regeneration of habitats after scrub clearance, with field protocols and drone-Lidar flights.

CONSTRUCTION of:

9 drinking troughs
3 salt licks
2 scratching posts
.....
Repair of 1 cattle chute.

CONTROL of invasive species such as the cardoon across more than 240ha.

1 PANEL and **1 ROLL-UP** explaining the impact of collecting daffodils.

Purchase of **18 GPS collars** to track animal behaviour.

Bog ENCLOSURE in Urbia and population reinforcement of threatened species such as *Menyanthes trifoliata*, with monitoring of its state of conservation.

ARALAR SAC

The large plateau which makes up the upper part of this SAC is covered by an extensive area of mountain meadows, a sign of the high level of livestock farming use made of the area for thousands of years.



Diagnostic keypoints...

- Joint Municipality of Enirio-Aralar, owner of the upper pasture plateau and public utility land of 5 municipalities.
- Most of the habitats have a favourable SC, except for dry heathland (little surface area). Very high representation of mountain meadow and rockland pasture habitats in this SAC.
- Broom cover on slopes. Proliferation of ferns and cardoons in some areas.
- High livestock load in the joint municipality, lower in the rest of the MUs. Large livestock expanding.
- Importance of sheep/shelters/Mendiko Gazta cheese.
- The political dispute as to the laying of new access tracks in the joint municipality has led to the suspension of project actions in this area.
- Area of bogs, tall herbs and listed species.

... and actions

SCRUB CLEARANCE:
around 60ha.

CONSTRUCTION of:
1 cattle chute
2 drinking troughs
.....

IMPROVEMENT of 225m of access route.

Construction of ENCLOSURES: protection for bogs (Igaratza), and monitoring of their state of conservation (Alotza/Katxine).

1 explanatory ROLL-UP about the impact of collecting daffodils.



RESTORE the *Cladium* bog by removing ligneous flora, reducing run-off and making openings in the enclosure (selective enclosure).

AIAKO HARRIA SAC

Highly wooded SAC, with mountain pasture areas located along the crest. The proximity to the coast means that these pastures are highly productive, despite the acidic substrate.



Diagnostic keypoints...

- Very little surface area without tree cover.
- Proliferation of ferns, brambles and broom. Heathland in poor SC.
- Slight increase in authorised load. In general, insufficient degree of usage on grazing land.
- Need for silvopastoral use in Añarbe. Expansion initiatives in grazing areas to maintain autochthonous woodland in the reserve area.
- Presence of vulnerable species: *Daphne cneorum*. Major restoration investments by local authorities.
- Antxotesaroiia bog restored in 2015, elimination of ligneous plants and recovery of the surface area occupied by a woodland track.

... and actions

SCRUB CLEARANCE: some 180ha (including manual scrub clearance in the area with populations of *Daphne cneorum* for conservation of the species. Each plant must be located and marked prior to clearance). Recurrent clearance of ferns at the summit.



CONSTRUCTION of:
1 drinking trough
1 salt lick

MONITORING of the evolution of the Antxotesaroiia bog.



ENCLOSURE and **PLANTATION** of copses in Bunanierre to restore small troughs and wetlands.

JAIZKIBEL SAC

Mountain parallel to the coast, with the coastal slope having suffered recurrent fires in the past; much of the area is now bereft of tree cover for this reason. With the fires extinguished, the natural flora is developing very quickly, because of the low livestock farming load.



Diagnostic keypoints...

- Much of the area of this SAC is occupied by a property belonging to the Ministry of Defence, where no action was taken under the project.
- The moor grass meadow habitat is of particular interest in the SAC (inadequate SC, previously facilitated by fires, and now scrub encroachment). As this plant is relatively unpalatable, it is of little use for grazing. The SAC is also vital for the conservation of coastal heathland.
- Habitats with inadequate/poor SC. Broom and ferns rapidly forming thickets. Advanced regeneration of tree cover in some areas.
- Considerable reduction in authorised load. Under-grazing in general. Agreements have been reached with the countryside horse federation to make use of this SAC. It is important to separate areas of pasture used by outside livestock, from the local livestock.
- Substantial presence of bogs and coastal heathland.
- Presence of *Phytolacca americana* (invasive).

... and actions

SCRUB CLEARANCE: some 120 ha (including areas of moor grass meadows). The great density and height, as well as the rapid growth of broom, required consecutive clearance of broom cover for several years in a row.



CONSTRUCTION of:
1 cattle chute
3 cattle grids

ENCLOSURES to improve livestock management.

MONITORING of the Jaizkibel I bog (through LIFE+ Tremedal), following the opening of its fencing.

CONTROL of invasive species such as *Phytolacca americana*.



PAGOETA SAC

This small mountain close to the coast has a large area which has lost its tree cover, owned by the Provincial Council of Gipuzkoa. It is made up of both deep valley meadows and mountain pasture, with intense livestock farming use.



Diagnostic keypoints...

- The areas covered by the project initiatives are owned by the provincial council. Major recent investments to divide up plots of meadowland.
- Very little tree cover. Herbaceous habitats with inadequate/poor SC. Proliferation of ferns and broom over the years in mountain pasture areas.
- Considerable recent increase in authorised load (very low in the past 15 years).
- Importance of cattle (meadows loaned for raising calves) and horses (agreement with horse livestock associations to bring mares for overwintering and increase the load in underused areas, and Pottoka ponies owned by the provincial authority). A fine supply/demand balance has now been achieved.



... and actions

SCRUB CLEARANCE:
around 80ha.



1 explanatory **ROLL-UP** about the impact of collecting daffodils.

CONSTRUCTION of:
2 drinking troughs

HERNIO GATZUME SAC



Diagnostic keypoints...

The notable features of this SAC include the limestone outcrops which, given their position in the centre of Gipuzkoa, attract frequent mountaineering use. Mediation by the Provincial Council of Gipuzkoa has achieved coordination between landowners and livestock farmers for the planned use of pastures, mostly on private land.

- Private ownership - there is no coordinated planning among users of the pastures. The public enterprise ETORLUR has brokered the signature of 10-year agreements between property owners and livestock farmers, facilitating planning and public investment.
- Most of the habitats have a favourable SC, except for areas of Mediterranean false brome.
- Area with significant scrub encroachment, where the aim is to encourage cattle farming, making use of the false brome growth. Problem of lack of water in summer.
- Testing and demonstration of designated burning (traditional use). Monitoring of the effect, compared with scrub clearance.
- Appropriate balances, lack of pasture in the Elkamen MU (because of the MU/SAC delimitation which excludes areas of pasture). Includes silvopastoral area.
- Areas of rocky outcrops and rockland pasture.

... and actions

2 km of **FIRE BREAKS** prior to burning.

20ha of **designated burning**.



Demonstration burning in 12ha.



1 BOREHOLE and subsequent construction of 1 drinking trough with storage tank in a false brome area to attract cattle.



IZARRAITZ SAC

The Izarraitz massif runs between the Deba and Urola valleys, in the heart of Gipuzkoa, just ten kilometres from the Cantabrian coastline. The landscape features are rocky slopes, woods, pastures and very abrupt contours. This is more fragile on the southern side, because of the proximity and visibility from a number of highly populated areas.



Diagnostic keypoints...

- Much of the area of the SAC is privately owned or public land not designated as PUL (Azpeitia). As in Hernio-Gatzume, agreements are being established between landowners and livestock farming users, with the mediation of Etorlur, to facilitate public investments. Given the ownership regime, there are no livestock authorisation data (only Azpeitia).
- Most of the habitats have a favourable SC, except for the bogs and acidophilous heathland.
- Signs of scrub encroachment. Traditional burning for control, which continues to be authorised sporadically in privately owned areas.
- Insufficient livestock load.



... and actions

SCRUB CLEARANCE:
some 20ha and burning of remnants.

.....
CONSTRUCTION of:
2 drinking troughs
2 water storage tanks



SAC

IN IPARRALDE

The partners in Iparralde in the project played a very active role in drawing up the monitoring protocols for the pasture habitats and the implementation of the monitoring, network, centralisation and analysis of data to calculate pasture production associated with each of the pasture habitats (2017, 2018, 2019 and 2020).



Monitoring protocols

The monitoring protocols developed were used to evaluate the impact on the target habitat from the pasture and meadowland management actions included within the NATURA 2000 (EAFRD) Contracts in 8 locations from the network in Iparralde.

Grazing practices, scrub clearance, burning and combinations thereof were monitored (2018-2022). One innovative aspect is the use of satellite images to detect the effective surface area affected by burning.

The evolution of trends in livestock activities and their effect on the landscape were evaluated by comparing pairs of photographs and a number of digital tools, revealing that mid-hillside areas are those most affected by changes in use.



Monitoring of the efficacy of the actions taken

LIFE Oreka Mendian has placed particular emphasis on the monitoring and analysis of the ecological effects of the conservation actions being taken.

This involves the design of indicators so as to evaluate whether the actions undertaken have delivered a response to the specific conservation goals es-

tablished at the outset of the project. Details are given below of a number of the main conclusions drawn, considering the effect of:

ACTIONS TO CONTROL COMMON BRACKEN (*Pteridium aquilinum*), TRIALLING DIFFERENT MANAGEMENT METHODS:



ACTIONS TO CONTROL THE SPREAD OF SCRUBLAND, TRIALLING DIFFERENT MANAGEMENT METHODS:



- Need for medium-/long-term fern control approaches. The indicated reference level for fern control is around 20%, a density of 20 stems/m² and an approximate fern height of 20cm.
- Scrub clearance suggests the requirement for at least 3 consecutive years of clearance, 2 cuts/year.
- The "fern-breaker roller" works by damaging the stems (but not cutting them), with the aim that the plant should use up

- its reserves repairing them rather than sending out new shoots.
- Treatment with 2 cuts/year is the most effective in areas with an initial very high/high level of fern cover; in areas with medium-low cover, roller treatment is equivalent to 2 cuts/year, and since it is faster, more convenient and cheaper to implement, it may therefore be advisable to use roller treatment instead in such areas.

- With regard to controlling the spread of scrubland, no major differences were found between the use of clearance and burning.
- Browsing is at its greatest when the livestock have access to the layer of shrubs in shrub pasture areas. Such browsing declines when the supply of grass predominates in the pasture structure, and

- when the shrub pasture grows substantially into a dense and relatively inaccessible structure.
- Scrub clearance has a negative impact on butterfly populations initially, but after two years these populations recover or even improve compared with the initial situation.

ACTIONS TO CONTROL THE INVASIVE SPECIES *Cirsium eriophorum*, TRIALLING DIFFERENT MANAGEMENT METHODS:



LIVESTOCK EXCLUSION ACTIONS TO CORRECT IMPACTS ON NON-PASTURE HABITATS OR RISKS OF EROSION.



PLACEMENT OF INFORMATION PANELS TO MINIMISE DAFFODIL COLLECTING.



TRACKING OF LIVESTOCK BEHAVIOUR.



- The preferred cutting season is June/July, before the seeds mature, but once the plant has already used up the bulk of its resources (pre-flowering). Begin treatment with a head at 10-15cm height, to finish the task at the pre-flowering stage.
- More effective with 1 cut/year (with hoe at pre-flowering stage).
- Medium-term results with successive and repeated control over several years.

- Fencing facilitates rapid recovery of typical bog species. Selective fencing against smaller livestock and temporary enclosures are the tools allowing the best maintenance of the bog over time.
- Temporary fencing during the flowering-fruit development period of threatened species improves their state of conservation.

- Variable results in daffodil populations, no significant short-term data.

- Positive response to the placement of the GPS and VISOR-GIS system. Advantages:
 - Real-time animal location tracking (mobile application);
 - Time and fuel savings;
 - Possibility of creating virtual fences with alarms if they enter/leave the area...



Dissemination of the project, exchanges of experience and good practice

Efforts have been made since the start of the project to debate initiatives and share knowledge among different administrations, countryside managers, researchers, livestock farmers, forest rangers and the general public. The integration and collaboration of livestock farmers at workshops and field visits proved an essential factor to guarantee the results obtained. To present the project to the rest of the population, communicate its results and guarantee visibility of the LIFE

funding instrument, the following were produced: a leaflet and website for the project, an explanatory video, information panels, a stand to be taken to livestock trade fairs, merchandising material and publicity campaigns with outings and talks.

Participation in the project by two partners in Iparralde facilitated mutual learning about ways of implementing, managing and funding conservation initiatives on both sides of the border.

Experiences were also exchanged with other LIFE projects, as well as a great many European organisations working in mountain regions, thanks to active participation in the Euromontana project. This organisation also produced a report, which first analyses the situation of mountain pastures across Europe, studying the components (legal, socio-economic and environmental) affecting such habitats, and furthermore compiling exemplary good practice implemented throughout Europe.

Lastly, the aim is to use the experiences generated and shared throughout the project to establish Good Practices that will assist managers in decision-making when authorising uses and actions in pasture habitats. In this regard, online tools developed in Iparralde to assist in the management of livestock farming areas.

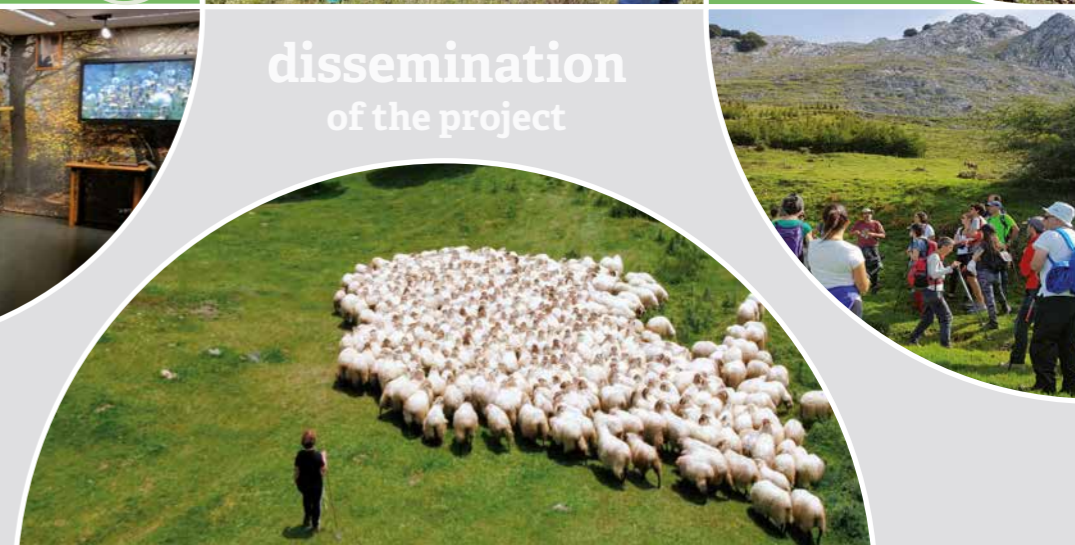


exchanges of experience



good practice

dissemination
of the project





LIFE Oreka Mendian has served to lay the right foundations for continued efforts to maintain the natural, cultural and scenic capital of mountain pastures in a way that strikes a balance with proper socio-economic exploitation.



Le LIFE Oreka Mendian a permis d'asseoir les bases correctes qui permettront de continuer à travailler à la conservation du capital naturel, culturel et paysager des pâturages de montagne, en veillant à maintenir l'équilibre avec une exploitation socioéconomique adéquate.