



LIFE « Hélianthème »

Dry Meadows See Light Again

2009 - 2014



Identity Card : Life « Hélianthème »

Duration : 5 years, from 01/02/2009 to 31/01/2014

Budget : 4 827 036€ (75% from the EC, 21% from the Région wallonne and 4% Natagora/ Natuurpunt)

Partners : Natagora and Natuurpunt

More information : www.life-heliantheme.eu

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The Financial Instrument for the Environment (LIFE)

LIFE is the name of the financial instrument created by the European Union to support nature and environmental conservation projects within its Member States. Since 1992, LIFE has co-financed some 3,954 environmental protection projects, representing a contribution of about 3.1 billion euros. Among these, between 1992 and 2013, 67 projects were carried out or are currently under way to restore environments and species within the Belgian Natura 2000 network.

These projects, including the LIFE « Helianthemum » project, are part of LIFE-Nature. The objective of LIFE Nature is to contribute to the implementation of Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds, and of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, and in particular of the European Natura 2000 network established by the latter Directive.

In Wallonia, the LIFE projects also receive financial support from the Walloon Region, whose administration actively participates in their implementation and is a key player in their success.



A History Linked to Man

Dry meadows on limestone are the most diverse ecosystems, but at the same time also the most vulnerable at the European level. For centuries, this stony terrain was part of a farming system based on self-sufficiency. While they were not very productive, these meadows still offered food resources enabling people to breed a few sheep, cows or goats. Under the care of a shepherd or of children, the small herds roamed freely across the non-cultivated areas and contributed to the maintenance of a largely open landscape. Stones were removed from the least rocky soils, after which cereals were sown with the aim of having a modest, but welcome harvest. Such practices led to hyper-specialized vegetation adapted to the harsh conditions of draught and heat. Featuring an assemblage of meridional, steppe and even sub-montane plants, calcareous meadows constitute unique and original ecosystems of great heritage and landscaping value.

From the end of the 18th century until the beginning of the 20th century, the gradual abandonment of pastoralism sparked the general decline in the amount of meadows and heaths. Abandoned, they became overgrown and were reforested. To make the most of terrain that is little productive, black pines (*Pinus nigra*) were often planted in the open spaces on dry terrain, a frugal way to supply quality wood.

Sometimes the degradation of natural environments was even faster: the massive use of fertilisers, manure, re-parcelling, urbanisation etc. In just a few decades a large part of the diversity of farming environments disappeared, causing this rich natural, cultural and landscaping heritage to fade into obscurity.

In Belgium, the lower and medium portions of the Meuse's basin still house numerous pieces of dry meadow of very great biological interest. These are located primarily on rocky slopes that are difficult to access, and to which they owe their survival. However, decades of abandonment caused the fragmentation and disappearance of numerous lime-loving meadows. Luckily, a handful of volunteers contributed to preserving certain oases by protecting them from the most severe threats. It was based on the remnants of residual meadows that the LIFE « Helianthemum » project was launched, its overall objective being the restoration of a network of 150 hectares of dry meadows.

« Dry meadows in Belgium covered thousands of hectares in the 19th century; at the start of the 21st century, they accounted for just 213 hectares. »



Exceptional Environments

The best-known meadow plants are orchids, fascinating by their beauty and their strategies for adapting to extreme conditions.

Lime-loving meadows rich in orchids, a priority habitat at European level, has been the main focus of the LIFE «Heliantheme» (Rock Rose) project, as have the more rocky environments with which they often form mosaics.

This LIFE project has focused on three types of environments :
Mesophile meadows, xerophile meadows and calcareous rubble.

With sometimes more than 40 species of higher plants per square metre, dry meadows on limestone represent a huge biological diversity. The plant diversity obviously attracts a very large number of invertebrates, including many butterflies. Often composed of a mosaic of habitats and of different stages of development, meadows can have a wide variety of facies.

The scope of the LIFE « Heliantheme » project constitutes the northern boundary of the area of distribution of numerous plant and animal species related to thermophilic habitats.

Reptiles

Podarcis muralis

Wall lizard (1)

Orthopteran Species

Metrioptera bicolor

Chorthippus vagans

Gomphocerippus rufus

Two-coloured Bush Cricket

Heath Grasshopper (5)

Rufous Grasshopper

Higher Plants

Ajuga genevensis

Anthericum liliago

Asperula cynanchica

Aster linosyris

Biscutella laevigata subsp. *varia*

Carex humilis

Cirsium acaule

Cotoneaster integerrimus

Dianthus gratianopolitanus

Digitalis lutea

Galium pumilum

Genistella sagittalis

Gentianella germanica

Helianthemum apenninum

Hippocrepis comosa

Lactuca perennis

Melampyrum arvense

Melica ciliata

Seseli libanotis

Sesleria caerulea

Teucrium botrys

Teucrium chamaedrys

Vincetoxicum hirundinaria

Geneva Bugleweed (2)

Spider Plant (4)

Squinancywort

Goldilocks Aster

Buckler Mustard

Dwarf Sedge

Stemless Thistle

European Cotoneaster

Cheddar Pink

Yellow Foxglove

Slender Bedstraw

Winged Broom

Chiltern Gentian

White Rock Rose

Fer à Cheval (6)

Blue Lettuce

Field Cow-Wheat (3)

Hairy Melic

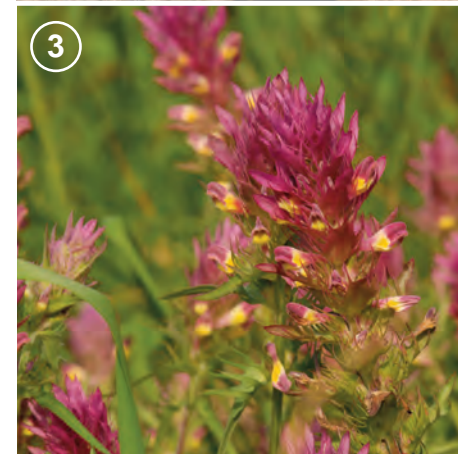
Moon Carrot

Blue Sesleria

Cutleaf Germander

Wall Germander

Swallowwort





Highly Endangered

Several factors are responsible for the fragmentation and gradual disappearance of lime-loving meadows.

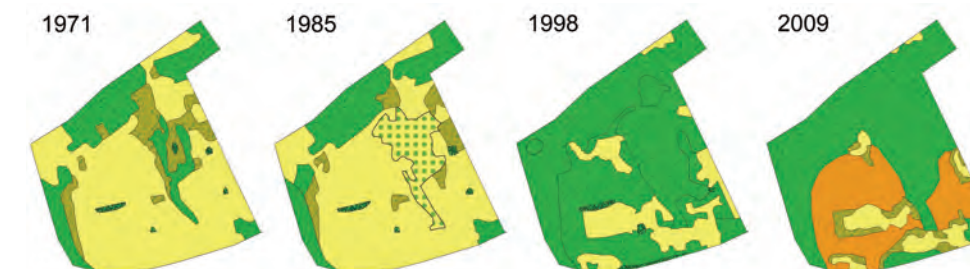
- The main cause of the decline of dry meadows in Europe is the abandonment of traditional management methods and the intensification of farming practices. The abandonment is quickly reflected in lands laid fallow (dominance of social grasses such as *Brachypodium pinnatum* and *Bromus erectus*), then overgrowth of meadows, moving toward forests. Little by little, the environment darkens and is enriched by nutrients. Agricultural intensification, in particular through the use of fertilisers, causes the disappearance of the flora of dry meadows.

- Locally, abandoned meadows have been valued as forest plantations, primarily black pines.

- The spread of invasive species which settle permanently on the meadows, and reduce their diversity. In particular, this is the case of *Robinia pseudo-acacia* and *Cotoneaster horizontalis*.

- Human activity that causes, more or less directly, the destruction of habitats (urbanisation, mining, overcrowding, fertilisation,...).

The «Plateau de Logne»,
from 1971 to 2009.





Goldilocks Aster

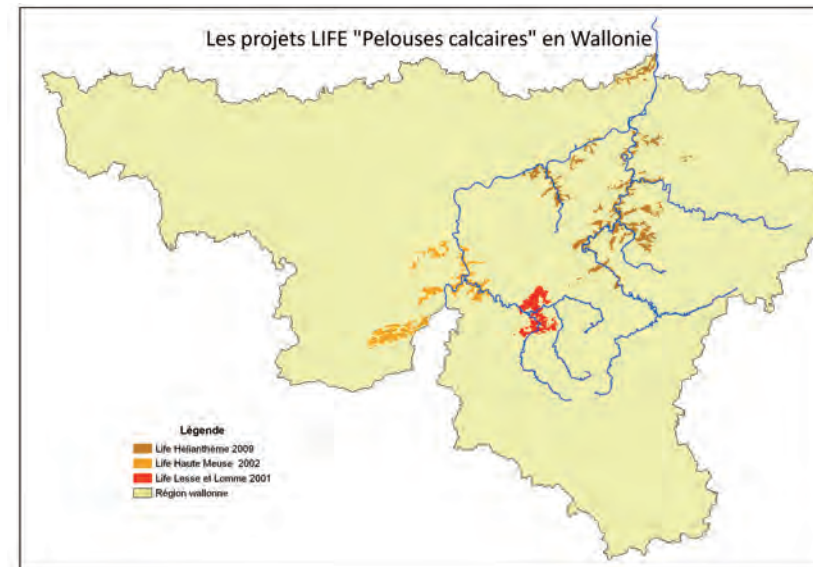
Following on from the projects LIFE « Lesse and Lomme » et LIFE « Upper Meuse », which together allowed for the restoration of about 250 hectares of dry meadows, the idea originated to pursue actions in a region where these habitats were still very little known. In view of the great restoration potential of the lower and medium parts of the Meuse and its main tributaries, the non-profit association Natagora, in partnership with Natuurpunt, set up an ambitious action plan which was made possible thanks to the financial support of the LIFE Nature programme of the European Commission and of Wallonia.

The LIFE « Heliantheme » project, with a total budget of €4,827,000, mobilised a team of 6 employees for a period of 5 years (February 2009-January 2014). This project, however, could not have been implemented without the help of numerous collaborators (administrations, owners, managers, scientists, volunteers etc.). The scope included the Meuse Valley between Huy and Visé, as well as

The Birth of the Project

numerous sites in the valley of the Ourthe between Marche and Liège. In total, more than one hundred abandoned dry meadows were identified at 23 Natura 2000 sites. The remaining meadows covered just thirty are on average, which demonstrates the great state of fragmentation of these environments. Beyond the restoration of the sites, the project's stakes were high: to recreate a network of dry meadows in order to ensure the long-term viability of the plants and animals that characterize them.

Dry meadows are dynamic environments, the conservation of which implies very regular interventions. The implementation of an effective management system based on grazing by sheep thus determined the project's success. Therefore, getting the support and collaboration of the local farmers was vital to the future of the restored habitats.



What is NATURA 2000 ?



Born out of two European Directives, the Natura 2000 network is a network of protected sites covering more than 20% of the territory of the European Union. In Wallonia, it involves 13% of the territory, representing 220.944 ha.

The aim of the Natura 2000 network is to preserve the species and natural environments, ensuring a harmonious cohabitation of biological diversity and human activity.

Ambitious Objectives

The results expected after 5 years were the following :

Restoration of a network of 150 hectares of dry meadows, by actions aimed at :

- eliminating and controlling woody plants on 115 hectares
- cutting 27 hectares of pinewoods
- mowing with export of hay on 40 hectares
- sowing on 5 hectares
- removing organic horizons on 5 hectares
- waste collection in 3 old quarries.

Development of a sustainable management system based on :

- the purchase or rental of 50 hectares of great biological interest
- the implementation of grazing management on about 130 hectares
- support to the grazing operators with a view to the development of an economically viable system
- the reinforcement and mechanical equipment of the network of volunteers involved in the management of the sites.

Informing of the local population and the general public through :

- a vast number of activities aimed at raising awareness about the wealth of dry meadows
- the setting up of 67 information panels and 4 educational routes
- the distribution of more than 50,000 leaflets
- the making of a film, the creation of a website,...



Actions !

Raising awareness among the owners and managers of these spaces was one of the first tasks tackled by the team of the LIFE project. They had to be convinced of the urgency to preserve these non-standard meadows and of the unique heritage they represent. Historical, landscaping or tourist arguments convinced the vast majority of public owners of the merits of the planned interventions. As for private property, negotiations were conducted regarding the acquisition of land or it being made available. The objective: to protect the sites in a sustainable manner by creating new nature reserves.

Following the abandonment of all extensive farming activities, the LIFE sites were strongly overgrown, even completely reforested. In the valley of the Ourthe, significant plantations of black pines shaded the remains of dry meadows still present.

Having devoted more than one year to field inventories, making contacts, negotiations and requests for permission, the time had come to expose the hillsides to light again.

It was with the sounds of chainsaws and other forestry machinery that the restoration work was begun. For over two years, some twenty companies were mobilised to expose these forgotten sites to light again.

On the steep slopes original felling techniques were used, such as cable yarding, which is usually applied in the mountains. Despite this, a very large part of the deforestation and brush clearing work had to be done manually.

Given the rapid recovery of the vegetation after a sudden re-exposure to light, the grazing system had to be put in place right away. Since itinerant grazing under the continuous supervision of a shepherd is not feasible anymore today, permanent fences were erected.

So the work of installing the fences closely followed the deforestation operations. To allow for the return of the sheep necessary for the maintenance of the meadows, more than 46 kilometres of permanent fences were installed. It was a mammoth task in view of the upslope and access conditions, and the rocky nature of the soil.

Despite the extraordinary efficiency of grazing by sheep, the regrowth of woody plants and brambles in the years following the deforestation requires additional mechanical work. Therefore, most of the work done at the end of the project consisted in cutting and removing woody waste, which for the most part was done manually.





The impact of the different management methods is the subject of a follow-up, using botanical inventories, to improve the knowledge about the natural wealth of the site and to adjust these management methods.

by the LIFE project. Similarly, the project provided one third of the livestock to them.

Since the spring of 2011, more than 500 hardy sheep ('Ardennais roux' and 'Mergelland', endangered local breeds) have been able to start their job of « brush clearing » at the newly fenced sites. The type of grazing being applied has nothing in common anymore with the itinerant grazing from the past. To increase efficiency and to limit the work load of the breeders, the sites are divided into parcels of a limited size.



Securing the Future

In addition to the restoration work, numerous contacts were made with the farmers of the region. The project's team set out to entrust the management of the fifty or so restored sites to local players. After numerous exchanges and meetings with more than fifty breeders, 18 of them were selected to ensure the management of the LIFE sites. The proximity to the sites proved to be a determining factor in the choice of the breeders collaborating on the project. While this job may seem attractive, the project's team never concealed the difficulties associated with this endeavour which constitutes a major investment in both time and energy. To enable the breeders to accommodate their herds in the best conditions, material assistance was provided to them

The herd stays there for a period of time that is relatively short (1 to 3 weeks) and tailored to the dynamics of the vegetation. This type of management allows for the creation of different conditions in the parcels and the maintenance of a diversity of environments. Particular attention is paid to the limited use of pest control products, whose adverse effects on invertebrate fauna are often overlooked. This way, at the sites of the LIFE « Heliantheme » project, more than 130 hectares are managed by sheep, sometimes accompanied by donkeys, cows or goats.

Despite their ferocious appetite, these herbivores are not enough to contain the plant dynamics. Significant changes in the substrate associated with the return of the forest foster the development of fast growing plants. It will take several years for the stump sprouts, fed by a strong root system, to weaken. Additionally, several years of sustained brush clearing will be needed to enable the vegetation of the dry meadows to dominate the entirety of the open areas.





Due to the abandonment of grazing, dry meadows have gradually been invaded by fast growing grasses, in particular tor-grass and upright Brome grass. These grasses typically cover vast areas where they form dense carpets thanks to their powerful rhizomes. They « suffocate » the meadows so to speak, and limit the possibilities of other plant species taking root. It is to counter this natural phenomenon of lands laid fallow that annual mowing operations with hay collection are organised.



Despite the magnitude of the task, the project's overall objectives have been achieved, both in terms of areas exposed to light again and grazing land. The biggest achievements of the project are, on the one hand, the large area that has been protected by a status of nature reserve and, on the other hand, the numerous collaborations established with the farming sector.

The Results in Numbers

154 ha of dry meadows exposed to light again thanks to :

- deforestation and brush clearing actions on 112 hectares
- the cutting of 31 hectares of plantations of black pines
- mowing actions with export on 40.6 hectares
- the recovery of wood waste on 82 hectares
- the clearing of 5.8 hectares of rocks
- the removal of organic horizons on 6 hectares of fertilized grassland
- the removal of invasive species on 9 hectares
- the sowing on 7.5 hectares of severely degraded land
- waste collection at 4 sites of dry meadows.

The protection of 93 hectares of dry meadows and the creation of 19 new nature reserves.

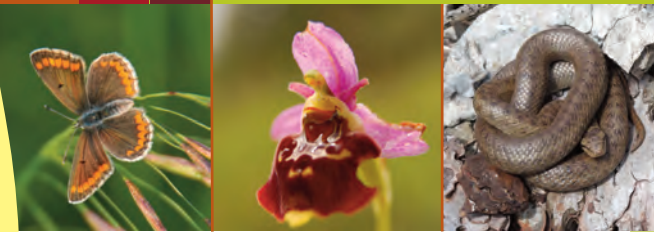
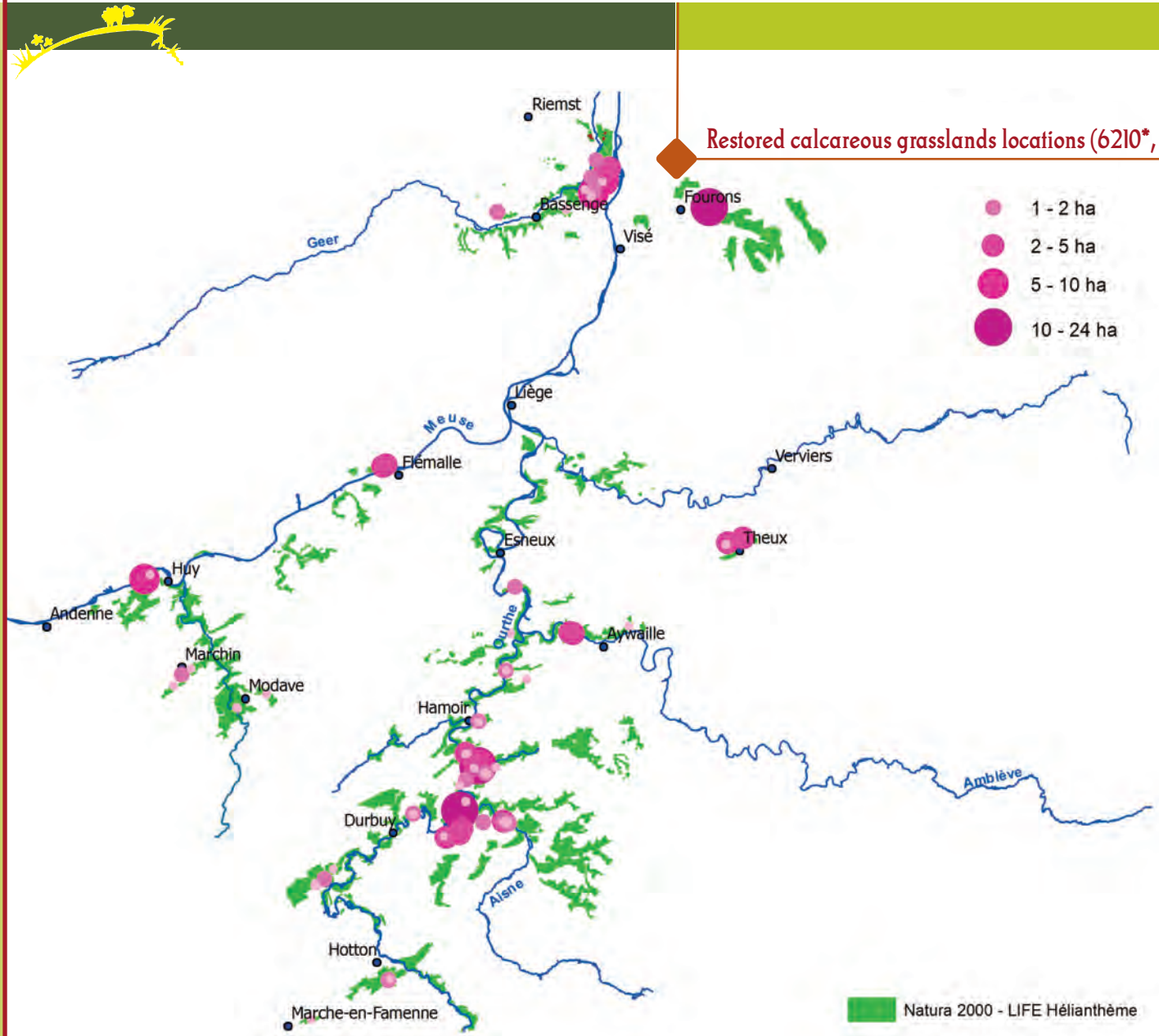
The introduction of grazing on more than 130 hectares thanks to :

- collaborations with 18 local breeders
- the provision of 144 hardy sheep and of part of the breeding and restraint equipment
- the construction of a sheepfold, of a sheep shelter and of an access gateway
- the installation of 46 kilometres of fences.

Awareness-raising among the players thanks to numerous communication tools :

- the publication of 4 brochures about the management of dry meadows
- the distribution of 7 presentation leaflets of the sites
- the creation of 3 educational trails and accompanying brochures
- the creation of 67 presentation panels of the sites
- the making of a film about the meadows of the Montagne Saint-Pierre,...





Most of the LIFE sites had been abandoned for many years before the project began. As a result, 50 hectares were covered by deciduous trees of 40 to 60 years old, with about twenty hectares covered by deciduous trees of 15 to 35 years old. The populations of black pines which were cut as part of the project were 60 to 120 years old. We may say that the conditions of the soil had been profoundly altered and that the re-colonisation of these spaces by species typical of dry meadows was going to take many years.

Despite forest dynamics that are still very strong (marked by the abundance of brambles and stump sprouts), dry meadows are gaining ground everywhere. Still remaining in clearings and at road-sides, the vegetation of open environments did not take long to re-colonise the bare ground. Vulneraria, Salad Burnet, Common Rock-Rose, Granny's Bonnet, Common Centaury, Thyme-leaved Sandwort, Slender Bedstraw... are expanding fast. Beside these rather common species in our meadows, certain rarities have made their appearance, such as Geneva Bugleweed, le Bugle petit pin or Cutleaf Germander. Already present in small numbers, orchids have multiplied in an extraordinary manner; a good example is the Lady Orchid, the Pyramidal Orchid and midge or the Dark-red Helleborine. On the appearance side, we can mention new stations of the Fly Orchid and the Bee as well as the very rare Late-Spider Orchid.

Eagerly Awaited Spring

The blooms did not fail to attract butterflies, such as the Black Jacobin, which has returned to most of the LIFE sites, as have other species that are more uncommon, such as the Noble Pen Shell, the Pearl-bordered Fritillary, or the Brown Argus.

As for nesting birds, the return of species of open and semi-open environments was very fast, for example: the Tree Pipit, the Yellowhammer, the European Goldfinch or the Common Redstart,... The Smooth Snake, a very discrete grass snake, was also discovered at several sites of the valley of the Ourthe.



The hay spreading operations demonstrated their potential, in particular the spreading of litter.





One year after pine stands removal, dry grasslands vegetation reappeared. Small scabious, *Vulneraria*, Common Rock-Rose and Salad Burnet are already numerous on this site of the Ourthe valley.

Activities for All



To win the approval of the general public and of the players involved in the use and management of the sites, more than 200 activities have been proposed throughout the project. Guided visits, management sites, thematic conferences, training sessions... are some of the tools used to convince people that it is worth protecting this unique heritage. The organisation of so many activities has only been possible thanks to the support of numerous volunteers. We thank them wholeheartedly !





The sites seen from the sky

2010

2013



After LIFE

The status of nature reserve of all the LIFE sites gives them the best legal protection possible, but also offers them guarantees in terms of funding and follow-up of the work to be done in the years to come. The new national nature reserves are managed by the Wildlife and Forestry Department (DNF), whereas the recognised reserves are managed by the nature conservation non-profit associations (Natagora and Ardenne & Gaume). In both cases, financial means are available to carry out the recurring management work. To help define the most adequate management measures, management commissions consisting of representatives from the scientific community, associations and the DNF contribute their expertise in the area of conservation of natural environments.

The challenge of the management of the LIFE « Heliantheme » project will be to control the woody dynamics at a cost that the managers can afford.

It will take several years before the dry meadows exposed to light again as part of the project can be maintained primarily through grazing. Many more years of mechanical interventions of brush clearing and collection will be needed. The project's team is well aware of these difficulties and has done its utmost to facilitate this work afterwards (informing of the managers, quality of the cleaning operations of the logging, sustainability of the infrastructure put in place etc.). Alongside mechanical operations, coaching of the breeders responsible for the grazing will be ensured by the DNF and the nature conservation non-profit associations. Even if precise grazing plans are provided to them, inevitably adjustments will have to be made, notably depending on climatic events and plant dynamics. Building on the actions of the LIFE project, improvements will continue to be made (increase of the herds, mixed grazing,...), to make sure that the management of the sites is always as effective as possible.



Barely Saved !

Of the entire scope, notably more than 14,000 hectares, so far it has been possible to conserve only a few hectares of dry meadows on limestone in good condition. If these exceptional meadows still exist today, it is thanks to the willingness of a few enthusiasts. By manually maintaining the open nature of the meadows, they have made it possible to prevent the disappearance of numerous species. Without their interventions, such actions never would have been undertaken. Thanks to all nature artisans !

Nature to be Discovered

Highlighting the landscapes and the wealth of natural resources found was an important aspect of the LIFE « Heliantheme » project. At the edge of each site, one or more didactic panels welcome you and present the history and the special features of the nature reserve.

Three didactic tours have been created at the sites most frequented by the public. This way, you will be able to journey through the Coteaux de Vieuxville in Ferrières, the Mont des Pins in Durbuy and the Montagne Saint-Pierre in Visé.

All the brochures, leaflets and guides can also be downloaded from the project's website :

www.life-heliantheme.eu

