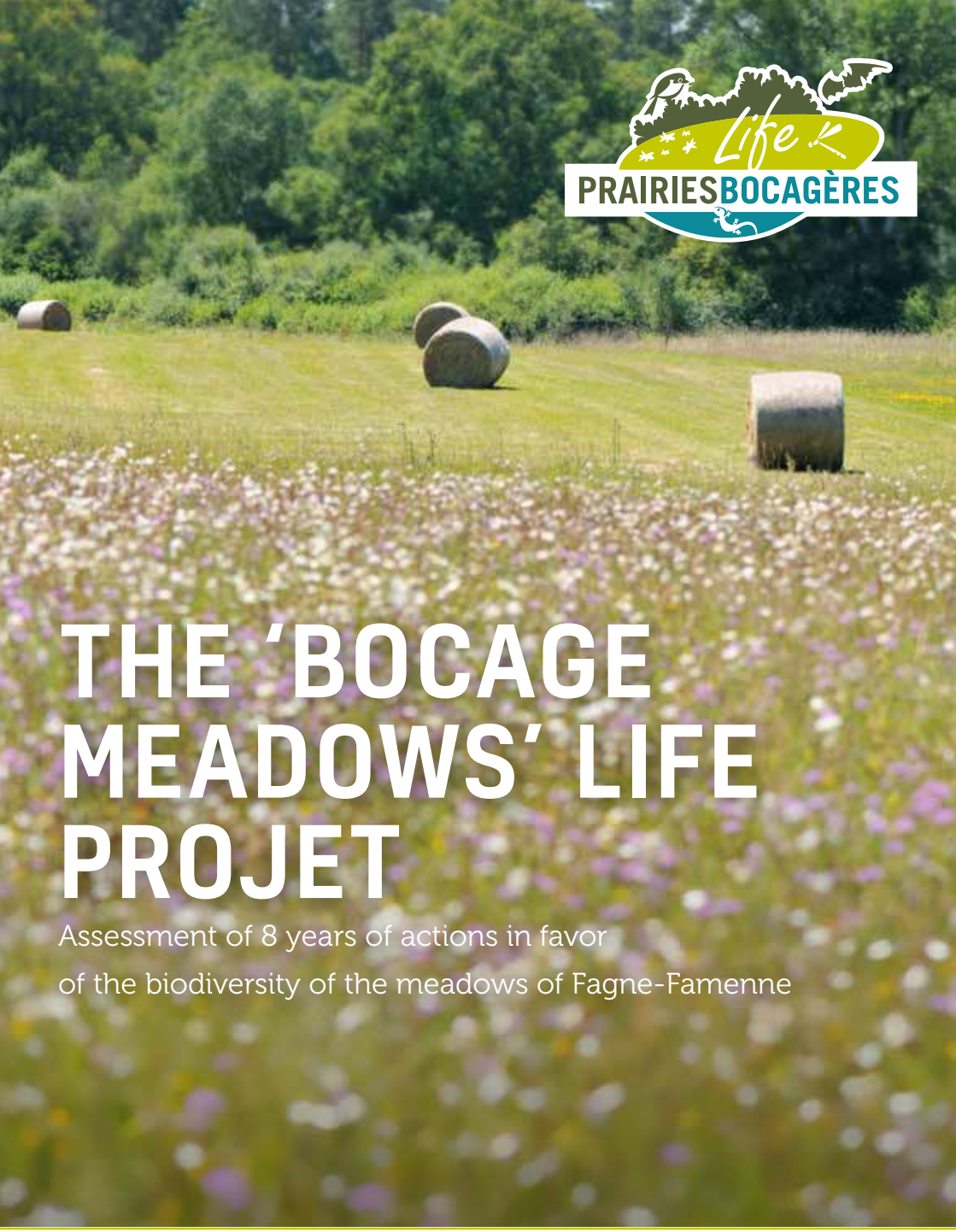


THE 'BOCAGE MEADOWS' LIFE PROJET

Assessment of 8 years of actions in favor of the biodiversity of the meadows of Fagne-Famenne

natagora

Life

NATURA 2000

Flowering meadows, interspersed with live hedgerows, dotted here and there with ponds, orchards, small streams, and where life is good for many animal and plant species ... These are the bocage landscapes that man has shaped over time. In recent decades, however, the profound changes in agriculture have had drastic repercussions on these landscapes.

The intensification of farming techniques has led to a loss of diversity of the flora of our meadows, the draining and filling in of ponds, the uprooting of hedges and orchards... All this, to the detriment of many species which are currently in critical situations, and at the expense of the natural balance to which our agriculture is intimately linked.

THE ASSESSMENT OF 8 YEARS OF ACTIONS IN FAVOR OF THE BIODIVERSITY OF THE MEADOWS OF FAGNE-FAMENNE

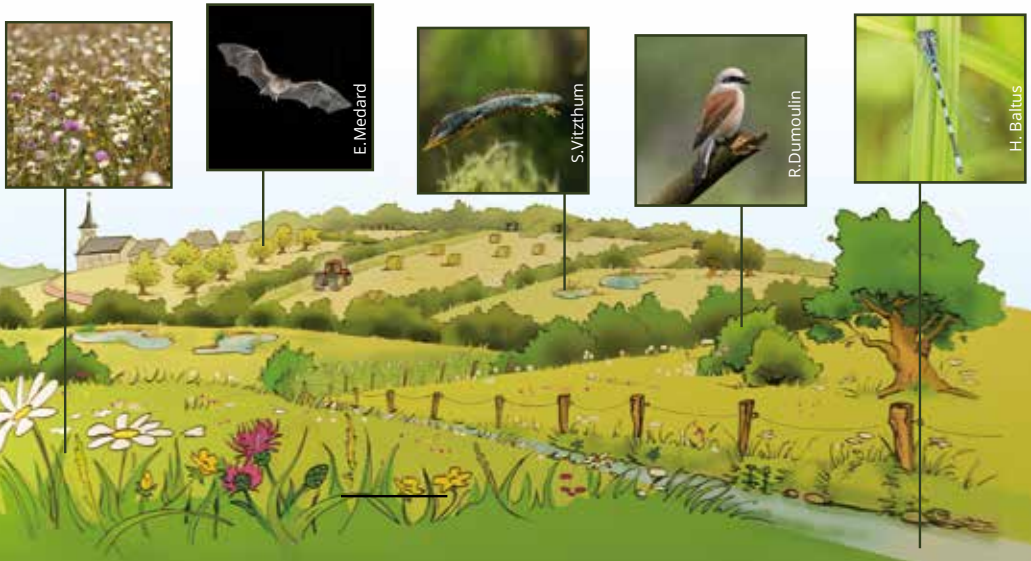
In order to conserve this invaluable wealth, Natagora implemented the 'Bocage Meadows' LIFE project. From 2012 to 2020, this project, co-financed by the European Commission, set out to create a network of meadows of high biological value, to which are added all the hedgerow elements favorable to many animal species, amongst which 6 endangered species. Actions such as inventory assessment, creation of nature reserves, meadow restoration, re-creation of hedgerow elements, and awareness-raising have been implemented within 10 Natura 2000 sites throughout one of the best-preserved large grassland regions of Wallonia: Fagne-Famenne (see map on the back of this brochure).

3 TYPES OF MEADOWS:

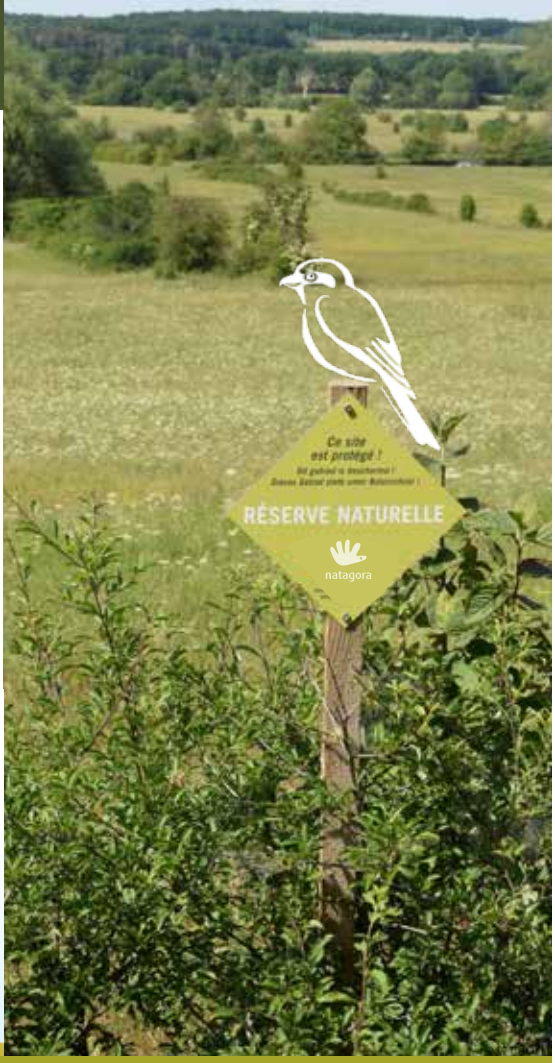
Nutrient-poor hay meadow (p4)
Wet molinion meadows (p6)
Filipendulion (p6)

6 SPECIES :

Lesser Horseshoe Bat (p10)
Greater Horseshoe Bat (p10)
Geoffrey's Bat (p10)
Northern Crested Newt (p8)
Red-backed Shrike (p12)
Southern Damselfly (p13)



PROTECTING OUR MEADOWS



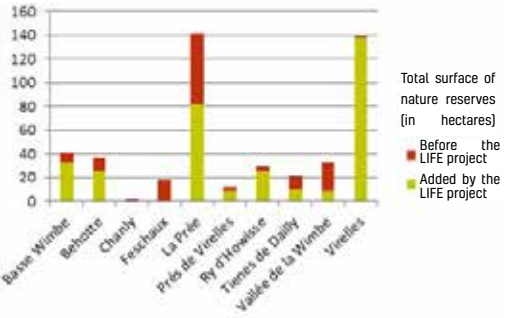
145 HECTARES OF NEW NATURE RESERVES

17 SITES APPROVED FOR FUNDING

BUYING LAND IN ORDER TO RETURN IT TO NATURE.

So as to best protect the most sensitive ecosystems, which represent an important common heritage as well as provide many services to human society, the acquisition of lands in these ecosystems has been made a priority, in order to register them for protection. In Wallonia, the strongest status of protection for biodiversity is that of «Nature Reserve». Sadly, only 1% of the Walloon territory is classified under this status, whereas the scientific community estimates that at least 5% would be required in order to halt the decline in biodiversity. As part of this LIFE project, nearly 145 additional hectares have been acquired, and added to the network of 300 ha of Natagora nature reserves already existing in the region. Although nature conservation is now a priority on these sites, this status does not exclude human activities compatible with, or necessary for, the objectives set, such as extensive agricultural management, monitoring of flora and fauna or organizing discovery activities.

Extension or creation of multiple nature reserves.



ADDING TO THE NETWORK OF NATURE RESERVES

Actions have also been carried out with 17 private or public landowners who have committed to sustainably maintain the flower meadows, orchards, live hedges, and natural ponds on their lands.

RESTORATION OF NUTRIENT-POOR HAY MEADOWS

190 HECTARES OF MEADOWS RESTORED.

OUR MEADOWS ARE LOSING THEIR DIVERSITY

Europe's nutrient-poor hay meadows hold the world record for the number of species counted per m^2! Shaped by man over the centuries, they have allowed a whole fauna and flora to develop into a delicate balance, rendering services to agriculture that are all the greater if large areas of these diversified meadows can be conserved. However, since 1950, a third of Wallonia's permanent meadows have disappeared due in particular to urbanization, plowing, forest plantations or their abandonment. As for the remaining areas of grassland, they have, for the most part, been heavily fertilized and are subject to very intensive exploitation. This form of management has led to a significant reduction in their biodiversity. At present, nutrient-poor hay meadows in good condition represent only 3.7% of our permanent meadows.

GIVING OUR MEADOWS THEIR COLORS BACK

Faced with this observation, the LIFE project's main objective was to restore a dense network of high diversity nutrient-poor meadows in 10 Natura 2000 sites across the grasslands of Fagne-Famenne. To do this, sometimes innovative techniques of grassland restoration were first tested, then implemented on a large scale. Amongst these techniques, applying diversified mowing regimes has helped to improve the quality of the least degraded meadows. For other meadows having undergone more intensive management in the past, it was found that the soil's seed

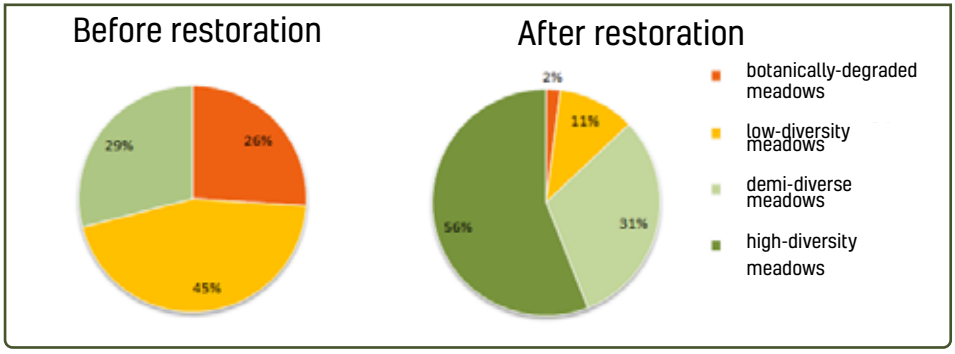
bank was so depleted that only supplying seeds would allow for an improvement in the medium term. To do this, hay or seeds were harvested from nearby diversified meadows in order to sow or spread over the degraded meadows we wished to restore botanically.

POSITIVE RESULTS

Over the course of 8 years, nearly 190 hectares of meadows were included into the project. The results of the different techniques used are positive, with all meadows seeing a rise in botanical diversity. Ox-eye daisies, knapweeds, hawksbeards, salsify, rattles, scabious, and trefoils can now be seen flowering in droves, attracting butterflies, wild bees and birds in this festival of spring colors. We hope that the substantial work that has been put in can serve as a reference guide for restoring many other meadows in Wallonia.

Graphs comparing the botanical diversity of target meadows before and after the LIFE restoration actions

1. Harvesting seeds from a species-rich meadow in order to sow them on a botanically-degraded meadow.
2. Group of botanists evaluating the success of the restoration work carried out.



RESTORATION OF WET MEADOWS

Mégaphorbiaie

28 HECTARES OF WET MEADOWS RESTORED

ABANDONED MEADOWS

While the surface areas of nutrient-poor meadows have declined sharply following agricultural intensification, other more marginal meadow types have practically disappeared, mainly due to the loss of management. Known as “Molinion”, “Filipendulion”, wet oligotrophic meadows, or filipendulion, these meadows develop on wetter soils which are difficult to manage mechanically and produce low quality fodder. Once the original mowing or grazing was stopped, these meadows were gradually colonized by bushes, then by trees... As these once open environments closed up, many sensitive animal and plant species became threatened. Across Europe, these exceptional environments are likely to disappear.

A LIGHT FOR WET MEADOWS

The main action implemented by the LIFE project to restore this type of meadow was to bring them back to light by cutting down the trees and shrubs growing there in order to allow all their diversity to be redeployed. It was then necessary to ensure that their management would be possible long-term. Some of these meadows have therefore been restored so that they could once again be used by a farmer, either for hay or for grazing by rustic breeds which enjoy the fodder of these wetlands. Other meadows have been reworked so as to facilitate their future maintenance by teams of volunteers.

THE FILIPENDULION

Twenty hectares of these meadows have been restored in wetlands or along rivers. They are managed occasionally, following a slow pace. Valerian, angelica, willowherbs, and meadowsweet perfume the air, attracting many specific insects such as the Large Marsh Grasshopper or the Twin-spot Fritillary . Iconic animals such as the very rare Corncrake or the beautiful Black Stork appreciate the tranquility of these environments.

THE MOLINION

This habitat is extremely fragile, and only a couple, difficult to preserve, shreds remain in Wallonia. However, eight hectares have been restored as part of this project. The floristic composition includes several dozens of plant species, some of which are very rare, such as Viper's-grass, Adder's-tongue Fern, Devil's-bit Scabious, and several species of wild orchids... along with, of course, all the insects specific to these environments.

Many management activities organized by Natagora help maintain these gems of nature. Volunteers use the techniques of yesteryear that have allowed such a rich specific diversity to develop.

- In 1971 : management of a wet meadow of great biological wealth was ended.
- In 2016 : just before the restoration work, the meadow is little more than a thorny thicket, rather poor in biodiversity.
- In 2019 : the restored meadow is slowly returning to its former richness. It is now entrusted to a local farmer who grazes his cows there extensively.

PONDS
FOR THE NORTHERN CRESTED NEWT

Rollin Verlinde / Vilda

136 PONDS
DUG OR RESTORED
AROUND THE POPULATION CORES

WITNESS TO THE DISAPPEARANCE OF AGRICULTURAL PONDS

The Northern Crested Newt owes its name to the high crest that the male displays during the mating season. It is the largest of the four species of newts in Belgium. More demanding than other newts, they prefer to reproducing in fairly deep, sunny ponds, with rich vegetation. In recent decades, many ponds and wetlands have been filled or have suffered from degradation. At the same time, many elements essential to the newt's terrestrial life phase, such as hedges, diversified meadows and other shelters, have become scarce in our landscapes. Populations of the Northern Crested Newt are now so isolated that their survival is jeopardized.

RECONNECTING THE SURVIVING POPULATIONS

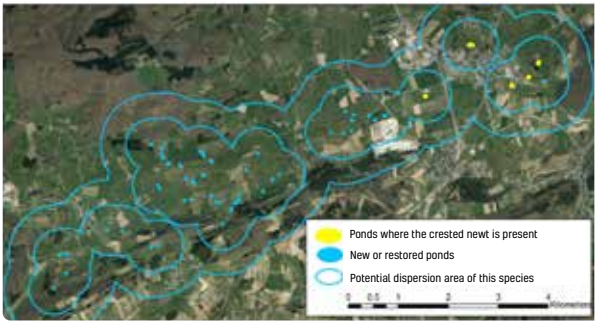
After an in-depth search for the last remaining populations of this species, 14 isolated populations were located throughout the project's application zone. Everything was then done to reconstruct continuous networks of large ponds favorable to the species' flourishing, and its dispersal out from these core areas. A total of 136 ponds were dug or restored. Several partners (private owners, municipalities, farmers) also contributed to expanding this network of ponds, sometimes even providing the missing link to the chain of puddles created.

SLOWLY BUT SURELY

Our monitoring shows that some parts of the population have seen their numbers increase thanks to the work carried out. Additionally, although the dispersal of this species within the network will take time, some of the new ponds have already been colonized.

Furthermore, ponds are the preferred environments for many other species and the new ones are already home to many toads, frogs, dragonflies and water birds, including emblematic species such as the Scarce Blue-tailed Damselfly, the Natterjack Toad, the Common Snipe, and the Black Stork.

As the northern crested newt's maximum dispersion distance is estimated at around 1000 m, the chain of ponds were positioned so that the distance between two water points does not exceed this distance, and so that the path from one to another is marked out with a multitude of hedgerow elements (hedges, diversified meadows, forest edges, unmown strips...).



Fagne-Famenne's clay-rich soils, which are not very permeable, make it possible to easily dig ponds which will naturally retain water.

DENSIFYING THE BOCAGE **FOR BATS**

Rollin Verlinde / Vilda

13 KM OF HEDGES PLANTED
8 KM OF STRUCTURED FOREST EDGES
20 ORCHARDS PLANTED
10 HECTARES OF DEDICATED MEADOWS

ALLIES OF AGRICULTURE WHO NEED HELP

Wallonia hosts 21 species of bats. Given their ecological needs, these animals can be considered sentinels of the quality of our environment. Furthermore, as insectivores, bats are great allies of our agriculture. However, more than half of these bat species are in critical condition. Among them, three endangered species were targeted within the framework of this LIFE project: the Lesser Horseshoe Bat, the Greater Horseshoe Bat, and Geoffrey's Bat. An important cause of the decline of these three species is the degradation of their hunting territories in agricultural areas. They hunt by following a network of hedges, forest edges, and orchards, and the modern-day scarcity of these elements in our landscapes has therefore greatly reduced their hunting areas. At the same time, the almost widespread use of pesticides and dewormers for livestock has not only considerably reduced the number of prey, but is also directly harmful to bats.

"GREEN CORRIDORS" AROUND THE COLONIES

Many efforts have been made to detect these discreet and little-known animals in order to best define their hunting grounds, as well as the locations of the remaining colonies of these three species in Fagne-Famenne. Everything was done to improve the hunting grounds around each of the colonies. The current hedgerow network has thus been expanded by 13 km of additional hedges. 450 high-stem orchard trees were planted to create around 20 orchards and 8 kilometers of forest edges structured in favor of their prey.

Additionally, the restoration of nutrient-poor meadows as previously mentioned has a direct, positive impact on the number of insects available; and for some of these, it was decided to graze them using «organically» bred and raised cattle, so that their chemical-free excrements may directly serve as food for the coprophagous insects. These "organic" insects will thus become high-quality prey for bats.

LET IT GROW!

Though the restructuring of the habitat is already visible, it will take a few more years before the hedges and fruit trees grow enough to become truly attractive to bats. The results of the end-of-project monitoring show that, at this time, the populations in colonies of Little Horseshoe Bats as well as Geoffrey's Bats present in Fagne-Famenne are still stable, whereas the Greater Horseshoe Bat colonies have seen a slight increase in numbers.

13 summer roosts have been identified throughout the project area. These are often maternity roosts located in the attics of old buildings. Below, a mixed colony of Greater Horseshoe Bats and Geoffrey's Bats at Rochefort.

1. Planting an orchard in Feschaux

2. This «organically» grazed orchard will be a favorable hunting ground

3. A continuous network of hedges is essential for Horseshoe Bats to travel along.

BUSHES FOR THE RED-BACKED SHRIKE

8,500 SHRUBS PLANTED,
7 KM OF STRUCTURED HEDGES
20 HECTARES OF DEDICATED MEADOWS

THE RETURN OF ZORRO TO THE BOCAGE

With his black Zorro mask, this bird species' male is easy to identify when he returns from his winter quarters in Africa. This shrike is an emblematic passerine of our traditional landscapes of grassland countryside, mosaics of meadows framed by bushy hedges. During the 20th century, populations of this species declined due to the intensification of agricultural methods. By the mid-1970s, only a few hundred pairs remained in our country. Although this downward trend is still ongoing in many European countries, this is not the case in Wallonia, where the local population has seen a marked recovery since the 1980s. In this globally negative context, Wallonia's responsibility for the protection of this species is all the more important.

SETTING UP A WELCOMING ENVIRONMENT

Teeming with insects and other prey, nutrient-poor hay meadows, described previously, are greatly attractive to this species. However, this bird also requires scattered, preferably thorny, bushes, in which to nest and take refuge. Thousands of thorny shrubs have therefore been planted for them within or around these meadows. To further densify the network, 7 km of hedges and thickets have been structured in order to make the area more attractive. Like bats, this bird is particularly fond of coprophagous insects, further supporting the decision to entrust the grazing of several meadows organic breeders.

Installing fences in anticipation of an organic pasture, which favors the presence of coprophagous insects of which the Red-backed Shrike is fond. This bird appreciates thorny bushes, as well as barbed wire, which he uses to impale the prey he will eat later.

DOUBLING POPULATIONS!

While the populations of the Red-backed Shrike in Wallonia have continued to rise since the 1980s, the causes of this increase are still relatively unknown. At first glance, the general changes in agricultural practices over the past 30 years have not been in its favor. However, it appears that actions to restore the bocage and, in particular, the nutrient-poor hay meadows, such as those implemented in this project allow for a much faster increase in population than elsewhere in the territory. During the last 8 years, we have seen populations double on Natura 2000 sites where project actions were dedicated to it, while the increase was by «only» 30% on other sites in Wallonia.

T.Gridlet

Over these 8 years, nearly 80 groups of volunteers participated in the planting of bushes.

The bocage landscapes preserved within the Fagne-Famenne Nature Reserves are favorable to this bird, which enjoys scattered bushes and insect-rich meadows.

WELCOMING DITCHES FOR THE SOUTHERN DAMSELFLY

Hubert Baltus

10 KM OF DITCHES RESTORED
300 M OF NEWLY-DUG DITCHES

A DAMSEL WE WISH WE'D SEE MORE OFTEN

The Southern Damselfly is a pretty little bright blue damselfly, that takes its name (Coenagrion mercuriale) from a design it has on its abdomen: it is indeed marked with the seal of the god Mercury! Although it has never been widespread, it is now only found very locally and in very small numbers in two regions of Wallonia: in Lorraine, and in the agricultural plains of Focant (Beauraing) and Lavaux-Sainte-Anne (Rochefort) in Famenne. This critical situation is caused by many factors that negatively impact the quality of the small streams and ditches that this species inhabits. The main causes are: the massive use of fertilizers and the resulting enrichment of the water, discharge of used water from dwellings, the use of pesticides near waterways, cattle being able to access stream banks, the channeling of waterways, deep cleaning of ditches, mowing of the banks during summer, and the filling in and shading of abandoned ditches.

TOGETHER FOR THE SOUTHERN DAMSELFLY

Working on waterways generally implies a good cooperation between many actors at the watershed scale. Municipal authorities and services, as well as representatives of the Province of Namur, both in charge of river management, representatives of the DNF and the 'Bocage Meadows' LIFE project team worked together on this complicated issue. With the scientific supervision of the DEMNA, they implemented a management plan favorable to the species over the duration of the project and a little over 10 km of networks of watercourses and ditches,

with localized cleaning, occasional felling of trees and bushes, as well as the installation of headlands and cattle fences. Two ditches, totaling almost 300 meters, were also dug. In order to ensure long-term sustainability, the Lesse River Contract committed to taking over the coordination of actions in favor of the Southern Damelfly.

CONTINUED ACTION

Despite these efforts and a structural improvement in the quality of the species' habitat, the population of the Southern Damselfly unfortunately seems to continue to decline in certain areas of the Focant plain. We can, however, hypothesize that these restoration works have probably helped limit the decline, and will have a positive impact in a few years. In Lavaux-Sainte-Anne, the less intensive agricultural context has enabled the populations of the region to maintain and develop. We hope that the new 2020-2025 management plan established between the various key actors will be followed as best as possible, thus allowing for the continued improvement of the habitat, which, hopefully, will elicit a positive response from the damselfly.

1. Many volunteers and professionals participated in the successive censuses of the Southern Damselfly in the ditches of the plain of Focant (Beauraing)
2. One of the ditches the most abundantly inhabited by this species

3. A punctual and light cleaning makes it possible for water to circulate, while preserving sections of plants favorable to the Southern Damselfly.

A TIGHT COLLABORATION WITH THE **AGRICULTURAL WORLD**

40 FARMERS INVOLVED IN THE MANAGEMENT OF RESTORED MEADOWS

NATURE THANKS TO FARMERS

The bocage landscapes, and its species which we are working to preserve, are the result of a long history linking agriculture and nature over several centuries. Though the radical changes in agricultural practices in recent decades have seriously undermined this complex balance, it is only possible to preserve this common heritage through agro-pastoral practices, and therefore, with the help of the agricultural world.

It is with the collaboration of some 40 local farmers that Natagora is thus able to manage the majority of the meadows restored by the LIFE project. More extensive agricultural practices, favorable to biodiversity, have been implemented on more than 200 ha of meadows located in nature reserves.

SERVICES PROVIDED BY MEADOWS

The forage productivity of an extensively managed meadow is lower than in intensive production systems. This is why this reduction in yield is compensated financially through agro-environmental subsidies. If such extensive management methods are encouraged, it is namely due to the many services that these biodiverse meadows provide to the whole agricultural system and, more broadly, to our society. These are known as «ecosystem services». Those linked to diversified grasslands include: better carbon storage, better soil protection, better regulation of extreme events (erosion, floods, etc.), increased pollination, better pest control, greater landscape appeal, ...

It is now clearly apparent to many farmers that taking biological processes and biodiversity into account in their activities is a major factor in the development of a more resilient and autonomous agriculture. Indeed, consuming less energy and producing a greater diversity of ecosystem goods and services will, all in all, be the agriculture of tomorrow.

AN ACTION PLAN FOR AFTER THE LIFE PROJECT

Although the more marginal sites and the most sensitive areas of our nature reserves will continue to be managed by Natagora and our numerous volunteers, the majority of the meadows restored by the project will be managed by local farmers who have committed to a long-term collaboration beyond the end of the LIFE project. They will be able to benefit from fodder, agro-environmental subsidies and the satisfaction of playing a role in safeguarding our natural and cultural heritage.

Since 2015, in order to reward farmers who put in place practices that reconcile production and environmental preservation, the LIFE project has been a participating member in the organization of the competition « Isn't my meadow lovely ? » set up by Natagora, FUGEA and Natagriwal.


Carte postale du siècle dernier

1. Ancestral farming methods have made it possible to develop and maintain ecosystems of great biological richness: the semi-natural open environments.
2. The more rustic cattle breeds particularly appreciate the fodder from natural reserves.

Meetings were frequent between naturalists and farmers to exchange management ideas, knowledge, and experiences about their shared common interest in biodiversity preservation.

COMMUNICATING

500 ACTIVITÉS ORGANISÉES
DE NOMBREUX OUTILS CRÉÉS
POUR CONTINUER À S'INFORMER

RAISING PUBLIC AWARENESS

Throughout the project, the LIFE team, with the support of the many volunteers involved in Natagora's "Famenne" and "Entre-Sambre-et-Meuse" regional sections, also dedicated their time to raising public awareness of the challenges and stakes of Natura 2000 and, in particular, of the protection of the flora and fauna targeted by the project.

Wonder at the beauties of nature is one of the keys to growing interest in its preservation; it is on this basis that nearly 500 activities were organized during the project, including guided walks, activity days involving the public in the field such as site management, information sessions, etc.

Additionally, several educational tools have been developed: a website (www.lifeprairiesbocageres.eu), a brochure presenting the project, regular newsletters, articles in Natagora magazine and educational panels in the nature reserves. The LIFE team has also communicated regularly through articles and news stories in various media.

FOR THE YOUNGER GENERATION

Educating by transmitting quality information to our younger citizens is essential in order to help the decision-makers of tomorrow understand the challenges of land use planning and the importance of nature conservation. Two original actions, targeting young people in particular, were created in collaboration with Virelles-Nature: a film, and a scenographic module in Virelles.

Many discovery actions have been organized for various audiences

A MOVIE

An educational film dedicated to the project tells of the discovery of a colony of bats and all the actions taken to protect them. It can be viewed on our website. DVDs of the film have been distributed to the project's many partners, and are available upon request.

A SCENOGRAPHIC MODULE

Set within the Virelles Aquascope, this laboratory of rural life unravels the mysteries of the project's meadows and target species in a fun and educational way. Well worth a little detour!

9 BROCHURES TO ENJOY

They address many aspects of the meadows, from the different elements which make up the bocage to their challenges and management. They can be downloaded from our website: www.lifeprairiesbocageres.eu .

FOR THE MANAGERS

It is equally essential to communicate our actions and results to the various land managers, in particular to farmers and the DNF. To do so, the project team organized guided tours and information sessions, during which thematic brochures were distributed. Furthermore, training was also organized for the caretakers of our nature reserves.

Several training sessions were given in order to inform managers about our actions and our results.

Over 8 years, the activities of the 'Bocage Meadows' LIFE project focused on 10 Natura 2000 sites in Fagne-Famenne (colored areas) and, more specifically, on 20 Natagora nature reserves and their surroundings.

WHAT IS A «LIFE» PROJECT?

LIFE is the Financial Instrument for the Environment (L'Instrument Financier pour l'Environnement) through which the European Union supports environmental and nature conservation projects in its member states. Since 1992, LIFE has co-funded more than 5,400 environmental protection projects across Europe, contributing approximately € 6.5 billion.

THANK YOU!

Many participants have made the success of this project possible; may they be warmly thanked for their contributions. In particular, we would like to thank the volunteers from Natagora's «Famenne» and «Entre-Sambre-et-Meuse» regional sections, the curators of the Nature Reserves, Virelles-Nature, Natagora staff, the naturalists, farmers, owners, and municipalities, the Wallonia Public Service (DNF, DEMNA), our partner non-profit organizations, agricultural and forestry companies, etc. All these great achievements would obviously not have been possible without the financial support of the European Commission which co-financed the project with Natagora, and the help of our sponsors, patrons and donors.

MORE INFORMATION ABOUT THE 'BOCAGE MEADOWS' LIFE PROJECT:

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Unless specified otherwise, all photos are by the LIFE team; mainly Sébastien Pirotte, but also Patrick Lighezzolo, Olivier Kints, and Thibaut Goret. All illustrations are by Olivier Kints.

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