LIFE | LOMME

RESTORATION OF NATURAL HABITATS IN THE LOMME RIVER BASIN AND ADJACENT AREAS

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THE LIFE PROJECTS FOR BIO-DIVERSITY IN EUROPE

Several animal and plant species are facing the threat of extinction. The European Union decided to tackle this worrying development and has set the objective of slowing down the loss of biodiversity. The EU first introduced the LIFE(1) programme in 1992 and it was aimed at supporting projects that would protect the environment and nature in the EU Member States and a number of neighbouring countries.

Since then the LIFE projects have contributed towards protecting endangered species (ranging from the emblematic Iberian lynx in Andalusia to the lesser known pearl mussel in Finland), to restoring natural habitats that have been degraded as a result of human activity, stopping the scourge of invasive exotic species, to raising awareness among the public at large and decision-makers about environmental problems and even developing extensive ecological networks.

THE LIFE-LOMME PROJECT

This is the backdrop to the LIFE-Lomme project. The project aims to restore natural habitats of great biological interest: peatlands, wetlands, nardus grasslands, floodplains, Luzulo-Fagetum beech forests, etc.

Because of their rareness, fragility and the original biodiversity they play host to, these habitats are all covered by the scope of the European "Habitats" Directive, which recognises the role they play in Europe's cultural heritage and asserts the need to protect, manage and restore them.

LIFE-Lomme is run in the river basins of the Lesse and the Lomme, across three Natura 2000 sites. The aim of LIFE-Lomme is to continue and build upon the restoration works carried out by other LIFE projects in Wallonia on similar natural habitats: LIFE-Croix-Scaille, LIFE-Tourbières de Saint-Hubert, LIFE-Plateau des Tailles, LIFE-Ardenne Liégeoise and LIFE-Hautes-Fagnes.

The project has been carried out by the Directorate General responsible for overseeing operations in agriculture, natural resources and the environment (DGARNE) and the not-for-profit association 'Contrat de rivière pour la Lesse', with financial support from the European Union.

(1) Financial Instrument for the Environment (LIFE)




WHO IS INVOLVED IN THE PROJECT?

LIFE-Lomme has carried out activities both on public property within the project's perimeters (municipality, province, church administration, region) and some areas of private property. The owners, both public and private, agreed to take part in the project on an entirely voluntary basis.

The areas that have been restored by the project encompass a surface area of 447 ha.

Owner	Surface area of the property involved in the LIFE-Lomme (hectares)	% contribution to the project
Municipality of Libin	110	25
Municipality of Tellin	50	11
Municipality of Saint-Hubert	39	9
Municipality of Libramont-Chevigny	49	11
Municipality of Wellin	17	4
Municipality of Rochefort	5	1
Municipality of Luxembourg	55	12
Church administration of Smuid	2	0.4
Region of Wallonia	66	15
Private	54	12
TOTAL	447 HA	100%

SPOTLIGHT ON THE NATURAL ENVIRONMENTS RESTORED BY THE PROJECT

© Andreas Trepte

The meadow pipit
This is a small, insect-eating migratory bird. It can be seen here in the right season on its typical courtship flight across open areas such as moors and peatlands.

I Peatlands and wetlands

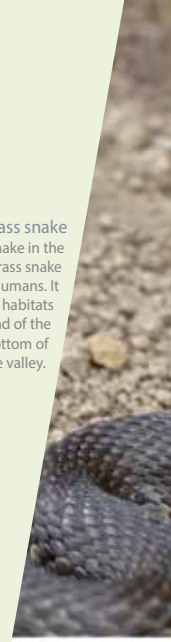
Peatlands and wetlands are also known as 'fens'. These are open areas of nature, dominated by small shrubs such as heather and are carpeted with sphagnum (moss). They are found in regions with a harsh climate that is cold and wet and with poor and acidic soil. In the region of Wallonia their presence is limited to the high Ardennes plateaus.

I Wet meadows

Wet meadows are generally found alongside watercourses. They may overflow during times of flooding in the region or rising water table levels. In the past, these meadows were mainly mown by hand or using horsepower.

The keeled skimmer
This species of dragonfly is mainly seen in July-August. It can be found alongside small, slow-flowing streams and in bursts of sunlight in peatlands, low marsh land and some meadows.

The violet copper
This butterfly is heavily linked to the presence of bistort; a plant found growing in wetland areas. The females lay their eggs exclusively on this plant. The butterfly flies to us in May-June.



The grass snake
This is the largest snake in the region of Wallonia; the grass snake poses no danger to humans. It lives in several different habitats but is particularly fond of the wet meadows in the bottom of the valley.

Why are these open areas under threat?

In order to respond to heavy demand for wood and to save the regional economy, our ancestors progressively introduced spruces beginning around the middle of the 19th century, including in the peatlands, on the moors and in the wetlands. So as to be able to plant softwood trees on waterlogged soil, several drains had to be dug so as to dry out the soil. By altering the environment in this way, the single-crop spruces caused the disappearance of species that were typically found in these natural areas.

Furthermore, the traditional agro-pastoral practices which had been used to maintain open areas had been abandoned because they were not economically profitable enough and the humidity of the soil meant that it was not possible to intensify agriculture by using machinery.

The species that were restricted to peatlands, moors and wetlands gradually lost their habitat.

The dormouse
This is a small mouse-sized mammal. It lives in hardwood forests with lower level bushes. It feeds on seeds, shoots, flowers or insects.

I Hardwood forests

On the high Ardennes plateaus, the hardwood forest is degraded. The young plants that would have been able to renew the forest after their elders had been cut down are either absent or are too sparse. "Companion species" are also frequently absent. These are species of trees and shrubs which do not primarily have an economic role to play but are important for keeping the forest in balance: mountain ash, birch, hornbeam, trembling poplar, elderberry, etc.

© Frank Vassen

The black stork
This bird appreciates the older hardwood forests, mainly in the Ardennes. The stork hunts in small, high quality streams.

Why are the hardwood forests on the high Ardennes plateaus under threat?

The harsh climate on the high plateaus accentuates the negative effects of several factors as the regeneration of young trees and shrubs is less dynamic than in other regions:

- *Overpopulation of large wild fauna (stag, deer, wild boar)*
- *Soil compaction from the repeated passage of heavy machinery used to transport wood*
- *Diseases affecting the forest populations*

RESTORATION OF NATURAL AREAS

LIFE-Lomme has carried out a number of activities aimed at restoring natural wetland habitats and keeping them in a good state of conservation. Over time, these areas will once again be able to welcome back species that are typical for the area.

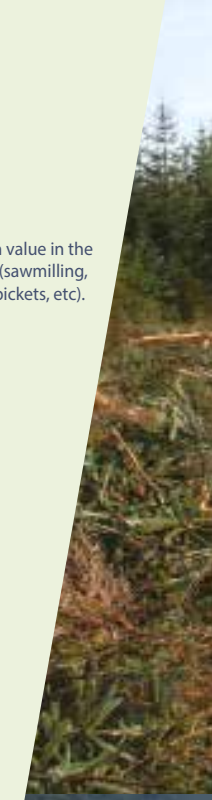
I (Re)-opening of the area

In the vast majority of cases, the wetland environments (peatland, moors, grassland) that were the objective of the LIFE-Lomme project's restoration works had been planted with conifers. In some cases this was on a limited scale with a number of natural spruce seedlings scattered across open areas but sometimes more intensively with dense softwood plantations. Where the latter is concerned, remaining areas of wetlands were only found in a very small number of pockets.

The first stage of the restoration works therefore generally consisted of removing softwood trees, either manually or using machinery. Where the spruces are very young and not too dense, they have very little economic value and are simply left alone. They lose their needles very quickly and do not prevent typical vegetation from returning. Where the spruces form a dense population but are still too young to have value in the traditional wood sector (sawmilling, pickets, etc.), LIFE-Lomme has tried as much as possible to harness their value in the form of wood-energy. There, the young wood is crushed and then processed into pellets or chips to be used in cogeneration.

82 ha of young spruces have been crushed to be used in the wood-energy sector wherever possible.

Use of 88 ha of wood with value in the traditional wood sector (sawmilling, pickets, etc).



Manual cutting of 176 ha of natural spruce seedlings with low density.

I Restoration of the water regime

Very often, the soil in degraded areas has been drained which means it loses its characteristic wetness. So as to guarantee optimal restoration of wetland areas, the challenge consists of raising the water table levels to their natural level. This can be achieved in various ways.

The drains are clogged with the help of clay plugs. This means that rather than evacuating the water as quickly as possible through the drainage network, the water can slowly seep through the soil.

699 plugs have been placed in the drains which dry the soil and this has made it possible to seal a 24km network of drains.

The construction of mineral dikes plays the same role: keeping as much water in the restored areas for as long as possible. As with for the plugs in the drains, the clay is extracted directly from the site.

28 dikes measuring 25 to 100 metres in length have been constructed.

I Specific measures

Peatland habitats

Restoration of a peatland habitat may sometimes be supplemented by turf cutting which involves stripping away soil to a depth of 5 to 10 cm. The objective of turf cutting is twofold:

(1) destroying the roots of molinia grass. This grass is indigenous and has a tendency to invade degraded areas of peatland;

(2) stimulate the 'seed bank'. These are seeds which accumulate in the soil over the years. Whilst the seeds are still viable, exposing them to the light once more allows them to germinate.

To speed up the return of typical species on bare soil where turf cutting has taken place, LIFE-Lomme has transplanted plants removed from neighbouring areas. The species selected for this purpose are called "nurse species"; they are capable of creating conditions that are favourable for other species to take root over time. The team working on the LIFE-Lomme project has transplanted eriophorum vaginatum and varieties of moss.

The watercourses created by blocking off drains (small pond at the place where the clay used to make the plugs is taken from) and through the construction of mineral dikes are very shallow in depth. It is also advisable to add to the range of bodies of water with deeper ponds (a minimum of 1.50 metres) which avoids the problem of the pond completely freezing over and therefore also the wildlife that inhabits it in winter.

100 ponds have been dug by LIFE-Lomme.

LIFE-Lomme has carried out turf cutting on some 15 ha of degraded peatlands. Opposite is an area of degraded peatland (see photo above) that has been restored by the turf cutting technique (photo below). Barely a few months after the works, the results are already surprising with a speedy return of typical vegetation (photo on the right).

Meadowland habitats

The majority of wet meadows being restored by the LIFE-Lomme project starting with softwood stands will be managed by mowing. This requires meticulous preparation of the land to allow a tractor through. The spruce stands are crushed and the soil is then levelled. As was the case for the peatland habitats, this has speeded up the return of typical vegetation to wet meadowlands. Neighbouring meadows have been flattened and the seeds extracted from the hay so that they can then be sown on the land that has been cleared.

Forest habitats

To overcome the deterioration of the hardwood forests, LIFE-Lomme created regeneration hubs within the very heart of the forest. These are small areas of land (1 to 2 hectares) which are fenced off to prevent large herbivores from grazing there. Various companion species have been planted in the exclosure to regenerate a diversified and tiered forest. When the plants have matured and are producing seeds, they will gradually be able to disperse their seeds in the surrounding forest, outside of the exclosure. Whilst the intervention is very local (size of the exclosure), the activity is aimed at diversifying the hardwood forest on a large scale.

21 regeneration exclosures have been created over a total surface area of 23 ha.

WHAT HAPPENS AFTER RESTORATION?

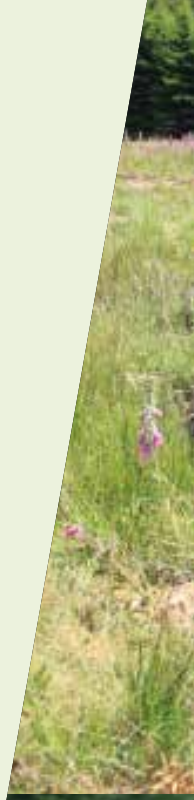
The restored areas of land will benefit from be granted a status offering them serious levels of protection: nature reserve domain or wetland zone of biological interest. Each restored area will also benefit from a "management plan" which details the possible management measures for conserving the restored habitats and sensitive species.

I Open areas

In order to preserve the original and remarkable biodiversity of peatlands, moorlands and wet meadows, efforts must be made to combat scrub encroachment. Without intervention, bushes and scrubs will slowly colonise the areas and close off the areas once more to the detriment of typical species. LIFE-Lomme has called upon farmers to manage some of the restored areas on an ongoing basis.

Four farmers have begun to manage the land by late mowing over 30 ha. A tractor-mower moving over the land is rather startling for small animals. To preserve the populations of insects, reptiles and birds, large areas are kept as refuges and are not mown.

LIFE-Lomme has created 15 free-range pens covering a total surface area of 74 ha. There are seven farmers who bring their hardy breed cattle to these areas and carry out highly extensive grazing, i.e. grazing with a low number of animals on the area of pastureland.



I Forested areas

In forests, the management can be more or less frequent according to the type of forest that is desired. Some hardwood forests in a very good state of conservation benefit from the status of wilderness reserve. In these forests, use of the wood is not permitted (with the exception of removing natural spruce seedlings). The aim is to allow the forest to age and for the natural dynamics to come to the fore.

In other hardwood forests, the traditional type of forest management is favoured, known as uneven-aged high stand management. Wood may be removed and there is a preference for developing a forest made up of trees and shrubs of different ages. This means the foliage can develop at different heights which makes the forest an attractive habitat for a larger number of species rather than an even-aged forest made up of trees of the same age.

Locally, the LIFE-Lomme has been managing the forest in the form of coppices. Intervention is more frequent and is aimed at preserving a young and dense forest. This type of forest management was common in the past mainly because it regularly provided wood to be used for heating. Some species such as the hazel grouse (a bird) particularly appreciate this type of forest.

BEFORE

AFTER

Fange Bubu (LIBIN)

BEFORE

AFTER

Fagne Mâ d'eau (TELLIN)

BEFORE

AFTER

Troufferies (LIBIN)

LIFE I LOMME

Direction de la nature
(Service public de Wallonie)

Avenue Prince de Liège 15 I 5100 Jambes
Tél. 0800/11 901

Responsible editor : José Renard, general Director f.f. of the Direction Générale Opérationnelle de l'Agriculture, des Ressources naturelles et de l'Environnement, avenue Prince de Liège 15 à 5100 Jambes.
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