



LIFE Plateau des Tailles



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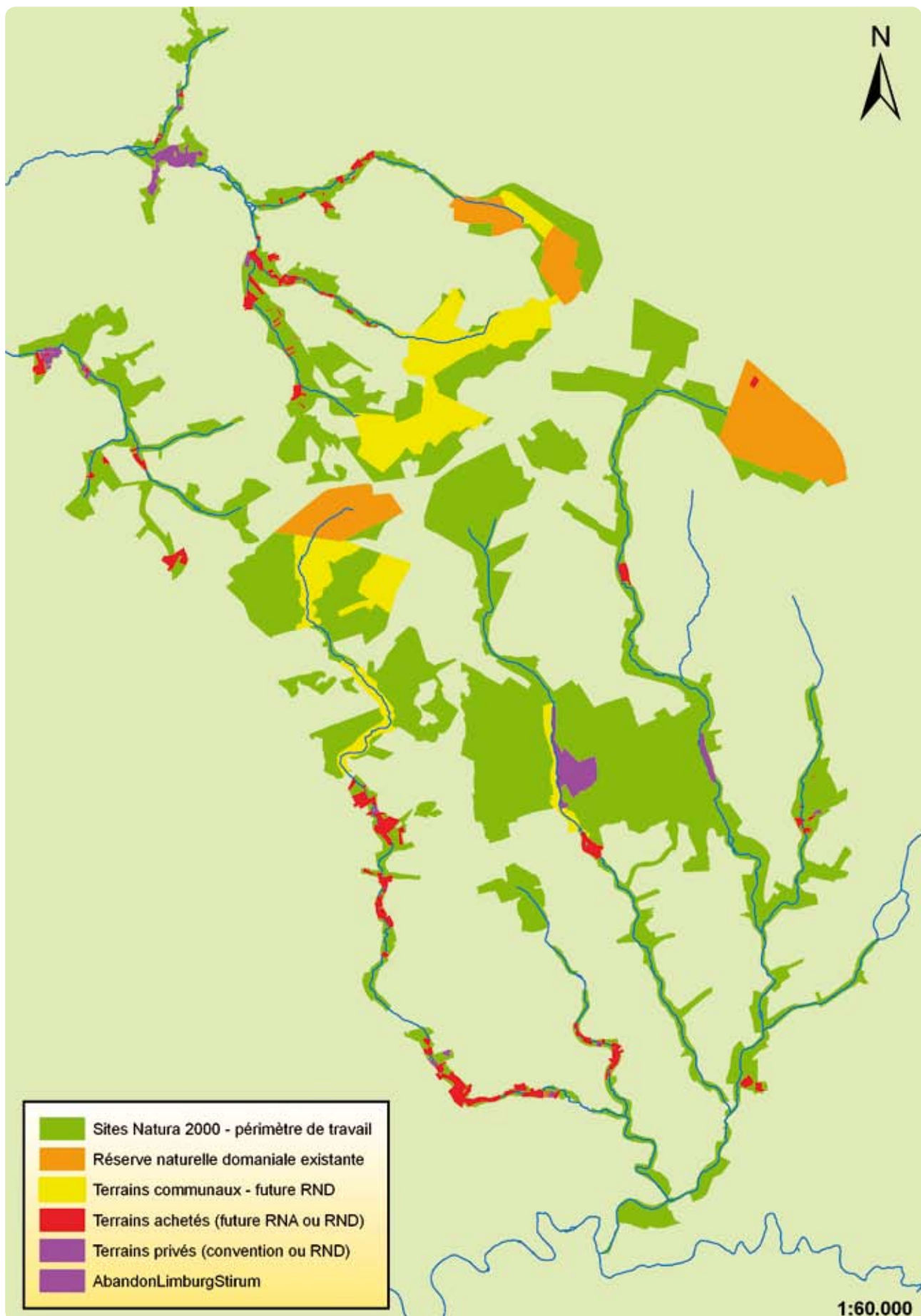
Denis Parkinson

LIFE Nature project

"Rehabilitation of
natural habitat on the
Tailles plateau"

2006-2010

MAP OF THE SPOTS REHABILITATED WITH THE LIFE PROJECT



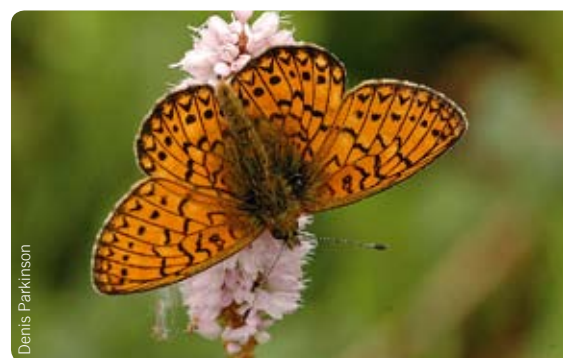
The Tailles plateau, a great natural resource

With heights of over 600 metres, the Tailles plateau makes Belgium's second highest region, after the Hautes-Fagnes. This particular situation goes with a cold and quite rainy climate, conditions that are favourable for very original natural environments to appear.

On the highest peaks, the peat moors and heaths offer landscapes that are comparable with the ones you find in northern countries. As they are very acid environments, continuously filled with water, the peat moors testify to past ice ages. The active peat bogs, one of the most exceptional and endangered natural habitats in our country, can still be found at two places of the Tailles plateau, the Fange aux Mochettes and the Fagne du Grand Passage. These peat moors house species of high patrimonial interest. Among the plants, the Sphagnum peat moss (*Sphagnum* sp.), which ensure the formation of peat, are the most characteristic ones in the peat environments. Other more rare and endangered species are also to be found, such as the bog rose-mary (*Andromeda polifolia*), the small cranberry (*Vaccinium oxycoccos*), the round-leaved sundew (*Drosera rotundifolia*), the peat bog orchid (*Dactylorhiza sphagnicola*), the European starflower (*Trientalis europaeus*), the fir clubmoss (*Huperzia selago*), the bog-bean (*Menyanthes trifoliata*), the cotton grass (*Eriophorum* sp.) or the bog asphodel (*Narthecium ossifragum*). As for the fauna, insects too, consist of various boreo-mountainous species, such as the cranberry fritillary (*Boloria aquilonaris*), a rare and magnificent butterfly. Several endangered dragonflies inhabit the peat moor's pools, such as the spearhead bluet (*Coenagrion hastulatum*), the small white-faced (*Leucorrhinia dubia*) or the northern emerald (*Somatochlora arctica*). The most characteristic nest-building birds, on the other hand, are the great grey shrike (*Lanius excubitor*), the meadow pipit (*Anthus pratensis*), the tree pipit (*Anthus trivialis*), the european stonechat (*Saxicola rubicola*), the grasshopper warbler (*Locustella naevia*) and the hobby (*Falco subbuteo*).

As you go down to the valleys of the Ourthe orientale and the Aisne, vast massifs of leaf forest, mainly beech trees have subsisted amidst widespread spruce plantations. These massifs, although strongly modified by man, give an idea of the vast forest that used to cover the Ardennes' major part before man settled there. These beech forest house several renowned nesting birds, such as the black stork (*Ciconia nigra*), the common raven (*Corvus corax*), the grey-headed woodpecker (*Picus canus*), the black woodpecker (*Dryocopus martius*) and very rare hazel hen (*Bonasa bonasia*). Numerous deer and wild boars also cross the area, which cannot but cause great problems for the forest's livability.

Down in the valleys run unpolluted streams, the banks of which are of an enormous biological interest. Martin-Moulin, Bellemeuse, Pré Lefèvre, Lue, Fays de la Folie, Aisne, all of them have their sources in the Tailles plateau's peat moors and wind along its slopes. In the past, these streams were bordered with swamp forests or humid mowing fields, a great natural resource. These environments still exist today, although they are more



Boloria eunomia is becoming scarcer in humid meadows.



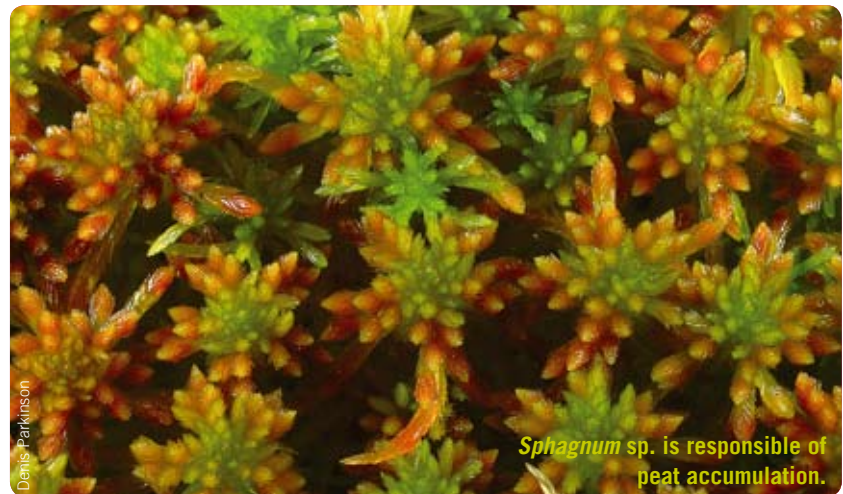
Dactylorhiza sphagnicola is still abundant in peat moors on the Tailles plateau.


Andromeda polifolia

occasional and often deteriorating. In springtime, the alluvial humid meadows cover with the common bistort, a plant that feeds two endangered butterflies' caterpillars, the violet copper (*Lycaena helle*) and the bog fritillary (*Boloria eunomia*). As a proof of their relative purity, these streams are inhabited by cold and clear water fish: the brown trout (*Salmo trutta fario*), the european bullhead (*Cottus gobio*) and the small lamprey (*Lampetra planeri*). And since it has recently been re-introduced in our region, they are an important bastion for the European beaver (*Castor fiber*), whose spectacular dams give rhythm and diversity to the watercourse.

The Tailles plateau also conserves traces of past human activity: heath shaped by extensive grazing of flocks of sheep and herds of cows, wood-scorching areas of charcoal burners, gold digger mounds, peat cutting ditches, abandoned mowing meadows, craters and second world war trenches. These marks of man shape the landscape and make it a rich and cultural inheritance.


Coenagrion hastulatum

Picus canus

Sphagnum sp. is responsible of peat accumulation.

Saxicola rubicola

Boloria aquilonaris

Eriophorum angustifolium

Endangered nature

Unfortunately, the Tailles plateau's natural environments have suffered severe deterioration as a result of human activities.

In a badly productive region, and where the forest was over-utilized, peat was a well-appreciated fuel. And so the peat moors of the Tailles plateau have, entirely or partially, been utilized, as can be seen from working fronts and the peat cutting ditches in the Fange aux Mochettes or in the Fagne du Grand Passage. Peat extraction has reduced the peat surface and contributed to its drying up, often leading to severe and even irreversible biological damages. This activity continued up to the middle of the twentieth century.

From 1870 to 1950, numerous plateau peat moors, such as the ones in Fagne du Pouhon and Fagne de la Goutte, were drained and then massively planted with spruces. This way, hundreds of kilometres of ditches were dug in order to make it easier for the water to run off and to allow spruces to grow. These plantations' negative impact was quite strong, as they involved several hundreds of hectares of peat moors.

In the second half of the twentieth century, certain ancestral agricultural practices, such as extensive grazing and the mowing of valley bottoms, were given up, since they did not meet modern and mechanized agriculture's criteria. The land on which





Denis Parkinson

When peat bogs lack water, typical vegetation disappears.

these activities took place, namely heath and alluvial meadows, was either disregarded or planted with spruces. These changes in land use caused very original and diversified natural environments to disappear or to deteriorate.

More recently, the Tailles plateau's beeches got hit by autumn cold entailing a great many old trees to languish, and having to be cut. This would not have been too serious if the beech forest had kept all of its natural regeneration capacities, as young trees grown from seedlings take over from old ones. Unfortunately, deer and wild boars, which are far too numerous in the Tailles plateau's forests, systematically eat all of the young trees and hamper the forest's natural regeneration, which is already weak as a consequence of grass sowing on the undergrowth linked to soil compaction caused by exploitation machines.

This overabundance of big game results from too poor a regulation by hunters who make them prosper artificially by giving them ample food in winter. And so the plateau's forests house dense populations of deer and hinds that are four times bigger than what can be handled by nature.



Frédéric Degraeve

The LIFE programme for restoring natural habitats

To contain the alarming deterioration of the Tailles plateau's natural environments, the biologists of the Walloon Region's Département d'Etude du Milieu Naturel et Agricole (DEMNA, = Department for the study of the natural and agricultural environment) thought of an ambitious restoration project which fits into an elaborate regional programme to preserve peat moor habitats. The Département de la Nature et des Forêts (DNF = Nature and Forest Department), managing the public forests and state natural reserves involved, was also closely linked to the setup of the project. The latter's elaboration became possible thanks to funding by the European Commission's LIFE Nature, along with co-funding by the Walloon Region. Two external partners were then included into the project, non-profit organization NATAGORA and consultancy BEMELMANS, respectively for their competence regarding the preservation of nature and for forest management.

The LIFE programme "plateau des Tailles", which involves a budget of 3,750,000 € and a team of five workers, got started in 2006 and is to come to an end late 2010. The working scope embraced four Natura 2000 sites of river basins eastern Ourthe and Aisne, which means an overall surface of about 3000 ha. The project aimed at restoring three big sets of natural habitats, i.e. peat moor environments, broad-leaved forests and valley bottom environments. The initial objectives were the following:

- **Protection of 250 ha of peat moor and alluvial environments through the acquisition of 50 ha of land and agreements reached with owners to convert 200 ha into nature reserves**
- **The restoration of 200 ha of deteriorated environments by planting coniferous trees**
- **the restoration of 285 ha of remaining open spots by digging off (20 ha), cutting down isolated trees (50 ha), cutting of regenerating conifers (50 ha)**
- **The hydrology restoration at certain places by closing the drains (20 Km), digging pools (20) or by building dikes (11,5 Km).**
- **Protection by fencing 50 ha of deteriorated beech forests**
- **Setting up grazing (40 ha) or mowing management (50 ha)**
- **Raising regional stakeholders' awareness of the natural resources in the Tailles plateau's environments**



Wallonie



Techniques at the service of biodiversity



Hubert Rotheudt

Restoration works could only be carried out after having obtained the involved owners' agreement. So a substantial job of contacting and negotiating was done before the field works were carried out. Finally, a couple of hundreds of small private owners joined the project, most of them reselling their parcels to create new nature reserves. Some private owners also signed a long-term agreement to guarantee their land would be treated as nature. As for the municipalities (Manhay, La-Rochette-Ardenne and Houffalize), they accepted the restoration and the new status of state nature reserve of several hundreds of hectares of municipal property.

In the areas planted with spruces, the restoration started by cutting down and removing the trees. For this operation, the usual wood processing circuit was used, as most of the woods were sold for the benefit of their owners. To avoid damages to the peat and marshy soil, machines were most of the time equipped with caterpillar tracks or wide tyres and they drove on top of the branches of cut down spruces.

The young spruces resulting from natural regeneration, in turn, were crushed. Here too, the soils' nature required the use of mechanical shovels on caterpillar tracks fitted with a crusher at the end of the arms. In the most unstable areas, machines even had to drive on top of floating platforms to avoid sinking.

In peat moor areas that were still open, yet deteriorated, several restoration techniques were deployed. Vast surfaces of heaths invaded by molinia were cleared or milled. On the cleared peat surface, seeds of typical peat moor plants can now germinate and grow again, whether they had gotten covered by peat moors or carried over by the wind after the clearance. In certain areas, we also set out cotton grass plants or sowed parts of peat moss to accelerate the re-colonization by peat moor vegetation.

In the large areas without access for machines, spruces were either cut down or ringed. The latter technique consists in peeling a ring off the bark near the trunk base in order to prevent the juice from circulating and so causing the tree to die. These upright dead spruces will provide an ideal environment for many mushrooms and timber beetles.

One of the project's larger parts consisted in restoring the sites' hydrology, as most of them had been drained. This operation was meant to retain a maximum volume of water on site by disconnecting the drainage network. This was achieved by installing innumerable clay plugs on the drains, and also by building dikes. Upstream these dikes, most of which consist of clay or peat, shallow water surfaces were formed in which typical peat moor vegetation is now growing, an omen that new

Clay dyke at the "Fagne de la Goutte"



Soil milling allows to convert spruce plantations into meadows.



Construction of a dam with PVC sheet piles

peat moors are to be formed in future. In areas with deep peat moors, dikes of PVC sheet piles were set up. The construction of these dikes, which is quite expensive, is to be done with care but the results are spectacular.

In the beech forests and on the edge of open peat moor areas, various regeneration techniques for broad-leaved forests were used. Grid fences were built to protect certain areas from big game, thus creating enclosures of 1 or 2 ha spread over the forest. Besides, thousands of young trees were planted, either within the fences, or protected by a sleeve of plastic grid. Finally, willow shoots were set out and large surfaces were sown with rowan tree and birch seeds. These artificial sowing operations were often preceded by tillage to make germination easier. This operation also took place in beech forests in order to make it easier on beech-nuts to germinate.

To make it possible for open areas to be managed by grazing, large enclosures were created for robust cows that are adapted to the land's conditions (most of the time, Scottish cows of the race called "Highland Cattle"). As for the surfaces meant to be mowed, preparatory work was done there too, most of the time by milling and levelling the soil, operations that will allow the mowing machine to pass through there later on.



Sowing of sorb seeds contributes to restore broadleaf forest.



The project's results

At the end of the project, most of the initial objectives had largely been surpassed:

- Restoration of 600 ha of heath and peat moors, 150 ha of beech forests and 100 ha of valley bottoms
- Creation of 380 ha of new nature reserves (state and acknowledged nature reserves)
- Removing of 325 ha of spruce plantations on peat or alluvial soils
- Clearing by combing and crushing of 270 ha of recent or earlier cuttings, often invaded by young spruces
- 33 ha of molinia heaths cut off or milled
- 70 ha of peat moor areas re-planted with cotton grass
- 120 ha of isolated spruce surfaces cut down or ringed
- 340 Km of drains disconnected
- 600 new pools and water surfaces, for a flooded surface of 18.5 ha
- 68 ha of beech forests within enclosure, 73,000 broad-leaved trees planted in the beech forests and open areas
- Tillage on 38 ha to make it easier for broad-leaved trees to regenerate
- Sowing of rowan trees and birches, slipping of willows on 80 ha
- Elimination by clearing of spruce seeds on 150 ha
- Preparation for mowing of 45 ha of infertile meadows
- Setting up extensive grazing on 100 ha of heaths and alluvial meadows
- Creation and planning of four didactic paths at restored spots, construction of two observation towers with free public access
- An ample communication segment: brochure, newsletters, scientific and simplified articles, web site, information panels, guided tours, presentations, volunteer projects,...
- Scientific monitoring of restored spots to make sure the objectives are achieved: botanical, entomological and ornithological surveys





Typical plants of peat bogs appears quickly in the newly created water bodies.



Spruce cutting led by big changes in the landscape of the valleys.



This part of beech forest which was cut has been rehabilitated by tree plantation.

"FAGNE DE SAMRÉE":



before (2006)...



... and after rehabilitation (2009)



Many volunteers have contributed to the success of the LIFE project.



Christian Xhardez

Nature for man

As we have seen, the project's execution had to rely on the support of the public or private site owners, whose agreement was required to carry out the restoration work. For most of these owners, the preservation of biodiversity was not one of their foremost worries. Therefore, the LIFE project's positive indirect effects needed to be highlighted and magnified in order to get the support of the various external stakeholders.

The Ardennes forests are primarily places where wood is produced. They sustain a vital economic network for the region. In this respect, the definite deforestation of several hundreds of hectares of spruce plantations could only be done because these surfaces did no longer yield for foresters. That is why they could be abandoned without any severe economic loss. Indeed, the swampy peat moor and valley bottom soils made forest exploitation labour and cost-intensive. On top, the project's restoration work in broad-leaved forests produced a direct economic added value, which local stakeholders understood and appreciated well enough.

Hunting, the renting of which is another important source of income in the forest, benefits too. The large open areas that were created are very attractive for lurking hunters. And furthermore, they will be a new source of food for game and contribute to lower the pressure – too high – on game in broad-leaved forests. As a proof of these positive effects and although the hunters' support to the project is still quite stiff, the rental rate for the hunting land including the LIFE sites has gone up.

Another added value relates to the local water resources. The plateau's humid areas contain numerous water supply points providing the surrounding villages with drinking water. The restoration of the peat moors, that act both as a filter and as a storage place for rainwater, is done to allow sustainable protection of this precious resource.

Finally, tourism is following suit since four walking trails, marked with didactic panels and two observation towers were created. They pass through restored places that have acquired a high landscape value.



Dennis Parkinson



Nature for its own sake



Scientific monitoring of the restored places already helps to observe the project's positive effects as biodiversity increases. The speed at which the vegetation colonizes the working areas is sometimes amazing. We are delighted to see, for example, peat moss and other typical peat moor plants (cotton grass, sedge,...) start conquering the countless new water surfaces. The colonization of the cleared spots by heath plants, heather (*Calluna vulgaris*) in the first place, is just as spectacular. The humid valley bottoms' exuberant vegetation literally explodes whereas the young broadleaf trees bud within the fence protection, sheltered from greedy game.

As for the insects, dragonflies celebrate, and several rare peat moor dragonfly species – the small white-faced darter (*Leucorrhinia dubia*), the moorland hawkmer (*Aeshnea juncea*), the spearhead bluet (*Coenagrion hastulatum*), the keeled skimmer (*Orthetrum coerulescens*) – see their populations grow or colonize new places. Among butterflies, the very rare cranberry fritillary (*Boloria aquilonaris*) colonized two new places, as well as the purple-edged copper (*Lycaena hippothoe*). Bog fritillary (*Boloria eunomia*) and violet copper (*Lycaena helle*) are waiting fearlessly for the latter to reappear in the alluvial valley bottoms freed of spruces.

The birds were the first ones to respond to the restoration work. In springtime, the places are filled with singing tree pipits (*Anthus trivialis*), meadow pipits (*Anthus pratensis*) and european stone chat (*Saxicola rubicola*). Migratory birds are countless: common snipes (*Gallinago gallinago*), sandpipers (*Tringa* sp), common cranes (*Grus grus*), northern harrier (*Circus cyaneus*) all make use of the restored places for a stop during their migration. Famous nesting birds, hardly ever noticed at the Tailles plateau, have reappeared: wryneck (*Jynx torquilla*), woodlark (*Lululla arborea*), Eurasian hobby (*Falco subbuteo*), lapwing (*Vanellus vanellus*), reed bunting (*Emberiza schoeniclus*). All of these wonders obviously attract all kinds of naturalists who will testify in future to the evolution of the Tailles plateau's biodiversity, which we hope will be as great and fast as it is promising.



Christian Xhardez



Christian Xhardez



And then?

The acquisition of the (state or private-NGO) nature reserve status offers excellent guarantees for the future takeover of the sites' management. The Walloon Region (DNF) will manage the sites in RND, whereas this association will keep up the new Natagora reserves.

A significant management operation will be to regularly eliminate the spontaneous spruce seedlings that will initially colonize the restored areas. Other invading plants will also have to be monitored and restricted to the needs, yet on limited surfaces: western brackenfern (*Pteridium aquilinum*), common broom (*Cytisus scoparius*), Himalayan balsam (*Impatiens glandulifera*). The re-colonization by broad-leaved trees will have to be controlled in several places.

The various newly placed dikes and fences will regularly be inspected to make sure they are waterproof enough. The equipment of the various didactic trails will be kept in good condition.

Finally, the managers will see to it that all goes well and to the continuity of extensive grazing and mowing by some ten farmers with whom partnership agreements have been made. At this moment, no less than 150 ha of restored areas are managed by late mowing or extensive grazing.



Hubert Rothard

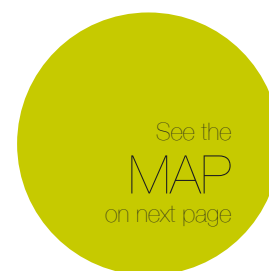


David Doucet



Denis Parkinson

Come and discover LIFE project "plateau des Tailles"'s accomplishments!



For the LIFE project, four signposted trails have been created to allow the public to discover the natural resources at the restored spots. Along the way, both itineraries that are described here have plenty panels and didactic modules containing massive information on the local natural resources and the LIFE project's action. These didactic trails have been funded by the allowances paid to the municipality of La-Roche-en-Ardenne in the context of the LIFE project. Come and explore them in any season, you will not regret it!

Explanatory trail at Samrée

Design

A **watchtower** helps you discover a wide panorama on the restored peat moors and the high Bellemeuse valley.

A **corduroy road** helps you cross the Fagne de Samrée on dry feet.

Panels and interactive modules help you get a better understanding of these environments and the various human activities of past and present on the Tailles plateau. Topics dealt with: the network of Natura 2000 sites (1), the peat moors (2), the landscapes (3), the spruce in the Ardennes (4), the forest-game balance (5), the ancient charcoal burners (6).

Practical information

Start: Along the N89 connecting Baraque de Fraiture and Samrée, a parking and a picnic area have been provided at the main entrance to the Samrée woods. Coming from Baraque de Fraiture, it is the first left-hand stone path after you have passed the Lue farm.

Length: 4,7 Km - about 1 hour and 45 minutes on wide stone paths.

Signposting: Green cross on a white field

Access: NOT AUTHORIZED from 10th September to 10th October, to safeguard big game's rest during the troating period. The trail crosses a hunting area. In the hunting season, from 21st September to 31st December, the trail is not open on round-up days and in lurking periods. See the small posters at the starting point.

*"The high moors of Bellemeuse:
walking in the Ardenne's water
storehouse"*

*Metamorphosed landscapes,
a mysterious region, passionate
debates and enigmatic individuals
will give you the experience of the
Intrepid Bellemeuse's birth.*

Explanatory trail at Bérismenil

Design

Panels and interactive modules help you get a better understanding of the natural environments and the landscapes you come across. They highlight water's ecological and socio-economic importance.

Topics dealt with: the stream's dynamics (7), Natura 2000 and the ecological network (8), the alluvial forest (9), water collection (10), the stream (11), the landscape (12) and water as a driving force (13).

Practical information

Start: A parking and a picnic area have been provided near the stream not far from the Bellemeuse windmill. From the centre of Bérismenil, take towards Samrée, then when leaving the village, a road to the right going down to the Bellemeuse windmill.

Length: 3 Km – about 1 hour and 15 minutes on stone paths and easy to walk on trails.

Signposting: Green cross on a white field.

Access: Authorised all year round. In the hunting period, from 21st September to 31 December, the trail is not open on round-up days and in lurking periods. See the small posters at the starting point.

*"Living waters at Bellemeuse: tapping
against a mountain stream slope!"*

*"Water, in a cosmic scope, is scarcer
than gold!" (Hubert Reeves).*

*So, then go and find it,
learn to tame it and become a real
blue gold seeker!*

Contact

For any addition information,
go to the project's web site:
www.lifeplateaudestailles.be

Contact LIFE team:

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Two more signposted trails are open to discover the peat moors located around the village of Odeigne. All practical information regarding these two itineraries is available on www.lifeplateaudestailles.be.

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