Villewälder

Ville Forests Forests-Waterworlds

A LIFE+ Project to Protect our Oak Forests

Inhaltsverzeichnis

Impressum

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A Forest for People and Nature

The Ville Forests between Cologne and Bonn form a building block in the European Natura 2000 system of protected areas for safeguarding biodiversity in Europe.

Here you find oak-hornbeam forests on hydromorphic soils - a forest habitat protected throughout Europe due to its rarity and vulnerability. The forests are home to many rare animal and plant species, such as the middle spotted woodpecker, Bechstein's bat, and the European stag beetle. Numerous water bodies and meadows contribute to the unique diversity of the forest area.

Simultaneously, the Ville Forests are of great importance for the people living in the region. The forests serve as a local recreational area for the Cologne/Bonn urban agglomeration and provide the renewable raw material wood. Balancing human demands while protecting the forests and their forest-dwelling species is the major challenge of this forest conservation project.

Our Objectives:

- Integrating nature conservation objectives into the forest management of oak-hornbeam-forests through preserving old-growth and deadwood
- Expanding natural forest habitats through the conversion of spruce forests
- Adapting the forests to climate change by backfilling the drainage ditches
- Improving the habitats of amphibians
- Restoring species-rich and floriferous forest glades
- Public relations work, communicating about the protection of the oak forests

„Ville Forests - Forests-Waterworlds" is a collaborative effort of forest management and nature conservation. It was implemented from 2014 to 2020 by the Regional Forestry Office Rhein-Sieg-Erft and the Biological Station Bonn / Rhein-Erft e.V.. The project was financed in equal parts by the European Union and the Ministry of the Environment of North Rhine-Westphalia.

Our achievements:

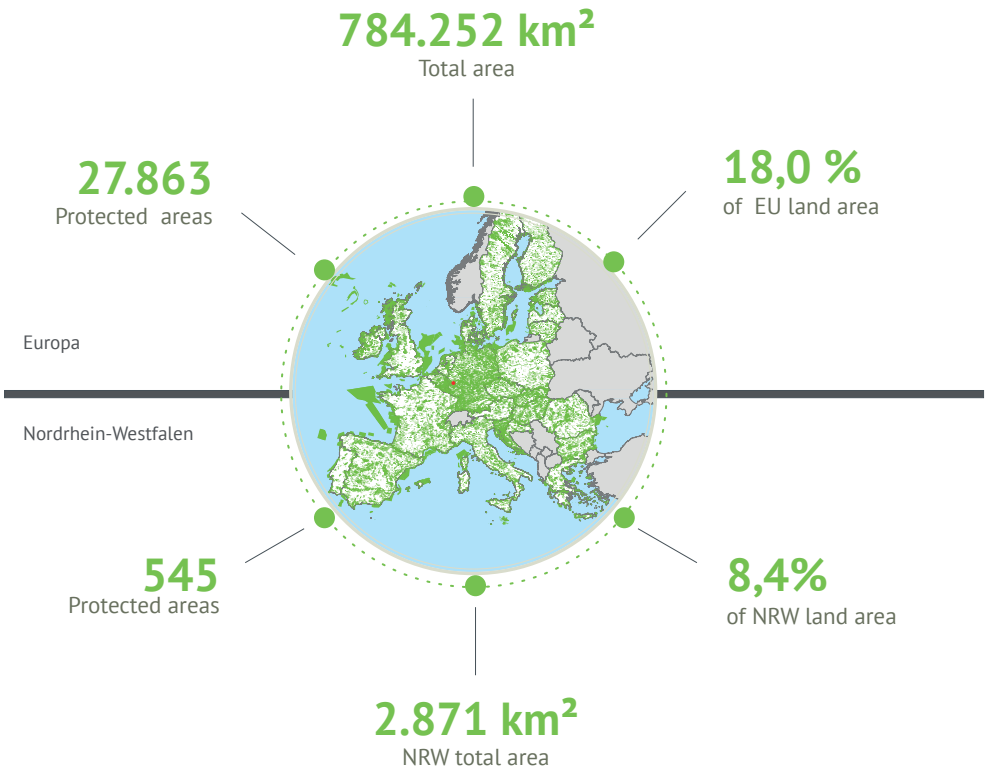
We protected valuable habitat trees in a forest area of 1,200 hectares. The natural soil water regime of mixed oak forests was restored on 530 hectares. By planting oak, hornbeam, small-leaved lime, and European beech, the project laid the foundation for 180 hectares of new mixed deciduous forests. The revival of coppice with standards management has created 40 hectares of habitats for light and warmth demanding animals and plants. Seventy-two (72) water bodies emerged throughout the forest, thus improving the habitat conditions for rare amphibians. Eighteen (18) species-rich forest glades now offer a home for rare grassland plants.

The Project Area

Between the Rhine Valley and the Lower Rhine Basin

What does LIFE stand for?

LIFE is the European Union's funding program for the environment and climate action. The sub-programme „Nature and Biodiversity" finances projects in Natura 2000 areas to protect or restore natural habitats. LIFE+ refers to the 2007 to 2013 funding period.



What is Natura 2000?
Natura 2000 is a coordinated network of protected areas across Europe for preserving the diversity of the European landscapes and their flora and fauna.

Two European legal acts, the FFH (Flora-Fauna-Habitat) or Habitats Directive - and the Birds Directive - regulate nature conservation in Europe across national borders. The Ville Forests are essential elements in the mosaic of this network.

The Ville Forests stretch out as a coherent forest area between Cologne and Bonn. The densely populated Rhine Valley borders them to the east and the Lower Rhine Basin's open agricultural landscape in the west. They include four Natura 2000 sites where the nature conservation project was realized.

West of Bonn you find the „Waldreservat Kottenforst" (DE-5308-303), a Natura 2000 site encompassing 2,456 hectares of protected forests with old oak stands up to 250 years old. The Ville ridge with the Natura 2000 site „Waldville" (DE-5207-301) follows in the north. This site spreads out between the villages of Volmershoven and Heimerzheim and covers a forest area of 1,128 hectares.

Separated by a belt of coniferous forests, the site „Villewälder bei Bornheim" (DE-5307-304) with a size of 725 hectares is located between Weilerswist and Brühl. The Natura 2000 site „Altwald Ville" (DE-5207-303), with a natural beech forest unmanaged for 40 years, sits at the edge of a former open-cast lignite mining area. All measures took place in forest properties owned by the state of North Rhine-Westphalia.

The rare Bechstein's bat is one of eleven bat species of the Ville Forests. It hunts in the old oak forests, collecting insects from leaves and the forest floor. Females give birth to their young in colonies. For this, they use abandoned woodpecker caves and relocate every few days. The Bechstein's bat has its main distribution area in Germany; therefore, we bear a special responsibility for the conservation of this species.

Our woodpeckers are the enablers of biodiversity. They build their nesting holes into the old deciduous trees. Many dwellers of old and dead wood use the abandoned woodpecker caves as their habitat. A particularly typical Ville Forests resident is the rare middle spotted woodpecker, who favours living in old oak-forests.

Habitat
Oak-Hornbeam Forest

Water plays an essential role in the Ville Forests. Here we find hydromorphic soils (technical term Pseudogley), which regularly fill up in the wintertime due to a water-impermeable layer in the subsoil while running dry to an extreme extent in the summer.

Pedunculate oak handles these changing soil water conditions particularly well and forms impressive mixed deciduous forests together with hornbeam and small-leaved lime. In summer, the forests often appear to be impenetrable. Trees of different ages alternate on a small-scale so that the foliage reaches from the ground to a height of 30 meters. The coexistence of tree giants 250 years old and young seedlings creates a unique structure and species diversity, providing habitats for many rare and endangered animal species such as the middle and black woodpecker, forest bats, and the shy wild cat.

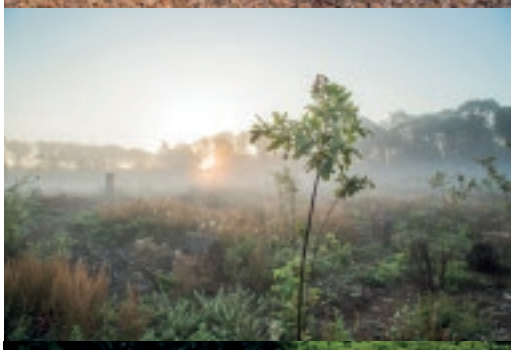
As far back as we can retrace history, people have utilized these forests. Many traces of settlement exist already from Roman times. Until the end of the 18th century, the Cologne electors had owned the forest area and it served as a backdrop for their stately hunts. The people used the wood for the construction of houses and as firewood. At the same time, they sent cattle into the forest for grazing. Thus, the oak was promoted as the main tree species for centuries. The hunter‘s cottage dating from 1730 in the heart of the Kottenforst is reminiscent of this time. Since the middle of the 19th Century, spruces and pines were widely planted, taking up a quarter of the forest area until a few years ago. For 30 years now the oak has received increasing attention in regeneration.

Nowadays, the management of oak-hornbeam forests follows close-to-nature principles. The aim is to create forest stands where different tree species are present in varying stages of maturity. Clear-cutting is avoided, and trees are selectively harvested as single trees or in groups.

The impacts of climate change also affect the Ville Forests. The heat and drought of recent years have resulted in the demise of the spruce stands, and many old beech and birch trees have died.

Numerous measures were carried out in the LIFE+ project to support the biodiversity of the oak-hornbeam forests and to mitigate the effects of climate change.

Measures



Foot bath for the Oak

The presence of the oak-hornbeam forest on hydromorphic soils is closely linked to the specific soil conditions in Kottenforst and Ville. This forest habitat can only assert itself where soils are temporarily saturated with water. However, its long-term survival is threatened by a network of drainage ditches.

Simultaneously, the conditions are becoming increasingly warmer and drier due to climate change. Water supply is becoming increasingly scarce for our forests. The backfilling of the ditches prevents rainwater from running off on the surface. Instead, it remains in the forest to sustain the trees. In four subsections of the Natura 2000 site „Kottenforst“, the drainage ditches were therefore closed at selected spots. For this purpose, the laterally deposited excavation material was returned to the trenches with a small excavator.

Converting Spruce forests into mixed oak forests

In the long term, the Ville Forests shall develop again into a large and close-to-nature deciduous forest area. The intention is to grow mixed oak forests rich in structure and species, which are also adapted to the impacts of climate change. This is achieved through the conversion of spruce and pine forests, which have been severely damaged by drought, storms, and bark beetle infestations in recent years.

Wherever clearings occurred, the LIFE+ project planted oak, hornbeam, European beech and small-leaf lime, arranging the oaks in groups or rows. Enough space was allowed between the planted saplings so that other tree species such as wild cherry, mountain ash and birch regenerate naturally, thus developing a species-rich mixed oak forest.

Come-back for coppice with standards

Coppice with standards is a traditional silvicultural system in the Ville Forests. Thereby, hornbeam and lime trees were harvested every 20 to 30 years as firewood. New shoots emerged from the tree stumps after a short time. Scattered oaks with large canopies grew above these coppice shoots. These oaks were harvested as construction timber when they reached suitable dimensions. This type of forest utilization creates sun-drenched forests with a particularly species-rich animal and plant community. The coppice with standards management system was resumed on a forest area of 40 hectares. For this purpose, all hornbeam and small-leaved lime trees, as well as individual oaks from the upper layer, were extracted, so that plenty of sunlight can reach the forest floor. A large forest complex of coppice with standards forest has been created in the Natura 2000 site „Villewälder bei Bornheim".

Preserving valuable forests through purchase

The Ville Forests include many small forest patches in private ownership from which no wood has been taken for many decades. Ambiguous ownership conditions and very small plot sizes hampered forest management. Due to the predominantly urban character of the region, interest in owning forest has continuously decreased over the last decades. Thus, islands of old-growth habitats of high ecological value have formed, which need to be preserved long-term.

Within the scope of the LIFE+ project, 22 forest areas with a total area of five hectares were purchased. These will be protected as habitat wood islands or be managed in a way compliant with nature conservation in the future.

Monitoring coppice-with standard forests:

+ 80 %

+ 30 %

As a consequence of the thinning in the coppice with standards tradition, more light reaches the forest floor again. As a result, the number of species in the ground flora has increased by 80% and the number of woody plants by 30%. In addition, very rare plant and animal species have returned, such as the European stoneseed and the tree pipit.

Habitat trees

Treasure troves of biodiversity

Trees of all ages are represented in a primeval forest- from seedlings to the ancient giant trees and deadwood. Due to the harvesting of wood, the old and dead trees are often missing in our commercial forests. However, many forest dwellers depend on these forest structures and are therefore only rarely found in our forests anymore.

For example, many woodpeckers build their nesting holes only in old trees that have already reached a large diameter and provide decaying spots or dead branches. The woodpeckers are trailblazers of biodiversity since they commonly use their burrows for only a few years before other species move in. Then, different bird species breed here, such as nuthatch or stockdove, which cannot create their burrows themselves. Forest bats and small mammals follow after them.

Tree fungi ensure that the cavity rots out further and increases over time until even a tawny owl or pine marten finds room in here. A variety of insects also use such tree-caves - from wood-dwelling beetles to the hornet. An old oak tree can live with a hollow trunk over many decades and will thus be an essential building block for the protection of biodiversity. In addition to tree cavities, there are many other small habitats (micro-habitats) that serve as dwelling places for forest residents, such as dead branches, decaying places or standing and lying deadwood.

The wood habitat guide (German only) provides further information on wood habitats, see www.villewaelder.de/biotopholzleitfaden

In the mixed deciduous forests, the LIFE+ project has registered all ecologically valuable habitat trees, and entered their exact position into a database. They remain in the forest until the end of their lifetime and serve as habitat for woodpeckers, bats and insects.

A wood habitat concept for the Natura 2000 sites will help to ensure that wood can be harvested here in the future without threatening the survival of the forest inhabitants. Particularly valuable forest stands were already permanently set aside from management before the start of the project. They serve as core zones for the protection of species and habitats and amount to 10 % of the forest area. In the managed forests, groups of old trees and individual habitat trees are preserved. These are marked with a sticker to prevent accidental harvesting. In this way, inhabitants of old and dead wood find vital stepping stones throughout the whole forest area. As part of its activities, the LIFE+ project has secured 13,000 trees.

Bat monitoring: Undiscovered forest dwellers detected

Forest bats are among the rare and highly endangered mammal species. To protect their populations in the Ville forests, the occurring species and their habitats were studied. It is possible to detect the calls of the animals and to distinguish the species with the help of detectors. Individual animals are caught in large nets and fitted with transmitters.

Eleven of the 24 native bat species live in the Ville forests. Included are six typical forest-inhabitants, who give birth to their young preferably in tree-caves of old oaks and beeches.

Fifty nesting trees could be identified and protected. They are primarily located in the extensive old oak forests in the southern part of the Kottenforst. The wood habitat concept ensures that there will always be sufficient places for reproduction and resting available in the future.

Agile frogs are the first amphibian species to migrate to the spawning waters in spring. By mid-March already, the females deposit their eggs in ball-shaped spawn bales. Afterwards, adult frogs abandon the water and spend the rest of the year on the forest floor. In North Rhine-Westphalia, this species only lives in the Lower Rhine Basin

The rare crested newt is the largest native newt. It owes its name to a jagged crest on the back, which the males display during mating season. It prefers structurally rich spawning waters with open sheets of water and underwater vegetation rich in herbs.

Habitat Forest Waters

The Ville Forests feature many forest water ecosystems, created by humans over the centuries.

Larger ponds, small pools, water-bearing ditches or intermittently water-bearing troughs provide a diverse offering for life at and in the water right in the heart of the deciduous forests. Tiny organisms, snails and dragonflies live amongst typical marsh and water plants. Reedbeds with reeds and cattail or sedges and rushes line the waters. Typical water-plants, like pondweed and duckweed, drift on open water-surfaces.

They also offer food and breeding space to the inhabitants of the surrounding forests. For example, frogs, toads or newts migrate in the spring from the forests to their spawning grounds, where they deposit their eggs into the open water or onto water plants.

16 of the 18 amphibian species of North Rhine-Westphalia are found in the project area. Among them are species protected throughout Europe, such as agile frog, crested newt and common midwife toad.

Water bodies in forests silt up naturally through deposits of leaves, branches and soil. Without maintenance, a sludge layer forms over the years from the organic material, which in the long run causes the loss of the open water surface. Woody plants such as willows or alders rise on the banks and shade the waters. Thus, they lose their role as spawning grounds for amphibians and as habitats for aquatic plants and animals. The risk of drying out increases continuously if the water supply decreases further as a result of dry and hot summers due to climate change. In the project area, many forest water ecosystems were strongly shaded and almost silted up as well.

Measures

New ponds for frog, toad and newt

In the long run, the forest waters would disappear from the Ville Forests without human help to preserve them. Therefore, the project staff has documented all water bodies in the project area and evaluated their condition. This way, it was determined where maintenance measures were required.

As a first step, the trees and shrubs were removed from the banks, because trees and bushes alongside the bank cast a shadow over the small waters and extract a lot of water from them. Some amphibian species prefer warm and sunny waters where tadpoles can develop very quickly into young frogs. The sooner the young animals can leave the water, the less they are at risk if the ponds dry out in summer. Next, an excavator removed the sludge from the ground, so that the water body increased in size again. Wherever possible, the waters were enlarged or connected to a trench to ensure water supply even in dry years.

In forest areas without water bodies or where existing ponds could not be reworked, new water bodies were excavated. In doing so, particular care had to be taken not to damage the natural stagnation layer in the soil. The troughs filled up with water at the latest during the next winter, and the amphibians migrated into the new waters already in the following spring.

The excavator placed the removed material next to the watercourse for amphibians to use as a land habitat. These mounds are also a favourite sunbathing place for grass snakes, which search for prey in the ponds. The LIFE+ project restored 30 forest water ecosystems and created 42 new small water bodies. Thus, spring frog and crested newt are supported, and their populations are connected to each other. Other pond inhabitants like different amphibian species, marsh and water plants and insect species benefit as well from these measures.

Some species arrive all by themselves!
Even the floating water-plantain, threatened with extinction in North Rhine-Westphalia, has settled again in a forest pond after the project measure.

Common midwife toad: Last minute rescue

At the start of the project, midwife toads had almost disappeared from the Ville Forests. Only a small residual population remained at the edge of the Kottenforst. This species is under protection throughout Europe and the LIFE+ project implemented a breeding programme for its preservation: Larvae were taken from a stable donor population in the region and hatched by breeders. Shortly before the larvae turned into toads, they were released into seven specially prepared water ecosystems to repopulate the Kottenforst from there.

For most of the year, midwife toads are land-based and live independent of water bodies. Sunny, warm hiding places under stones, roots or in natural cavities near the spawning water are crucial. The banks of eleven stepping stone water ecosystems were shaped to meet the particular needs of the midwife toad. In the year after the release, highly developed larvae could be found again in those waters. Whether the species can reestablish itself again permanently in the Kottenforst will remain to be seen in the following years, when the released animals will give their typical chime-like call in early summer.

Monitoring Amphibians: New habitats are accepted

+84 % **+39 %**

In the second year, agile frogs already populated 84 % of the created and restored forest waters. This percentage corresponds to an expansion of its spawning habitats by 120 %. The crested newt could be observed in 39 % of the created and restored waters as of the second year.It thus expanded its spawning habitats by 78 %.

Wolf's bane or Arnica is almost extinct in our region. Only two occurrences are remaining. Arnica grows on particularly nutrient-poor meadows, which are mowed only once a year.

Devil's-bit scabious owes its name to the shape of the underground part of its shoots. It dies off from below and looks as if the devil himself had bitten it off. Its flowers are a valuable provider of nectar for butterflies.

Habitat Forest meadows

Sanctuary for insects

The forest glades in the Ville Forests were mostly established for hunting. Nowadays, they are a refuge for colourful, herb-rich meadow communities, characterized by their extraordinary wealth in plant and insect species but no longer to be found in the intensively exploited agricultural landscape.

Among the types of meadows particularly worthy of protection are false oat-grass meadows, purple moor-grass meadows and matgrass grasslands. These habitats are named for the occurrence of select plant species, which thrive under conditions of medium to low nutrient supply and handle soils with changing water saturation levels well. False oat-grassland, the common hay meadow type, appears at medium nutrient levels. Short matgrass grasslands only occur on extremely nutrient-poor soils. Purple moor-grass is a specialist and prefers low nutrient and wet soil conditions. Characteristic herb species such as devil's-bit scabious, cross-leaved heath, betony, dyer's greenweed, burnet and common daisy provide for the rich colour and species diversity.

In the Ville Forests, these valuable meadows had also largely disappeared. The characteristic plant species only appeared sporadically along roadsides and aisles. Owing to the measures of the LIFE+ project, the species-rich and floriferous meadow communities are returning to the forests. They provide a habitat for many insects and offer critical foraging grounds for forest-dwelling bats and woodpecker species.

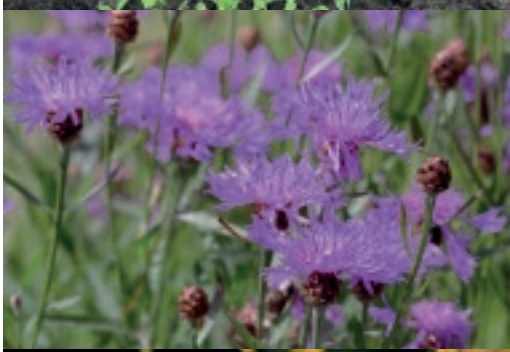
Measures

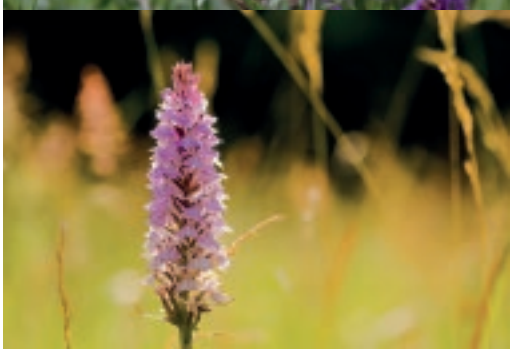
Numerous working stages were necessary to allow species-rich meadows to develop in the Ville Forests. As a first step, young trees and shrubs were taken out to expand existing meadows and create new ones. Next, a forest mulcher removed tree stumps and roots to facilitate agricultural cultivation of the grounds in the future. A rotary cultivator was used to level the soil and prepare the seedbed. A low fence protects the meadows in the future against wild boar damage.

Afterwards, cutting material from species-rich false oat meadows from surrounding areas was imported. For this purpose, a donor area with many different native meadow plants was cut after seed maturity, and the hay was transferred directly to the target areas so that the seeds of the species could spread here.

Since there are only a few donor meadows left in our region, the harvested cuttings were not sufficient on their own. Therefore, strips of meadow plants were sown as well. The seeds originated from local wild stock grasses and herbs, which were propagated in the beds of the Biological Station. Some sensitive species such as arnica, betony and devil's-bit scabious were raised in advance and planted directly into the areas.

During the initial years, the areas had to be mowed intensively to withdraw nutrients and to push back disturbance indicator plants. Farmers from the surrounding area will provide for the cultivation in the future. They receive financial support from contractual conservation management agreements for renouncing fertilization and intensive cultivation. This approach ensures that the colourful and species-rich forest glades are protected long-term and are available as a habitat for butterflies, grasshoppers and many other insects.





+73 %

Vegetation Monitoring Open Space: Flourishing meadows emerge

All meadow types worthy of protection have become established in all forest glades. 73 % of the sown and planted plant species have taken root. The very rare Arnica could be established on four project meadows.

Power for Diversity

South of Alfter-Volmershoven, a high voltage line crosses the Kottenforst. Until the summer of 2016, the power line was almost entirely overgrown with trees and bushes. Hidden between the bushes were small meadows with colourful rarities, such as the heath milkwort, the heath spotted-orchid and the heath grass. The LIFE+ project has connected these small islands again to form a six-hectare meadow rich in flowers and other species.

The woods were cleared with the support of the electricity grid operator Amprion GmbH. Afterwards, local seeds were distributed in the whole area, and additional selected wild plants were planted. A local farmer will manage the meadow in the future so that its plant diversity is preserved long-term. Furthermore, several small water bodies were created.

People and Forest

People protect what is familiar

Challenge and opportunity

Implementing an extensive nature conservation project in forests close to a city is both a challenge and an opportunity. The successful implementation of the project measures depends on the acceptance and the support of the people.

The objectives and measures of the project were communicated to a broader public on a website, during guided forest excursions, through leaflets, in daily newspapers and via radio and TV broadcasts. Explanatory information boards were set up next to areas where measures were implemented. These provided the opportunity to inform about the Ville Forests particular worthiness of protection due to their unique forest habitats and to encourage considerate behaviour from forest visitors towards the forests and their flora and fauna.

Also, the project organized advanced training and excursions to educate professional forestry and nature conservation audiences on the management of oak forests in compliance with Natura 2000.

Corporate events: Many companies and their employees feel the desire to contribute to the environment in their region. In cooperation with the Regional Forestry Department, planting activities were organized in the Natura 2000 sites to support the protection of the forests actively.

Guided forest excursions: "People protect what is familiar" - we organized guided tours, lectures and information tables with this slogan, often in cooperation with local partners such as adult education centres, educational institutions and nature conservation associations.

Simulation exercise „Nature conservation and forest use": On a demonstration and exercise area in the middle of the Kottenforst, citizens were able to take on the role of a forest ranger and manage an old oak forest in a close-to-nature way. In a virtual exercise, they were prompted to decide independently, which trees should be harvested or remain as habitat trees to secure biodiversity. The impacts of their decisions were simulated on-site on a tablet and inspired many exciting discussions about the protection and use of our forests.

Video:

A video with impressive pictures of the oak forest and its inhabitants informs about the LIFE+ project "Ville forests" and promotes civil interaction between humans and nature.

The film is still available for viewing, linking and downloading at vimeo.com/villewaelder.

Oak campaign “Markwart”

This forest education project was an essential component of the LIFE+ project to provide children and young people with knowledge about the native mixed deciduous forests and their flora and fauna.

The jay, popularly known a „Markwart“, was chosen as the leading species because it demonstrates the peculiarity and unique vulnerability of mixed oak forests excellently. From September onwards, it collects acorns, which it hides on the forest floor as winter storage. Since the jay only recovers a portion of the acorns, the „forgotten“ seeds germinate in the following year and thus serve the natural rejuvenation of the forest.

The traditional method of directed jay cultivation takes advantage of this behaviour to transform spruce and pine forests into natural oak forests.Pupils built wooden tables themselves during handicraft lessons, brought them into the spruce forests and filled them with self-collected acorns over the winter. The following summer, the students revisited the woods to check whether the jay had been successful and new oaks were germinating. These were then protected with protective casings.

The Heinrich Böll Secondary School from Bornheim-Merten received the Environmental Award of the city of Bornheim for their participation.

Villewälder-App

At three locations, this smartphone app allows users to observe and learn about the inhabitants of the forest in their natural environment. Also, it offers a wealth of information about these oak forests under protection throughout Europe.

The Villewälder app is available for download free of charge from Google Play and the Apple App Store.

Recovering from the big city

The Ville Forests protect nature, but they are also a place of recreation and relaxation for the people from the neighbouring cities.

However, how important are these near-natural mixed oak forests for visitors, and how do they perceive the measures of the LIFE+ project? A visitor census and survey were conducted in 2019 and 2020 in the Natura 2000 area „Kottenforst“ in cooperation with the European Forestry Institute (EFI Bonn) to answer these questions.

Simply the number of forest visitors demonstrates the significance of the Villewälder for local recreation. On average, 300 people per day were counted walking on a main path in the Kottenforst (April 2019 to Jan. 2020). This number includes many commuters, cycling from the suburbs through the forests to their workplace. Friday and Saturday were the least busy days. As was to be expected, Sundays saw the most activity. The importance of the forests for the people became apparent during the periods of corona restrictions. In April 2020, the number of visitors had more than doubled. (March to May 2020).

Visitors associate the forest with peace, fresh air and recreation - qualities that are increasingly hard to find in busy urban environments. Many visits to the forest also include significant emotional, spiritual or aesthetic components, with respondents associating the forest with memories, a sense of home, scents, sounds and a unique atmosphere.

Visitors described the oak-hornbeam-forests, which are protected throughout Europe, as particularly natural and beautiful. Hence, they contribute decisively to the recreational value of the forest area.

The measures of the LIFE+ projects have been widely acknowledged. The creation of water reservoirs for amphibians, forest restructuring and the creation of species-rich forest glades was rated positively by 63% of those surveyed and rejected by only 16%.

A glimpse into the future

Like an outcry, an unmistakable call to action, the enormous lettering „Zeitenwende“ (turn of an era) rises in front of a wall of dead spruces in the middle of the Natura 2000 site „Kottenforst”

The consequences of climate change can currently be experienced in the Ville Forests in an alarming and unmissable way. Weakened by the hot and dry summers of recent years, almost all spruce forests have fallen victim to the bark beetle.

The two-meter-high lettering „Zeitenwende“ is part of the forest art project „wald.anders. denken“ taking place at a clear-cutting site in the Kottenforst woodlands. The Regional Forestry Department Rhein-Sieg-Erft conducts the project with the support of the LIFE+ project „Ville Forests“.

In 2020 and 2021, many other (art) activities will take place in the vicinity of the area, such as concerts, exhibitions and forest education programs. The project poignantly enlightens forest visitors about the impacts of climate change on our forests and encourages discussion about necessary changes.

For further information please refer to there Website www.villewaelder.de

Native tree species, such as the European beech and the birch, also suffer from the drought. A profound shift seems inevitable - moving away from homogeneous monocultures towards mixed forests rich in species and structure as well as forest management that takes into account the preservation of biological diversity.

The measures undertaken in the LIFE+ project are also intended to help adapt the Ville Forests to the effects of climate change. The oak plantations shall develop into mixed deciduous forests - diverse and resilient so that they will hopefully be able to cope with climate change. The filling of the drainage ditches retains the water in the forest and improves the water supply for the trees. Restoring the water ecosystems in the forest will ensure spawning of amphibians even in dry years. Preserving old trees and deadwood as well as creating sunlit coppice-with standard forests enhances the biodiversity of the oak forests. Developing flower-rich forest glades prevents further dieback of insects. Project measures must be continued and secured long-term to ensure a sustainable outcome. The lead partner of the project, Landesbetrieb Wald und Holz Nordrhein-Westfalen, has signed an After-LIFE agreement with the European Union for this purpose.

“Zeitenwende” is a wake-up call for all of us: towards sustainable economic activity, towards the renunciation of rampant consumption and for putting an end to global environmental destruction - in favour of respectful conduct towards nature and peaceful and fair coexistence of people.

In a nutshell

On **530** hectares we have improved the water supply of the oak-hornbeam forests - for this purpose **55** kilometres of drainage ditches were filled at **333** spots. **315,000** saplings of common and sessile oak, hornbeam, small-leaved lime, European beech and alder were planted, so that new mixed oak forests are now developing on **180** hectares. **13,000** oak, beech, hornbeam and lime trees are now protected as habitat trees. Their exact location and micro-habitats are stored in a database. In managed parts of the forests, they are marked with a sticker. **40** hectares of sunlit coppice with standards forests are available as habitat for light and warmth-loving insects. **18** species-rich and floriferous forest glades covering **12** hectares have been created. **5** meadows received grassland cuttings, **28** seed strips were prepared and **48** plots planted with **20** species. **30** ponds have been restored, and **42** new water bodies were created.
600 larvae of the midwife toad were released. **142** guided forest excursions, lectures, advanced training events as well as maintenance and planting campaigns with **3,150** participants took place. **22** press releases were issued and **88** newspaper articles, radio and TV reports covered the LIFE+ project and the Ville Forests. **970** schoolchildren took part in **20** forest education programs. **14** permanent and **13** temporary information boards at **168** locations provided information on the measures and theexceptional conservation value of the Natura **2000** areas. **3** leaflets, one video, one app and one website were published. **2** times, the LIFE+ Projectwas awarded as a project of the „UN-Decade on Biodiversity“.

6 Years for the Ville Forests

Thank you!

Our heartfelt thank you goes to all the people who helped to implement the project in an energetic and committed way. We were particularly supported by

- the forest officers of the forest districts Buschhoven, Kottenforst, Schnorrenberg, Ville-Seen, Venne, and Vorgebirge of the Regional Forestry Department Rhein-Sieg-Erft
- the Public Relations and Environmental Education Team at the Regional Forest Department Rhein-Sieg-Erft
- the Bonn Working Group for Bat Protection (Bonner Arbeitskreis für Fledermausschutz, BAFF)
- the volunteers in the collection of butterflies and moths, hoverflies, bugs, etc.
- the volunteers, interns and staff in their Voluntary Ecological Year at the Biological Station Bonn / Rhein-Erft e. V.
- Biological Station im Rhein-Sieg-Kreis e.V.
- the City of Bonn and the Counties of Rhein-Sieg, Rhein-Erft, and Euskirchen with participating departments
- Zoologisches Forschungsmuseum Alexander König
- the Botanical Gardens of the Universities of Bonn and Marburg
- Arnika Hessen Project
- European Forest Institute (EFI Bonn Office)
- Schutzgemeinschaft Deutscher Wald Bonn/Rhein-Sieg (Forest Protection Association)
- the Bachelor and Master students of the University of Bonn
- the nature conservation associations NABU and BUND from the region
- the web and graphic designer
- the forestry enterprises, farmers and planning offices

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Nordrhein-Westfalen

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This brochure has been funded by the European Union within the LIFE programme.