

Acidophilous oak woods with bogs and heaths

Looking after Europe's natural heritage

**Six and a half years of LIFE+
– results and lessons**



www.life-eichenwaelder.eu

An overview of the project

From 2012 to 2018 the BSKW or “Biological Station in the district of Wesel” carried out the large-scale conservation project “Acidophilous oak woods with bogs and heaths”. Its work was supported by the State Enterprise for Forestry and Timber North Rhine-Westphalia, the Regional Association Ruhr and NRW-Stiftung (“North Rhine-Westphalia foundation”) and financed by the EU, the state of North Rhine-Westphalia, the district of Wesel’s administrative council and Stadtwerke Wesel. Targeting areas in the district of Wesel in western North Rhine-Westphalia, the project served to improve the flora and fauna of six Natura 2000 sites near the rivers Rhine and Lippe.

Oak woods, bogs and heaths lay at the centre of the project’s attention. These habitats with their special flora and fauna are largely absent from our landscape today and therefore part of the European network Natura 2000. This network expresses a responsibility to preserve and protect wildlife for future generations. For this purpose over 160 hectares of land were bought in the course of the project, ensuring their long-term availability for conservation measures.

By means of numerous outdoor measures the protected habitats in question were either created, improved and/ or expanded, depending on the initial conditions. This in turn benefited these sites’ animal and plant populations – and thus their biodiversity, from Antlion to Yellow-spotted whiteface.



Acidophilous oak woods

At the end of the last ice age the departing glaciers left behind inland dunes consisting of sand and chalk. These were poor in nutrients, allowing the growth of a kind of sparse woodland, which is known by the technical term “acidophilic oak wood on sand”. Its trees, common oaks first and foremost, grow much more slowly on the sand than on ordinary soil. Also, logging has in the past been limited to an extent that permits a large portion of old trees and deadwood to remain standing, giving the forest a high ecological value: the tears, hollows, cracks and dead trunks of the ageing trees are a habitat which many species of animals, mosses, fungi and lichen are closely dependant on. The rare stag beetle is a prime example. Its females lay their eggs into rotting oak stumps and roots.

Semi-natural oak forests have declined in many places. The replacement of deciduous by coniferous forests is one of the reasons.

The project supported acidophilous oak woods in two ways: on the one hand, 75 hectares of non-endemic conifer woods were thinned out. In addition, 20 hectares of conifer monocultures were felled completely. The resultant clearings were planted with young oaks which are expected eventually to grow into an oak forest. Moor birches were added to the mix on 3 hectares to encourage the development of moist to wet oak woods.



Bogs and wet heaths

The sand of the inland dunes is unable to retain water for long. It is only thanks to the impermeable clay layers hidden beneath the sand that bogs have nonetheless developed in the dells between the dunes. Dying plants here decay only in part as a result of the permanently high water levels and the consequent lack of oxygen. Over the years, the accumulating plant material degenerates into peat. All in all, our bogs are naturally extreme sites: they are wet, acidic and poor in both nutrients and species.

Only specialised wildlife is capable of surviving in these habitats and in the wet heaths that develop on their verges: peat moss, cottongrass, cross-leaved heath and sundew are a few examples. The moor frog and the yellow-spotted whiteface (a kind of dragonfly) use the bog pools as nurseries for their young.

Many of the bogs and wet heaths were drained in past centuries to make the land usable. A dense network of branching ditches extends to all corners of the bogs like fishbones. Once a given area had fallen dry, it was often forested.

That is why restoring a semi-natural hydrology was an important project aim. Nearly one and a half kilometres of ditches were blocked to achieve this; trees and shrubs were felled across the bog and on its edges to remove their contribution to drainage and open the area to more sunlight. An area of over 3 hectares was cleared of monotonous *Molinia* growth and its topsoil removed to encourage the development of wet heaths.





**Presented in detail:
the actions around the Schwarzes Wasser ("black water")**

The Natura 2000-site Schwarzes Wasser lies in the North-West of the project area. Its distinctive feature is a large heath mere with a surface area of 2,5 hectares. Many of the target species and habitat types supported by the project occur here. A so-called hydrogeological assessment was commissioned prior to the practical measures in order to establish the soil and groundwater conditions. With that insight into the mere's sensitive hydrology, the subsequent measures could be carried out very purposefully.

One important goal was to encourage the population of *Luronium natans*, a rare water plant. To this end, a stretch of 200 metres along the northern bank was care-

fully desludged with an excavator to give typical littoral plant species like *Luronium* more space to grow in. A neighbouring pine forest to the West of the mere was felled and thereby converted to heathland. This served to sustain the improved conditions on the northern bank for as long as possible. Valuable heather growth has taken the place of the trees, encouraged by the seeds of *Calluna vulgaris* and *Erica tetralix* that have been lying dormant in the ground. Meanwhile, the unobstructed wind blows across the bank, causing waves to hit the mere's bank and prevent the aggregation of new sludge. Finally, two new water bodies were created. Once these had been completed it did not take long for the population of the rare moor frog to rise.



Dry heaths and oligotrophic grassland

Sandy soil that is poor in nutrients (or “oligotrophic”) and higher than the mounds between the inland dunes is naturally dry. Heath and grassland have developed here through intense land use by humans. Vegetation consists mainly of common heather, but species like sand sedge and grey hair-grass are also present. The plant growth is naturally low with frequent gaps. During the late summer the common heather turns into a purple sea of flowers that attracts countless insects. Smooth snakes and sand lizards, cold-blooded species that seek out sunny spots to warm up, are also typical residents.

Once their historical use had ended, heathland areas were forested with pines or converted to fields or meadows. On the remaining nutrient-poor sites, pines grow alongside birches and also black cherries, which means that these once open spaces automatically turn into woodland in the long term. This leads to an increase in shade and nutrients. Today, open, sandy biotopes only exist as vestiges scattered across our landscape.

In order to foster the rare oligotrophic sites, 2.5 hectares of new heathland were created near the Schwarzes Wasser. Furthermore, over 20 hectares were cleared of encroaching scrubs. Unwanted woody plants were felled and removed from the site to prevent the influx of nutrients into the soil. Once the light has been let back in, rare species like the woodlark and the blue daisy have a chance to re-establish themselves. In the future, these areas will also be grazed by sheep. The animals bite back upcoming woody plants and thereby keep the land open. New pasture fences were put up for this purpose.





International youth camp helps out with the “mammoth task”

The black cherry or *Prunus serotina* is a non-native species from North America. It was introduced into Europe in the 17th century as a fast growing tree useful to commercial forestry. From that point onwards it began to spread across the continent unchecked, picking up pace as it multiplies very quickly and grows on most kinds of soil. Its dense growth also suppresses native trees and scrubs.



The project aimed to minimise the population of the unwanted black cherry in its target areas. Therefore, the species was combatted in the ecologically valuable parts of the oak woods, heaths and oligotrophic grasslands. This was done by ringbarking the trees with tools such as peeling knives and saw chains specially adapted to the purpose. A broad width of bark is removed all round the tree-trunk, causing the tree to die within a few years. This method has proven to be particularly effective, unlike felling a black cherry tree, which usually just leads to an increased growth of new shoots.



The large workload associated with this measure meant that extra helping hands were needed. That is why international workcamps were organised (see <https://www.ijgd.de/en.html>). For three weeks each summer, teenagers from all over the world made the trip to Wesel to help with the project. An overall total of 100 young volunteers from 20 countries joined the six camps, particularly from Italy, Spain and Turkey. The longest journeys were made from Taiwan, South Korea and Mexico. With their aid and the assistance of school classes, other volunteers, contractors and the BSKW's own staff, the black cherry's advance was halted on 580 hectares of oak wood.



What is LIFE?

Life is an EU funding program to finance conservation and environmental projects. It is an acronym for the French “**L**’**I**nstrument **F**inancier pour l’**E**nvironnement”, which translates as “the financial instrument for the environment”. It benefits the network Natura 2000, which encompasses Europe’s most valuable nature reserves. They are designated for the purpose of preserving and boosting natural habitats and rare wildlife.



Joining forces for nature

In addition to the European Union, the state of North Rhine-Westphalia, the district of Wesel and Stadtwerke Wesel all contributed financially to the project. 50% of the money came from LIFE. The State Enterprise for Forestry and Timber, represented by the Lower Rhine area’s regional forestry agency, the Regional Association Ruhr and Nordrhein-Westfalen-Stiftung (“North Rhine-Westphalia foundation”) were all highly active in implementing the project measures. The regional forestry agency and the Regional Association Ruhr conducted the conservation measures on their own land with great enterprise.



All actions were planned with great diligence and after much thought and discussion in work groups with the relevant agencies. With everyone working together, the project succeeded in all its ambitions.



Experience acidophilous oak woods with bogs and heaths!

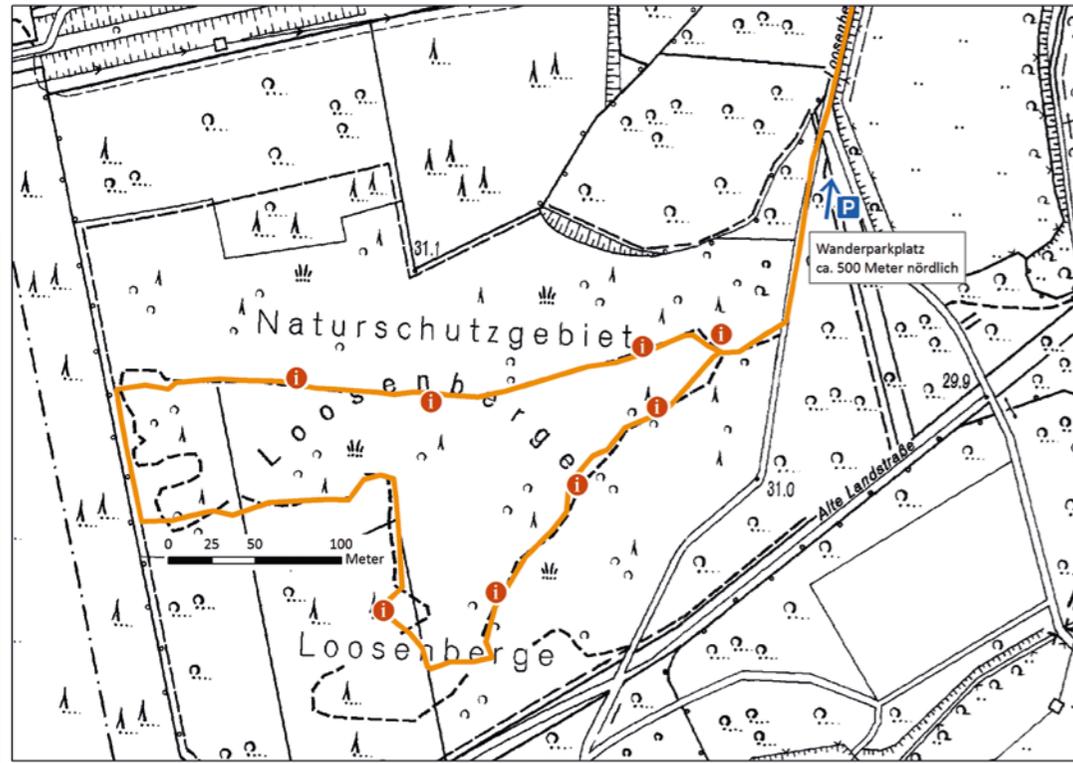
“Loosenberge” - built on sand

Location: between Drevenack and Schermbeck

Where to park: car park “Loosenberge”,
D-46514 Schermbeck

Length: 1,0 kilometres

As a part of the dunes spreading along the Lippe, the Loosenberge are home to extended juniper shrublands – the largest in the lowlands of Lower Rhine region. The juniper heathland also sports patches of grey hair-grass meadows along with dry and wet dwarf shrub heaths. Solitary old oaks and beeches, their low-hanging branches sometimes resting on the ground, are another speciality of the area.



“Kaninchenberge” - a dune landscape

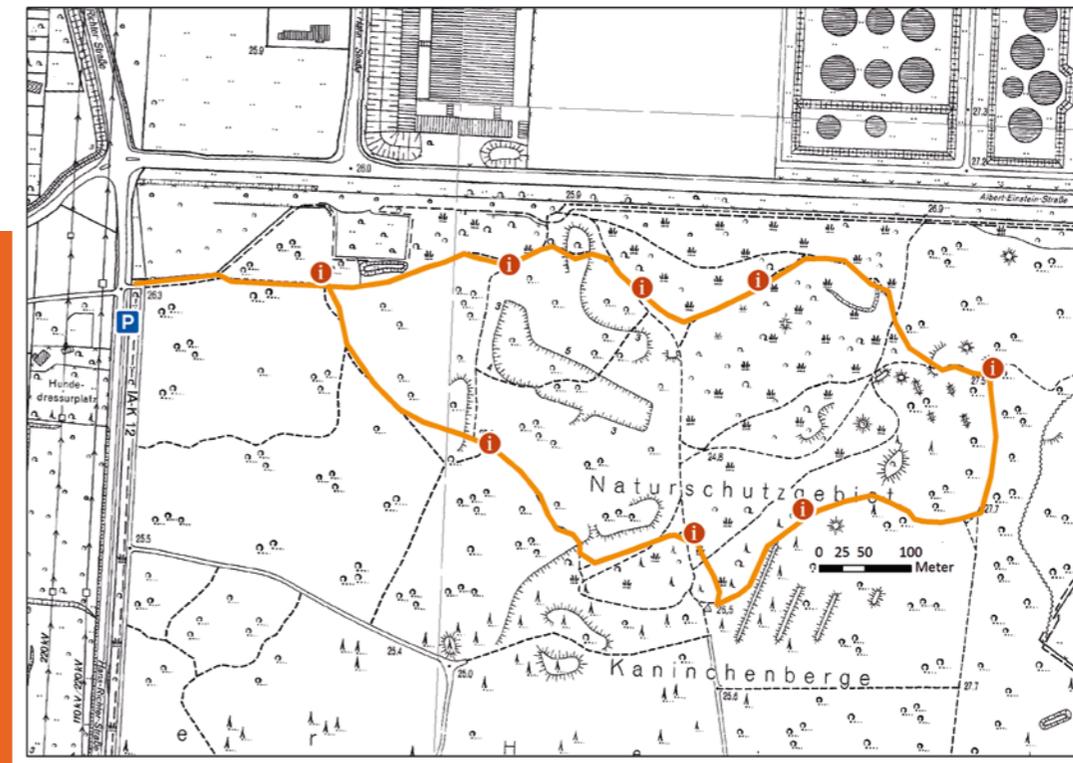
Location: between Voerde and Hünxe

Where to park: “Hans-Richter-Str.”, D-46562 Voerde

Length: 1,5 kilometres

South of the river Lippe you will find the area “Kaninchenberge”. Light oak-birch woods surround a kernel of dry heath and siliceous grassland, featuring large populations of grey hair-grass and bentgrass.

Thanks to varied use, the landscape hasn't developed a complete forest cover. This benefits species preferring warm conditions. The landscape is a habitat for field crickets, woodlarks and sand lizards.

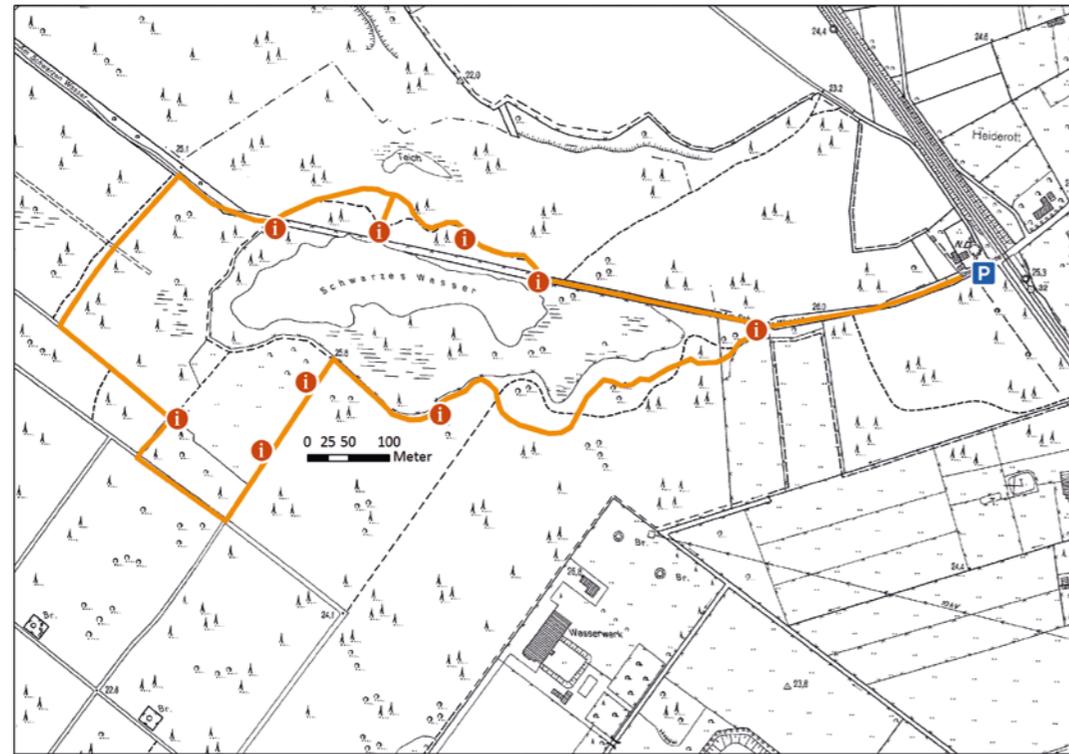




“Schwarzes Wasser”
- natural diversity on a compact scale

Location: north-west of the town Wesel
Where to park: T-junction “Kanonenberge” / “Am Schwarzen Wasser”, D-46487 Wesel
Length: 2,3 kilometres

The circular trail by the “Schwarzes Wasser” (“black water”) goes all the way round the large heather mere. From on top of a dune you have a wide view of this special habitat, home to little grebes and moor frogs. Many different dragonflies and waterfowl occur here, as does the rare *Luronium natans*. The heathland adjacent on the West is inhabited by sand lizards. Sections of the path lead through sparse oak woods.

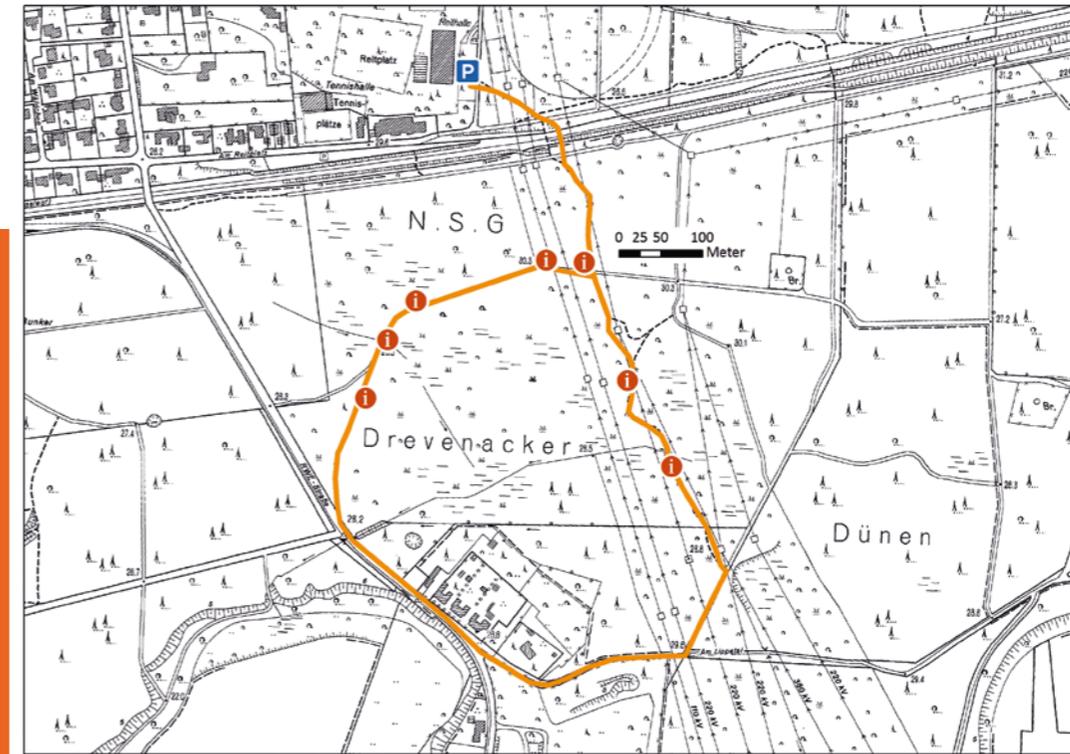


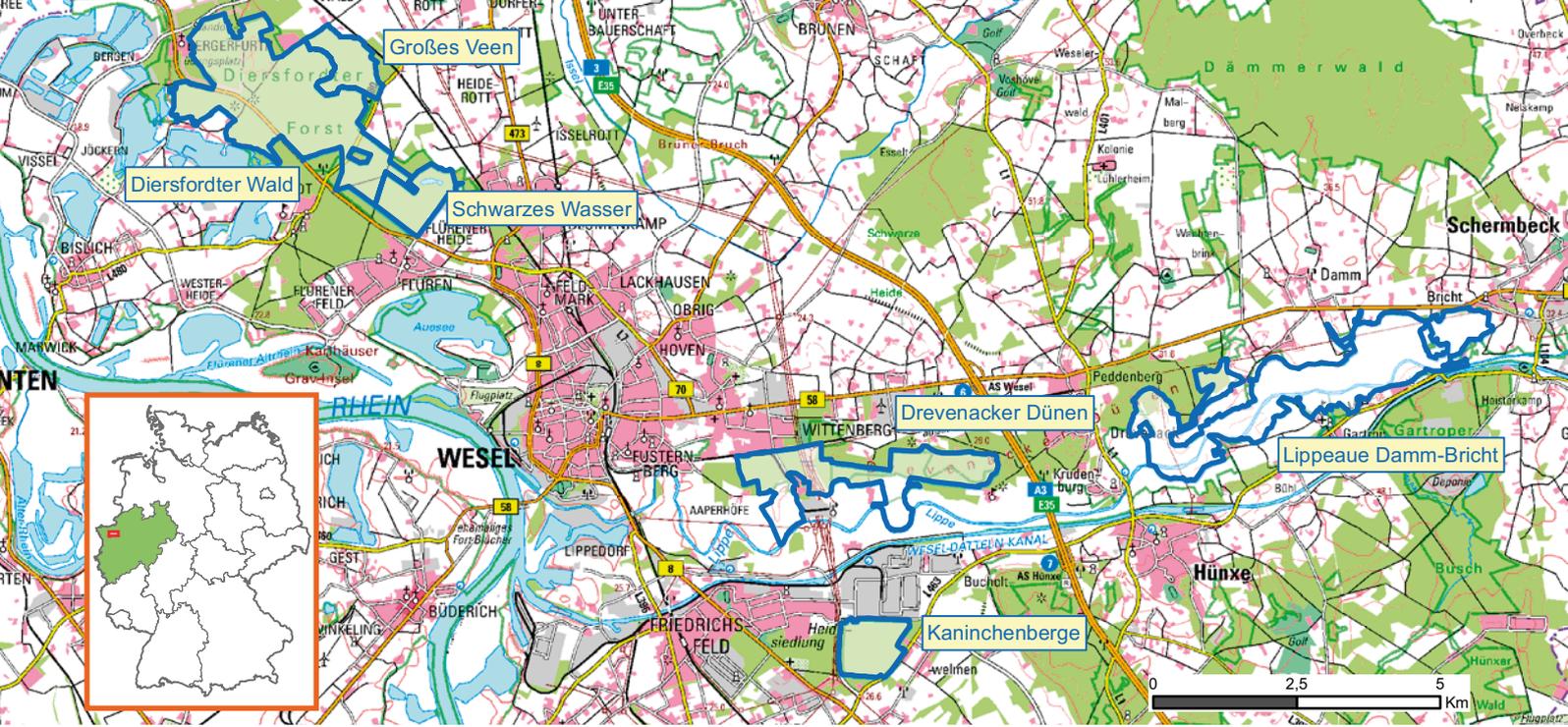
“Aaper Vennekes”
- diversity in the dunes

Location: near Wesel-Obrighoven
Where to park: car park “Am Reitplatz”, D-46485 Wesel
Length: 1,5 kilometres

A gem of nature, in between forest areas with oaks and birches on the northern bank of the Lippe; dystrophic wet heaths and heath bogs formed in the depressions between the dry heaths and sandy grassland on the inland dunes.

This richly structured landscape is a habitat for many plants and animals, dragonflies and amphibians among them. In the summertime, deep blue petals of marsh gentian rise to draw the eye.





Life+-Project "Acidophilous oak woods with bogs and heaths"

A project managed by



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