



LIPPE aue

LIFE+ PROJEKT



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H. Blossey



Corporation of Hamm



M. Bunzel-Drüke

Foreword

Around 11.5 km of renatured river banks, 170,000 square meters of new water surfaces, 250,000 square meters of newly created riparian forest etc, etc, etc ... – this is the positive balance of ten years of successful conservation work in the floodplain of the River Lippe between Hamm, Dolberg and Vellinghausen.

The Lippe floodplain is of special ecological importance. Many rare animal and plant species live here. This landscape is protected not only as a nature reserve, but also under EU law as a Fauna-Flora Habitat Area (FFH) and as a bird sanctuary. It thus belongs to a Europe-wide network of protected areas, which is called "Natura 2000".

To maintain and restore the Natura 2000 areas the European Union launched the funding program "LIFE-Nature". With this financial support, two consecutive LIFE projects were implemented: the LIFE project "Lippe Floodplain" (dura-

tion 2005-2010) and the LIFE+ project "Lippe Floodplain" (duration 2010-2015), and a large number of new habitats were created.

Gradually, the rare animals and plants previously typical of the river floodplain are returning to the Lippe. Already, Kingfishers and Sand Martins again breed regularly in the renatured banks and White Storks search the newly created groundwater ponds for food for themselves and their young. Beavers have also returned and feel at home in the Lippe and its adjacent riparian forests.

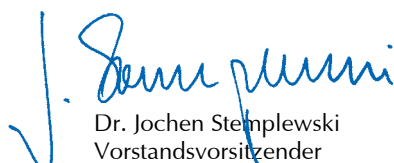
For human beings, the Lippe floodplain has meanwhile become a popular "experience space". Two lookout towers located beside hiking trails invite people to enjoy the view and to see animals and plants. The hand-operated river ferry LUPIA allows walkers and cyclists to cross over the Lippe. Numerous informa-

tion panels enable visitors to learn about the Lippe floodplain and its inhabitants. In the meantime, the Lippe floodplain has become well-known beyond the municipal and county borders and also attracts recreation seekers from other regions. This successful conservation work was primarily made possible due to the good cooperation with many different partner organisations, such as fisheries, agriculture, hunting, forestry, water management, clubs, associations and above all the many landowners who, through the valuable assistance of the Land Consolidation Authority, provided their land for implementation of the projects. Our special thanks to everyone involved!

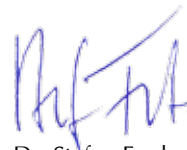
With this brochure we want to inform you about the now completed LIFE+ project "Lippe Floodplain", make you curious about this unique landscape and invite you to visit it.



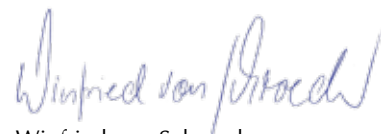
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A new project for the Lippe Floodplain

New conservation areas - new plans

Corporation of Hamm

Many of you will remember: between 2005 and 2010 a large conservation project was implemented in the Lippe floodplain east of Hamm. Areas of land were purchased, the river was freed from her rigid corset of armourstones, flood channels, ponds, oxbow lakes and dunes were created, forests were planted, flowering meadows were prepared and a fish ladder was built. Endangered plants and animals came back, and visitors enjoyed the beautiful scenery. The project even won a prize. So everything was good – right? However, the first LIFE project “Lippe Floodplain” could not restore the entire 17 kilometres of floodplain between Hamm and Lippborg to a near-natural state;

the river section was simply too long. Therefore at that time only five “action blocks” were restored. Approximately the same area initially had to be excluded from the project.

Inspired by the great success of the first LIFE project, a new large-scale conservation project was launched in 2009 in order to restore the areas not included in the first project.



J. Brackelmann

Teal (front) and Coot

LIPPE aue

LIFE+ PROJEKT



That was the beginning of “LIFE+ Lippe floodplain”. The distinctive logo of the first LIFE project was retained. It shows the Marsh Harrier, a bird of prey of the marshes and reedbeds, which builds its nest on the ground or in shallow water. Marsh Harriers breed in several sites in the Lippe

floodplain. Due to the distinctive coloration of the males, the species is unmistakable. That is why it was chosen as the symbol for the first and also the second LIFE project.

Between 2011 and 2015, extensive restoration works again took place. This time, the action

blocks were not designated by letters, but by attractive old place names: Schlagmersch (east of Schloss Heessen) Mühlenlaar (at Schloß Oberwerries), Westermersch (between Uentrop and Dolberg) and Heidemühle (east of Schmehausen).

M. Bunzel-Druke



Male Marsh Harrier

What is LIFE+?

The European Union helps nature



Celery-leaved Buttercup



C. Schmidt

Common Sandpiper

The Lippe and its floodplain between Lippetal-Lippborg and Hamm have been designated as FFH conservation area “Lippe Floodplain Between Hangfort and Hamm”. The areas are also part of the more than 2,300-hectare bird sanctuary “Lippe Floodplain Between Hamm and Lippstadt with Ahsewiesen”. In FFH areas and bird sanctuaries, the European Union helps to conserve threatened species and habitats. To preserve the natural treasures of Europe and improve habitats – these are the aims of the 1992 Habitats Directive. “FFH” stands for Fauna - Flora

- Habitat, i.e. animals - plants - habitats. The Europe-wide network of protected areas is called “Natura 2000”. It also includes the EU bird protection areas. Every EU member state has undertaken to set up protected areas for a specified list of threatened animal and plant species and habitats. The list includes many residents of floodplain habitats, such as Beaver and Bullhead, Loach, Kingfisher, Sand Martin, Lesser Spotted Woodpecker, Tree Frog, Green Snaketail Dragonfly and River Mussel. The EU is committed to the maintenance of Natura 2000 areas, and

has developed the programme “LIFE-Nature”. “LIFE” stands for “L’Instrument Financier de l’Environnement”, which simply means “environmental finance instrument”. In 2008, the program was further developed into “LIFE+”. Its funds are used to improve Natura 2000 sites – for the sake of nature and people. Municipalities, authorities or associations can develop projects and apply for financial support. The EU, however, always pays only part of the cost. In North Rhine-Westphalia, the remainder of the cost is borne by the applicants and in large part by the state.

The project-partners



The project-partners

Corporation of Hamm

The Lippe floodplain east of Hamm lies mainly within the area of the urban municipality of Hamm, but also partly in the districts of Warendorf and Soest. Some sections of the Lippe form the boundary between these municipalities. Intermunicipal cooperation is therefore essential for the achievement of effective floodplain restoration. During the first LIFE project in the Lippe floodplain the team had already proven its worth, so

it was logical that this successful collaboration should be continued for the LIFE+ project. The Corporation of Hamm again had lead responsibility and the Lippe Management Association undertook the technical project management. The Arbeitsgemeinschaft Biologischer Umweltschutz im Kreis Soest e.V. and the District Administration of Warendorf had been previous project partners, while the District Administration of Soest was

a new team member. Together, the partners developed the specific objectives and required measures, and also involved a large number of citizens, interest groups and agencies in the planning.

In 2008 the Corporation of Hamm applied to the EU Commission for LIFE+ funding. All involved were delighted when the application was approved in October 2009.



The project area and optimization measures



In the Westenmersch many new bodies of water were created.

L. Hauswirth

The Lippe has its source at the foot of the Teutoburg Forest and after around 215 km flows into the River Rhein at Wesel. Between the municipality of Hamm and the districts Warendorf and Soest there is a floodplain with a number of near-natural habitats. Meadows and reed-beds characterize the landscape, and there are also oxbow lakes and other bodies of water. Damp tall shrub communities, floating aquatic vegetation and remains of riparian forests are examples of habitat types which the Habitats Directive aims to protect. Rare animals such as the Great Crested Newt and Pond Bat live here, and threatened species of birds breed and rest in the floodplain: for example, Corncrake, Kingfisher and Garganey, as well as the Marsh Harrier – the symbol for the Lippe floodplain.

The objectives of the project

LIFE+ was aimed at protecting and enhancing the Lippe floodplain as a habitat for endangered species and as a retention area for floodwater. These were the main objectives:

- To optimize the habitats of animals and plants,
- To improve the connection between river and floodplain,
- To increase the frequency of flooding and create a near-natural water balance,
- To rewet the floodplain,
- To develop typical habitats such as riparian forests and oat grass meadows,
- To minimize disturbance (by visitor management), to improve the experience of nature and to inform the public about nature in the Lippe floodplain.



Water Speedwell

C. Schmidt



Excavator digging a flood channel.

The optimization measures

What are “optimization measures”? These are efforts to improve the habitats of animals and plants; usually they have the aim of reversing earlier human interventions in nature. In the past, streams were straightened, wetlands were drained, riverbanks were reinforced, floodplain forests were felled, ponds were filled and meadows were converted into arable land. How can such things be reversed?

Often large construction machines are used for the optimization measures. Isn't this a new crime against nature? Can't nature heal itself, if we just leave it alone? Well, it can – but it would then usually take a very, very long time.

Perhaps the Lippe would take

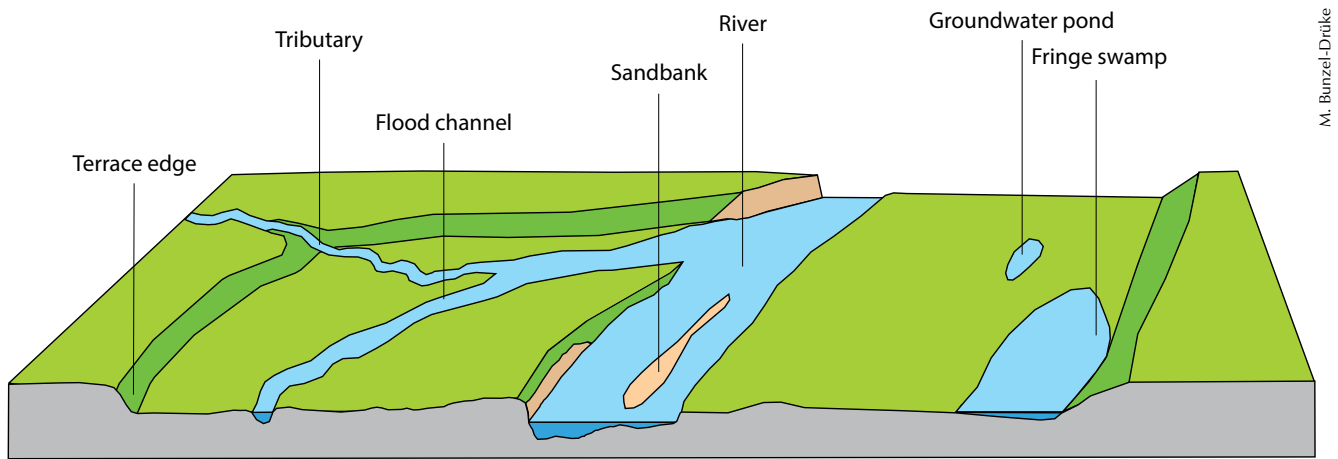
several hundred years to completely carry away its bank reinforcements and create natural banks. The threatened animals and plants do not have so much time – and people want to be able to enjoy lively natural landscapes again soon. For these reasons, excavators were again used for the LIFE+ project. Previously, all work had been carefully planned. The Lippe Management Association developed terrain and flow models and determined the frequency of flooding after opening the floodplain to high water. Prior mapping of sensitive plants and animals was also essential, in order to avoid harming their habitats.

Later, large machines could therefore be observed carefully working around lapwing breeding sites, Sand Martin colonies

or species-rich periodically wet meadows.

Archaeological monuments were also taken into account. In addition, archaeologists regularly inspected the working areas.

The excavators have not created a final state of the Lippe floodplain; they did not produce a “finished” floodplain, but only triggered the natural evolution of the landscape. The construction of new bays, flood channels, ponds and oxbow lakes, and the removal of river bank reinforcements and embankments along the Lippe allow natural flooding of the landscape and restore the connection between river and floodplain. This will enable the river landscape to constantly change and evolve, which is an explicit objective of the project.



M. Bunzel-Drüke

Schematic of a typical cross-section of the Lippe floodplain in near-natural state

The figure above is a schematic showing how the Lippe floodplain should be after implementation of the optimization measures: The river is wide and shallow, not cut deep into the surrounding land, has sandbanks and occasional small islands. It is accompanied by flood channels that shorten the course of the river. Water only flows through them when the level is high, for example during the winter months. In summer they can run dry, with the exception of deep scour holes.

In the floodplain there are groundwater ponds and oxbow lakes. Some constantly carry water and are inhabited by fish, while others dry out in late summer.

Along the edges of water bodies willows, poplars and other softwood trees typical of riparian forests grow, while hardwood riparian forests with oak trees grow in the drier areas. The landscape is dynamic and may change its appearance after every flood. Although these are not suitable for fish, frogs and dragonflies feel at home, because they are not threatened by predators.

At the terrace edge the groundwater emerges in many places,

forming shallow, marshy bodies of water.

As the floodplain is regularly inundated, only plants that can

tolerate these conditions will grow here. Damp meadows and pastures are typical, as are reeds and tall shrub communities.



M. Bunzel-Drüke

Green frog in a disused coot's nest

Data of the two LIFE projects in the Lippe floodplain

	LIFE	LIFE+
Length of the restored river section:	17 km	17 km
Project duration:	2005 to 2010	2010 to 2015
Purchased / compensated area:	100 ha	90 ha
Start of works:	September 2006	August 2011
Approx. length of restored banks:	6000 m	5500 m
Approx. new water surface:	7.6 ha	9.3 ha
Total cost:	5.50 million €	6.00 million €
of which EU Commission	2.75 million €	3.00 million €
State of NRW	2.20 million €	2.40 million €
Project partners	0.55 million €	0.60 million €



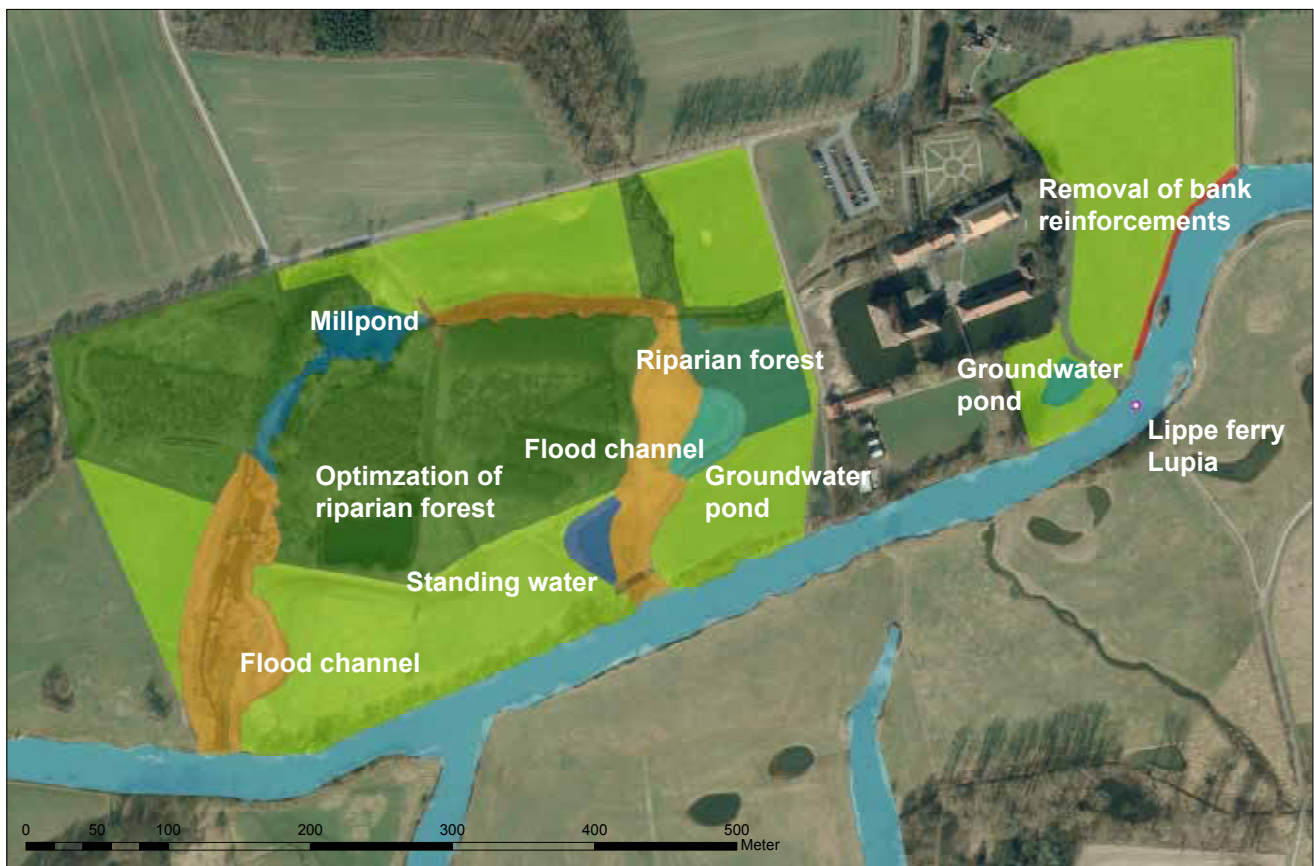
“Schlagmersch” prior to the restoration work (Schloss Heessen top left): There is a large ploughed field in the foreground and the Lippe is narrow and confined by continuous bank reinforcements.



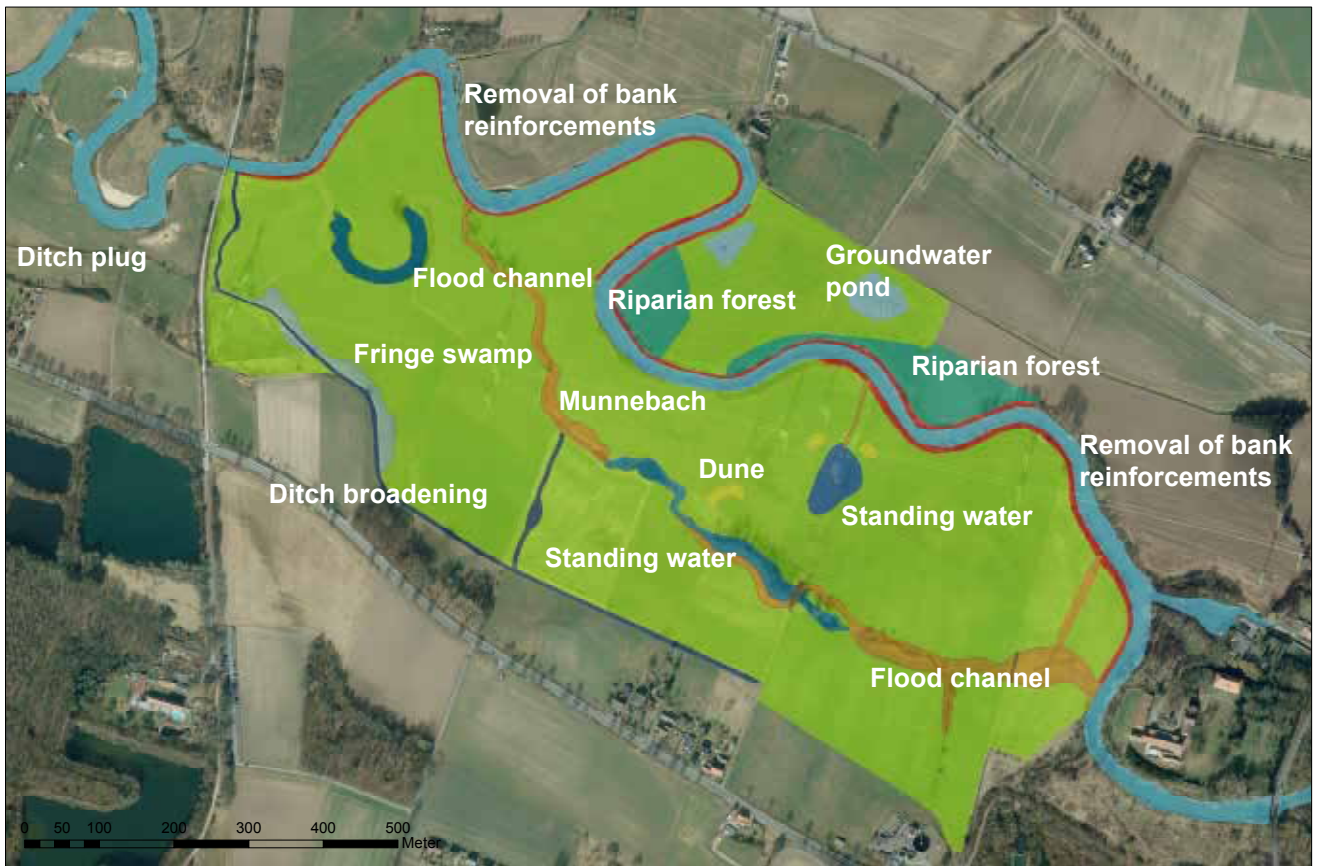
“Schlagmersch” during the restoration work: Large bodies of water and flood channels are being created, the ploughed field has become a meadow and the river bank reinforcements have been removed.



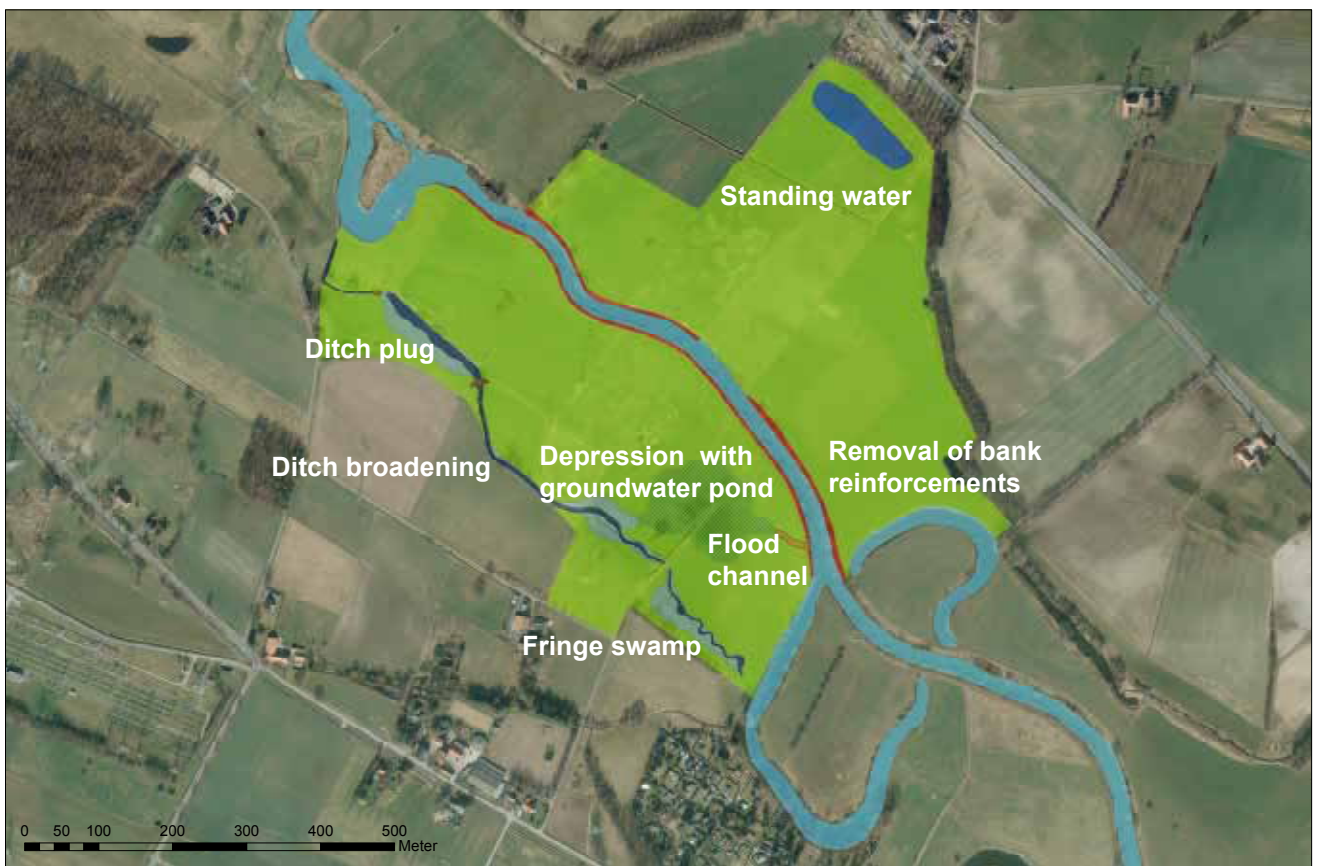
In the “Schlagmersch” project block east of Schloss Heessen the entire river bank reinforcements were removed. Flood channels connect an oxbow lake with the Lippe and permit inundation of the floodplain during highwater periods.



The most important measure implemented in the “Mühlenlaar” block – on both sides of Schloss Oberwerries - was the creation of a flood channel to connect the Westhusen Stream and the historical millpond (top left) with the river. The new Lippe ferry is very popular with hikers and cyclists.



One of the main measures implemented in the “Westenmersch” block northwest of Uentrop is the near-natural restructuring of the “Munne”, a body of water that had been made into a ditch.



In the “Heidemühle” block west of Schmehausen, ditch restructuring created extensive fringe swamps at the edges of the terrace. During highwater periods, these are flooded by the Lippe, whose bank reinforcements have been entirely removed.

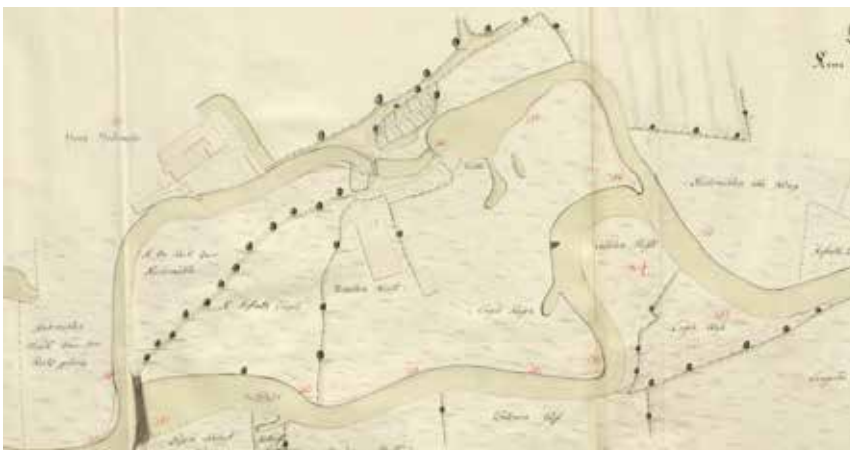


Site plan and view of the historical Heidemühle ("mill on the heath")

During restoration work in the floodplain, objects previously kept hidden by the soil are encountered again and again, as in the Heidemühle project block. The place name recalls the historical use of this area. The "mill on the heath" was first mentioned in writing in 1345. A watermill still existed here at the beginning of

the 19th century with outbuildings and a manor house. Today, the remains of the mill races and millpond are still recognizable. To drive the mill wheels, the water of the Lippe was conducted by means of a weir through the mill race or a branch of the Lippe to the mill. Another weir dammed up the water just ahead of the

mill wheel, so that the energy of the down-flowing water could be used optimally. Some beams of the weir that dammed up the water right by the mill were found during the excavation work of the LIFE+ project. Remains of building walls were also discovered.



This old map shows the historical course of the Lippe and the mill races.



Uncovered remains of building walls.

Corporation of Hamm

Marsh and reedbeds



Corporation of Hamm

Reed bed with Water Plantain (front) and Bullrush



M. Bunzel-Druke

Reed Warbler

In an intensively cultivated floodplain, drainage ditches dewater the land. Drainage pipes laid in the ground dry out the fields and meadows. This enables farmers to easily work the land with agricultural machines.

Originally, the situation was totally different: the water accumulated in depressions and sometimes stood there until early summer. Along the fringes of the valley, where groundwater flowed from the higher areas into the floodplain, small swamps often formed.

“Return water to the landscape!” was one of the objectives of the LIFE+ project. At various points where no adjacent land usage could be disrupted, the project partners again excavated shallow bowls called groundwa-

ter ponds, closed off drainage pipes and plugged ditches. In winter and spring, bodies of shallow water once again form in the floodplain. In this way, new habitats were created for Darter, Chaser and Skimmer dragonflies,

as well as plant species such as Marsh Marigold, Water Plantain and Ragged Robin. Once reed beds grow, the Reed Warbler can breed, as can the Marsh Harrier, the symbol of the project!



R. Joest

Common Darter

Natural bank restoration and water connectivity



Excavation work in the nature reserve: This is essential in order to free the Lippe from its stone corset.

Corporation of Hamm

The course of a natural river is constantly changing. Usually this is hardly noticeable, but during heavy flooding it can also happen suddenly. Each shift in course creates habitats such as vertically eroded banks, sandbars and shallow bays, which are vital for many animals and plants. An “improved” or “canalized” river can no longer change its course. Up into the 1980s, the banks of the Lippe had been maintained by sloping and covering with armour stones, preventing any further change in the river bed. For the benefit of nature, the LIFE+ project made use of excavators to “release” 5.5 kilometres of the Lippe from its stone corset. The river now once again has varied shores. However, the machines only did the initial work. From

now on the Lippe itself will take over the further restructuring of its course. The natural processes will thus again function all by themselves, without needing any further human assistance. In a natural river, the water, sediments and living organisms are able to pass without hindrance both along and across the river, from the source to the mouth, as well as into the tributaries and – during high water periods – over the entire floodplain. During the LIFE+ project man-made obstacles were eliminated wherever possible, in order to restore the original connectivity. New flood channels connect river and floodplain, and small streams again flow unhindered into the Lippe. Now, fish such as Pike and Burbot can again reach their spawning



C. Schmidt

Sand Martins dig their nest tunnels in freshly eroded, sandy river banks. Such vertically eroded banks are created during a lateral shift in the course of the river.

grounds in small tributaries without any problem. Other species move into the floodplain during flooding or search for food there.



In the “Mühlenlaar” project block near Schloss Oberwerries, the restored connection between river and floodplain can be readily discerned. Fishes and other water creatures are now able to easily move back and forth between the different habitats.



Little Ringed Plovers breed on sandbanks or exposed mud deposited by the river on the inner shores of bends.

Agriculture in the Lippe floodplain



Without grazing or mowing the Lippe meadows would become overgrown, first with high shrubs then with bushes and trees.

H. Blossy

The agricultural use of fertile alluvial soils beside der Lippe has a very long tradition. This created a valuable cultural landscape with a range of habitats such as wet meadows. The existence of such habitats depends greatly on continued agricultural use. However, most areas in the Lippe floodplain were still subject to intensive use before the project started, i.e. they were frequently mowed, heavily fertilized or even ploughed. Nature-compatible

farming was a key objective of the LIFE+ project. To ensure that a socially equitable solution could be found for each farm, the North Rhine-Westphalian Chamber of Agriculture and the Westphalia-Lippe Agriculture Association were brought in as specialist advisory institutions. The result was an agreement that regulated how nature and farming would “coexist”. A technical expertise identified the needs of each farming operation in order

to avoid endangering their existence. This promoted the acceptance of the project and secured the long-term conservation of the cultural landscape.

After remodelling, many areas were leased back to the local farmers. Where there were previously ploughed fields, there are now species-rich meadows and pastures. Old drainage ditches have been plugged and many new bodies of water have been created. And the use of fertilizers has been minimized. To protect the nesting birds, the areas are mowed late in the year and grazed by few a small number of animals. Although these conditions limit the scope of agricultural practices, the re-leasing of land ensures the ongoing existence of local farms as well as conserving the floodplain landscape and therefore protecting nature in the Lippe floodplain.

Stonechat



M. Bunzel-Dritke

Flowering meadows

L. Hauswirth



“Seed-donor” meadow with Giant Daisies, Cornflowers and Poppies

Damp meadows along the Lippe, full of blooming flowers and shrubs, delight the eye and also attract butterflies, bumblebees and Stonechats. However, their agricultural output is not particularly high. Such plant communities cannot tolerate fertilizers and pesticides. This explains the present rarity of the once widespread floodplain meadows. In the LIFE+ project the last species-rich mead-

ows were visited in order to obtain seeds for propagation of now rare plant species – a method already successfully used during the first LIFE project. The meadows were mowed at seed maturity, the hay was gently loaded and afterwards spread over the areas with impoverished flora. It was important that the seeds fell out only at the new site and not already during transport. Farmers with valuable

“seed donor meadows” took part in the action, showed great interest and helped with the necessary instinct for hay production and transport. And now comes the burning question: Has the “seed transfusion” met with success? It is still too early for a final judgment, because plants need more time than animals. But initial surveys carried out by botanists give cause for optimism.

L. Hauswirth



A dung spreader distributes the seed-rich hay on the newly-created meadow.



A new chance for the Black Poplar

M. Bunzel-Drüke

A large old Black Poplar, one of the last of its species in Westphalia.

In some areas of the Lippe floodplain, space has been provided for the development of riparian forests, which have become rare today. In spring 2012, saplings of the black poplar – an almost vanished species of our floodplain landscape – were planted in these areas. This species is typical of softwood forests located close to

ivers, in which various species of willow also grow. Poplars and willows can tolerate flooding up to 200 days a year. Black Poplars have become rare because the open soils and sandy areas which the seeds need in order to germinate have disappeared due to river engineering and resultant lack of flooding in the floodplain.

The planting campaign in “Mühlenlaar” was actively supported by members of the Zukunftsfabrik (“Future Factory”) Hamm, a project of the Job Centers of the Corporation of Hamm which is aimed at helping young adults to get started in the working world. They planted one-year-old Black Poplar seedlings that had been grown by the Teaching and Research Forestry Office (Lehr- und Versuchsforstamt) of Arnsberg Forest. The young trees were planted at a distance of about 10 meters apart. This “wide-spaced” type of planting provides the new riparian forest with room to develop. The flow dynamics of the renatured Lippe will hopefully ensure that the propagation of Black Poplars will in future again take place without human assistance.



Corporation of Hamm

Black Poplar planting team



Reintroduction of the Burbot

Members of the Hamm Anglers' Interest Group explain the Burbot project to North Rhine-Westphalia's Environment Minister Johannes Remmel.

This species of fish is not critically endangered without reason: the Burbot places special demands on its habitat. It is nocturnal and needs clean, cold water. Its breeding season is in winter. When ready to spawn around the turn of the year, the fish leave the river and enter small streams and ditches, where they lay their eggs. Tiny larvae hatch from the eggs. In the early spring they need food-rich waters – if possible without other fish. For development of the young fish, shallowly inundated floodplains are best suited. When the spring

flood recedes, the larvae have changed into small fish and follow the water into the river. This complicated way of life can only succeed where the river and the floodplain are connected.

The LIFE+ project created suitable Burbot habitats. Almost at the same time, the temperature of cooling water discharged from a local power station was reduced, making the Lippe cooler. So only the Burbots were missing. The Hamm Anglers' Interest Group and the Westfalian and Lippe Fishery Association (Landesfischereiverband West-

falen-Lippe), together with the Ruhr Association, initiated a project with the aim of artificially breeding this rare fish species. Near Lippstadt, adult Burbot were caught in the last almost intact part of their range in North Rhine-Westphalia and, despite great difficulties, artificial propagation met with success. The challenge of rearing the larvae was also mastered. Finally, thousands of juveniles were placed in suitable, newly created waters of the Lippe floodplain near Hamm. It took only a few years before adult Burbot again appeared in the Lippe, and hopefully these will soon produce their own progeny. The initiator of the project, fisheries consultant Siegfried Kuss, says: "When natural habitats are available again, you need a few people with courage and a little time, and it is possible to repopulate all the waters from a small remaining stock."



Tiny fish larvae grow to become the secretive Burbot.

A visit to nature's living room



Corporation of Hamm

Well-hidden, visitors can observe the water birds at this large flood channel.

The remodeling measures have transformed the floodplains – into a variety of landscapes with many new water bodies, sandy dunes, young riparian forests and a river “unleashed from its corset” and therefore able to often change its structure. During floods, shallow lakes form for a short period of

time. Visitors can enjoy all this from the hiking and cycling trails. There are also two observation towers that provide a broad view of the landscape. Birds can also be observed from these. The family lives of the breeding pairs of White Storks are a particular attraction. Other large birds such

as herons and geese are also already visible from afar. But birders take a delight even in the less spectacular species, such as the various ducks and wading birds or the dragonfly-hunting Hobbies.



Roe Deer fawn



Common Snipe



Great White Egret

M. Bunzel-Drüke



Excursions in the Lippe floodplain are extremely popular.

Throughout the entire project period there was a strong demand for excursions – a rather overblown word for exciting hikes to explore the nature of the new floodplain landscape. People of all ages came to learn about the animals, plants and their habitats from professionals.

The topics were diverse: bird-song, wild plants, dragonflies, river dynamics, pond life, meadow plants, storks, fish or general floodplain biology. Construction site excursions, in which the restructuring measures and water management fundamentals were presented and explained, proved

particularly popular. The sign-posted hiking trails are open to all who want to wander or cycle through the floodplain on their own. There is also a bridleway and canoeists are permitted to paddle down the Lippe.



Pond tour: the netted water creatures are identified.



“Auenpost” and Floodplain Festival



M. Bunzel-Drike

M. Bunzel-Drike

Podium discussion at the Floodplain Festival: Project partners and NRW Environment Minister Johannes Rammel are distracted by flying storks.

As so many people are interested in the near-natural Lippe floodplain, it was clear that regular information should be provided during the LIFE+ project. In addition to press articles, radio reports, lectures and occasional contributions on local television, the “Auenpost” was published every two or three months. This is a flyer that was made available in the Environment Agency and in infoboxes placed along the hiking

trails. Among the topics were the renaturation works, Beaver, Black Poplar, Lippe ferry, breeding season, the establishment of riparian forests and bats. A special attraction for the public and great fun for the project partners were the Floodplain Festivals. At these events, set against the noble backdrop of Schloss Oberwerries, visitors could eat, drink, party and obtain information about the

project. There were interesting lectures, films, coffee and cake, information stands of various associations and authorities, canoe rides, words of greeting and speeches (accompanied by flying storks), children's amusements, barbecues, music, floodplain excursions and dances. The organizers were rewarded by a great response from the public.



The public was kept well informed by the “Auenpost” .



Corporation of Hamm

The ferry “Lupia”



T. Hübner

To move the ferry across the river, passengers have to pull on a chain.



H. Blosssey

The “Lupia” seen from the air



Corporation of Hamm, Stadtarchiv

Historical Lippe ferry in Hamm

“Lupia” is an ancient name – in fact it's the Roman name for the River Lippe. However, the ferry with the proud name isn't 2,000 years old, but brand new. Since spring 2013, it has connected the pedestrian and bicycle path of Oberwerries Mersch south of the Lippe with Schloss Oberwerries on the north side in the months April-October. Up to six people can simultaneously cross the Lippe, and bikes can also be transported. The ferry is operated by muscle strength. It is a practical solution and at the same time a great attraction, well-known even beyond the borders of the Municipality of Hamm. In the first year after its inauguration, more than 40,000 passengers already used this new way of crossing the Lippe. In olden times and, indeed, right into the 19th century, ferries crossed the Lippe. The old ferry east of Hamm could even transport carts and carriages.



Success monitoring and science

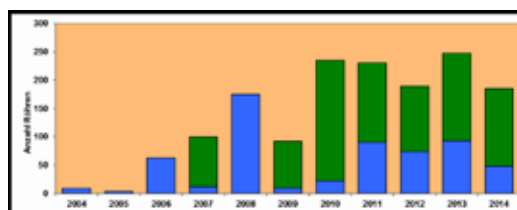
O. Zimball

Electrofishing

Transforming the Lippe floodplain was complicated and has changed the landscape a lot. Does nature actually benefit significantly? Success monitoring measures are carried out to answer this question. Biologists count certain animal and plant species before and after implementation of the renaturing project. In the Lippe floodplain, plants, dragonflies, fish and selected breeding bird species were recorded. The groups of species react at different speeds to changes. A bird species flies in right away if the new habitat is right. A plant, on the other hand, takes a lot of time to colonize the new habitat, because most species only spread by distributing their seeds. Success monitoring leads to a better understanding of the natural processes after renaturing projects and gathers knowledge for future projects, for instance:

which remodelling measures produce especially good results. In this context, an exchange of information between scientists is essential. Jointly with other LIFE project teams, the LIFE+ project "Lippe Floodplain" therefore organized a conference, which was held during the 8th Interna-

tional Symposium for European Freshwater Sciences 2013, which took place in Münster. In addition to lectures on the Lippe floodplain, North Rhine-Westphalian experts presented papers on the Allis Shad, stream valleys in the Arnsberg Forest, the River Mussel, and the rivers Ems and Möhne.



Results of the LIFE+ project were presented at a scientific symposium.



Corporation of Hamm



New residents of our countryside

The Round Goby is expanding its range in the Lippe. Originally a native of the Black Sea region, it came here via the Rhine-Main-Danube Canal.

Naturalists rejoice in the return of vanished species. However, there are now a whole range of animals and plant species in the Lippe floodplain whose arrival does not cause any enthusiasm - because they are not native to our country. But such species also respond positively to the improvement of Lippe floodplain habitats. Most visitors to the area will have seen Canada and Egyptian Geese, two aptly

named species, as they originate from North America and Africa respectively. South American Nutria have become frequent. Giant Hogweed and Himalayan Balsam have established themselves on the banks of the river. Underwater, various species of goby – small fish from the Black Sea region – are reaching the Lippe. Crayfish and Canadian Waterweed from North America, Asian Cup Clams and tiny

shrimps from the Mediterranean are already here. They have all been deliberately put into the river, or inadvertently introduced. At best, it will only be possible to get rid of the larger animal species. The rest will probably remain, whether we like it or not. The consequences for our nature are unpredictable; therefore a request: Do not dispose of garden waste or the contents of aquariums in the countryside!



above left: The flower of the Himalayan Balsam, that came to our country as an ornamental plant, is almost orchid-like. On the shores of our waters it can overgrow all other plants.

Below left: Coypus are significantly smaller than beavers and much more commonly seen during the day. The characteristic features of this South American species that escaped from fur farms are the white moustache and nose hairs, and the long tail that is not flat like a beaver's.

Top right: Canada geese were released into the wild in England and the Netherlands. Meanwhile, they are also common on the Lippe.



H. Blosssey

Who would have thought it: Storks and Beavers are back!

A rare view into the nest: In this photo from an aeroplane the young storks can be seen.

When in 2010 the first White Stork pair in more than 60 years bred in Hamm, even biologists were astonished. The large birds need not only a safe nesting place, but also enough food for rearing their young. Here the first LIFE project had done a very good job. Many new bodies of water in the floodplain are now inhabited by frogs

and fish. In the meadows, which are now used in an ecologically compatible manner, storks can collect earthworms, mice, snails and insects. The renaturing measures of LIFE+ have further improved the habitat. Even the first beavers have already appeared in the Lippe floodplain near Hamm. They may have originated from

the reintroduction project at the mouth of the Lippe in Wesel. Here and there, visitors to the Lippe floodplain can find young willow trees felled by Beavers, with the characteristic wood chips littered around the trunk. The beaver itself is, however, rarely seen, because it is almost exclusively active at dusk and during the night.

Corporation of Hamm



The presence of Beavers is shown by felled trees.



O. Zimball

Night photo by trail camera: Two beavers leave the water.

But the LIFE+ project has also increased the populations of many other animals and plants. For instance, there has been a rise in the numbers of breeding Kingfishers and Sand Martins. These birds build their nests in vertical banks of the river – and after the river renaturation a sufficiently large number of steep banks is again available.

Studies show that after the improvement measures significantly more dragonfly species occur than before. In the “Mühlenlaar” area the number of species increased from seven to 17. At the flood channel in “Mühlenlaar”, which has proved very attractive for dragonflies, 15 species have been observed. Some of the newly recorded dragonflies like the Broad-bodied Chaser are typical inhabitants of freshly created bodies of water and usually disappear again after a few years. Other species, such as the Migrant Hawker and the Red-eyed Damselfly, will stay longer. The newly created shallow water zones in the Lippe and the flood channels in the floodplain were immediately colonized by fish, including endangered species such as the Nase and Barbel. As young fish, they need shallow-water habitats that are connected to the river. Here, they are safe from predation by Pike and other large fish.

When fish stocks were surveyed in six sample sections of the Lippe in 2010, 18 fish species were registered. In 2014, after the implementation of improvement measures and the reduction in waste heat introduction from the power station, 28 species were recorded in the same sample sections!



Banded Demoiselle, Nase and Barbel



Nodding Beggarticks and one of the seeds that give the plant its name. Because of their two barbed "teeth", they attach to the fur of animals or the clothing of people and can be thus be carried for long distances.



L. Hauswirth

One very pleasing development has been the formation of sand and mud banks on the shores of the renatured Lippe. These banks do not become dry until the summer and then offer specialized plant species the opportunity to colonise them. The seeds of these plants are transported by the Lippe and deposited on the shores of slow-flowing stretches of the river. These are pioneer plants like Nodding Beggarticks, Knotted Needle Spikesedge and Celery-leaved Crowfoot. They grow rapidly, blossom and bear fruit quickly, without having to fear competition from other plants on the new mud or sandbanks. Among the "construction-site birds" which also inhabit mud and sandbanks, is the Little Ringed Plover. This small wading bird bred on some river shores newly created in the LIFE+ project. Only when sand which breaks from the river banks is repeatedly deposited further down the river, will the pioneer species always find adequate habitats.



L. Hauswirth



L. Hauswirth

This muddy sandbank in the Lippe has only just emerged in late spring and is still almost bare (above). Later in the year (below), Nodding Beggarticks and other plants grow here.

Prospects: What happens next?



Stadt Hamm

Corporation of Hamm

Children of the “Marderweg” Kindergarten helped to intertwine sticks to make the artificial nest attractive to storks.

The LIFE+ project is over, but the near-natural Lippe floodplain remains and must continue to evolve. Thanks to the support of the European Union and the state of North Rhine-Westphalia, the stocks of endangered animals and plants were able to recover. People enjoy the nature and the varied landscape while hiking or cycling along new paths with a ferry and observation towers. In the long term, opportunities might arise to improve the Lippe floodplain even further. If missing plots of land eventually become available or if the two Lippe weirs should become superfluous ... who knows.

The project partners will in any case continue to look after the protected areas. The cooperation with farmers, fishermen and other groups in society will continue; paths, observation equipment and signage will be maintained; small conservation tasks will be carried out; natural history data will be collected in order to monitor success; and further excursions and lectures will be offered wherever possible in order to foster enthusiasm for nature. The presence of storks supports us in this task. They're back – and that says more than a thousand words!



C. Schmidt

Lapwing, water lily and Burbot



Contact

In the case of further questions and for information about the LIFE+ project Lippe Floodplain, please consult the project's homepage (www.life-lippeaue.de) or contact the the project partners:

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The LIFE+ project “Lippe Floodplain” improved the habitats of animals and plants in four sub-areas totalling around 170 hectares, the action blocks called “Mersch”, “Mühlenlaar”, “Westenmersch” and “Heidemühle”. The areas delineated with a white dotted line are the five action blocks (A-E) of the LIFE project already completed in 2010. They are situated in a 17-kilometre-long section of the Lippe floodplain between Welter-Handorf (District of Soest) and Hamm-Heessen (Municipality of Hamm).

