



# LIPPE aue

LIFE PROJEKT



**Hamm:**



# Imprint

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# Contents

Preface . . . . .	2
The floodplain as natural habitat . . . . .	4
Humans alter the floodplain . . . . .	6
The European Union helps: The LIFE programme . . . . .	8
The project partners . . . . .	10
Plan area and affected zones . . . . .	11
The Lippe is set free: removal of bank reinforcement and extension of course . . . . .	16
Flood channels and oxbow lakes: restoration of watercourses . . . . .	18
Networked habitats: improved connectivity . . . . .	20
Dunes and alluvial woodland: tomorrow's wilderness . . . . .	22
Moist and unfertilized: environmentally friendly agriculture. . . . .	24
A landscape to enjoy: visitors in the Lippe floodplain. . . . .	26
The return of the Sand Martin: Successes in nature . . . . .	28
Conclusion . . . . .	30
Literature . . . . .	31
Location plan, contact . . . . .	32



Municipality of Hamm



M. Bunzel-Drüke



Municipality of Hamm



# Preface

Riverine floodplains are unique natural landscapes because the force of the water constantly creates a new and varied mosaic of different habitats. The water meadows between the town of Hamm and the districts of Warendorf and Soest are an excellent example.

Firstly, the floodplain of the River Lippe is characterized by different bodies of water: oxbow lakes, ponds, ditches and streams. Other significant features of the floodplain landscape are extensive reedbeds and water meadows that are an important cultural heritage. We find habitat types that have become rare, such as the wet stands of tall perennial herbs or relict alluvial woodlands with alder, ash and softwood trees. These facts alone would be justification enough for protecting this beautiful landscape. But the Lippe floodplain near Hamm is also home to numerous rare species of animal and bird. Kingfisher, Lapwing, Marsh Harrier and Corncrake, to mention just a few examples, depend on the habitats of the Lippe floodplain for survival.

These are all good arguments for including the Lippe floodplain between Hangfort and Hamm in the European nature conservation network „Natura 2000“, making a significant contribution to preservation of the European natural heritage. Within the framework of the so-called LIFE programme, the municipality of Hamm, in cooperation with the Lippeverband and other project partners, received

EU funding at an early stage and commenced the ecological LIFE Project with an area of 615 hectares of the River Lippe and its water meadows.

Since then, the work along the Lippe has not only been concerned with achieving ecological improvements for many species of animal, bird and plant but also with creating more water retention space for protection against future floods. Thanks to the removal of river bank reinforcement over a length of almost 6 kilometres, the Lippe has been released from its bonds and the form in which it is taking advantage of this new freedom is shown by the numerous steeply eroded banks and the sandbanks deposited in the course of the river. Today we have the remarkable situation that the Lippe floodplain is still largely being utilized as a cultivated landscape by local farmers, but – on the other hand – that the natural heritage of the Lippe landscape has been made accessible to our citizens. In the area of the Oberwerrieser Mersch visitors are able to observe the natural life of a large pond from a plank walkway. An observation hill offers a view of the broader water meadow landscape.

The LIFE Project Lippe Floodplain is a good example of how rivers can be restored in such a way that that economic, social and ecological demands are made compatible. This only became possible as a consequence of the early forging of cooperative ties between users and owners of



the affected areas. Moreover, the local public was provided with comprehensive information and involved in the planning process at an early stage. A not insignificant factor speaking for the project is the fact that the investments made for implementation of the LIFE measures also contribute to the safeguarding of jobs in the landscaping and hydraulic engineering sectors.

I am very happy that the EU's successor programme LIFE+ enables the continuation of this successful work on the Lippe. The municipality of Hamm, the Lippeverband and the other project partners will restore further sections of the Lippe and its floodplain to a near-natural condition between 2010 and 2015. I wish the citizens of the region many fascinating hours in the floodplain of the River Lippe, enjoying the power and beauty of this landscape.

A handwritten signature in black ink, which appears to read 'Eckhard Uhlenberg'. The signature is fluid and cursive.

Eckhard Uhlenberg

Minister for the Environment and Conservation, Agriculture and Consumer Protection of the State of North Rhine-Westphalia

# The floodplain as a natural habitat



M. Bunzel-Drücke

What is a floodplain? It borders a stream or river, but what does the term “floodplain” mean exactly? When water levels are low, the river remains within the normal confines of its channel. However, after heavy rainfalls the increased volume of water demands more space and the river overflows its banks and covers the floor of its valley. For a period of time the river channel is then much wider. All the land that the river can flood – even if this only happens once in a hundred years – is called the floodplain. It consists partly of dry land and partly of the river channel.

Floodplains are unique landscapes. The power of the river water creates a complex mosaic of natural habitats, and constantly recarves the contours of the floodplain, creating an ever new combination. Here, a flood scours out a deep pothole, there it deposits the mud or sand that its current has washed downstream. An old tree undercut by the water lies in the river

channel, a side stream is given a new course. The wind can pile up dry sand into dunes. Gravel banks, heaps of dead wood, meadows, stands of tall perennial herbs, reedbeds, alluvial woodlands and a variety of forms of standing water: shallow temporary pools, ponds, oxbow lakes and flood channels, are created. This large variety of natural habitats makes the flood valley into one of the most species-rich natural landscapes of Central Europe. And most of the animals and plants that occur here not only tolerate the dynamic changes, but are indeed dependent on them. Black poplars need banks of mud that gradually dry out and thus provide ideal conditions for their seeds and saplings to grow. The young trees later act as food and building material for beavers. Kingfishers dig their nest tunnels in vertical sandy banks. Pasqueflowers bloom on sand dunes, which also provide a home for Green Tiger Beetles. Charophyceae algae and the larvae of Broad-bodied Chaser dragonflies and Tree Frogs

live in newly created ponds, while Water Lilies and Common Toads are to be found in older bodies of water. Golden Orioles and the Purple Emperor butterfly populate alluvial woodlands. In spring the Pike leaves the river to lay its eggs in flooded meadows, where Storks and flocks of wading birds, ducks and geese search for food.

Natural riverine floodplains with their water meadows are rich in natural resources and also act as storage areas for nutrients and water. Their natural water-retention capability reduces the destructive force of flood waves.

Human beings originally made use of rivers for fish-catching and later used them as transport routes with small boats. The alluvial woodlands were rich hunting grounds, also providing firewood and timber and later acting as grazing areas for herds of cattle. These uses had only a small effect on the ancient natural community of river valleys.

M. Bunzel-Druke



**White Stork**

M. Scharf



**Green Tiger Beetles**

H. Vierhaus



**Yellow Water-lily**



# Humans alter the floodplain



A picture from the 1960s: A construction crew of the Lippeverband securing an undercut bank.

Lippeverband

In the course of time our ancestors exploited rivers and floodplains. The valuable areas of land were put to intensive agricultural use, rivers were straightened and their banks reinforced to increase their viability for boat traffic and water power utilization, settlements were even built in flood areas, rivers were turned into waste water receivers. These changes came gradually, but in sum they had dramatic negative effects. By the end of the 20th century all the Lippe's alluvial woodlands had been cut down, the sand dunes had been excavated and numerous open wetlands with standing water had been destroyed. As a result of canalization the Lippe had lost 20 % of its original length and most of the cut off river loops had been filled in. The river had been made narrower and its banks were reinforced with stone embankments, the so-called rip rap. The shortened river course meant that the gradient was steeper, so that the river current now

had greater force and therefore eroded and washed away its sandy bed. The bank reinforcements prevented the supply and accumulation of new sand. The Lippe, which had formerly been a wide, shallow and varied river, consequently scoured out a channel that was up to 4 m deep and its water meadows dried out. Flood channels were converted into drainage ditches, meadows were drained and often ploughed. As flood protection for the agricultural land, low dykes were built along the banks of the Lippe. In this way, the river and the water meadows – formerly a single unit – were separated from each other.

The sewage from settlements and industrial areas, the pit water from coal mines and the cooling water from power stations were discharged into the Lippe. Around 1975 the water quality in the Hamm area had finally fallen to „critically contaminated“ or

even „severely polluted“. However, a general public re-thinking then occurred; people no longer wanted rivers to be nothing more than open sewers! But a great social effort was required before bodies of water were cleaned up. These days modern sewage plants ensure good water quality.

Clean water is a vital necessity for humans, animals and birds. But many species need more, namely near-natural habitats – and those were still few and far between in the Lippe floodplain. Then in the 1990s the municipality of Hamm and the Lippeverband carried out the first nature conservation measures. In 1995 the Lippeverband presented the Lippe floodplain programme as a development concept. However, really fundamental improvements had to wait until a major project was prepared in 2004: the LIFE Project Lippe Floodplain.





In April 1969 folding canoes pass a long naturally eroded riverbanks that still existed in front of the picturesque manor house of Oberwerries.



At the beginning of September 1969 the bank had been sloped back and reinforced with a stone rip rap embankment.

# The European Union helps: The LIFE programme



Once widely distributed, today no longer to be found in the central stretch of the Lippe: the Beaver.  
Hopefully it will return in the near future.

O. Zimball



To preserve Europe's natural resources and to improve natural habitats – those are the aims of the FFH directive adopted in 1992. „FFH“ stands for Fauna - Flora - Habitat, meaning animals - plants - living areas. The aim is to develop a coherent Europe-wide network of conservation areas, known as „Natura 2000“, that also includes the EU bird reserves. Every EU member country has undertaken to establish conservation areas for a defined list of threatened animal, bird and plant species as well as habitats. This list includes many residents of floodplains, such as Beaver and River Lamprey, Spined Loach, Salmon, Garganey Duck, Kingfisher, Lesser Spotted Woodpecker, Crested Newt, Southern Damselfly and Swollen River Mussel.

In spite of the serious degradation of the floodplain, relict populations of such species have survived in some localities – including the Lippe within the municipal boundaries of Hamm. For this reason, a 615 hectare section of the Lippe floodplain between Lippetal-Lippborg and Hamm was declared an FFH conservation area „Lippe floodplain between Hangfort and Hamm“. It also forms part of the bird reserve „Lippe floodplain between Hamm and Lippstadt with the Ahse Water Meadows“, which is over 2,300 ha in size.

The EU provides financial assistance for the development of such areas for nature and human beings and has created the programme „LIFE-Nature“ for this purpose. „LIFE“ stands for „L'Instrument





A few pairs of Garganey breed in the Lippe water meadows.

Financier de l'Environnement" and simply means „Environment financing instrument“. The funds involved are only used for the improvement of Natura 2000 areas. Local councils, public authorities and associations can

develop projects and apply for funding. However, the EC only pays part of the project costs; in North Rhine Westphalia the remainder is borne by the applicant and particularly the state.



The pencil-sized Spined Loach needs a sandy river bed and sparse water plant growth.



# The project partners



These project partners grew together into a true team.

Soester Anzeiger

Immediately after designation of the Lippe floodplain in the municipality of Hamm and vicinity as an FFH area, a meeting was held between the authorities responsible for nature conservation („untere Landschaftsbehörde“) of the municipality of Hamm and the districts of Warendorf and Soest to exchange ideas regarding application for a LIFE Project. To develop concrete aims and measures a large number of citizens, interest groups and official agencies were involved in a one-year drafting phase. At the beginning of 2005 the municipality of Hamm submitted the application for funding under the LIFE scheme to the EU Commission.

During this initial period the project partners for the implementation and partial funding of the LIFE Project were also found. Alongside the municipality of Hamm as project applicant and initiator, these were: the Lippeverband as technical project manager, the Arbeitsgemeinschaft Biologischer Umweltschutz in the district of Soest e.V. and the relevant authorities of the district of Warendorf.

## Hamm:



# Plan area and action zones



Male Marsh Harrier

M. Bunzel-Drüke



The river Lippe has its source at the foot of the Teutoburger Forest and reaches the Rhine at the town of Wesel after around 215 km. Between Hamm and the districts of Warendorf and Soest there is a floodplain landscape that still possesses some near-natural habitats. This landscape is characterized by water meadows and reedbeds, as well as oxbow lakes and other standing waters. Wetland perennial herb meadows, floating water plants and relict Alder-Ash and softwood alluvial woodlands are examples for habitat types that the FFH directive aims to protect. The area also holds such rare animals as the

Crested Newt and the Pond Bat, and threatened birds breed and occur as passage migrants here, e.g. Corncrake, Kingfisher and various species of duck and wader. The Marsh Harrier is another example, breeding in a number of places in the Lippe floodplain. The male has an unmistakable plumage colouring, which is why this bird was selected as the symbol for the LIFE Project.

## The aims of the project

The Lippe floodplain should be protected and improved as a habitat for threatened species and as a floodwater retention area. These are the individual objectives:

- removal of bank reinforcements and near-natural restoration of the Lippe,
- development of near-natural floodwater dynamics by restoring the connection between river and water meadows and allowing flooding,
- making the Lippe more hospitable and passable for migrating species,
- maintenance, improvement and restoration of typical floodplain habitats and increasing the structural diversity,
- preservation of meadows and grazing land, also in view of their value as a cultural heritage and the establishment of grassland farming with a low environmental impact,
- visitor management, development of nature experience areas and information of the public with regard to the nature of the Lippe floodplain.

## The optimization measures

Not all of the Lippe floodplain was available for the LIFE Project. During the planning of optimization measures it was important not to affect any neighbouring private land. For this reason, five action zones were defined, the so-called „Action Blocks“ A to E, whose terrain was such that the implemented measures could not affect the property of third parties. It was thus permissible to re-waterlog these areas and allow their occasional flooding.

What are „optimization measures“? These are activities aimed at improving the habitats of animals, birds and plants. Their primary aim is to reverse mankind's earlier interference with the natural environment. Often the work involved is carried out by heavy construction machines. Sometimes the question is asked „Isn't

that just a new crime against nature? Won't nature heal herself if we just leave her in peace?“ Well, she could, but it would often take a long, long time; the Lippe might need several hundred years to completely wash away the bank reinforcements. The animals, birds and plants don't have that much time – some species have already almost disappeared from the area. That's why the excavators move in to perform the work involved in the LIFE Project. But they don't create a final state, a

„completed“ man-made floodplain; they only create the starting conditions for near-natural development of the landscape. The excavation of new bays, ponds and river loops, the removal of bank reinforcements and dykes along the Lippe permit the natural waterlogging and occasional flooding of the landscape and reunite the river with its water meadows. This allows constant alteration and development of the river's landscape, which is one of the Projects explicit aims.

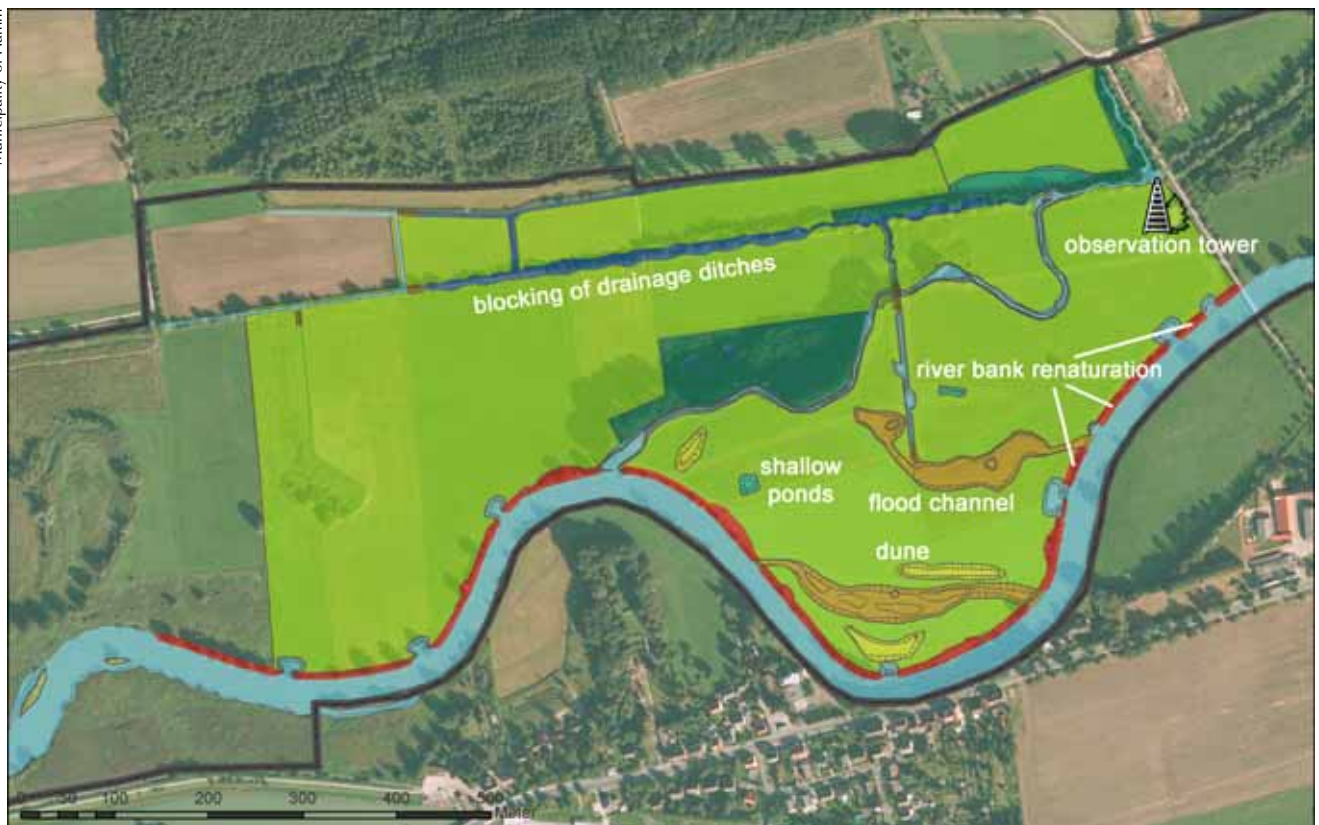
### Data of the LIFE Project Lippe Floodplain

Length of renaturated section of the floodplain:	17 km
Project duration:	2005 to 2010
Area purchased:	100 ha
Commencement of construction work:	September 2006
Renaturated river banks:	approx. 6000 m
Newly created water area:	approx. 7.6 ha
Total costs:	€ 5.50 million
of which	EU Commission
	State of NRW
	Project partners
	€ 2.75 million
	€ 2.20 million
	€ 0.55 million

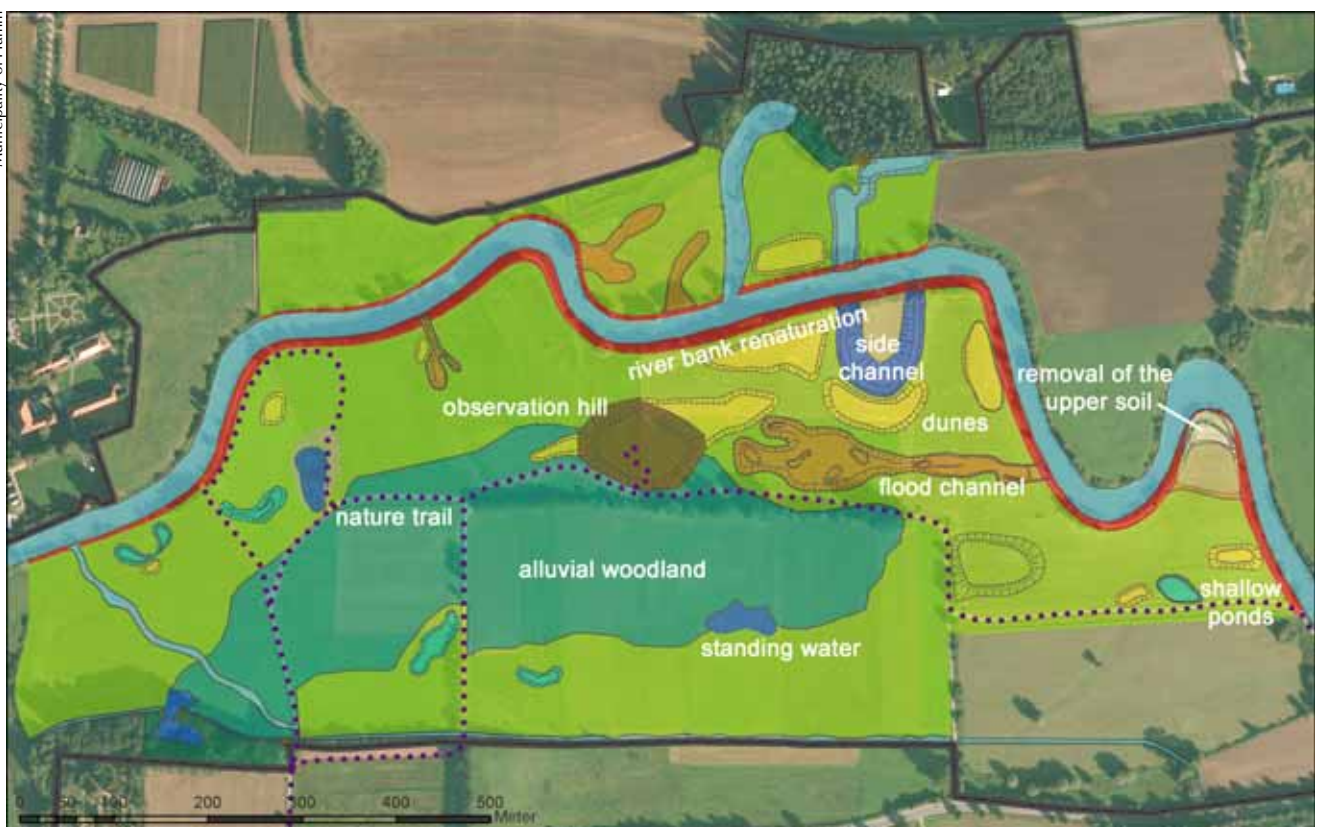


Block B with its numerous different renaturation measures is located south of the urban district Hamm-Heessen, off the Niederwerrieser Weg.





Action Block A, in which the „bypass“ - a so-called diversion channel - was built around the weir at Heessen, is situated south of the manor house of Heessen.



In Action Block C, east of the manor house of Oberwerries, a particularly large amount of river and floodplain remodelling work was carried out. This is also the site of a new walking trail with observation hill and the plank walkway over the ponds.





The biggest measure implemented in block D, south-east of Ahlen-Dolberg is the excavation of a new Lippe river loop close to the former coal mine railway, now a cycle track connecting Dolberg and Haaren.



Action Block E, the LIFE Project zone that lies furthest upriver, is located at the border between the districts of Soest and the municipality of Hamm near the A 2 motorway.





**Action Block C before remodelling:** A path leads along the reinforced left bank of the Lippe. There are still ploughed fields in the floodplain. Hardly any bodies of standing water are present.



**Block C as a construction site:** The path has already been relocated into the meadows at the centre of the floodplain area, the river banks have been restored to a natural state and the Lippe has been widened. In the centre of the photo, construction vehicles are modelling new areas for standing water and constructing the observation hill.



# The Lippe is set free: river bank renaturation and river course extension



Excavators in a nature reserve: This measure is necessary in order to release the Lippe from her bonds.

Municipality of Hamm



H. Vierhaus

## River bank renaturation

To restore the natural dynamics of river and flood water, it is necessary to have an „unhindered flow“. However, most of the Lippe’s banks were stabilized (reinforced) by stone rip-rap packing in the 1950s to 1980s. On its own, the Lippe would only be able to free itself very slowly from this corset. In the course of the LIFE Project, excavators therefore removed the stone packing from a total stretch of almost 6000 m. Now, dynamic processes can again take place along the „uncorseted“ river banks. Soil breaks away or is deposited, islands, steep banks and zones of shallow water are created – habitats for many animals, birds and plants.

The Banded Demoiselle, the most common species of damselfly along near-natural banks of the Lippe.



The extension of the Lippe's course in Action Block D is downriver of the bridge of the former coal mine railway in the foreground of the photo. From above it is clear that the Lippe is much wider and shallower in the new loop than it is in its old course.

## River course extension

Thanks to the LIFE Project, the Lippe has got back a piece of its former course. Between Dolberg and Haaren a new 400 m long and 35 to 40 m wide river loop was created. The old, canalized course was partially blocked with the excavated material, so that it is now an artificial oxbow lake. The new loop of the river has a special feature: its bed is about 2.0 to 2.6 m higher than that of the old canalized course. This means the water is only 1.0 m to 1.5 m deep and there are extensive sand banks. Such shallow stretches correspond to the natural form of the Lippe, but are rarely to be found in the canalized, deepened and scoured-out course of the

river. It is therefore not surprising that species of fish that need shallow-water habitats quickly found their way to the new river loop. Dace, Nase and Barbel appeared in considerable numbers. In the canalized stretches of the river they are all rare and even where

the banks have been restored they are not common, because the shallow water zones and bays are too narrow there. Despite the new, near-natural form of the banks, the man-made trough-like channel of the Lippe is still too deep.



A fish called Nase.



# Flood channels and oxbow lakes: Restoration of water bodies



Cattle and swans in the new waterscape of Action Block B

L. Hauswirth



L. Hauswirth

## Flood channels

Flood channels are depressions in the terrain that are connected to the river and carry flowing water during periods of flooding. Within the framework of the project, existing but often filled-in and no longer active flood channels were optimized and six new flood channels were excavated. Water now flows sooner into the water meadows and remains there longer.

Grazing animals can keep the banks of water bodies open.



## New standing waters

Bodies of standing water along a river valley, whether ponds or oxbow lakes, are important for water and reedbed flora as well as many species of animal and bird.

Shallow ponds, which only temporarily hold water and are therefore seldom inhabited by fish, often hold good populations of dragonflies and amphibians, because the degree of predation is low. In four Action Blocks a number of old, almost levelled ponds were therefore deepened and new ones were excavated.

A number of deeper ponds of different sizes that will permanently hold water were also created. They will provide a safe home for various species of fish, even in hot summers and in icy winters.

## More nature in small streams

The stream called „Heessener Schlossgraben“ – previous straight and uniform – was restored to near-natural condition. It was returned to its old course, which was still visible in the terrain. Another small stream, known today as the „Heessener Bach“, now reaches the Lippe by a more direct route. Its remaining ditch-like course was dammed to back up the water and re-waterlog the surrounding meadowland.

The stone packing and the bed reinforcement of the „Tiefenbach“ north of the Lippe were also removed, restoring the stream to near-natural form.

J. Brackelmann



Pond frog

H. Vierhaus



Broad-bodied Chaser

M. Bunzel-Drücke



The new Heessener Bach

# Networked habitats: Improved connectivity



H. Blossey

In the top section of the photo the Lippe comes from the right and flows in a loop past the manor house of Heessen. Level with the manor house and obscured by the trees is the weir that is impassable for fish. The straight canal lock in the middle of the photo is also impassable. Further to the front, the photo shows the curvy bypass channel in almost completed state, but not yet connected to the river. Meanwhile, it successfully guides fish around the obstacle.

## Removal of bank dykes

The dykes placed directly above the sloped and reinforced banks of the Lippe were built with the purpose of preventing floods from covering the adjacent land, particularly in the summer months. This isolated the river from its water meadows. The LIFE Project made it possible for the dykes to be removed from many parts of the river. The Lippe and its water meadows have thereby been re-connected, so that fish and other water creatures are now once again able to move around freely between the different habitats.

## Improved passability of the watercourse

The weir at Heessen has always been an insurmountable obstacle for fish trying to migrate upriver. For various reasons, elimination of this weir was out of the question but it was possible to build a bypass. For this purpose, a 500 m long channel was constructed as a near-natural stream in the water meadows, providing a route for part of the Lippe water to flow around the weir. Migrating fish sense the current of water at the mouth of this channel and turn into it, enabling them to bypass the weir and continue their upriver migration. The height difference between the water below

the weir and the water above it is only 70 cm. However, the mouth of the bypass channel is some distance downriver of the weir, so that not all the fish following the main river flow to the weir are able to find it. Despite this, the number of fish swimming up the bypass channel exceeded all expectations: In the first eight months a total of almost 9,000 fish of 29 species were counted in the monitoring fish trap. These included a small number of really rare fish like the Bullhead and the Spined Loach. It was discovered that it is particularly the young fish of many species that migrate upriver.





Where the bypass channel leaves the Lippe a large fish trap was installed. The migrating fish come from downriver (at right of photo) and swim into the funnel of the trap. Once a day, members of the Heessen Fishery Association count and measure the fish and then release them upstream of the trap.



In the Lippe the little Ruffe turned out to be one of the most migratory species - a result that surprised the fish experts.



# Dunes and alluvial woodland: tomorrow's wilderness



**The trunk of a mighty oak lies on the new dune. This witness of the past came to light when the new loop of the Lippe (in the middle of the photo) was being excavated near the former coalmine railway.**

L. Hauswirth

Dunes are typical for the floodplains of lowland rivers that flow through areas of sandy soil. Along the Lippe, however, the sand deposits have been excavated since early times for use as building material.

A special plant community grows on sand dunes: specialists for warm, dry and poor soils. Here they face little competitive pressure from other species. However, such so-called poor soil locations have become rare, and in the intensively cultivated landscape the specialists find no place. For these plants, many of them endangered species, as well as for the associated butterflies and other insects, new sand dunes were created in the Lippe water

meadows. For this purpose, the sand obtained when excavating for new bodies of water was dumped to form several dunes.

Alluvial woodland – a species-rich habitat that is severely threatened in North Rhine Westphalia – had practically disappeared in the project area. An area of about 15 hectares has been reserved for the natural development of alluvial woodlands. Woodlands originate when the seeds of trees and bushes germinate and grow on an area of open soil. Meadows, with their dense cover of grasses and herbs, are not a good nursery for seedling trees and it takes a very long time for a woodland to develop. To speed up the natural process, typical species of tree,

for example Pedunculate Oak, Ash and European Hornbeam, were planted on 10 % of the area reserved for alluvial woodlands. When they have reached the sapling stage, these trees provide the conditions for other trees and shrubs to establish themselves. Willows and Alders are among the pioneer species.

The new woodland offers a habitat for numerous plants, and also for animals and birds that prefer the moist and shadowy woodland climate. In the early development stages, birds of semi-open landscapes, such as the Whitethroat and the Hedge Accentor, can breed in the planted trees. Later they are replaced by true woodland birds like the Nightingale and the Golden Oriole.





Relict alluvial woodland in the Lippe water meadows



Woodland fringes with stands of tall herbs are home to the beautiful Silver-washed Fritillary.



# Moist and unfertilized: Environmentally-friendly agriculture



**A bold colour scheme, but still attractive: wayside poppies and mallows.**

Municipality of Hamm

Once the water meadows were alive with colours, not uniform plain green as most are today. Then drainage and fertilization provided the conditions for quick-growing, strongly competitive grasses to flourish. The new conditions put an end to the colourful diversity of plants that were adapted to moist and wet habitats, but the land now produced more cattle fodder. It was possible to mow the grass earlier and more often, or to hold more cattle per unit of area. In the LIFE Project area, this intensive form of agriculture will become a thing of the past. Clearly, such aims as re-waterlogging, non-use of fertilizers and the creation of water bodies can seldom be implemented on privately-owned land. However, before project work started, most land in the

Lippe water meadows was in private hands. To get around this problem, the Department for Rural Development and Land Use of the Arnsberg District Government carried out a simplified reallocation and consolidation of agricultural land holdings. The previous owners either sold their areas or received alternative land. By this means, the water meadows gradually became the property of the Municipality of Hamm, the Lippeverband and the District of Warendorf. The acquired areas are rented out to farmers for extensive agricultural use. But the old drainage ditches have now been blocked. In co-operation with the farmers an extensive form of land use without fertilizer or with only a small amount of fertilizer has been introduced. This makes it

possible for colourfully-flowered meadows to re-establish themselves and simultaneously reduces the amount of nutrients entering the water bodies.

Where ploughed fields are reconverted into meadow land it can take a very long time for rarer plants to reestablish themselves. In the LIFE Project, this process was jump-started by either sowing near-natural seed mixtures, or by resorting to a trick: transferring mowed plant material. A species-rich meadow is mowed after the seeds have come to maturity. The freshly-mowed plant material is collected and spread over the new area. The seeds fall out of the drying hay and subsequently germinate in the new habitat.



Near-natural meadow in der Lippe  
water meadows: the loose grass cover  
leaves space for the yellow Meadow  
Buttercup and the pink Ragged Robin.

Before construction work commences, a threatened species of  
plant is being removed together with its entire surroundings  
and placed elsewhere.

L. Hauswirth



L. Hauswirth



L. Hauswirth



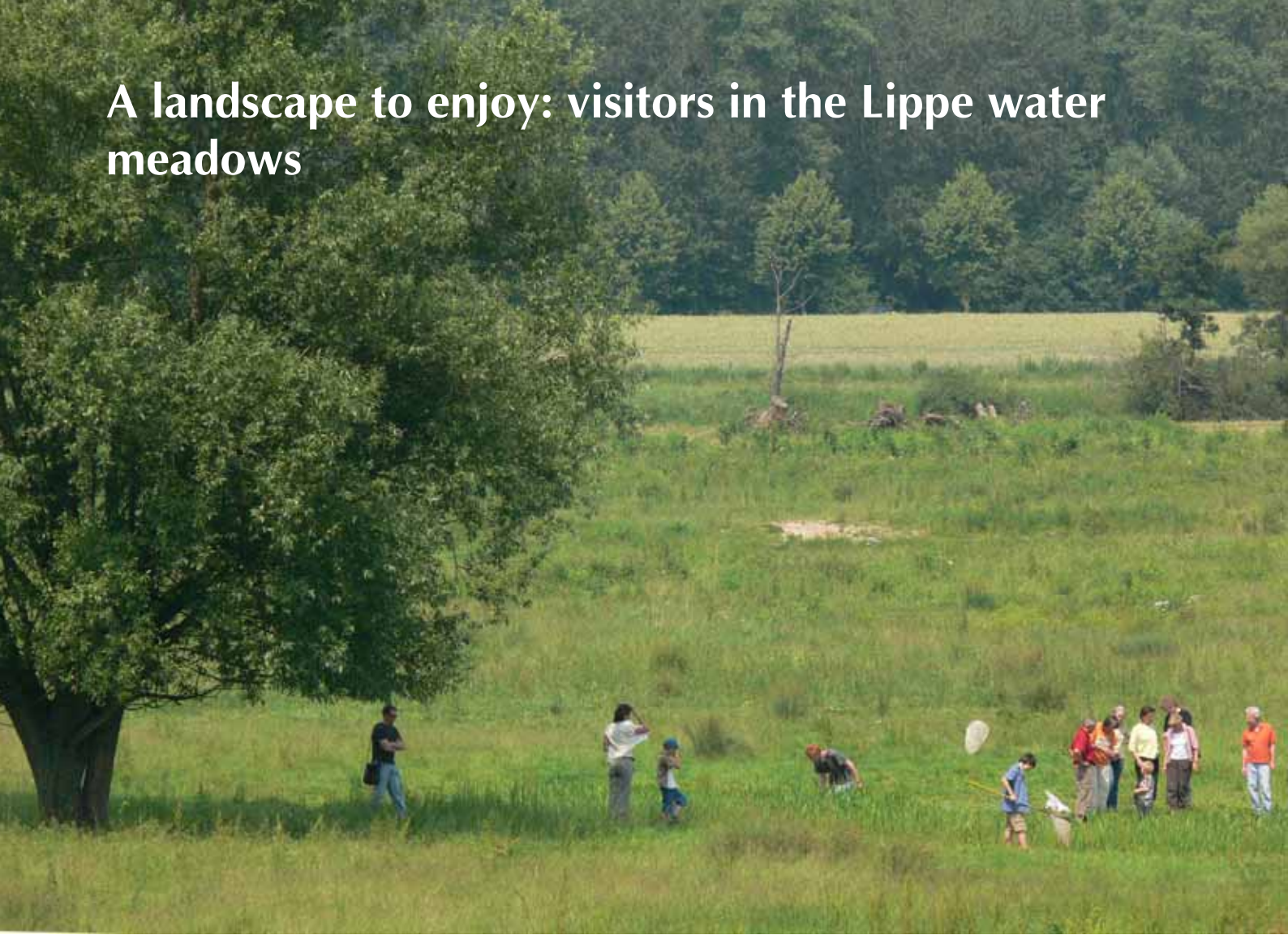
J. Druke



Meadowsweet (left) and Water Forget-Me-Not (right) grow in moist, not too heavily fertilized meadows.



# A landscape to enjoy: visitors in the Lippe water meadows



J. Brackelmann



Municipality of Hamm

The plank walkway over the pond will become even more interesting when the water plants, reedbeds and willows take over the new habitat. To the pleasure of visitors, frogs already moved in during the first year.

Many especially rare and threatened species react sensitively to human disturbance. Therefore it is necessary to have tranquil zones in the protected area. On the other hand, there is the need to give the public an opportunity to discover and enjoy nature. Parts of the Lippe water meadows were inaccessible to the public before commencement of the project, and will remain so. However, Action Block C (Oberwerrieser Mersch) had long been an important recreation area for the local population. The measures carried out in this area therefore had the aim of developing the Lippe water meadows as a combined nature reserve and local recreation area.





**Grey Heron**

First of all, a new network of paths was created. A 1.5 km long stretch of the old path, which had previously led directly along the bank of the canalized river, was shifted away from the river to allow renaturation of the banks. At the same time, a new bridle path was constructed to replace that which had previously run parallel to the footpath. A plank walkway over a newly constructed pond leads the visitor through the middle of the developing water meadows habitats. Here they can experience standing waters, reed-beds and willow scrub up close. For those wishing to learn more about the Lippe water meadows, illustrated information boards are placed along a nature trail. The large, new observation hill and an observation tower offer visitors a panoramic view over the water meadows, a diverse and structurally rich landscape.

What people don't know they don't want to protect. For this reason, public relations work for the Lippe water meadows and its nature was a vital part of the LIFE Project. A „water meadows festival“ held at the manor house of Oberwerries at the beginning of the project implementation and attended by around 3000 people was a good way to start shaping public perception. During the renaturation work the project partners held numerous lectures and excursions on the subject of the ecology of the Lippe water

Municipality of Hamm



Municipality of Hamm



**A quiet walk along easy paths through the green water meadows, watching birds from a hide or discovering nature on a guided cross-country excursion: in Action Block C everyone can experience the diversity of animals, birds and plants close up.**

meadows, and organized visits to the construction worksites. Kindergarten groups, school classes, families, clubs, public authority representatives and politicians attended these. For everybody interested there was also a regularly published news leaflet, the „Floodplain Post“, as well as a special web page. News items concerning the progress of work often appeared in the press, radio and television. An international

conference on the subject of flowing waters and water meadows informed numerous experts and interested parties on the latest state of knowledge about protection measures and provided a forum for exchanging practical experience. In September 2009, another public festival marked the „last round“ of the restoration work. However, excursions and lectures will still be held after the end of the LIFE Project.

Municipality of Hamm



# The return of the Sand Martin: Successes with nature



Municipality of Hamm

**Every pair of Sand Martins digs out a tunnel in the steep bank. The birds nest in colonies because good nesting places are rare and also because the small Swallows can group together to drive away enemies.**

Do the renaturation measures of the LIFE Project really help the threatened animals, birds and plants? This question can be answered by population surveys conducted on a scientific basis. For this purpose, certain species were counted before and after the renaturation work. One example is the development of the Sand Martin population in Action Blocks B and C. Like the Kingfisher, Sand Martins breed in tunnels that they excavate in steep banks undercut by the river. Such vertical faces do not occur along reinforced banks, which is why for many years the Sand Martin had nowhere to breed along the Lippe. Not until the Lippeverband renaturated some sections of the river did this little brown Swallow return. When new vertical banks were created in the course of

the LIFE Project, the number of breeding pairs rose to over 150. A pair of Kingfishers also successfully raised three broods in 2009 in the new banks of the Lippe in Block C east of the manor house of Oberwerries. The coming years will show whether the banks that were renaturated last will also be colonized so quickly.

In different areas of the restored near-natural water meadows the rare periodically inundated plant communities and stands of Pygmy Rush are spreading – a great success resulting from re-waterlogging parts of the water meadows. Marsh Cudweed and Toad Rush are again growing on damp, disturbed ground. The lovely Common Centaury is also colonizing new areas.

Fish benefit from a number of the implemented measures. More fry of the Dace, Nase, Barbel and Gudgeon were found alongside renaturated river banks than along comparable stretches of reinforced, rock-sloped banks. This is because the fry of these species need shallow fringe areas of the river. While Dace and Barbel prefer a slight current through their „nursery“, Nase and Gudgeon also like quiet bays. This preference explains why these two species were to be found alongside slack water species in the new flood channels.



The Barbel needs areas of shallow water with a slight current as their „nursery“. Such habitats were created along the renaturated banks of the Lippe and in the new loop of the river.

M. Bunzel-Drüke



As colourful as a tropical bird: the Kingfisher hunts small fish and breeds in steep banks undercut by the river. It has become a symbol species for near-natural streams and rivers.

M. Bunzel-Drüke



Young Sand Martins at the entrance of a nest tunnel.

W. Oppermann





# Conclusion



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The Life Project has brought about a lot of changes in the Lippe floodplain: now there are sections of natural banks without rock reinforcement, flood channel systems, various-sized standing bodies of water, extensively managed wet grassland and young alluvial woodlands. Obstacles preventing water creatures from moving freely up and downriver and between river and water meadows have been removed or made passable. These measures have provided the preconditions for a natural development. Some species that were previously rare have again become more numerous. Attractive footpaths and observation towers enable visitors to see how the protected areas are developing.

We are proud of what has been achieved and wish to express our appreciation to all those who made this success possible. Particular thanks are due to the LIFE programme of the EU

and to the State of North Rhine-Westphalia.

Is the job now finished? This cannot be said, because although much has been improved in the Lippe water meadows, there is still a lot to be done:

- Between Lippborg and the manor house of Heessen there are still sections of the valley in which no plots of land have so far become available for restoration of the river and its water meadows. However, some progress is currently being made and renaturation projects will be possible at various places in the future.

- In the course of the centuries, the canalization of the Lippe and reinforcement of its banks caused a strong current that scoured out a deep channel. Instead of being shallow and richly structured, the bed of the river is deep and trough-shaped in many places.

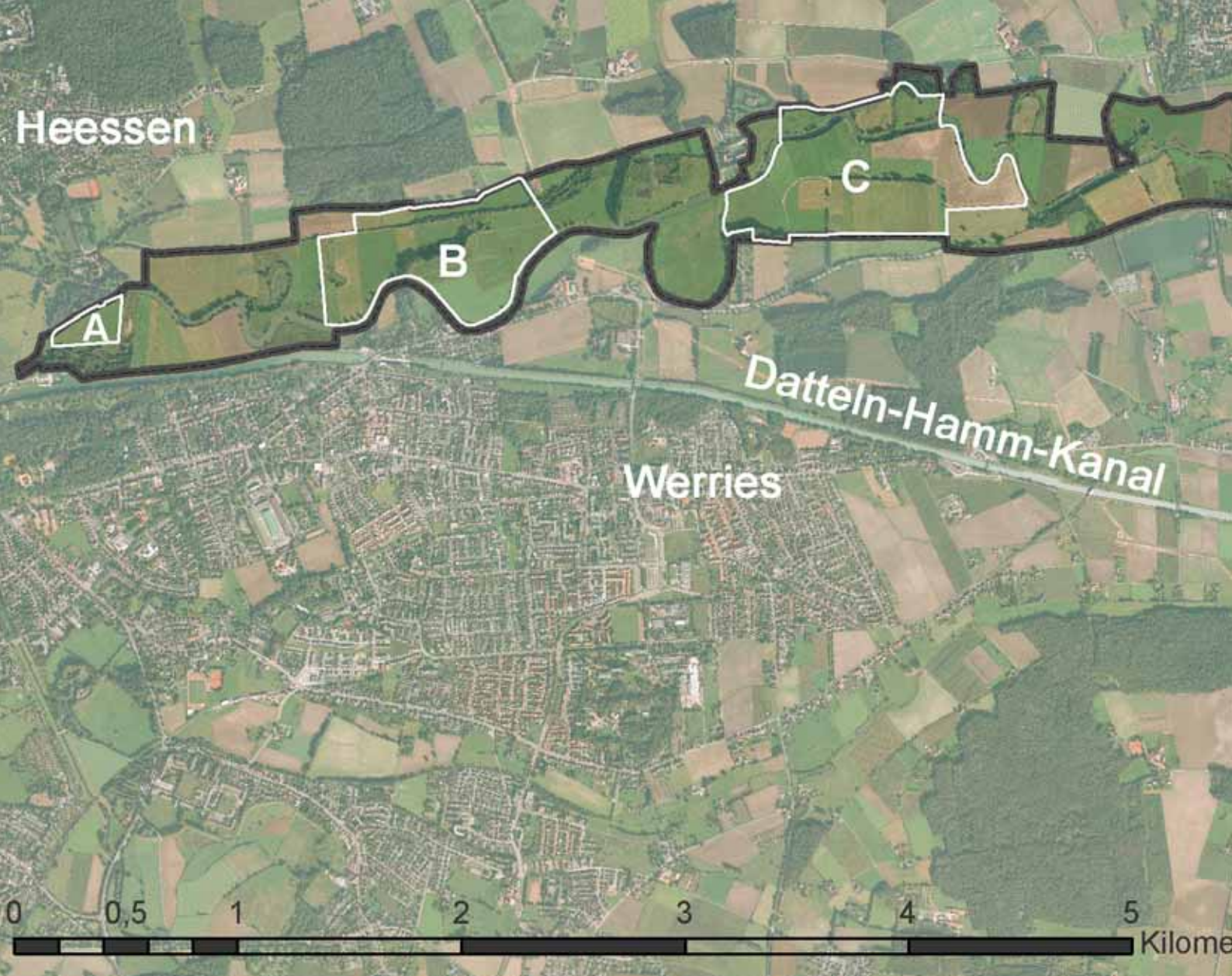
Even damming the water by installing the weir at Heessen could not prevent this from happening. It is important to raise the river bed, not only for the sake of the landscape, but also to provide the conditions needed by many animals and plants. For one thing, this is the only way to obtain sandbanks and adequately large zones of shallow water and for another it would significantly improve the connectivity between river and water meadows. For this reason, the successor funding programme LIFE+ Lippe Water meadows has been given the ambitious aim of raising the bed along a section of the river and stabilizing it by broadening the river and extending its course.

So let us by all means enjoy the restored water meadows of the Lippe – but simultaneously take every opportunity to improve the landscape and habitats even further with the aid of our many partners and supporters!

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If you have any further questions or would like more detailed information about the LIFE Project Lippe Floodplain, visit the Project Homepage ([www.life-lippeaue.de](http://www.life-lippeaue.de)) or contact the project partners:

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The LIFE Project Lippe Floodplain improved the habitats of animals, birds and plants in five sectors with a total area of 170 hectares, called „Action Blocks“ A - E (s. pages 12 - 14). They are located in a 17 kilometre long section of the water meadows between Welter-Handorf (District of Soest) and Hamm-Heessen (Municipality of Hamm).

