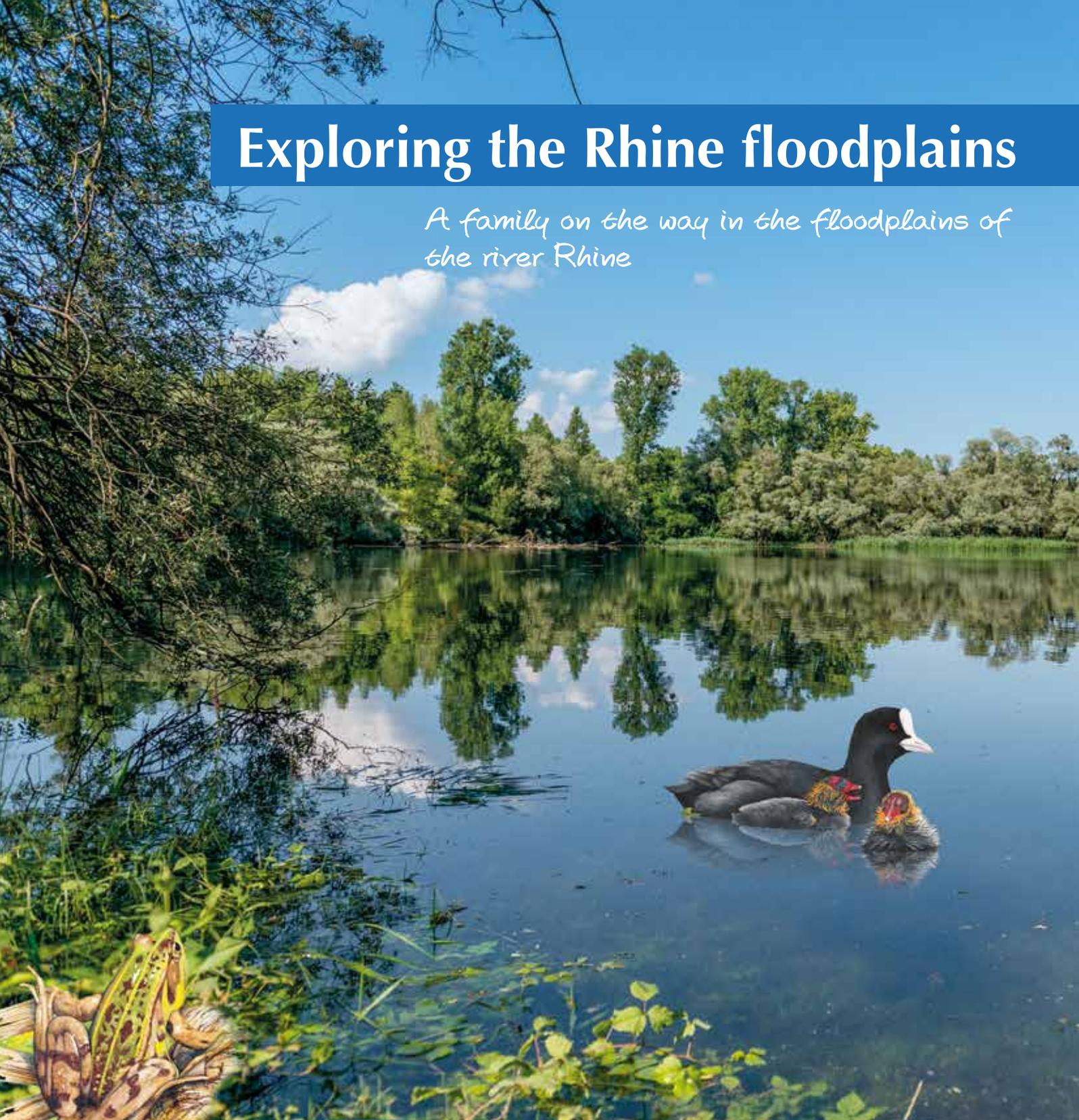


Exploring the Rhine floodplains

A family on the way in the floodplains of the river Rhine



RHEINAUEN
bei Rastatt



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This brochure was created within the framework of the LIFE+-project "Rhine floodplains near Rastatt", which is supported by the EU- commission by means of the funding scheme LIFE+. LIFE+ is the financial instrument of the European Union, promoting environmental projects (L'Instrument Financier pour l'Environnement). The resources, out of the budget "LIFE+-nature", are provided only for areas that are part of the European network "Natura 2000". The intended measures have to protect, improve and re-establish habitats and their endangered plant and animal species, which are considered important throughout Europe. Natura 2000 is the nature conservation concept of the European Union aimed at preserving the biological diversity in Europe. It is based on a network of special areas of conservation (SACs). In these protection areas, habitats and species of European importance according to the Habitats Directive and the Wild Birds Directive, are to be conserved. Together those protection areas are called Natura 2000 sites. The European Union promotes the project with a contribution of 4.7 million Euros. In addition to the district government Karlsruhe as the project management and the Nature Conservation Fund (Stiftung Naturschutzfonds Baden-Württemberg) as a project partner, the following institutions support the LIFE +-project financially:



Municipality
Elchesheim-Illingen



Municipality
Durmersheim



Municipality
Steinmauern



City of
Baden-Baden



City of
Rastatt



Riedkanal-
administration union

Environmental
foundation Rastatt



BUND
Südhardt



Fishing club
Rastatt



NABU district
association Rastatt





Dear Nature lovers,

The “Floodplains of the river Rhine near Rastatt” are one of the most valuable natural resources in the administrative district of Karlsruhe. Within the framework of the largest LIFE-Nature conservation project in Baden-Wuerttemberg so far, the regional council Karlsruhe, together with several different partners, has created near natural floodplain areas, renaturated flowing waters and established species-rich meadows between 2011 and 2015. We thereby promote rare animals, plants and habitats and contribute to obtain and develop the European network of protected areas, Natura 2000.

In the LIFE+-project “Floodplains of the river Rhine near Rastatt” different disciplines have been working closely together. For example, the flood protection for Rastatt has been significantly improved, but at the same time, the Murg in Rastatt became more attractive for both nature and man.

A silted up oxbow lake of the river Murg was awoken from a long, sleeping beauty slumber. Two oxbow lakes have been reconnected to the Rhine so that they are strongly flown through by water. They therefore provide new habitats for fish, water bats, birds and mussels. In former times, there were thousands of islands along the Upper Rhine, they all got lost through the straightening of the Rhine. Around “Au am Rhein”, we have recreated islands where riparian birds will be breeding in the future. Less complex, but not less important for rare animal species, was the re-design of ditch systems, by which rare fish, butterfly and dragonfly species are promoted.

The extensive construction works are finished and in some places the usage of diggers is already no longer visible. On one hand, this is due to the fact that the digger drivers were extraordinary cautious while working in the protected areas and, on the other hand, the dynamic of the water-course has continued the work in favor of nature. However, the work of the nature conservation authorities and the municipalities is not finished yet. The newly established meadows have to be cultivated and the ditches have to be maintained near-naturally, in order to preserve the diversity of species in the long term.

With the present brochure we now invite you to get to know the LIFE+-project area. Discover this valuable natural treasure together with your family.

A handwritten signature in blue ink that reads "Nicolette Kressl". The script is fluid and cursive.

Nicolette Kressl
Chief Administrator of Regierungspräsidium Karlsruhe

The Brunner family on the way in the floodplains

Lots of nature, industry and trade with many jobs characterize Rastatt, where Oliver Brunner and his wife Martina live with their children Svenja and Marco.

Oliver Brunner is working in the automobile factory nearby. The parents spend a lot of their free time in nature and needless to say they would like to pass on their enthusiasm to their children. Martina is especially pleased by rare wild flowers. Oliver is always looking out for animals, especially birds. The 12 year old Svenja is fascinated by hopping frogs and crawling toads. The 10 year old Marco is excited about the ducks and herons, also because he can tease his older sister by telling her that the male ducks look much nicer than the female ducks. Since the children are able to ride their bikes, the nature trips they are undertaking together have become longer. From the barrage weirs at Iffezheim, to the Murg outlet into the Rhine, from there to the banks of the Murg in the city center of Rastatt - with their bikes the family can get anywhere. Often the Brunners get off their bikes in order to watch a Great Crested Grebe more closely or search in puddles of water, after a rainy day, for Yellow-bellied Toads. Martina stops whenever she sees a blaze of colors of blooming plants along the flood dykes. Every bicycle tour is different, again and again, something new is discovered. Recently there have been quite a few changes in the alluvial forests near Rastatt, along the Riedkanal and the river Murg, which is flowing through the middle of the city. Diggers and bulldozers have been digging through the soil. Countless trucks transported huge amounts of soil and rocks. New concrete bridges for the traffic have been built. The river, formerly monotonous over long stretches, has now become sometimes wider or sometimes narrower, and islands and new water branches have been gained. "They are destroying nature!" Marco is complaining. "No", his father Oliver says. "I read in the newspaper that the construction works aim on helping nature. In the future, they are additionally supposed to prevent high waters flooding the city center of Rastatt."

The children want to know more precisely about that. They are not convinced yet, that the heavy construction machines will not cause damage to the animals.



Yellow-bellied Toad



Great Crested Grebe





“We need to have a closer look at everything”, they are announcing to their parents. Let us accompany the Brunners on their excursions. We will find out that heavy construction machines are in use for nature. In the Rhine floodplains and the rivers near Rastatt, a lot of money was and is being spent to create new habitats for animals and plants. The project is called LIFE+ and a third of the costs are covered by the European Union, further support is given by the Federal State of Baden-Wuerttemberg, municipalities and other organisations - all in all a respectable amount of 15 Million Euros.



New inlet from the Riedkanal to the Hofwaldschlut

Sometimes high water, sometimes low water, this is what

“Today, we will go to the Rhine floodplains near Plittersdorf”, Oliver announces to his children. “But we have been there before two weeks ago”, says Marco. The parents are smiling. “There will be a surprise for you!” , Martina adds. Half an hour later at the Ankerbrücke in Plittersdorf the children are visibly astonished. Marco cannot believe it. “That’s really cool!” he exclaims. In contrast his sister who describes the situation very objective. “The water here in the Plittersdorfer Altrhein has increased at least 2 meters.” The parents are smiling, because of the surprise for the children. The change from high water to low water is exactly what fulfilled them, again and again, with joy and enthusiasm. “Where does all the water come from? ”, Svenja asks. Martina explains that “in May and June when the snow in the Alps is melting and at the same time it is raining here in the Vosges and in the Black Forest, the Rhine is gathering so much water that the water level in the floodplains can be 6 meters higher than the low water level.” Martina opens her backpack and takes out a wet sponge that she carries with her on hot days, to cool the necks of her children. “Imagine the forest along the Rhine works like a sponge. At high water the forest soil is soaked up with water, the cut-off-meanders of the Rhine are filled, almost all the trees are standing in the water. A few days later the water level in the Rhine is getting lower, in the floodplains it is sinking as well, until everything will start to dry and the trees will no longer stand in water.” Svenja is horrified: “What is happening to the fish, frogs and toads then? Do they have to die?” Oliver is calming her down: “They are used to it. They are retreating to deeper places where there is always water.”

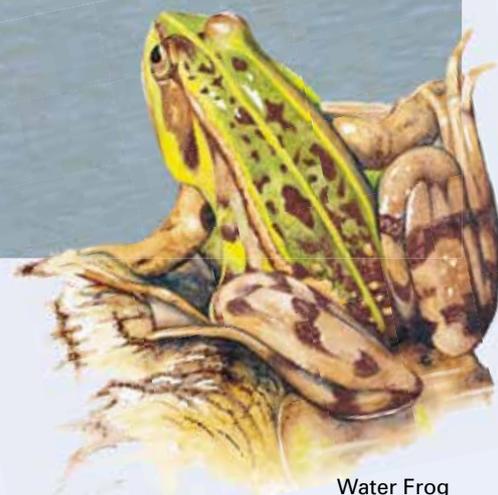
He adds: “The floods come unexpectedly, mostly one huge flood in spring and another huge in summer. Smaller floods can occur in between.”

The animals and plants are adapted to the situation of changing water levels. A unique variety of species developed. The floodplains of the river Rhine near Rastatt are protected areas of European importance; they therefore belong to the network of protected areas known as Natura 2000.

The floodplains of the river Rhine near Rastatt are protected areas of European **and global** importance; they therefore belong to the network of protected areas known as Natura 2000 **and the cross-border Ramsar-Site „Oberrhein - Rhin supérieur“**.



Low water



Water Frog

floodplains are about



Mute Swan

High water

The alluvial forest

At the end of May, the Brunner family once again is going on an excursion.

This one starts at a small quarry pond near Wintersdorf and leads along the Saurheinweg, to the nature paradise Rhine floodplains. This time the family is going by foot, on their right, along the way there are little hills and slots. Willows are standing below, oaks and ash trees are standing above. In between there are climbing plants like ivy or clematis, which create a jungle-like character here.

The parents see the fascinated looks of their children. "These are parts of the hardwood floodplain forest, a type of alluvial forests with oaks, ash trees and elm trees. They grow on higher areas, because those trees bear standing in the water for only a few days," Oliver explains. Later, after crossing the flood dyke, there are again oaks and ash trees along the way. An oxbow lake of the Rhine is only a few meters away. The picture of the riparian forest looks completely different here. Silver willows and poplars border the oxbow lake, alongside there are sections with dense growth of water plants. Suddenly the path is interrupted. Water is flowing right across it.

The Brunners are a little helpless. Martina sums up the situation: "A new flood is coming, the path is already overflowed. We cannot go further!" she says and warns: "The water could rise even further and we would not be able to come back without help." The family has a look around and realizes that the path is paved. Marco is calling: "The parts with the pavement are those where the high water has a strong flow. Therefore the path needs to be especially fixed here." Svenja is interrupting: "Why are the willows, over there, looking so strange? Has it something to do with the flooding too?"

Many willows on the other riverbank have a short trunk with spherically sticking out branches. "They were regularly cut back short, in former times, because the branches of the willows, after soaking in water, were used to weave baskets, bowls and even chairs," Martina explains. Oliver Brunner urges for departure. The water is rising. Shortly after that Svenja discovers toads in a puddle. She wants to catch one but her Dad Oliver insistently prohibits it. "These are strictly protected Yellow-bellied Toads".







He takes a field guide out of his bag and points right below on a plate on the yellow belly of the toad. The real Yellow-bellied Toads have descended. Now one is showing up again at the rim of the puddle. From the side something yellow can be seen. The Brunners are hiking back. From the branch of an ash tree sounds the loud and memorable singing of a nightingale. “It is the most beautiful song of nature”, thinks Oliver.

Frogs and toads in the floodplains

- ① Grass Frog, Size up to 10 cm
- ② Agile Frog, Size up to 9 cm
- ③ Water Frog, Size up to 12 cm
- ④ Natterjack Toad, Size up to 10 cm
- ⑤ Green Toad, Size up to 10 cm
- ⑥ Common Toad, Size up to 15 cm
- ⑦ Yellow-bellied Toad, Size up to 5 cm

Nightingale

Tree Frog

RHEINLAND

Amphibien in der Aue



①

Crasfrosch
Größe bis 10 cm



Wechselkröte
Größe bis 10 cm

⑤



③

Wasserfrosch
Größe bis 12 cm



④

Kreuzkröte
Größe bis 10 cm



⑥

Erdkröte
Größe bis 15 cm



⑦

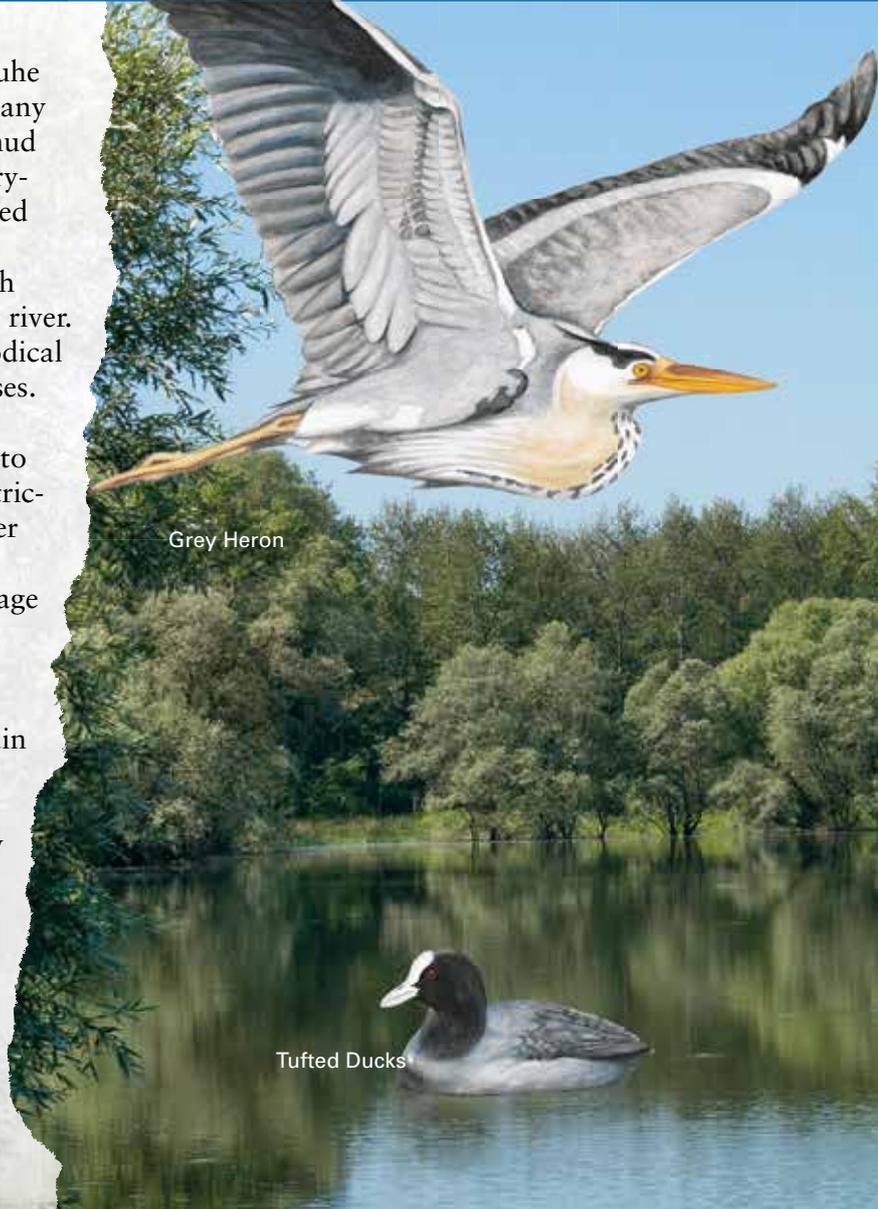
Gelbbauchunke
Größe bis 5 cm

Originally the Rhine between Basel and Karlsruhe was a several hundred meter wide river with many larger lateral branches, numerous gravel and mud banks, little wooded islands between them everywhere small watercourses. It was therefore called "island Rhine".

Then there was the regulation of the Rhine with barrages and especially the straightening of the river. Shortly after Basel, the forest without the periodical flooding by the river Rhine fell dry in many cases. Due to barrages and high flood dykes, in the former floodplains of the Rhine from Freiburg to Iffezheim, the varying of the water levels is restricted. Many old meanders or sidearms of the river Rhine were cut off. Today they are silted up or only have a low waterflow. Only after the barrage of Iffezheim, the floodplains live the same way they used to in former times. Through water inlets fresh Rhine water reaches the old river arms. Therefore silting up is prevented and again and again different water levels are ensured. This can be seen at the Altrhein near Plittersdorf. This watercourse has almost permanently water Intake from the Rhine. At flood stage the water sometimes stands only a few centimeters below the dyke top. However when the water is low, many shallow water zones fall dry. But there are also oxbow lakes in the floodplains that have no regular water inflow.



Grey Heron



Tufted Ducks



Black Coot



Common Pochards

Common Teals



White Stork



Great Crested Grebe



Mallard Duck

Great White Egret



Canada Goose



Due to the fact that there are deep and shallow water bodies an extraordinary variety of duck species can be found:

Dabbling ducks, like the Mallard Duck and the Common Teal only need to stretch their head in the water for foraging in the shore areas. Diving Ducks like Tufted Ducks and Common Pochards dive in deep water and turn up again many meters away. After a bicycle tour from Wintersdorf to Plittersdorf, the Brunner family has arrived at the Ankerbrücke.

While the parents are sitting down on a bench, Svenja and Marco didn't even get off their bikes. Many water birds are bustling around in the oxbow lake. Silver willows are growing on the banks. The children are moving their field glasses back and forth. At first both are silent and concentrated. Then Marco triumphantly announces: "Three magnificent Mallard Duck males, seven unspectacular females, over there six black and white

Tufted Ducks with a crest, pretty as a picture and not a single plain, black-brown female

Tufted Duck!" As usually, Svenja is taken in by his teasing and answers annoyed: "Have you still not gotten it, that the females have to be better disguised while they are breeding. They must not fly away as the drakes, otherwise the eggs get cold and the hatchlings in the egg die." "All right", Marco gives in, "I just like the drakes better!"

They are also observing Black Coots, Common Pochards, a Grey Heron and a Great White Egret flying by. In the middle of the Altrhein, they discover a Great Crested Grebe, again and again, diving for some seconds in search of food. Later on a Canada Goose is swimming by slowly. Then many little Dabbling Ducks are coming into focus which Svenja determines as Common Teals.

Also a White Stork who has his eyrie in the Altrhein is sailing by. In contrast to the Grey Heron, the Stork has a stretched neck when flying. The children have not noticed the Common Kingfisher passing by, because Svenja and Marco went over to their parents. Now they want to eat and drink something too. Oliver and Martina are watching their children contently. Observing makes hungry!



Western Marbled White



Yellow Swallowtail

Reed meadows

It is not only forest that is growing in the floodplains of the Rhine. There are various types of meadows too. On both sides of the street leading to the Pittersdorf ferry, meadows can be found in between the alluvial forest, as well as next to the flood dyke between Wintersdorf and Plittersdorf and also at the Teilergrund.

Those meadows have not been fertilized and were only cut in autumn in former times. They are also called litter meadows, because the grass was used as stable bedding.

Today they have become very rare because in modern stables, such litter is no longer needed. But litter meadows are highly worth protecting because they serve as habitats for many endangered animal and plant species. Here orchids like the March Helleborine and the Early Marsh Orchid are growing. Also the Common Meadow-Rue, the Edged Garlic that blooms pink, the Tall Violet and the Meadow Saffron belong there.

This weekend Martina wishes for a bicycle tour on the flood dyke. The tour leads from Rastatt to Plittersdorf, then on the dyke in southerly direction. It is particularly interesting when the sun is shining.

Butterflies and bees are swirling around and a sea of blossoms provides a colorful backdrop.

Again and again Martina, Oliver and the kids

dismount from their bikes. Here flies a Western Marbled White, there a huge dragonfly. Red Clover, Sage, Coffeeweed, and Margarite are

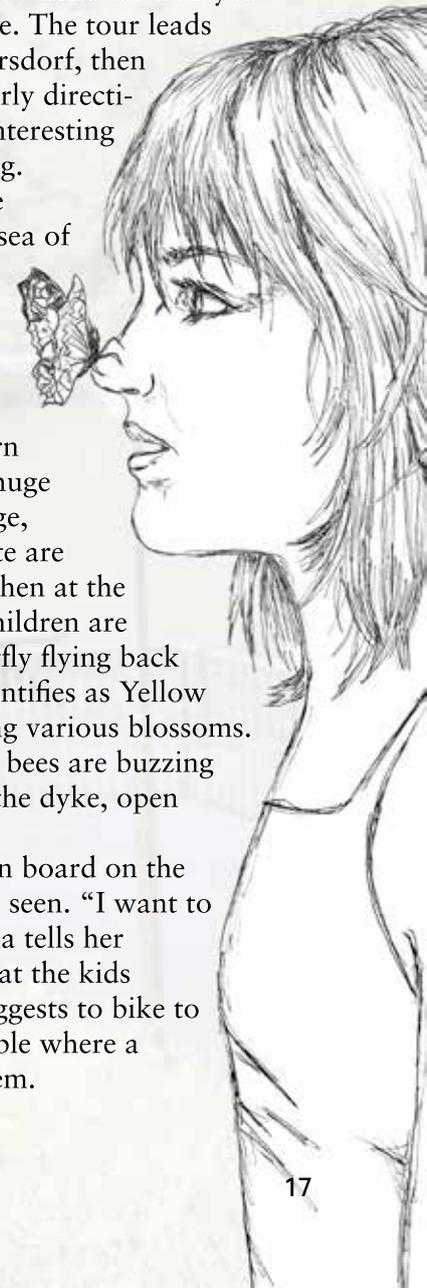
blooming, every now and then at the dyke base an orchid. The children are attracted by a yellow butterfly flying back and forth, which Svenja identifies as Yellow Swallowtail. Bees are visiting various blossoms.

Bumble bees and other wild bees are buzzing while flying. Sideways from the dyke, open spaces are turning up now.

Martina reads the information board on the dyke, on which plants can be seen. "I want to stop by there again", Martina tells her family. The mother senses that the kids want to let off steam. She suggests to bike to Wintersdorf as soon as possible where a playground is waiting for them.

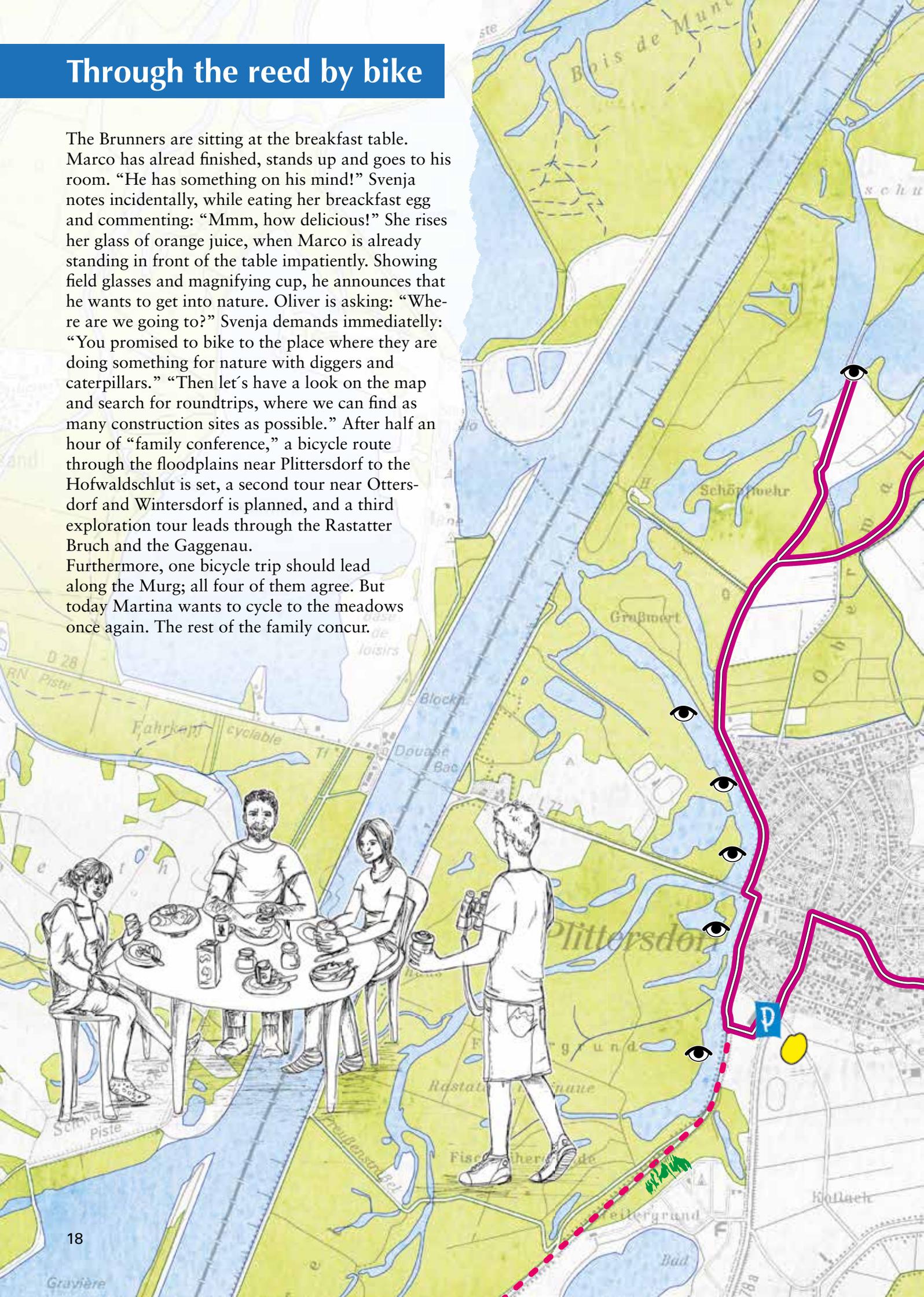


Long Horned Bee



Through the reed by bike

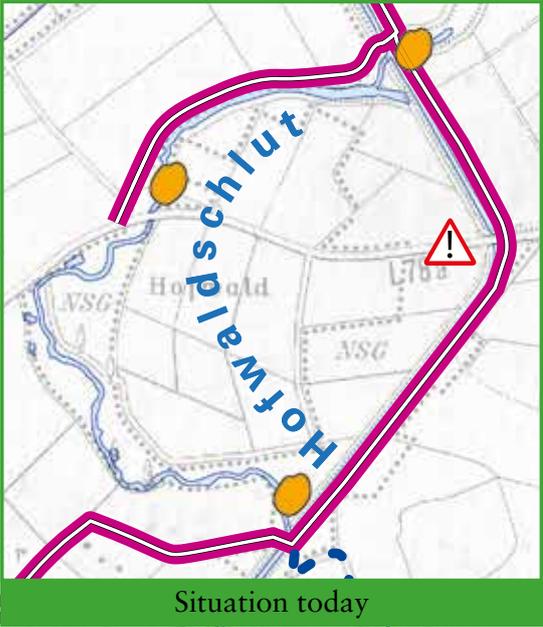
The Brunners are sitting at the breakfast table. Marco has already finished, stands up and goes to his room. "He has something on his mind!" Svenja notes incidentally, while eating her breakfast egg and commenting: "Mmm, how delicious!" She rises her glass of orange juice, when Marco is already standing in front of the table impatiently. Showing field glasses and magnifying cup, he announces that he wants to get into nature. Oliver is asking: "Where are we going?" Svenja demands immediately: "You promised to bike to the place where they are doing something for nature with diggers and caterpillars." "Then let's have a look on the map and search for roundtrips, where we can find as many construction sites as possible." After half an hour of "family conference," a bicycle route through the floodplains near Plittersdorf to the Hofwaldschlut is set, a second tour near Ottersdorf and Wintersdorf is planned, and a third exploration tour leads through the Rastatter Bruch and the Gaggenau. Furthermore, one bicycle trip should lead along the Murg; all four of them agree. But today Martina wants to cycle to the meadows once again. The rest of the family concur.



Tour 1 – 11 km

The Floodplains near Plittersdorf

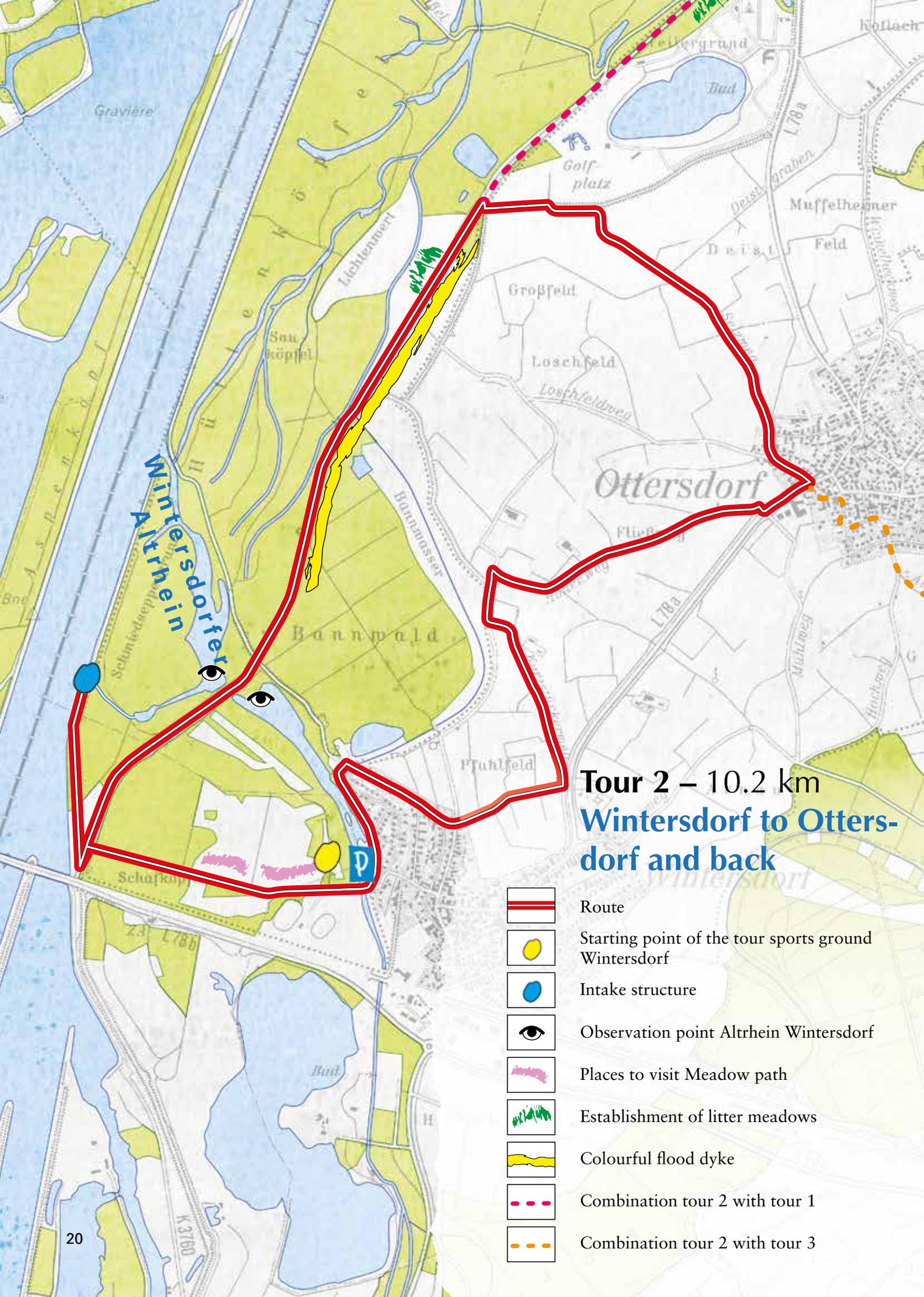
-  Route
-  Starting point of the tour Altrheinhalle Plittersdorf
-  Observation points
-  Places to visit Hofwaldschlut
-  Establishment of litter meadows
-  Combination of tour 1 with tour 2
-  Road crossing



Hiking path – 2,1 km

Floodplain tour

-  Route



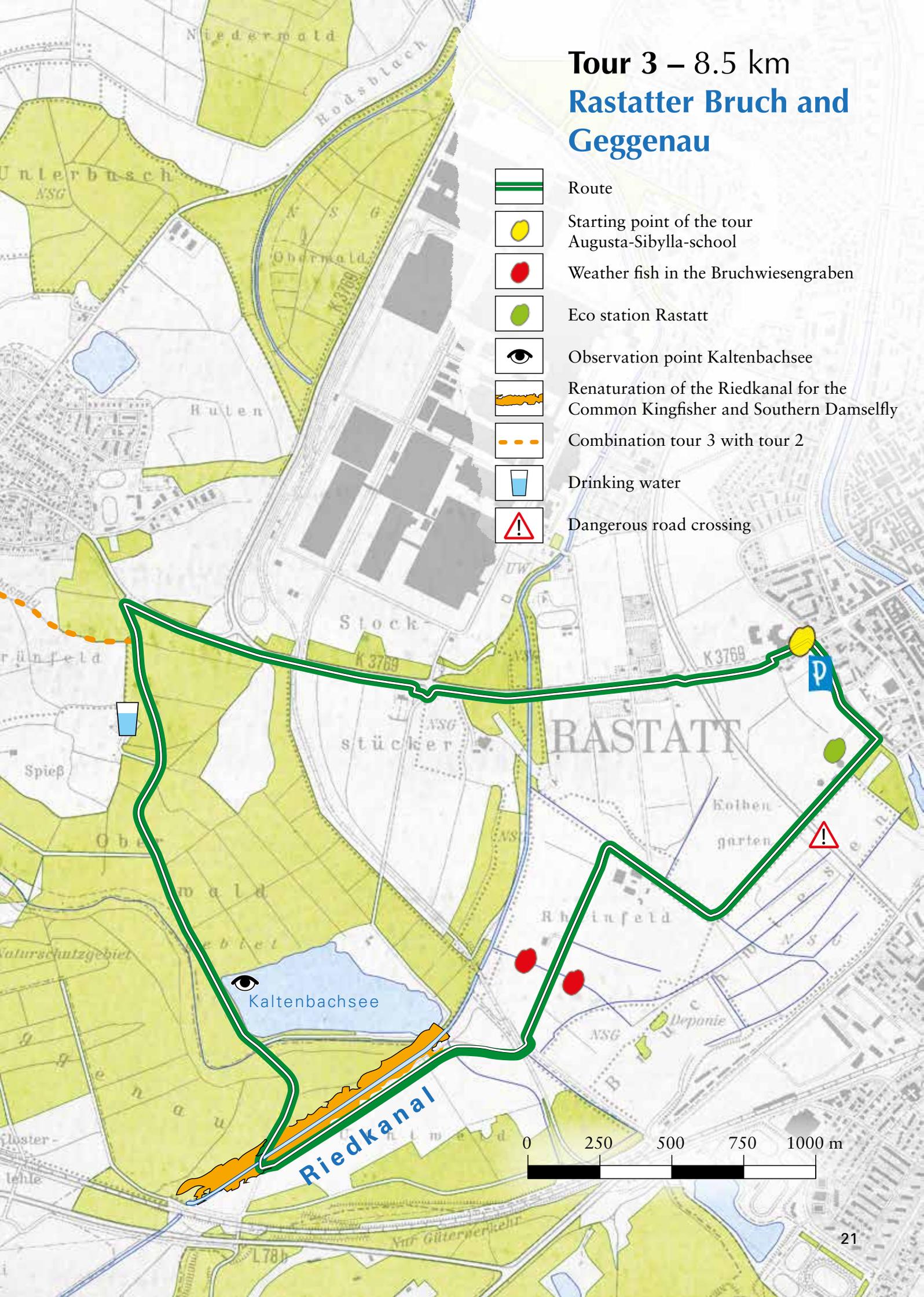
Tour 2 – 10.2 km
Wintersdorf to Ottersdorf and back

-  Route
-  Starting point of the tour sports ground Wintersdorf
-  Intake structure
-  Observation point Altrhein Wintersdorf
-  Places to visit Meadow path
-  Establishment of litter meadows
-  Colourful flood dyke
-  Combination tour 2 with tour 1
-  Combination tour 2 with tour 3

Tour 3 – 8.5 km

Rastatter Bruch and Geggenau

-  Route
-  Starting point of the tour
Augusta-Sibylla-school
-  Weather fish in the Bruchwiesengraben
-  Eco station Rastatt
-  Observation point Kaltenbachsee
-  Renaturation of the Riedkanal for the
Common Kingfisher and Southern Damselfly
-  Combination tour 3 with tour 2
-  Drinking water
-  Dangerous road crossing





New Meadows as they used to be in former times

From Ottersdorf, the bicycle tour leads to the flood dyke, then the Brunner family cycles on the dyke towards Plittersdorf. They are arriving at the point where signs explain the characteristics of the litter meadows. Martina goes down the dyke and stops at the edge of the meadow. Oliver has whispered to the children to stay behind their Mom. A sea of blossoms, butterflies in between, wild bees and other insects amaze all of them. Now it is also clear to the children why this meadow is not a playing field. From Plittersdorf a man with field glasses, camera and writing utensils is approaching them. He introduces himself as biologist Kai Reiter working for the LIFE+-project. Martina is excited. Finally she can get all her numerous questions about the different wild flowers off her chest. The kids meanwhile join Oliver and sit beside him on top of the dyke. Martina finds out a lot about grasses and flowering plants of the litter meadows at the Teilergrund. Marsh Orchid, Tall Violet, Edged Garlic, Moor grass, Early March Orchid and Common Meadow-rue are coming up.



Tall Violet



Large Copper



The plants are shown and described in detail on the display boards. Martina thanks Kai because he has to move on. He is searching for rare flowering plants in the litter meadows.

The atmosphere in this part of the floodplains of the Rhine, the colours, the buzzing of the insects, the rustling of leaves in the soft wind - all that radiates a wonderful calmness and contemplation. Martina smiles after her specialist briefing and announces:

“We will come back here more often! I want to see the Dusky Large Blue butterfly one day.”

On the bench in front of the “Anker” Inn, the Brunnens take a rest and watch the Storks bringing food for their offspring.

Dusky Large Blue butterfly



Still water reinvigorated

Once again, the Brunners are on the way with their bikes. They use a short break at the anchor bridge in Plittersdorf to compare the flight silhouettes of the Common Buzzard and the Black Kite. While the Common Buzzard has a round tail tip, the Black Kite attracts attention by a light bifurcation of the tail feathers. “When you know what details you have to watch out for, it’s easy to distinguish the birds,” comments Svenja.” It’s even possible without using field glasses.” adds Marco.

On the flood dyke they continue north. The Brunners are interested in a newly established gravel island in the Wörthfeldsee. Little Ringed Plovers and Common Terns are sitting on the gravel there. Great Crested Grebe and Canada Geese are swimming along the shore.

On they go along the causeway to the Murg. Here again a lot of water birds can be seen. Grey Heron, Egyptian Geese, Canada Geese and Greylag Geese are gathering on the riparian meadows. Now the route turns towards Rastatt. The ride continues along the Riedkanal. When crossing a bridge, the Brunner family stands at the beginning of a watercourse called Hofwaldschlut. “When I look at the Riedkanal which is dead straight in large parts and compare it to the newly designed Hofwaldschlut,” Oliver starts, “I admire the digger driver for his natural and diversified shaping of this water course,” Martina completes his sentence.



Oriole



Little Grebe



Common Kingfisher

Spined Loach



“Curves, flat and steep banks are a fabulous playground,” Marco shouts and descends immediately from his bike. Tree trunks lay on the shore extending a bit into the water. Holes in the steep banks indicate that a Common Kingfisher is building his breeding burrow here. The Brunners are following the Hofwaldschlut along an adjacent field path. Little islands, reed beds, bushes and trees on the banks make the newly designed water course look wild and natural. Before they get to the street from Steinmauern to Plittersdorf the Brunners turn round. Directly along the Hofwaldschlut there are now ways that are suited for bicycle tours. Also due to nature conservation reasons it is not allowed to leave the paths.

Therefore it is better to go back to the Riedkanal and cycle along there. In the Riedkanal as well the Brunners discover changes of the banks. As Martina explains, “through many years the watercourse, will transform by temporarily strong current from a straight canal to a curved, natural looking stream.” With a view to the curved forest edges of the nearby Hofwaldschlut

Svenja asks: “What has been there before?”

“A ditch that has fallen dry in many places”, says Martina and adds that originally there has been a side arm of the Murg flowing through here which has dried out partially due to the construction of the Riedkanal.

On the meadows the rare butterfly species Dusky Large Blue can find forage plants. In the waterbody the Spined Loach, a particular fish species, can settle. And soon there will be White Willows growing along the river banks.” Everyone is laughing cheerfully because of the excitement that is reflected on Martina’s face. Finally the Brunners are standing at the point where the water of the Riedkanal is flowing into the Hofwaldschlut.

A few minutes they are looking marvelling at the streambed where lots of curves, side arms, fallen trees give the impression of wild nature. Even though only a few months ago a digger stood there in the bed of the stream. The bicycle tour has shown clearly to the family that in this case the construction machinery actually helped nature.

Common Toad

From a canal to a lively stream

The next bicycle tour starts at the Augusta-Sybil-la-school at the southwest edge of Rastatt. Passing the Eco station of the town and the colorfully painted gas holders, the Brunner family finally reaches the western bypass road where heavy traffic requires patience and caution. After crossing, the tour leads along the nature conservation area "Rastatter Bruch". Meadows, reed and willow trees, with lots of songbirds, are forming an idyllic natural setting. The route passes a farm, thereafter cows come in sight on their right-hand sight. Oliver stops at a ditch that is filled with water. "This is the Bruchwiesengraben," he explains, "it's the habitat of a rare fish species, the European Weather Fish, which is able to live in the mud when the stream falls dry." Oliver continues: "This ditch has been slightly re-designed to improve the habitat conditions for the European Weather Fish. This fish swallows air when there is too little oxygen in the water. The oxygen contained in the air can then be resorbed through the bowel. Hereby a special sound is created that reminds of a fart. Therefore the fish is named "Furzgrundel" which means "fart-goby". "Cool", Marco exclaims and laughs. "This is really an exceptional fish!" The bicycle tour leads over a rail track, through meadows and between hedges. When the path is leading into a large meadow area the Brunners stop. 200 meters further, there are deers grazing. Not far apart, a Grey Heron is striding over the meadow. Shortly after that the Brunners are impressed by the Riedkanal flowing towards them from the right. Josef Rossmann, a fisherman sitting there, is turning around to them. "The Grey Heron has been fishing here a little while ago, now he goes hunting for mice over there", he says. Immediately he is distracted by the shrill calls of a Common Kingfisher flying fast along the Riedkanal. "Blue-orange!" Marco comments. "Stay here," Svenja adds. Martina calmly reckons: "He will pass by again." "You are right," the fisherman says. "They have not only established gravel islands and shallow water zones, there are steep banks, as well, that serve as breeding ground for the Kingfisher." Marco and Svenja jumped down the slope already to the banks. Marco has taken the magnifying cup out of the bag. Svenja is fishing with a small net for insects living in the water.





Oliver and his wife are observing a White Wagtail, then a green dragonfly. Svenja shouts: "What a tiny nice blue dragonfly". Marco fetches a field guide from his Dad's bag. He thumbs through the book, checks up, looks at the little dragonfly, then at the book again. "I have found her, it's a Southern Damselfly," he cheers. "The book says it needs clear clean water."

Then he portrays the waterbody: watersides with bays and steep banks, gravel islands, plant-carpet in the arms of the watercourse, in between clear, burbling water - sometimes shallow, sometimes deep. "A playground for fish and children", he thinks.

He knows, the waterbody belongs to nature, but looking closely and observing quietly is quite exciting. He resolves to work out a water course-traffic-plan for fish. What could the signs look like? I have to ask Dad whether they can see all colours. Tonight he will certainly have time for me.

Once again, at the continuation of their trip, they see a Common Kingfisher flying away quickly, tree trunks extending into the water, more gravel islands. Martina and Oliver look at each other. They are convinced how much has been improved here for nature.



Common Kingfisher



The Murg in Rastatt

The Brunner family is standing at the BadnerHalle with their bicycles. Today they want to cycle along the Murg, to see what has changed after the use of huge diggers and the removal of gravel, mud and soil. “Flood protection, what does that mean?”, Svenja asks her mother. “A few years ago the water of the Murg was standing in the middle of the Kaiserstraße”, she explains and further illustrates, “that due to heavy rainfalls in the Black Forest, huge amounts of water came down the Murg. At the Ankerbrücke the water flowed over the dykes and flooded the inner city. The cellars were under water and in the shops the floor was wet. Massive damages occurred.”

“It would be great to canoe through Rastatt”, announces Marco. His Mom looks at him strictly. “Well, if all shops are under water that is not ideal”, he admits finally. The bicycle tour starts. A short stop at the Rohrersteg gives an overview of the curve of the Murg. Instead of a canal-like river bed with almost the same width and green stripes of grass, there are now shingle beaches, sand-, clay- and meadow areas, gravel islands, narrow places in the river bed, as well as stretches of water where the water is flowing off sometimes slowly, sometimes rapidly.

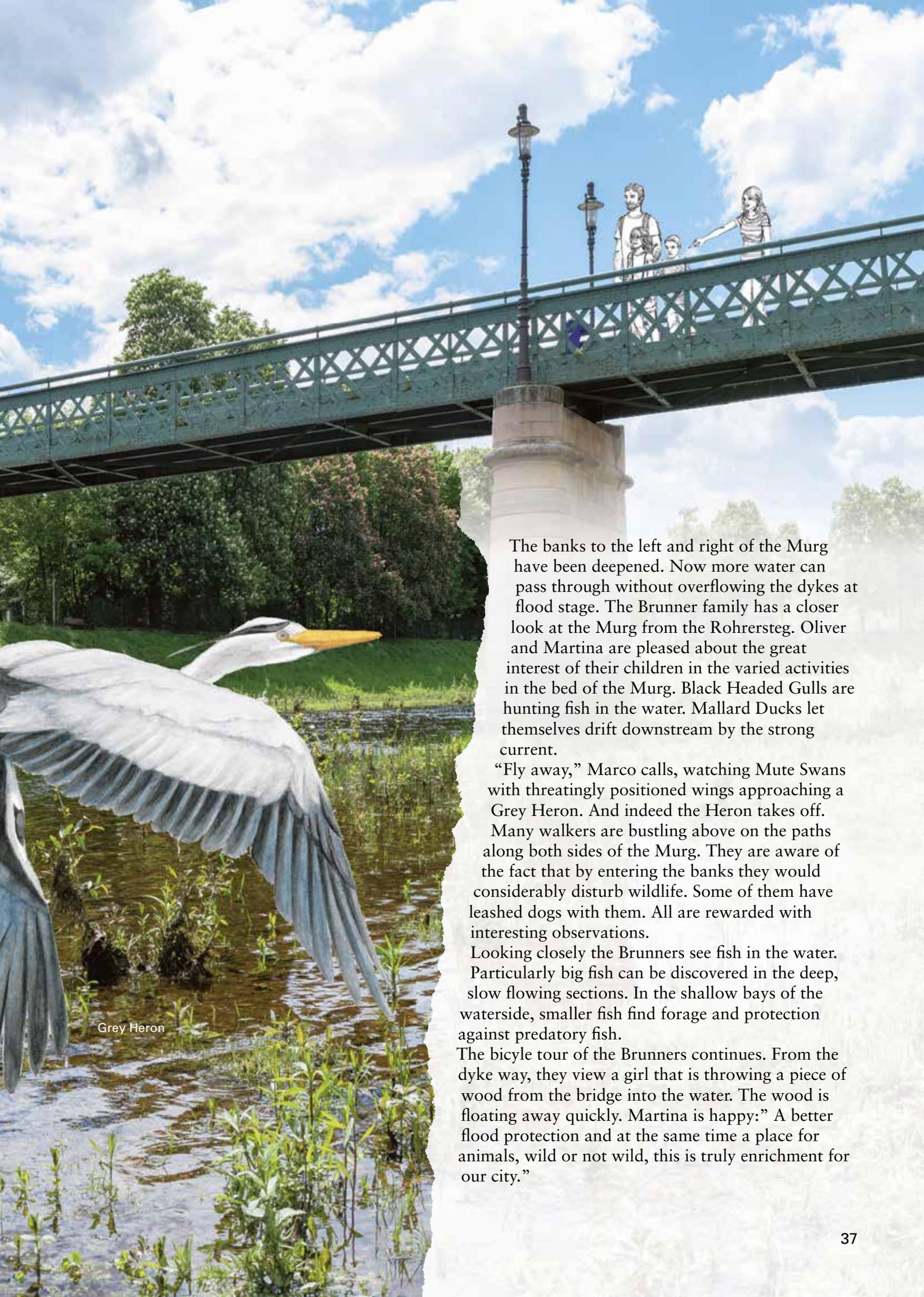




Bullhead



Mute Swan



Grey Heron

The banks to the left and right of the Murg have been deepened. Now more water can pass through without overflowing the dykes at flood stage. The Brunner family has a closer look at the Murg from the Rohrersteg. Oliver and Martina are pleased about the great interest of their children in the varied activities in the bed of the Murg. Black Headed Gulls are hunting fish in the water. Mallard Ducks let themselves drift downstream by the strong current.

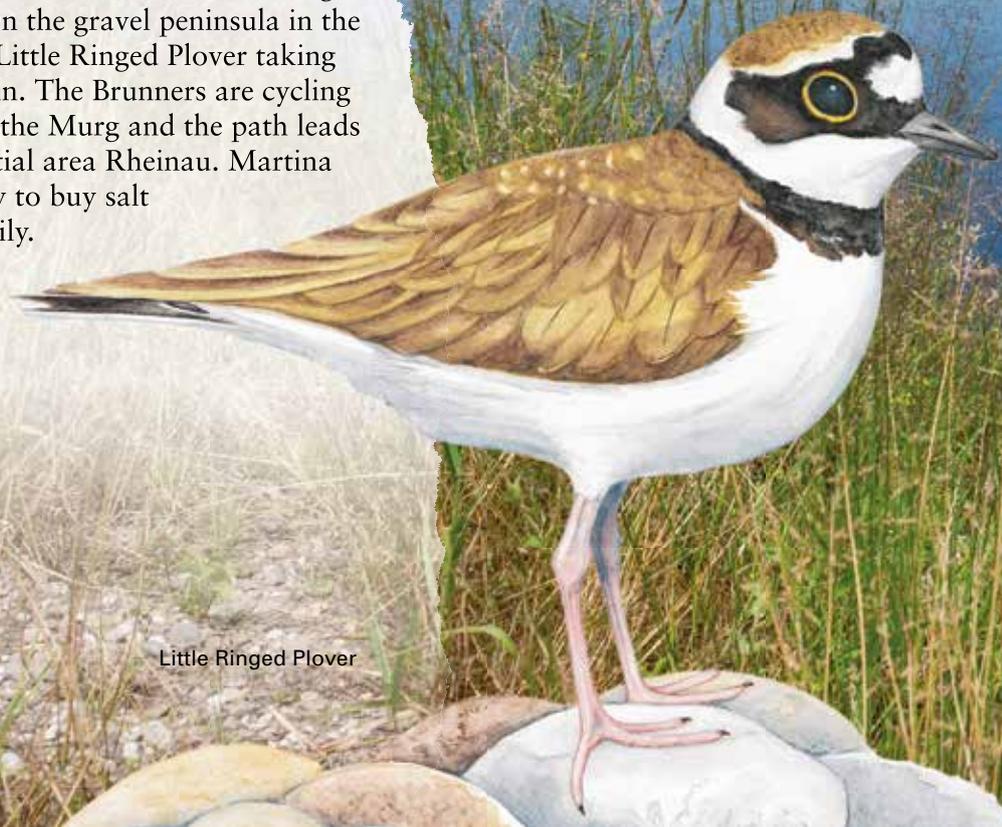
“Fly away,” Marco calls, watching Mute Swans with threateningly positioned wings approaching a Grey Heron. And indeed the Heron takes off. Many walkers are bustling above on the paths along both sides of the Murg. They are aware of the fact that by entering the banks they would considerably disturb wildlife. Some of them have leashed dogs with them. All are rewarded with interesting observations.

Looking closely the Brunners see fish in the water. Particularly big fish can be discovered in the deep, slow flowing sections. In the shallow bays of the waterside, smaller fish find forage and protection against predatory fish.

The bicycle tour of the Brunners continues. From the dyke way, they view a girl that is throwing a piece of wood from the bridge into the water. The wood is floating away quickly. Martina is happy:” A better flood protection and at the same time a place for animals, wild or not wild, this is truly enrichment for our city.”

A new river landscape

On a hot summerday, Oliver and Martina are sitting in an ice-cream parlour with their kids. Coffee and sundaes for the parents, spaghetti-ice cream for the children are a treasured cooling. “Rested enough?” Oliver asks, “Come on to our tour into nature”. After only a few hundred meters drive with the bikes, along the Murg dyke, the river is widening. The flood dykes have been relocated backwards, islands and peninsulas, dividing the Murg in several water courses. Trunks of trees are lying on the banks and extending to the water. Quiet shallow water bays, fast and strong current, flat and steep banks, mud and gravel areas alternate. The children throw their bicycles aside and get the magnifying cup and strainer out of the backpack. By this auxiliary means the water on the bank border is examined. Oliver has taken a specialist book for the examination of the water quality at hand. Therein it is explained how it can be specified by the occurring water animals how clean the water is. Now Svenja is coming up to him. Tiniest animals are swimming in the magnifying cup. Oliver discovers a larva of a caddis-fly with the typical case that looks like a quiver. This only occurs in clean water. The second animal is a rounded mayfly larva, which can tolerate moderately polluted water. White Tubellaria and Ram’s Horn Snails are also there. The children find the “tiny water monsters” creepy and continue searching eagerly. The animals found show the water in the Murg is clean up to very clean. An even from a long distance clearly audible “Pi-uu” is calling Oliver’s attention. On the gravel peninsula in the Murg, he can see a Little Ringed Plover taking off and landing again. The Brunners are cycling back a bit, crossing the Murg and the path leads through the residential area Rheinau. Martina uses the opportunity to buy salt brezzels for her family.



Little Ringed Plover



Alluvial forest for the future

In the North of the residential area Rheinau, the Brunners are crossing a busy road and cycle up a little flood dyke. A relatively dry forest area, 50 hectare in size, looks damaged. Trunks of poplar trees are lying along the paths, the numerous ash trees have disappeared. Martina has informed herself and tells the family what lies ahead.

In the future the Murg will be allowed to flood the woodland site at high water. Dykes on the three sides of the woodland not facing the Murg ensure, that the water will not flow on the adjacent fields and residential areas. This so far fairly dry forest will turn to an alluvial forest by future flooding. Together with the widening of the bed of the Murg, 57 hectares additional floodplain have been formed for a million cubic meter water. An alluvial forest close to nature combined with flood protection for Rastatt – a genial idea! Oliver and Martina are modeling the new floodplains on a mud area with puddles. With a little water bucket they demonstrate to their kids low- and highwater levels. Little branches represent trees standing in the water. While the parents enjoy the evening sun on the dyke, Svenja and Marco are reenacting the flooding at highwater. Martina kindly overlooks the fact that they are getting dirty more and more.





A new course for the water of the river Rhine

The oxbow lakes of the river Rhine, cut off by the regulation of the watercourse, have no connection or only a low water inflow. They are flooded only at high water. The water thereby contains a lot of sand- and mud particles. Little by little, the water-arms are filled up with sand and mud. This way the cut off meander Schmiedseppengrund bei Wintersdorf is threatened to silt up. Currently only three small steel pipes supply the oxbow lake with some Rhinewater.

Therefore the hampered current in the oxbow lake is too weak to swirl up and transport the settled sludge.

But the plans of the LIFE+-project intended to construct a box-shaped passage. In this way, particularly in times of higher water levels in the Rhine, larger amounts of water will flow into the Altrhein and release it from the sludge deposits. The Brunners are cycling from the sports ground at Wintersdorf past the flower meadows to the Rhine dyke. From there they are heading in direction of the Wintersdorfer Rheinbrücke directly to the Rhine. About two hundred meter downstream, the passage building is situated.

Marco hurries down the embankment at the passage. The gravel at the water edge is sliding away and his left shoe is filling immediately with water. Marco's outcry is drowned by his father's powerful voice: "Come back to us straight away! The strong current of the water is dangerous." Marco obeys promptly. Crawling on all fours he comes up the dyke.

All are relieved. Marco already thinks further and seems worried again. "Don't all the ducks get washed away too?" Martina explains: "The ducks are looking out for calm places on the bank or they could also fly away, if they should be drifting off."







Oliver complements: “I read that fast, strong current creates sites of open soil in the watercourse. At those places the population of fish, like Spined Loach and European Bitterling, will increase. Also frequently occurring fish species, like Perch and Common Rudd, can as well fluctuate much better between the river Rhine and its floodplains.”

“Then it is like in former times with the natural Rhine. The current of the water changes the riverbed permanently, tears away embankments and creates little mud- and gravelbanks.” Martina concludes. Later on Oliver tells his family some more about the fish species Spined Loach and European Bitterling. The Spined Loach needs loose, sandy and muddy grounds where he can dig himself in. The European Bitterling occurs in swarms. This small fish of the carp family needs the Swan Mussels or the Freshwater Mussels because the female lays its eggs into the gill of large mussels. The juvenils are growing up inside the mussel and get well supplied with oxygen.

Both species are rare and in the oxbow lakes at Schmiedepfengrund they find a suitable habitat.



Common Rudd



Perch

The LIFE+-project Floodplains of the river Rhine near Rastatt

The LIFE+-project is up to now the largest LIFE-nature-protection-project in Baden-Wuerttemberg and one of the biggest in Germany. Together with the adjacent municipalities, foundations, associations and other organisations, the district government Karlsruhe has reevaluated the floodplains of the Rhine and the Murg and therefore made it again more natural, valuable and interesting for both man and nature. A great number of the measures of the LIFE+-project have already been introduced on the previous pages. But not only in the floodplains of the Rhine but also directly at the Rhine have important changes been made. At the estuary of the Murg and Illinger Altrhein to the river Rhine, diggers removed rocks from the embankments. Now by the power of the water the river Rhine has the ability to shape it's banks on it's own. Natural banks can develop where lots of insects and spiders live. They are serving as forage for birds. In former times there have been thousands of islands along the Rhine. Due to the straightening measures of the Rhine all of them got lost at the Upper Rhine. By excavating a deep, about one kilometer long ditch, the so called "Tomateninseln" (tomato islands) have been developed into a real island again. The name tomato island derives from the fact that depending on the waterlevel tomatoes are growing there. A part of the promontory Kohlkopf has as well been cut off as an island. Protected from natural enemies, waterfowls might breed and forage here. The fast flowing sidearms of the Rhine, with their gravelly riverbed, are suitable spawning grounds for Lamprey, Spined Loach and Allis Shad. Less spectacular but important on a European level for protected small fish and dragonflies is the re-design of smaller ditches that have been implemented on a stretch of more than two kilometers in the project area.

The embankments of the ditches are covered with the Great Water Dock, one of the most important forage plants of the Large Copper. Especially for amphibians like the Great Crested Newt or the Tree Frog standing water bodies have been established.





Excavating a ditch along the „tomato island“

LIFE09 NAT/DE/000004 “Floodplains of the river Rhine near Rastatt” www.rheinauen-rastatt.de

Applicant body: Regierungspräsidium Karlsruhe

Project period: 1.1.2011 – 31.12.2015

Financial volume: about 15 million Euros, there from 4.7 millions of the European Union

Project size: ca. 4.000 km²

Development of water bodies: about 11.6 kilometers

Development of meadows: 9 ha Lowland hay meadows; 3.9 ha Molinia meadows

Forest development: 9.5 ha Alluvial softwood forests; 36 ha Hardwood floodplain forest;

14 ha stitchwort/oak/hornbeam forest



Stiftung
Naturschutzfonds
Baden-Württemberg



HOF
BRAUHAU
HATA

RHEINAU
bei

Rastatt
seit 2011-2015

RHEINAUEN
bei Rastatt



Rheinauen bei Rastatt live

Svenja is sitting at the dining table and is flipping through the daily newspaper. "Hey, we need to go there!", she shouts excitedly. Her mother Martina turns towards her. "A celebration for the LIFE+-project", intentionally Martina says a little reluctant. "But we really need to go there, Svenja emphasizes, and Marco, who heard everything from the adjacent room, calls aloud: "Sure we are going there!" Martina laughs. She has already written down the date and Oliver has approved. She tells her children and they hug her immediately. On Saturday they are going by bike to the BadnerHalle in Rastatt. To the left of the hall there are lots of tents and booths. The children hurry ahead. In the first tent the Nature protection center near Karlsruhe Rappenwört offers possibilities to carve.



While Svenja, under Martina's guidance, is carving patterns in a thick branch, Marco is tearing his Dad a few booths ahead. Snakes and frogs can be seen here. Marco is courageous and takes a snake on his arm that lives in the Rhine floodplain. A little later the family is standing at another booth in front of a cold water aquarium. The fish living in the Murg and Rhine floodplain are presented to them there. This aquarium show was established by the Nature Conservation Fund (Stiftung Naturschutzfonds Baden-Württemberg) in order to pass on the knowledge about the wildlife of domestic waters especially to children and young people. Marco and Svenja are wishing for a cold water aquarium as well. The parents are hesitating but on the other hand, don't want to suppress so much enthusiasm. It is pointed out to them that several schools in the project area own aquariums like that. "Then we will visit those schools once in a while", Oliver promises to the children. "Which are those schools?" Marco asks. "But we can look that up at the project-website, www.rheinauen-rastatt.de," his Dad answers. Martina goes to the BadenerHalle, listens to the speech by the Lord Mayor and watches a prize-giving-ceremony of a photo competition, where grades of two different schools are selected as winners. She is happy about the enthusiasm of the award-winning students of the Karlschule of Rastatt and the Wilhelm-Hausenstein-Gymnasium Durmersheim. Meanwhile Oliver visits a number of booths and finally stands in front of a brown construction trailer, with a round shaped roof and lots of posters. A friendly man says "Welcome at the MIC." "What is a MIC?" Svenja curiously asks. "Mobile Information Center" answers the MIC manager. Then he shows films about measures of the LIFE+-project. Martina joins in. "Most of it we already experienced out in nature," Svenja says. "The construction measures have improved nature," says Marco. The parents nod. "We all learned a lot, had lots of fun and collected awesome nature observations", tells Martina. And Marco adds: "A digger driver can be a nature preserver as well." For Svenja another thought is important. "Do the animals now make their way to their new habitats?" "We will have a look at that again," Martina announces and the Brunners are laughing.





Staatliche Naturschutzverwaltung
Baden-Württemberg

Welcome to the Nature reserve Welcome to the Nature reserve

...orsal.
...11 and 2015, the floodplains of the R...
...and Murg have been the scope of one
...of German Nature Conservation sco...
...LIFE+ project „Floodplains of the river
...Rastatt“. Through an individual pro...
...regional Commission Karlsruhe, to...
...numerous other participants between
...n and Rastatt/Wintersdorf, it promo...
...te habitats and rare species. With this
...successful work of the LIFE+ project
...plains near Karlsruhe“ that ended in
...continued southwards. Thus the
...s of the river Rhine“ as one of the
...tural ecological connecting axis in the
...re: Conservation Network Natura
...significantly increased in value. The
...is financially supported by the
...union through the funding instrument

...a
...area is situated in the district of
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...tection Areas „Rhine valley Eichelstein
...and „Rhine valley between the Ranch
...lutter“ (SPAs according to the Wild...
...level).



Re-design of habitats

1. Near-natural reconstruction of the Riedkanal
2. Re-connection of the cut-off Hofwaldschlut to the Riedkanal
3. Project on flood protection and ecology Murg Rastatt
4. Re-design Kohlkopf and "Tomateninseln"
5. Development of natural shallow banks at the right embankment of the Rhine
6. Improved connection of the Wintersdorfer Altrhein
7. Near-natural re-design of ditch systems
8. Development of species-rich meadows of the planar zone
9. Development of species-rich molinia meadows
10. Near-natural redesign of the Altmurg river

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Baden-Württemberg
REGIERUNGSPRÄSIDIUM KARLSRUHE

Floodplain riddle

Marco and Svenja are flipping through a leaflet about the nature protection area “Floodplains near Rastatt” and find a drawing that shows a profile of the floodplain (<https://www.lubw.baden-wuerttemberg.de/servlet/is/233588>). The various lines marked there, make clear how the alluvial forest changes with low or high water levels. They are showing the leaflet to their parents and Marco is acting as if he would be a teacher and the parents were his students. “So, your homework will be to read this through and write a little essay how the floodplains are functioning.” Obediently “student” Oliver receives the leaflet. “Ok, I will work something out until tomorrow and deliver a special presentation.” Marco knows his Dad well enough, to anticipate that Svenja and he will be challenged. The next morning Oliver places a piece of paper for the children on the breakfast table. “To show you what’s so special about the floodplains I have prepared a riddle. Find the solution!” Oliver grins and leaves the riddle to Svenja and Marco. Intently they start to ponder...



Rheinauen-check

Remember your trips to the floodplains and you will find the answers to the three questions. Fill in the answers in the row with the boxes. Then put the green boxes together to get the solution. But watch out: the order of the letters is not right - you have to rearrange them. The solution will tell you what causes the large diversity of species in this habitat.

What’s the name of the animal Martina wants to see one day in the litter meadows at the Teilergrund?

<input type="checkbox"/>													
22		28			1	5	17	11	7	33	24		30
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		6	15	31	8	18	19						

A cut-off side branch of a river is called?

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2		20	3		14		16	

What’s the name of the strictly protected animals Svenja discovers in a puddle?

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18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36

Solution: Low water, high water, floodplains need both

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Comitted to quality of life and climate protection

Clean drinkable water flows out of the tap, traffic- and street lights are working, the bathing water in the ALOHRA and Natura is well tempered, the bus traffic is rolling, flats are getting warm and the refrigerator is operating, two companies of the city of Rastatt: the star.Energiewerke and the Stadtwerke Rastatt ensure all that.

All around the clock the municipal companies provide a comfortable and safe life of a good 48.000 people in the city and region.

The star.Energiewerke get involved especially with safe and affordable energy- and water supply. Therefore they are actively developing the energy transition on-site: They are investing in the development of renewable energy and in highly efficient local heat networks. Hereby they always make sure that the region profits from their activities, in terms of orders for local firms and the support of social and cultural projects, as well as sports.

They offer their clients fair prices, a good service and useful consulting services. „All contributes to a high quality of living. Our home is near and dear to us“, explains director Olaf Kaspyrk. To manage the tasks of the energy supply that are getting more and more challenging, he relies on further training of his employees as well as the solid training of young people.



RHEINAUEN
bei Rastatt



Baden-Württemberg
REGIERUNGSPRÄSIDIUM KARLSRUHE

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