LIFE+ Projekt

Orsoyer Rheinbogen

in the SPA „Lower Rhine area“

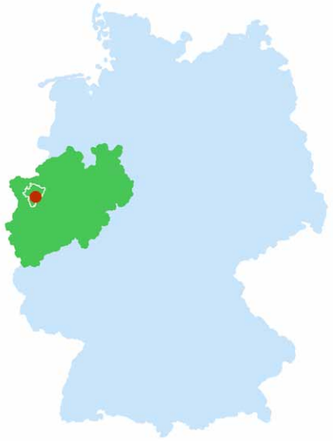
www.orsoyer-rheinbogen.de

The Orsoyer Rheinbogen lies in the far West of North Rhine-Westphalia. It is a Special Area of Conservation (SAC) and part of the Special Protection Area (SPA) „Lower Rhine area“, which extends along both banks of the Rhine from Duisburg to the Dutch border. It lies at the gates of the town of Rheinberg, hugging a bend in the river, which bounds the varied floodplain landscape on two of four sides.

The Orsoyer Rheinbogen has been subject to large changes for decades. Opencast mining, subsidence and an inland dyke relocation have combined to give it its present appearance.

Cows, horses and sheep graze on the meadows, which are mostly farmed extensively. Significant populations of lapwing, skylark and meadow pipit are still to be found here. Black-tailed godwit and redshank, both threatened by extinction in North Rhine-Westphalia, also still breed – in good years the area is home to 10 % of the state‘s resident redshanks. When it comes to migrants, the Orsoyer Rheinbogen is actually of European significance for numerous species.

The botanist‘s eye will be rewarded by the hay meadows: Conspicuous plants like cowslip, meadow sage and field scabious are accompanied by less obvious species such as Cambridge Milk Parsley, burnet and bedstraw boomrape.



On the doorstep

In spite of the area‘s designation as a nature reserve, SAC, part of the SPA „Lower Rhine area“ and of the Ramsar site „Lower Rhine area“, the conditions have deteriorated for many of its inhabitant species in the last three decades. Their populations have declined as a consequence and many of them are now listed as threatened.

To counter this worrying development, the state of North Rhine-Westphalia has produced a concept of measures for the SPA „Lower Rhine area“. It addresses factors that impact the species‘ conservation status and suggests lists of measures to improve them. However, they can only succeed with careful planning based on thorough local investigation. Their implementation has to be accompanied and evaluated by experts. This takes a lot of work and requires funding.

The Biologische Station im Kreis Wesel e.V. has taken up this task in the Orsoyer Rheinbogen with the aid of the European fund LIFE. We offer you an account of what we have done, as well as how and why, on the following pages. We invite you to join us in reliving the turbulent project years 2013 to 2018.

„Numbers“

· 3 new permanent water pools have a total of 600 m of bank and a surface area of 6.000 m²

· 5.500 m³ of earth were moved during the creation of the water pool

· 16 new bog pools add up to 52.000 m² of pokable ground, a further bog pool of 5.000 m² serves the development of reed beds

· 400 mobile pasture fence posts were erected and 5.000 m of electric rope applied

· 40.370 m² of grassland were mowed to prepare for the measures

· 8 fence gates, 3 waterers and 5 electric fencing energisers enable livestock grazing on the meadows

· 2.000 Eoak fence posts, 3.800 isolators and 20 km of smooth wire were necessary to erect over 9.600 m of pasture fences

· 43.600 cobblestones were removed from a former „NATO road“ and carted away

· „Flecki the research cow“, who wears a GPS-logger, walked over 60 km around the wood pasture in one week

· 2.647 kg of seeds were spread for the creation of meadows

· 20 years of monitoring have shown the breeding bird population in the project site to lie between 1.150 and 2.400 pairs of 58 to 69 species

Turbulent years

Creation of bog pools

Over the centuries the Rhine has progressively deepened its bed through erosion and thus lowered the water table. This has lead to a continuous drying and hardening of the ground, including that in its floodplain. This means that species who feed on small animals living in the soil are finding it close to impossible to get at their prey. Without food they and their offspring can no longer survive in such areas. Our target species include such specialists in the redshank and black-tailed godwit: their long, thin and highly sensitive bills are ideal tools for probing the soft ground for worms and insects. So our aim was to develop areas into suitable feeding grounds for waders.

A measure central to this goal was the creation of bog pools in the grassland. These flat depressions are only temporarily filled with water (or at least their soil is waterlogged), mainly from winter to spring or early summer. During summer and autumn they are mostly dry. They are also typically well integrated into the meadow and in agricultural use, usually in the form of extensive grazing. The latter is essential to prevent the pools turning to shrubland – after all, the open ground is no less attractive to the wind-borne seeds of fast-growing poplars and willows than it is to waders.

This measure began with the removal of the topsoil, which was then temporarily stored. Large machines were used to scrape out the depressions to a depth of 30 to 40 cm. The dug-out material was arranged into very flat, low mounds alongside the mould. Finally, both were covered with a layer of the stored topsoil. This way, none of the seeds present at the site are lost. A seed mixture suited to the floodplain dynamic was also added.

Water pools are indispensable to the habitats of waders, amphibians, fish and insects. Flat shore zones are of particular importance for our target species. „Heads down under water, tails up in the air“ (as a German children’s song has it) only works as a feeding strategy if the water is shallow. Dabbling ducks like the garganey, gadwall and shoveler feed here and have room to build their well-hidden nests, from which they later guide their ducklings to the water. Frogs, toads and newts need a way into the water but also a way back out, since their daytime and winter habitats are on land. This, too, necessitates flat banks. The pools are also a refuge for fish from the Rhine. Young fish withdraw to here when the flood recedes because they provide comparative safety from hungry, larger congeners, who prefer to return to the Rhine rather than follow them here.

We created three water pools with surface areas between 1.300 and 3.000 m². Roughly 1,5 m deep, they are fed by rain and floods. The Rhine also exerts a constant influence since the water table near the river rises and falls with its level. During high water periods the Rhine “pumps” water into pools up to a distance of around 100 m from its bank.

Creation of permanent waterpools

Flat pools with little vegetation are preferred feeding grounds for ducks and waders. For some, they also serve as breeding sites. These include the little ringed plover, the lapwing and the oystercatcher.

But bare patches of ground are threatened by a barrage of air- or water-borne seeds in the floodplain. That is why one of the pools in the project area had become overgrown by willow and poplar saplings and lost its function for the aforesaid species, as well as many others. We therefore attempted to restore it by cutting back the growth to near ground-level across an area of 3 hectares. Many trees and shrubs in the floodplain, however, are used to constant bending, tearing and breakage –the floodwaters subject them to immense forces. They simply produce new shoots, sometimes even from broken parts like twigs and root balls, which meant that the tree cuttings had to be removed completely.

Wader-friendly agriculture will see to it that the area is not repopulated by trees and shrubs in the future.

Optimisation of water banks

Our grassland target species can neither cope with unused, quickly rising vegetation nor with too intensively farmed meadows and pastures. This makes an agricultural use of the grassland indispensable – so long as it is adapted to the cause.

Mowing the grassland is ill-suited to the aim of combining farming and breeding success. If it happens too soon, nests and chicks are in danger. If it happens too late, it is of little use to the farmer. Grazing resolves this conflict. The animals graze slowly and irregularly, leaving areas with varying vegetation height. Nests can be hidden and chicks can avoid the grazing animals‘ hooves. All this provided that not too many grazers trot about the place – adapted grazing means extensive grazing.

In the course of our project we have erected fences and set up pumps for waterers, as well as acquiring a crowding tub and several water buffalo with the intention of building up a herd. We signed lease agreements with the managing farmers, which both protect the birds and enable an agriculturally productive use of the areas.

Management suitable for grassland birds

Floodplains are fertile landscapes which allow plants resilient against regular flooding to flourish. A small bush of willows takes 2 to 3 years to morph into an intractable thicket and any open patches quickly become overgrown.

The structural mosaic of alluvial forests of varying age, deadwood, open land with perennials and moist clearings is threatened by structural monotony. We seek to prevent this by an extensive form of wood pasture with cows and horses as grazers. By grazing and biting back shrubs, they allow more light to penetrate bushy areas, thereby giving light-loving plants more of a chance. The animals‘ hooves stamp out bare patches, existing grassland is retained rather than left to succession into shrubland. Various plant species find their niches this way and with them animals of numerous groups – from soil organisms and insects to birds, from deadwood inhabitants to small mammals. A total of about 30 hectares of the project site is grazed like this.

Wood pastures

Not just single species but entire habitats can find their way onto the Red List. The lowland hay meadows are an example. They are classified as endangered in North Rhine-Westphalia. Especially the lowlands have seen a strong decline of this colourful and flower-rich type of grassland. This is no surprise, when they thrive under conditions exactly opposite to those dominant in today's grassland farming. They require mowing twice a year, whereas strong fertiliser, herbicide or pesticide use spell doom for them. Their seeds, which used to be distributed by the now almost extinct practice of nomadic shepherding, now often fly into oblivion.

If you want to support or actually recreate this habitat today, you need to give it an extra boost. We paved the way for the development of 17,3 hectares of species-rich meadows across four sites in the project area. We took the necessary measures, comprehensively in some places, sporadically in others: The ground was prepared by milling, harrowing or even ploughing and dominant, unwanted plants were thoroughly removed. Then we proceeded to plant a very special mixture: certified producers provided regional seeds in a suitable combination. We rounded these off with a selection of hand-picked seeds of plants that have become very rare in Wesel district. The mixture contains as many as 18 species from the North Rhine-Westphalian Red List among others. A handful of half grown seedlings were planted among the seed.

An adapted, extensive form of land management will hopefully ensure that these meadows continue to expand and develop in the right direction.

Development of lowland hay meadows

Along many of Germany's rivers you will find spare crossings, popularly called "NATO-ramps" with broad, concrete-paved roads leading up to them. Their military function is history today and the concept of measures for the SPA "Lower Rhine area", whose implementation our project aims at, sees the removal of these roads as a necessary step on the way to reducing disturbance in the most sensitive areas.

We dismantled the upper concrete layer of part of one of these roads. The resulting basin structure is flooded during high water and fills up with muddy, nutrient-rich sediments. These are quickly populated by perennials and grasses, leading to a reedbed-like tall, humid herb fringe, which is an Annex I habitat according to the Habitats Directive. Since the military roads have a stable foundation, this ground differs markedly from those surrounding it. No-one can predict how these areas will develop – which makes this both a grey-to-green action and a fascinating experiment for biologists.

Deconstruction of a former „NATO road"

Northern lapwing

Great crested newt

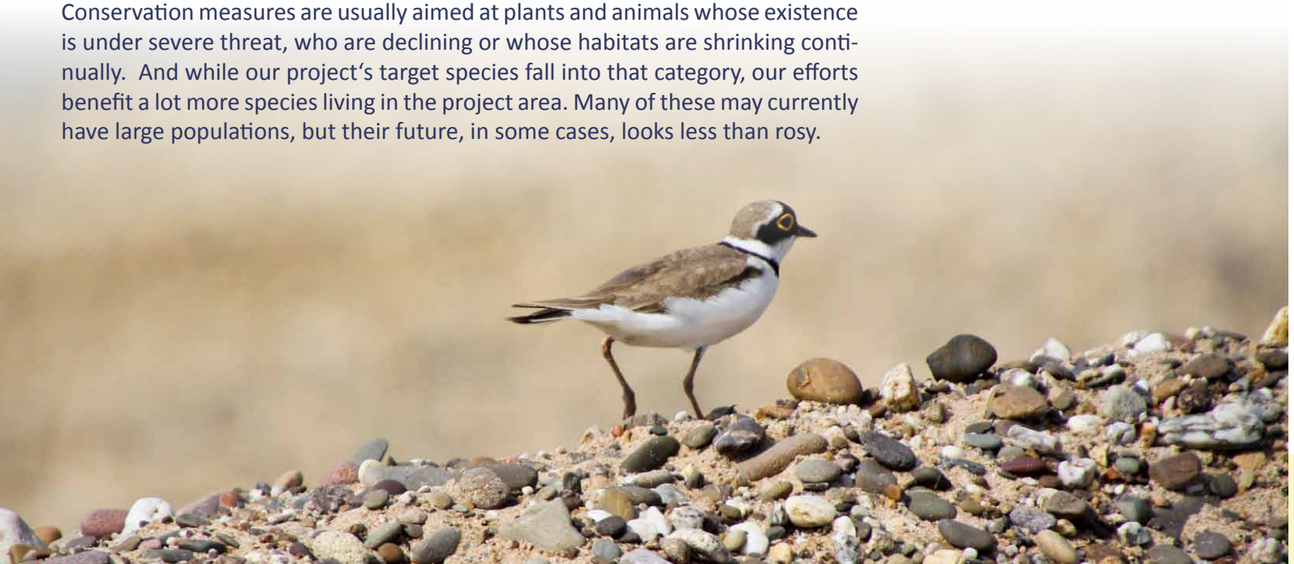
Redshank

Garganey

Natterjack toad

Black-tailed godwit

Conservation measures are usually aimed at plants and animals whose existence is under severe threat, who are declining or whose habitats are shrinking continually. And while our project's target species fall into that category, our efforts benefit a lot more species living in the project area. Many of these may currently have large populations, but their future, in some cases, looks less than rosy.



Yellow rattle

Meadow sage

Primrose

An Annex I habitat, a colourful flower meadow, a site of agricultural production, a paradise for bees, a specially protected element of the landscape – all this describes the target habitat "lowland hay-meadows". It's form and constitution of species varies from one spot to another. Overall, our meadows contain over 90 different grass and herb species.

Rough hawksbeard

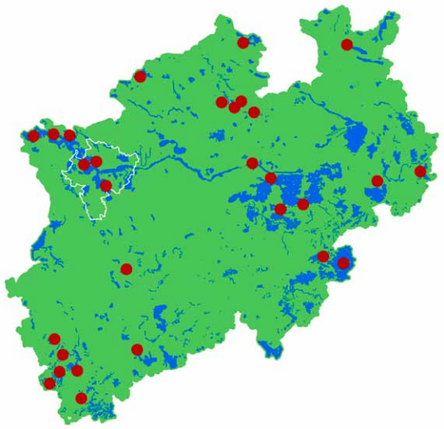
Great burnet

Field scabious

Target species and habitats

The Orsoyer Rheinbogen is part of the European web of nature reserves “Natura 2000”. This was established from 1992 onwards with the aim of linking and protecting areas of special common significance and is one of the most important instruments of conservation throughout the EU. It consists of Annex I habitats and SPAs – the Orsoyer Rheinbogen is both at once.

A set of guidelines was set up to ensure the conservation of Annex I species and habitats in Natura 2000 sites. The EU offers financial support from the fund LIFE for the implementation of conservation measures.



North Rhine-Westphalia contains 517 SACs and 28 SPAs (adding up to 8,4 % of the states surface area) and has seen 29 Life-Nature-Projects (completed and ongoing, as of 2017).

The federal state Northrhine-Westphalia

Natura 2000 sites

LIFE-Nature-Projects

Part of the web

The project‘s funding allowed the purchase of 93 hectares in the Annex I site. This lays the foundation ensuring the conservation aims. To sustain the newly created structures (bog pools, permanent water pools, species-rich meadows and structurally divers pastures) it is important to keep them in agricultural use. Managing them takes flexibility and delicacy, when it comes to reconciling the protection of plants and animals with the farmers‘ subsistence. That is why we see close collaboration between land users and land owners as a permanent task.

Good decision making also relies on keeping in touch with developments in the area. That is why the target species and habitats is regularly monitored.

After LIFE Conservation Plan

Funded by:

Ministerium für Umwelt, Landwirtschaft,
Natur- und Verbraucherschutz
des Landes Nordrhein-Westfalen

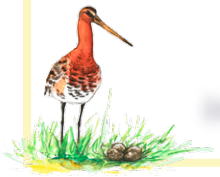
KREIS WESEL

Publisher:
Biologische Station im Kreis Wesel e.V.

Text and layout:
Biologische Station im Kreis Wesel e.V.

Photos:
Dr. R. Bräseke (†), S. Engler, H. Glader, W. Hingmann, R. Müller, P. Schnitzler, G. Terwelp

Print:
Heinrich Matten & Co. KG,
Voerde-Friedrichsfeld



Imprint

Layman´s Report

Orsoyer Rheinbogen
im Vogelschutzgebiet „Unterer Niederrhein"

Biologische Station
IM KREIS WESEL E.V

Biologische Station im Kreis Wesel e.V.
Freybergweg 9
D-464853 Wesel
Fon.: +49 (0)281 9 62 52 0
www.biostation-wesel.de