Cross Oder

Lower Oder Valley Cruises

1. THE ODER RIVER

The Oder is currently 854 km long, with 742 km of its course lying within Poland. As recently as 180 years ago, it was almost 200 km longer. This shortening of the river's course is the result of channel regulation aimed at improving navigability. During the works, some of the floodplains and meanders of the riverbed were removed. The river carries a large volume of water; currently, downstream of Szczecin, the average flow is around 565 m^3 per second. The difference in elevation between the headwaters and the mouth is 632 metres. The average gradient is approximately 74 cm per kilometre of river course, which should result in a fast current. However, the current's speed is slowed by 23 barrages, located mainly in the upper and middle reaches of the river, where the natural gradient is greatest. On the stretch from Kostrzyn to the river's mouth, the average gradient is only about 5 cm per kilometre of river course.

Fot: Szymon Maksymiuk

Fot: Andrzej Kraśnicki Jr

2. BACKWATER

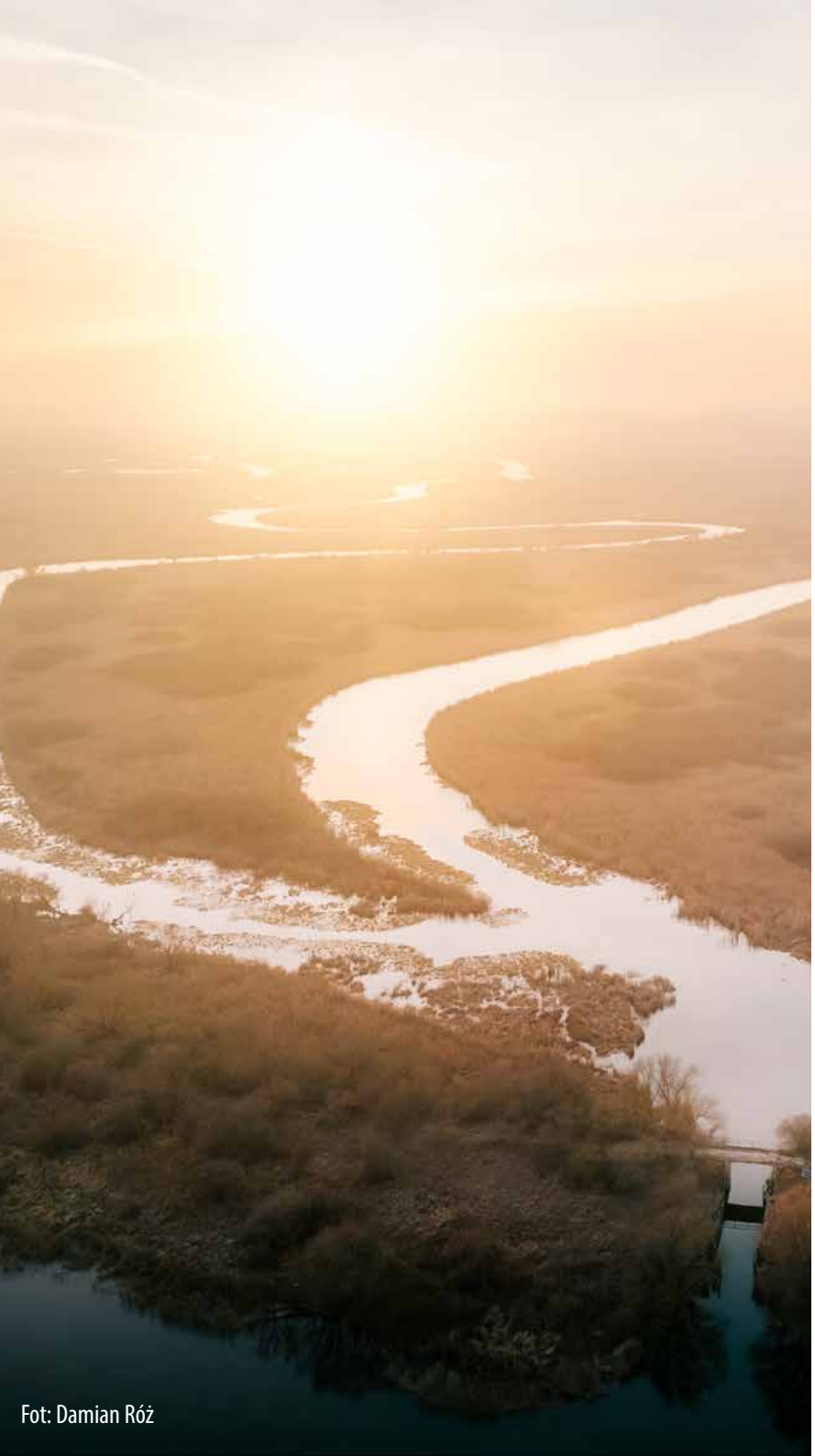
Backwater, or storm surge, used to cause many problems in the area, leading to local flooding, damage to bridges, buildings and crops, and posing a threat to human and animal life. It is caused by a north wind, which pushes water from the Baltic Sea into the Szczecin Lagoon, raising its level and thus preventing water from flowing out of the river. Furthermore, the weak current is unable to withstand the strong northerly winds. Due to this combination of factors, it can be observed that the waters of the Oder, instead of flowing northwards, head up the valley. In the Cedynia area, the riverbed lies at an elevation of approx. 1.5 m above sea level, whilst in the vicinity of Police it is only approx. 20 cm above sea level. The gradient of the Odra valley floor is only 0.04‰. For this reason, the backwater on the Odra has a very wide reach. It can be observed as far as 150 km from the coast. It has also given rise to the Świna Backward Delta. Backwater occurs quite frequently, between 20 and 60 times a year.

3. THE GOD OF THE ODER RIVER

Since ancient times, deities who were believed to watch over the rivers and the people living along their banks were worshipped. The safe return home of fishermen, raftsmen and sailors was believed to be depended on their will. They were also to ensure an abundance of fish and protect the riverbeds from drying up. However, if people somehow incurred the wrath of the deities, they would drown in the river's whirlpools, and towns and cities would be flooded by the waves of violent floods. The first mentions of the mythical god of the Oder, Viadrus, date back to ancient Rome; his name derives from that of the river. In the oldest historical sources, the Oder is referred to as 'Viadrus fluvius'. One of the few, and at the same time most beautiful, artistic works depicting the god of the Oder can be found in Szczecin, on the Port Gate. A narrow frieze above the gate's passage depicts a muscular, elderly man lying in the reeds, looking to the left. He rests his left arm on a water-spouted vase symbolising the river, whilst his right hand holds an oar symbolising its navigability. Viadrus is depicted with a bare torso, whilst his hips are covered by a himation, a rectangular piece of woollen fabric, a characteristic outer garment in ancient Greece.

4. MIĘDZYODRZE

Międzyodrze is a flat area of peat bogs and marshland situated between the two channels of the Oder, which splits into the Western Oder and the Eastern Oder near Widuchowa, and is known as the Regalica in the Szczecin area. Międzyodrze occupies a vast marshy plain between the Western and Eastern Odra, stretching from Widuchowa to Szczecin. It is almost 33 km long, and its width varies from 1.5 to 3 km. The entire area covers almost 7,000 ha. It is estimated that there are over 50 named islands and islets here, as well as dozens of smaller unnamed ones. It is characterised by a dense network of oxbow lakes, artificial canals and drainage ditches with a total length of over 200 km.



Fot: Damian Róż

5. THE VALLEY CARVED BY THE ICE SHEET

The relief of the Międzyodrze area was shaped by the retreat of the Baltic Glaciation ice sheet. It was then that the distinctive post-glacial relief was formed. During the Pomeranian phase, the ice sheet front did not retreat in a straight line, but formed large ice tongues. One of these entered the depression of what is now the Lower Oder Valley. During the ice sheet's standstill, high terminal moraines were formed on the edges of what is now the valley. These constitute the valley's current high and steep edges, which contrast with the flat bed of the Międzyodrze. As the climate warmed, around 15,000 years ago, water from the melting glacier began to flow rapidly into the foreland. The immense energy of the river repeatedly widened and deepened the valley floor. When the ice sheet finally retreated and the river's flow slowed, the river began to deposit fine-grained material – silt and sand – forming the flat valley floor. Due to the very gentle slope of the terrain and the high groundwater level, marshland processes began. These led to the formation of vast peat deposits.

6. THE LARGEST PEAT BOG IN EUROPE

Międzyodrze is the largest fluvial peat bog in Central Europe, meaning it was formed by river activity. It was created by the accumulation of organic matter, such as dead vegetation, in the river valley. The peat deposits act as a natural filter, purifying the waters of the Oder before they reach the Szczecin Lagoon and the Baltic Sea. The area of the Międzyodrze peat polders has been estimated at 5,630 hectares and has the capacity to retain 31 million cubic metres of water. At the beginning of the 20th century, human activity began in earnest in Międzyodrze. The construction of canals, locks and embankments commenced; the land was put to agricultural use, creating a 'vegetable garden for Berlin and Szczecin'. Following the passage of the Second World War front and the redrawing of borders, people gradually left the Międzyodrze and nature returned. More than 50 years after the cessation of farming, 70% of the vegetation in this area is natural. We can therefore regard the Międzyodrze as an almost entirely natural area.

7. SZCZECIN AS THE GATEWAY TO THE BALTIC SEA

Under the Treaty of Westphalia of 1648, the lower reaches of the River Oder and the city of Szczecin were under Swedish control. Brandenburg, and later Prussia, keen to develop shipping and trade and to avoid Swedish customs duties, transported goods from the upper and middle Odra basin to Berlin via the Odra–Spree Canal, dug in 1669, and the Odra–Havel Canal, built in 1746. From there, via canals and the River Elbe, the goods reached the North Sea and the port of Hamburg. In this way, Prussia integrated the Odra river basin into Europe's vast network of waterways. After seizing the former lands

Fot: Szymon Maksymiuk

of the House of Griffins from the Swedes in 1720, Prussia recognised the opportunity presented by the potential for developing shipping along the Berlin–Szczecin–Baltic Sea route. The works planned on the Oder were intended not only to improve navigation, but also to protect the towns, villages and arable land in the Lower Oder Valley from the floods caused by the waters of the Oder following the spring thaw and those flowing from the north as a result of backwater.

8. THE CREATION OF MIĘDZYODRZE

In 1899, the Oder River Regulation Board of the Szczecin Building Authority drew up a plan to create a dual channel for the Oder. Seven years later, on 20 September 1906, the symbolic ground-breaking ceremony took place. Divided into two channels, the Oder was thus to flow from Widuchowa all the way to Szczecin. As part of the works, an 11.5-kilometre-long canal was dug from Widuchowa to Gryfino, shaping the course of today's Eastern Oder. A weir was also built in Widuchowa, which directs most of the water into the Eastern Oder. A total of 33 km of canals, 177 km of embankments and 129 hydrotechnical structures were constructed. The works were completed in 1932. Between the Western and Eastern Oder, a 33-kilometre-long, 1.5 to 3-kilometre-wide embanked area was created, divided into polders which began to be used for agriculture. In winter, when the sluices were opened, the polders served as flood defences. Water flowing down from the south filled the entire area, protecting the villages along the river from flooding. In spring, the sluice gates were closed. Thanks to the weir at Widuchowa, it was possible to maintain a lower water level in the Western Oder than in the Eastern Oder. Water from the Międzyodrze thus flowed by gravity into the western branch. The water remaining in the polders was removed using four pumping stations built along the western bank. In spring, summer and autumn, the polders were transformed into vegetable gardens, fertile pastures and a source of hay supplies for the winter.

9. THE ODER FLEET

In the Oder river transport system, until the widespread adoption of steam propulsion, the 'Odrzaki' (German: 'Oderkahn') were the dominant vessels. They were built from oak or pine timber, impregnated and sealed on the outside with wood tar. They were rectangular in shape, measuring between 3 and 6 metres in width and between 20 and 30 metres in length. The bow and stern were formed by a keel curved upwards, whilst the sides were vertical or slightly flared and parallel to one another. A mast was erected in the bow, on which a sail was hoisted. It was used only when the wind blew from astern. When sailing in narrow canals or against the current and wind, the vessel was propelled by the pulling power of oxen or horses, and sometimes by people. The undoubted advantages of this vessel – namely its considerable load capacity, simple construction and ease of operation – led to the spread of Odrzaki


Fot: zasoby ZPKWZ

as far as the Vistula and Neman river basins. Locks and canals in the polders, in addition to regulating water levels, facilitated the transport of cattle grazed on the meadows, milk churns, and agricultural produce and hay. A local type of boat known as a 'hojer' developed, from the German 'die Hoje', meaning hay. These oak boats were such a successful design that they were built right up until the second half of the 20th century as fishing boats. In later years, wood was replaced by steel, but the design itself remained essentially unchanged.

10. RIPARIAN FORESTS

Today, riparian forests are among the unique ecosystems in Europe that are closely linked to flowing water. They thrive in areas that are periodically flooded and within the reach of floodwaters. As a result, during flooding, fertile silt is deposited on the ground. European riparian forests are even compared to tropical rainforests. The tall trees allow sufficient light to reach the lower parts of the forest, which, combined with good access to water, results in lush growth of shrubs in the undergrowth. The shrubs, in turn, protect the nutrient-rich soil from moisture loss. During the growing season, the undergrowth and ground layer are characterised by high temperatures and high humidity, with considerable shade. As a result, riparian forests are characterised by high biodiversity in terms of vegetation. Numerous species of birds and mammals find shelter in the dense thickets.

11. THE KUROWSKIE BŁOTA AND FLOWER CANAL

Wielkie Bagno Kurowskie is an island situated on the eastern side of the river channel; it forms part of the Szczecin polder. In 1965, the Kurowskie Błota nature reserve, covering an area of almost 100 hectares, was established there. The reserve originally protected the habitats of colonies of cormorants and grey herons, whose population was estimated at 600 pairs. Today, the heron colony no longer exists, and the reserve protects a natural riparian forest. Less than a kilometre further upstream, right next to the motorway embankment, a flora reserve covering just 3 hectares was established. This small section of the oxbow lake has been named the Flower Canal. It is home to rare floating and marsh plants, such as the floating fern and the fringed water lily.

12. FLOATING PLANTS

The plants floating on the water's surface are particularly striking. Among them are white water lilies, yellow water lilies, fringed water lilies, water soldiers, European frogbits, floating ferns, broad-leaved pondweeds and water caltrops. They provide shelter for amphibians and fish and help to limit water heating. On the other hand, they are a sign of the overgrowth of canals and oxbow lakes, which leads

Fot: Damian Róż

to the obstruction of water flow and the formation of anoxic zones. The idea behind establishing a national park here involves clearing some of the canals and allowing water to flow freely as part of the ecosystem's revitalisation.

13. WATER CALTROP / WATER CHESTNUT

Directly on the other side of the Międzyodrze lie colonies of water caltrop. It is a relatively easy plant to identify; its diamond-shaped, serrated leaves resemble those of a birch. It floats on the water in dense rosettes, thanks to its swollen leaf stalks containing buoyant air sacs. In 1929, the last known site in the Szczecin area was documented. However, in 2017, an abundant and expanding population of this species was rediscovered in the branches of the Oder near Szczecin. It is likely that flood waves, which carried fragments of the plant and seeds down the Oder River, contributed to its reappearance. This thermophilic species requires temperatures of 22°C to persist for at least two months. The water caltrop is strictly protected and listed in the Polish Red Book. The plant owes its Polish name (lit. Anchor Water Nut) to the distinctive shape of its fruit, which is equipped with hard projections resembling anchors. A single nut can produce up to 30 leaf rosettes, each with a diameter of up to 50 cm and bearing around 20 fruits. The length of the underwater shoots can exceed 10 m. From the Middle Ages to the 18th century, the water cultrop was cultivated in Europe and Asian countries as a valuable animal feed. Water cultrops have high nutritional value. Traditionally, they were eaten roasted, boiled, or even ground into flour or added to halva. The plant has also medicinal properties and is used in traditional Indian medicine. The nuts are also used to make jewellery and ornaments, and the plant itself is used in domestic ponds.

14. THE VIEWPOINT HILL ABOVE MIĘDZYODRZE

On the western side of the riverbed, right next to the motorway embankment, lies the Viewpoint Hill above Międzyodrze nature reserve. It was established on the steep edge of the Odra valley, which is also part of the Stobniański Embankment. The reserve encompasses the 65-metre-high Morenka Hill. The panorama of the Odra valley stretches from Szczecin to Gryfino. The aim of the reserve is to protect natural and landscape features, such as the high banks of the Odra valley and xerothermic vegetation.

15. FORSING THE ODER

In April 1945, the Red Army's assault came to a halt on the Oder. These battle-hardened soldiers had already crossed the Don, the Dnieper, the Narew and the Vistula rivers. Deployed along the Regalica

Fot: Szymon Maksymiuk

river, from Dąbie to Gryfino, General Pavel Batov's 65th Army was given a difficult task: to cross the Regalica, then the 3.5-kilometre-wide, canal-criss-crossed and marshy Międzyodrze stretching beyond it, and then to cross another river – the Western Oder. The conditions for the assault, the most difficult imaginable, were described by the soldiers as "two Dniepers, with the Pripyat in the middle". Furthermore, from the hills around Siadło Dolne, German units had anyone who entered Międzyodrze within their line of fire. To slow down the advance, the Germans opened the sluice gates, flooding part of the area and raising the water level. As part of their preparations, sappers built 625 boats in field sawmills, each capable of carrying ten soldiers with their weapons. On a lake hidden in the woods of the nearby Bukowa Forest, the troops practised rowing and efficient loading and unloading.

16. BATOV'S ROAD

The so-called Batov's Road was built to transport tanks, artillery and supplies for the Red Army across the Oder Valley. It was named in honour of the commander entrusted with the task of crossing the Oder in the area between Szczecin and Gryfino. Work was carried out under fire, in icy water, the level of which had risen further due to backwater. The road was laid out from what is now Daleszewo across both arms of the river and a vast, boggy peat bog to Moczyły. The sappers built it by first forming a causeway from peat extracted in Międzyodrze, and then lining it with timber. Small bridges were built where the canals crossed. To this day, its outline is visible in the landscape.

17. LIFE IN REEDBEDS

As we float along and look around, we might get the impression that there isn't much going on in the reeds or under the water. However, this is merely an illusion. In the reedbeds along the banks of the canals, amongst the trees and beneath the water, life is bustling. Here you can encounter beavers, otters, wolves, wild boars, roe deer, red deer, and with a bit of luck, a lynx or even an elk. It is much harder to spot the small mammals living here: weasels, hedgehogs, squirrels, hares, martens, polecats, voles, moles, or the common shrew and the smallest mammal in Poland, which is 4 to 6 cm long – the pygmy shrew. In Międzyodrze, we can also find invasive species that did not naturally occur in this area, such as the raccoon, the American mink and the Asian raccoon dog. Międzyodrze is also home to numerous species of amphibians and reptiles. Many species are found here in large numbers, such as the common frog and the common toad. The most numerous population, numbering at least 5 000 individuals, consists of frogs from the green frog group. Hidden in the undergrowth, the frogs can nevertheless be heard, and one may even come across a chorus of many voices. Grass snakes, which are common in Poland, are found here in great numbers; they often bask on leaves or nimbly slither between plants.

Fot: Szymon Maksymiuk

18. KAMIENIECKIE WĄWOZY NATURE RESERVE

The reserve encompasses the edge of the Odra Valley, with its picturesque gorges and numerous springs. Valuable riparian forests have developed along the streams cutting through the hills and on the low floodplains, whilst in the slightly higher parts of the hills there are oak-hornbeam forests and oak woods, interspersed with remnants of xerothermic and sandy grasslands. A particularly valuable species is the small corydalis, a plant of the poppy family, whose population here is considered the largest in Poland. On one of the hills lies an extensive Lusatian culture settlement, listed in the register of archaeological monuments, and a later early-medieval fortified settlement. The reserve is named after Prof. Janina Jasnowska, who, together with her husband, Prof. Mieczysław Jasnowski, promoted the idea of establishing the Lower Oder Valley National Park for many years.

19. INVERTEBRATES OF MIĘDZYODRZE

In addition to fish, the waters of the Międzyodrze are home to numerous invertebrates, including 16 species of freshwater mussels and 24 species of snails. The freshwater mussel can grow up to 25 cm in length and filter 1,5 litres of water per hour. When looking at mussel shells washed up on the shore, one may come across half-pearls. These are formed as a result of external factors irritating the areas that the mussel covers with mother-of-pearl. Closely linked to the presence of mussels is that of the European bitterling – a small, protected fish. Once a male of this species has found a suitable mussel, he waits by it for a female to appear. When she swims over, he begins to dance around the mussel to encourage the female to lay her eggs inside the mollusc. Afterwards, the male releases sperm into the mussel. The bitterling lays eggs several times a season, so the shell contains offspring at various stages of development.

20. FISHES

There are around 40 species of fish in the waters of the Międzyodrze region. Not all of them are permanent residents; some of the species recorded here use this area as a spawning ground or a stopover on their journey up the Oder. The most numerous include: asp, three-spined stickleback, ruffe, crucian carp, carp, bream, perch, roach, blue bream, bitterling, zander, wels catfish, pike and eel. In June 2025, an angler caught a catfish measuring 252 cm in length and weighing almost 100 kg in the waters of the Regalica River. The fish's age was estimated at over 30 years. In autumn and winter, more anglers than usual gather on the banks of the Oder in the centre of Szczecin and upstream of the city. They all dream of catching a zander.

Fot: Szymon Maksymiuk

Fot: Szymon Maksymiuk

21. WILDLIFE CONSERVATION

From this point, the border between Germany and Poland runs down the middle of the Western Oder riverbed. Given the international nature of the area, there were plans in the past to establish a cross-border national park here. Ultimately, it was established in 1995 on the German side only, whilst the Polish section had been designated a landscape park two years earlier. In 1992, the then President of the WWF, Prince Philip, Duke of Edinburgh, husband of Queen Elizabeth II, paid a visit here. Taking into account all forms of nature conservation in the Lower Oder Valley and the surrounding areas, they constitute the largest contiguous nature conservation area in this part of Europe.

22. STAFFELDER POLDER

The Staffelder Polder is an area covering 63 hectares where agricultural activity was halted in 1995. It is the oldest protected area on the German side of the border where nature is allowed to develop freely. The landscape is dominated by reedbeds, criss-crossed by canals. In 1999, the embankment surrounding the polder was cut through in three places, removing a total of 200 metres of it. This allows the waters of the Oder to flood the area freely. These measures have created the conditions for the formation of a riparian forest fed by floodwaters, which stores them and then gradually releases them. An observation tower has been built nearby, the design of which is inspired by the wings of a crane.

23. THE KINGDOM OF BIRDS

The Międzyodrze area is home to 237 species of birds, and for 131 of these species it serves as a breeding ground that plays a crucial role in the local ecosystem. It is also a stopover site for migratory and wintering birds. Flocks number over 150 000 individuals during the spring migration and 50 000 during the autumn migration and wintering. Międzyodrze is under constant observation by ornithologists, and scientific research has been conducted there since the 20th century. It was Międzyodrze where the most famous male black tern – Rysiek, named after his geolocator code: RK – set off on his journey from. His migration began in Międzyodrze, from where he flew south across the continent to northern Italy. He then flew across the entire Mediterranean Sea and continued along the west coast of Africa to Mauritania, where he spent a month on the coast. Rysiek then flew out into the open waters of the Atlantic Ocean, near the African coast of Guinea. He strayed as far as 1200 km from the coast, with only 1800 km to go to the coast of Brazil. After his great journey, he returned to the Międzyodrze area, where his geolocator was removed.

Fot: zasoby ZPKWZ

24. BIRDS FROM THE NEIGHBOURHOOD

Among the birds that can be spotted here are swans, herons, cranes, kingfishers, woodpeckers, cormorants, white-tailed eagles, lapwings, terns and many others. The most numerous group of permanent residents are the reed warbler and the sedge warbler, with their numbers estimated at several thousand pairs. Occasionally, a sound resembling the blowing of a bottle or a ship's foghorn can be heard from the thickets. This is the mating call of the male bittern. It can be heard from the reeds at any time of day or night from a distance of several kilometres. It is worth keeping an eye out for old tree trunks or solitary trees. Cormorants usually dry off and bask on their branches, but white-tailed eagles very often perch in such places, waiting for prey. Scouting for prey accounts for as much as 90% of a white-tailed eagle's total hunting time. However, they enjoy flying and do so frequently; they can spend up to 8 hours a day doing so. The average distance covered daily by adult birds is 120 km. They form lifelong pairs. White-tailed eagles have brown plumage, and their white tail is a distinctive feature. The tails of chicks and young birds are dark and lighten with age.

25. PAUL ROBIEN

The pioneer of bird research and observation in Międzyodrze was Paul Robien, who, as early as 1926, succeeded in securing protected status for what is now known as Sadlińskie Łąki Island. The island became a tourist attraction. It was visited by numerous groups interested in the nature station established there. There were also many curious visitors interested in the naturalist himself, who had settled together with his partner on that uninhabited island. In his educational mission, Paul Robien raised awareness of the importance of nature conservation for the survival of humanity. Between 1912 and 1943, he published over 200 articles describing the appearance, habits and habitats of birds. These earned him recognition both for their substantive content and for the quality of the author's writing. The texts were published in the press, which led to the formation of the Zwitscherklub (Chirping Club) – a club for nature lovers, and in particular for those interested in birds found in the Szczecin area. In 1920, his first book, *The World of Birds in the Szczecin Region*, was published, and it remains highly regarded to this day. Paul Robien and his companion, Ewa Windhorn, were killed by Red Army soldiers.

26. LASY OLSZOWE

Alder forests grow in areas with high groundwater levels and poor drainage. These areas are marshy all year round and are periodically completely flooded. Due to these specific hydrological conditions, their appearance is distinctive and easily recognisable. Clumps of vegetation form around the tree trunks, and the spaces between them are filled with water. The water depth can range from a few to several

dozen centimetres. Alder swamps are sometimes referred to as ‘clump forests’. The clumps provide a foundation for the trees growing on them and can reach up to a metre in height and four metres in diameter. Sometimes the clumps are quite far apart, and the landscape resembles an archipelago of small islands with trees in the centre.

27. XEROTHERMIC GRASSLAND AND BEAUTIFUL VIEWS

Between Mescherin and Gartz lie the hills that form the edge of the Oder Valley. Here, one finds numerous areas of xerothermic vegetation and steppe grasslands. The vegetation is exposed to high temperatures and drought, whilst on the exposed slopes it can sometimes be bitterly cold. The hairs covering the plants provide protection against evaporation, and deep-reaching roots ensure a sufficient supply of water. Two species of orchids are found in damp areas. As early as March, flowers bloom here and a bustling insect life begins. In addition to butterflies, bumblebees and honeybees, the purple oil beetle can also be found here. On the Schäferberge, or Shepherds’ Hills, sheep are grazed and trees and shrubs are cleared to preserve the ecosystem’s current character. There are natural vantage points here, such as Stettiner Berg and Seeberg. The Gartzer Schrey, covered in natural forest, is also exceptionally picturesque.

28. CRANES

Międzyodrze is one of the most important autumn gathering places for cranes in this part of Europe. Up to 14 500 birds may be found here, with around 30 pairs of these birds nesting here permanently. On autumn evenings, 2–3 hours before dusk, flocks of up to 1000 birds fly here to the polders in search of a safe place to roost. They circle, looking for a place to land, and call out to one another, making the whole process a truly spectacular sight. During the same period, up to 25 000 geese find refuge in the Międzyodrze area. During Crane Week, park staff on both sides of the border, in the vicinity of Gartz and Marwice, organise joint birdwatching sessions. Fot. C. Korkosz

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