Integrated Management of River Ecosystems in Southern Slovakia

LIFE12 NAT/SK/000488 - RIVERMANAGEMENT

PROJECT IMPLEMENTATION REPORT

MINISTERSTVO ŽIVOTNÉHO PROSTREDIA SLOVENSKEJ REPUBLIKY
SOS/BirdLife SLOVENSKO
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Introduction

The challenges of the climate crisis and biodiversity loss call for a fundamental shift in how we manage our landscapes. Extreme droughts, flash floods, and the gradual disappearance of fauna and flora across the country led to the launch of our project aptly titled **Integrated Management of River Ecosystems in Southern Slovakia**. This project aims to restore two ecologically significant wetlands of the Nitra region. The restoring of these wetlands highlights the strong link between nature conservation and the improvement of ecosystem services. The project primarily implements nature-based flood protection and water-retention measures that follow natural processes and benefit both people and nature preservation.

Project implementation was significantly affected by challenging global crises. The COVID-19 pandemic disrupted permitting procedures, causing delays in obtaining authorizations for revitalization works. The war in neighboring Ukraine and the subsequent energy crisis and inflation resulted in a surge in contractor costs, fundamentally impacting the budgets of previously planned and tendered activities. As a result, the project team faced a major challenge: how to execute long-planned and designed nature restoration works under these conditions?! Throughout the project, the team successfully secured supplementary funding through complementary projects. Consequently, the planned activities were fully executed as intended. This public report presents the project's achievements in environmental aid across the project areas.

We would like to thank to everyone who contributed to the successful completion of the project.

Project title: Integrated Management of River Ecosystems in Southern Slovakia
Project code: LIFE12 NAT/SK/000488
Project acronym: LIFE RIVERMANAGEMENT
Beneficiary: SOS/BirdLife Slovensko
Budget: 1 785 675,00 EUR
Co-financing EC: 892 837.50 EUR (50 %)
Co-financing MoE SR: 737 661.88 EUR (41.31 %)
Beneficiary's contribution: 155 175.62 EUR (8.69 %)
Implementation period: XI. 2013 – VI. 2025

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5.5 ha of water expanses restored

679 m of meanders restored

497 m of nesting walls for the European Bee-Eater restored

10 ha of meadows restored

Special Protection Area

Parížske močiare marshes

Location: The Parížske močiare marshes are located in the Nitra Region, in the southern part of the Nové Zámky District, in the cadastral area of the municipalities of Gbelce, Nová Vieska, Strekov, and Maďarský Svodín.

Area: SPA 380 ha, NNR 184 ha

Description of the area: The Parížske močiare marshes are dominated by extensive stands of common reed, which cover almost the entire site. The massive expansion of reed occurred as a result of the wetland drainage and changes in the natural water regime. Based on an analysis of the secondary landscape structure and land use, Boltižiar, Petrovič, and Mojses (2005) modeled the course of successive changes of the landscape based on available historical data, mapping, and GIS analyses. Between 1782 and 1819, the open water covered approximately 133–153 hectares (in a ratio of 1:1 of open water surface with the remainder occupied by reed beds); from 1949 to 2001, it was only 8.12 hectares, which gradually decreased only to 1.31 hectares. From 2001 to 2014, open water biotopes represented an even smaller area as a result of progressive succession and the end of winter reed bed cutting, in conjunction with the effects of drought resulting from the climate change; these habitats covered an even smaller area, estimated at approximately 1 hectare, which is about 0.5% of the total area.

Conservation issues: The main problem is the legacy of past water management interventions. The most drastic ones took place in the 1960s, when the Paríž stream, which flows through the centre of the marsh, was significantly deepened and regulated. The water management infrastructure (a monk outlet, a dam, and a diversion channel) turned the area into a water reservoir (polder), which limited the stream processes such as transportation of sediment. This accelerated infilling and ecological succession processes, in particular, the massive expansion of common reed. These are also contributed to by agriculture (erosion, rafting, the use of nitrogen fertilizers, and pesticides) and the surrounding settlements, which, to this day, do not have a sewage system or wastewater treatment plant. The end of traditional farming practices in the area, especially the abandonment of grazing and mowing of meadows, as well as the gradual decline of reed bed cutting and harvesting in winter, contribute to further biomass accumulation, siltation of wetlands, and gradual desiccation and vegetation overgrowth.

Revitalization measures implemented

RESTORATION OF WATER EXPANSES AND MEANDERS

The main objective of the revitalization measures was to increase the area of open water biotopes. Using an amphibious dredging machine and removing reed overgrowth and bottom sediments, **5.5 hectares of open water and 679.19 meters of side inlet and outlet meanders** connecting to the Paríž stream were restored. The expanses were built on the site of the original overgrown ones. The three largest lagoons, completed in 2025, were restored to a total area of 4.5 hectares. Between 2014 and 2022, smaller lagoons with a combined area of 1 hectare were revitalized using a TRUXOR machine. Extensive revitalization measures aimed at restoring water expanses and meanders of the Paríž stream were financed under the projects **Integrated Management of River Ecosystems in Southern Slovakia LIFE12 NAT/SK/000488 – RiverManagement** funded by the European Commission and the Ministry of Environment of the Slovak Republic and the **DBU project No. 40224/01 Restoration of populations of trigger bird species in the SPA Parížske močiare marshes through wetland revitalization and reconstruction of the meanders of the Paríž stream**, supported by funds from the German Federal Environmental Foundation (DBU), which made it possible to implement financially costly activities. **The Slovak Savings Bank Foundation also contributed to the implementation of the activities as part of the project Revitalization of the Parížske močiare Marshes Water Expanses, and the VÚB Foundation contributed with the project Parížske močiare Lagoons.**

WINTER REED CUTTING

During the project, we mitigated the vicious circle of overgrowth, infilling, and desiccation of the wetland by cutting the reeds in the winter and removing biomass from the wetland. During the project, we cut a cumulative total of over 10 hectares of reed beds. The work was carried out using a small motor cultivator on ice, brush cutters, and a TRUXOR machine.

CONVERTING OF CROPLAND TO GRASSLAND

During the project, 10 hectares of cropland were converted into grassland. The land was purchased or leased as part of the project. This eliminated erosion on cropland adjacent to the wetland and prevented sediments and pesticides from soaking into the wetland. At the same time, suitable feeding habitats were created for Marsh Harriers, Graylag Geese, and other protected species in the area.

RESTORATION OF A NESTING WALL FOR THE EUROPEAN BEE-EATER

Several projects were carried out at the former sand quarry in Nová Vieska to restore vertical walls for the nesting of the European Bee-Eater (*Merops apiaster*). A total of 497 meters of nesting walls were modified, improving conditions not only for nesting European Bee-Eaters but also for Sand Martins (*Riparia riparia*), which formed a colony of more than 1,400 pairs in 2019.

2,12 km of Žitava River meanders restored

85 ha of cut and grazed meadows

155 ha of improved water regime

Lateral connectivity of the flow was restored

Special protected area

Žitavský luh

Location: Žitavský luh is located in the northern part of the Nové Zámky District, in the cadastral areas of Veľká Maňa, Kmeťovo, Michal nad Žitavou, and extends into the Nitra District in the cadastral area of Žitavce.

Area: SPA 155 ha, PR 75 ha

Description of the area: The site represents a preserved fragment of the original alluvial meadows and meanders of the Žitava River. The Žitavský luh Nature Reserve contains one of the largest meadow complexes in the Žitava River basin, which is characterized by rich bottomland flora and represented mainly by foxtail meadows. The vegetation alliance *Cnidion venosi* is also present as one of the rarer biotopes. Grass communities are also characterized by extensive stands of sedge, glyceria, and, in isolated patches, tall marsh grasses such as Saccharum and Bulrush. The riparian vegetation along the Stará Žitava within the Žitavský luh NR and the Žitava River NM represents the preserved tree composition of soft riparian woody plants. In the southern part of the SPA, periodic wet meadows form on cropland (on the site of former meadows and the original meanders of the Žitava River) in years with abundant rainfall or during floods.

Conservation issues: The fundamental problem of the area is the water management interventions made in the past, which caused the complete destruction of the river ecosystem as a result of the regulation of the Žitava River. The channel of the regulated river was dug in the most valuable parts of the area, which led to the cutting off of all the meanders and original riverbeds. The new riverbed was dug approximately two meters deeper than the original. These changes caused extensive drainage of the area, the complete disappearance of natural flooding, and the collapse of the water regime. In the decades following the regulation, there was a negative development of biotopes, their change, and the decline of species linked to the sensitive system of alluvial areas with a specific water regime. The unfavorable development was exacerbated by the plowing up of meadow biotopes in the process of socialist-era agricultural intensification fertilization. Hundreds of hectares of valuable meadows and pastures were thus lost. The artificially controlled water regime did not meet the requirements of nature conservation and replaced natural flooding with a man-controlled sluice gate system for raising the water level, which did not fulfill the natural functions of the river. A fundamental problem was also caused by the land use changes and the abandoning of traditional grazing of farm animals in the countryside as a result of communist collectivization. The original distributaries and meanders are gradually silting up due to the lack of flooding, while the regulated, straightened flow is gradually sinking into the subsoil, and the problem with its drainage effect is constantly growing in the area. Insensitive regulation of the river has not brought about any fundamental change in flood protection either. During floods, the narrow space between the sluices quickly fills up, and the overflowing water causes damage to settlements, instead of allowing it to spread out into the open area as a result of the prioritization of agricultural activities.

Revitalization measures implemented

WETLAND RESTORATION

In the Žitavský luh NR, we **restored the original river** distributaries and meanders of the Žitava River over a length of 2.12 kilometers. The restoration consisted of removing sediments, mud, and backfill that caused the disappearance of the original river branches in this part of the area. They were remodeled so that they could be connected to the core of the entire revitalization. The fundamental task of revitalization was to restore the natural water regime. The water regime used until 2024 was implemented through a weir in Martinova. After the water level in the Žitava was regulated and raised, the water was released through the Martinova-Maňa canal, i.e., through the Zitava NM, also into the Žitavský luh NR through the siphon buried under the Žitava and flowing into the Žitavský luh NR in the cadastral area of Michal nad Žitavou. After the closure of the natural reserve discharge sluice, the water supplied in this way gradually rose and flooded the area to the north. This artificial system of spring flood simulation and maintaining of the water regime had several negative effects. One of them was that the water supplied through the Martinova-Maňa passed through villages, and the rising water level in the Stará Žitava NM caused problems in the Michal and Žitavou municipality. Therefore, as part of the revitalization, a system was implemented to connect the restored distributaries directly to the regulated flow of the Žitava River in order to make the flooding of the area more dynamic and natural, while eliminating the negative effects caused in the village. For this purpose, a full-channel stone fish ladder with a fixed threshold was built on the regulated stream to restore the bottom elevation of the Žitava to its original state. This ensured a lateral connection between the regulated Žitava River and the restored river distributaries of the old Žitava River in the Žitavský luh NR. The measure improved the water regime and strengthened flood protection in the surrounding villages thanks to better water management in the area. The full-channel slide, which serves as a fish ladder, is connected to a new inlet structure on the left bank of the Žitava River, which ensures the flow of the restored distributaries of the Žitava River in the Žitavský luh NR at flow rates of Q270 on the Žitava River. The installed floodgate allows the inflow to be regulated if necessary, but the set operating rules allow for a certain degree of dynamics in order to restore river processes in the area i.e., during periods of higher flow, the sluice gate is raised to allow flushing and flooding of the area and the removal of sediments.

RESTORATION OF THE WATER MANAGEMENT INFRASTRUCTURE

The revitalization measures also included improving the condition of the floodgates and dikes, which were in poor technical condition or had been damaged over decades. A new sluice gate was constructed at Žitavsky luh NR, replacing the damaged structure that no longer allowed effective regulation of water outflow from the area. The transverse dike of the Žitavsky luh NR was repaired, and the crest level was raised to the height of the flood protection dikes along the regulated Žitava River in order to create a flood retention basin to prevent the river from overflowing into villages. Dike repair and crest heightening were also carried out along the new channel of the Žitava River. A total of 3 km of dikes were reconstructed. A safety spillway was constructed in the left-bank dike near the new inlet structure above the intake structure and fish ladder, designed to automatically divert floodwater into the Žitavský luh NR during a 100-year flood event. Here, the reinforced dike system allows the floodwater to spread within the reserve, be retained, and decrease the flood peak. This measure will protect municipalities by preventing uncontrolled dike breaches within residential areas. The measures were implemented in close cooperation and partnership with the Slovak Water Management Enterprise as part of the joint project **ACC04P04 Wetland restoration - Velká Krčava and Žitavský luh**, acronym 2WetRest, under Norwegian grants.

RESTORATION OF THE TRADITIONAL LAND MANAGEMENT

The last documented free-range grazing on the Gedrianske lúky dates to 1992. After that, the livestock stopped feeding from the meadows. In 2015, we reintroduced sheep and goat grazing and in 2016, cattle grazing. The restoration of grazing and traditional land management practices has enabled the creation of vital pastures and the restoration of conditions for numerous plant and bird species. Succession and the expansion of certain grasses, especially reeds, sedges and cattails, as well as non-native and invasive species, most notably the box elder. Grazing ensured the restoration and creation of optimal conditions for conservation targets, while also supporting the presence of rare steppe bird species associated with pasture landscapes. Throughout the project, the conditions for pasture management were established on 85 ha of land.

458 m of nesting walls for the European Bee-Eater restored

Special protected area

Dolné Pohronie

Location: Dolné Pohronie SPA is located in the Komárno district in the cadastral areas of Bátorove Kosihy, Búč, and Radvaň nad Dunajom; in the Levice district in the cadastral area of Pastovce; and in the Nové Zámky district in the cadastral areas of Horný chotár and Mužla.

Area: 229.32 hectares

Description of the area: SPA consists of a total of four separate locations: the sand dune in Radvaň nad Dunajom and Virt, Jurský Chlm in the municipalities of Mužla and Búč, Bátorove kostihy, and the active material extraction site in Pastovce and Horný Chotár.

Conservation issues: European Bee Eaters and Sand Martins naturally nest in vertical walls along rivers and river terraces, which were regularly shaped and maintained by river floods. The floods periodically removed eroded sediments of the riverbanks, preventing the walls from overgrowing and restricting access for terrestrial predators to the nesting colonies. However, most of our rivers are regulated with modified banks, and natural nesting sites for European Bee-Eaters and Sand Martins have become increasingly rare. They readily occupy secondary habitats, such as various excavation pits, gravel pits, foundation trenches, stockpiles, foundation excavations, etc. However, these locations often rapidly disappear due to erosion and subsequent overgrowth, often by invasive plant species.

Revitalization measures implemented

The primary conservation measure for European Bee-Eaters includes the creation of suitable vertical nesting walls through mechanical excavation and the elimination of succession of self-seeded vegetation, particularly invasive woody plants. Within the framework of project activities, 458 meters of nesting walls were established in Dolné Pohronie SPA at the sand dune sites in Radvaň nad Dunajom and in Jurský Chlm. Simultaneously, spontaneous self-seeded, non-native, and invasive woody plants were removed from the modified walls, primarily including black locust and tree of heaven.

Avifauna

During the implementation of the project, intensive bird monitoring was carried out in the project areas of the Paríž marshes, Žitavský luh, and Dolné Pohronie.

Project activities focused on selected bird species in the NATURA 2000 area, a total of seven bird species. For all target species, an increase in average breeding populations was achieved thanks to the implementation of project activities, which we consider a success, especially given the decline in global populations of some species whose conservation status is deteriorating (e.g., the garganey, the spotted crake, and the little crake).

We expect further growth in the populations of target bird species during the post-project period, primarily following the significant expansion of open water surface area in Parížske močiare marshes SPA and the maintenance of project results in all SPAs by ensuring appropriate water regimes and habitat management.

	Breeding population in 2010-2013 before the project implementation and during initial monitoring	Breeding population between 2014 and 2025 during and after project implementation	Changes in the population
Garganey (*Spatula querquedula*)	• **1–2 breeding pairs** • **120–150 individuals during migration**	• **5–10 breeding pairs** • 5 brood-leading females simultaneously in Žitavský (2023) with the estimate of 5-8 breeding pairs • the estimated breeding population in the Paríž marshes is 0 to 2 pairs • maximum of 113 migrants in Žitavské luhy, 55 individuals in the Paríž marshes • **maximum 168**	**+ 500 %** of breeding pairs **+ 12 %** increase in the migrant population in the project areas
Little Crake (*Zapornia parva*)	• **20 calling males** in project areas	• **29 calling males:** • 4 calling males in Žitavský luh • 25 calling males in Paríž marshes	**+ 45 %** increase of recorded calling males
Western Marsh Harrier (*Circus aeruginosus*)	• **18 to 31 pairs** • mean of 25 pairs • 60 to 80 individuals during migration	• **20 to 47 pairs** • 1 to 3 pairs at Žitavský luh • -19 to 44 pairs in Paríž marshes • recorded maximums of migratory individuals: 35 in the Paris marshes and 64 individuals in the Zittau floodplain	**+ 42 %** increase of breeding population **+ 24 %** increase of migratory population
Spotted Crake (*Porzana porzana*)	• **1 to 3 calling males** • a mean of two calling males	• **2 to 8 calling males** • mean of 5 calling males	**+300 %** increase in the number of calling males
Moustached Warbler (*Acrocephalus melanopogon*)	• **10 to 15 pairs** • mean of 13 pairs	• **8 to 25 pairs** • mean of 16 pairs	**+ 23 %** increase in the estimated number of breeding pairs based on the recorded number of singing males
Little Bittern (*Ixobrychus minutus*)	• **1 to 3 pairs** • mean of 2 pairs	• **2 to 5 pairs** • 1 pair in Žitavský luh, 1-4 pairs in Parížske močiare marshes • mean of 3.5 pairs	**+ 75 %** increase in the number of calling males/breeding pairs
Greylag Goose (*Anser anser*)	• **2 to 3 breeding pairs** • **100 to 120 migratory individuals** • mean of 2.5 pairs	• **7 to 17 breeding pairs** • **100 to 536 migratory individuals** • 5 to 15 pairs in Parížske močiare marshes, 2 pairs in Žitavský luh • mean of 12 breeding pairs • migratory populations of 60 to 376 in Žitavský luh, 50 to 160 in Parížske močiare marshes • mean of 323 migratory individuals	**+ 480 %** increase of breeding population **+ 269 %** increase in the mean migratory and wintering population
European Bee-Eater (*Merops apiaster*)	• **65 to 105 pairs** in the entire Dolné Pohronie SPA and Parížske močiare marshes SPA • mean of 85 pairs	• **131 to 242 pairs** in Dolné Pohronie SPA Jurský Chlm site • mean of 187 pairs	**+ 220 %** increase in the European Bee-Eater population in 3 project sites

Other significant breeding species

Conservation activities focused on selected NATURA 2000 sites also benefit other bird species, which profit from the measures implemented. The following species are particularly noteworthy in the project areas:

Great Egret (*Ardea alba*) forms a significant breeding colony in the Parížske močiare marshes SPA. Project activities contributed to the expansion of the breeding colony of Great egret. The mean number of breeding pairs ranges from 20 to 114. The highest number of 114 breeding pairs in 2019 was recorded after winter reed cutting on an area of approximately 2 ha. In the spring, the colony of Great Egrets moved adjacent to the mowed area, where they foraged food until the reeds regrew to cover the wetland. Concurrently, between 2015 and 2019, works were carried out to clear smaller water bodies, which improved the food base for the species.

Purple Heron (*Ardea purpurea*) is among the rare breeding species of Parížske močiare marshes. Between 2014 and 2022, the breeding population was estimated to be 1 to 3 pairs. In 2023, the breeding of five pairs was confirmed. In 2025, the population grew to 8 breeding pairs. Management measures and the creation of water bodies and foraging habitats for the species also aided in increasing the breeding population.

Eurasian Bittern (*Botaurus stellaris*) is rarely found in the Parížske močiare marshes, and during the implementation of project activities was confirmed the clear response of the species to the management measures. After the cutting of old reed and creation of habitat mosaic, the species' vocalization was consistently recorded every spring in the Parížske močiare marshes.

Northern Shoveler (*Spatula clypeata*) is one of the rare breeding species of migratory ducks in Slovakia. This species bred in the Zivatsky luh area in the past. However, it disappeared as a breeding species after the successional changes in the wetland habitats. Following the implementation of grazing management, courting pairs were recorded, and breeding in the territory has been expected since 2020. Successful breeding was confirmed in 2023, when two females were observed on 3.7.2023, leading two broods with 4+4 ducklings that were only a few days old.

Eurasian Teal (*Anas crecca*) is one of the abundantly migrating and wintering species within the project areas. Recorded maximums are 424 individuals in Zitavsky luh SPA and 229 individuals in Parížske močiare marshes SPA. This species appears on Zitavsky luh also during the breeding season, and breeding is anticipated. In 2025 was repeatedly observed one pair with the female being repeatedly absent while the male guarded a specific area near sweetgrass. 23.6. was subsequently observed an adult pair with two flying offspring, leading to the conclusion that the species bred in the territory.

Common Redshank (*Tringa totanus*) breeds regularly on Zitavsky luh after the implementation of biotop management, with a population of 1 to 3 pairs. It primarily utilizes flooded cattle pastures with low vegetation.

Northern Lapwing (*Vanellus vanellus*) is among the regularly breeding species in both project wetlands. It is typical for Zitavsky luh, where it breeds more abundantly, that is, in numbers of 4-16 pairs. It breeds more rarely in Parížske močiare marshes, in the numbers of 1-3 pairs. It is one of the species that benefits from the management and revitalization measures, such as grazing on wet meadows and mowing of meadow-wetland habitats.

The impact of project activities on selected common species of aquatic and meadow birds

Water Rail (*Rallus aquaticus*) breeds in wetlands with well-developed vegetation and a suitable water column. Both project wetland areas are a suitable breeding ground for the species. The project implementation has demonstrated the positive impact of extensive and mosaic management of meadow-wetland habitats through mowing and grazing and in particular, due to suitable water regime management facilitated by the restoration of the river ecosystem at Zitavsky luh and the implemented water measures, the breeding population has increased by 30%.

Western Yellow Wagtail (*Motacilla flava*) is among the typical meadow bird species of Zitavsky luh, where it reaches relatively high densities. The grazing management in the area contributes to better foraging conditions and higher breeding success. The species breeds in the territory in numbers of 30-40 pairs and migrates in numbers of 200-400 individuals, and during migration, flocks stay near cattle, where they forage insects.

White Stork (*Ciconia ciconia*) breeds in the surrounding villages adjacent to the Zitavsky luh SPA. The species uses this landscape intensively influenced by agriculture as a foraging ground during the breeding season, attracting individuals from a wide radius, as well as during migration. Management and revitalization measures have contributed to the increasing attractiveness of the area to this species. In connection to the implementation of the project, a new White Stork nest was built in Michal nad Žitavou in 2022, following an increase in the carrying capacity of foraging habitats. The presence of White storks has increased particularly during migration, with flocks of 10-35 individuals being recorded. Since 2022, there has been a regular presence of 20 to 35 non-breeding storks every May. These birds remain in the area for several weeks due to favorable foraging conditions. During the breeding season, the breeding birds gather here to forage food that was made available through local grazing management. Through the identification of a ringed stork, it has been confirmed that breeding storks travel from as far as 10 kilometers away to forage in these meadows.

Black Stork (*Ciconia nigra*) uses wetlands as foraging grounds. In lowland landscapes, wetlands are particularly significant during migration. Thanks to the successful restoration of lateral connectivity, fish migration into the Zitavsky luh SPA has improved, which has helped to enhance foraging options for Black storks. During the autumn migration of 2025, up to 40 Black storks remained in the area for an extended period. They foraged in the restored branches of the Žitava river within the Zitavsky luh NR, preying on fish that migrate into the territory in large numbers due to the restored lateral connectivity between the river and its floodplain.

Common snipe (*Gallinago gallinago*) migrates through wetland areas. It is abundant during migration in Zitavsky luh, where it prefers shallow, grazed, muddy areas in both spring and autumn. It occurs in numbers ranging from tens of individuals, with a recorded maximum of 110 individuals in 2023 within the Zitavsky luh SPA.

Great Reed Warbler (*Acrocephalus arundinaceus*) is a common reed-dwelling passerine in the Parížske močiare marshes SPA. However, its abundance is closely linked to habitat conditions, particularly the state of reed beds, the ratio of new to decaying biomass, and the extent of water coverage in the area. Monitoring has clearly demonstrated the positive impact of reed mowing and the creation of transitional habitats between reed stands and open water. Within the CES research, it was shown that following management and restoration of open water areas, the population along the mist-netting line near revitalized lagoons increased from 8-10 ringed individuals in 2020-2024 to 39 ringed individuals in 2025, representing an almost five-fold increase.

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Other significant non-breeding species

The implemented management, in the form of restored extensive grazing and meadow mowing in Zitavsky luh, creates suitable conditions for many rare bird species associated with pastoral landscapes. After the introduction of grazing, numerous pasture and steppe species have been recorded in the area, including **European Roller**, **Lesser Grey Shrike**, **Red-footed Falcon**, Western Cattle Egret, **Baillon's Crake**, Glossy Ibis, Eurasian Spoonbill, **Black-Tailed Godwit**, Sociable Lapwing, Collared Pratincole, Black-winged Pratincole, Common Shelduck, Pacific Golden Plover and Short-toed Snake Eagle.

Telemetry of the Western Marsh Harrier (*Circus aeruginosus*)

Between 2014 and 2022, ten Western Marsh Harriers were fitted with telemetry transmitters. The research aimed to monitor the species' utilization of the SPA and its surroundings, as well as the habitat usage during migration, and track the species' migration routes to wintering grounds. Data regarding the home ranges of the Western Marsh Harrier breeding and migrating within the Zitavsky luh SPA also helped guide the directing of wind farm construction that could pose a direct threat to the species designated as the primary conservation target within the NATURA 2000 network. The migration of Western Marsh Harriers to Africa provided the first insights into the wintering grounds of our populations in West Africa, specifically in countries such as Mali, Niger, and Nigeria, thereby contributing to a better understanding of the migration strategies of populations breeding in western Slovakia.

Raising awareness and promoting the natural values of the areas

The natural values of the areas were presented to the residents, general public, and schools through excursions and lectures. We conducted a total of 37 lectures for 792 participants, 14 lectures and discussions for 477 participants, 2 ornithological camps, and 8 information booths.
For enhancing the experience of visitors, we constructed an observation tower in the Žitavský luh SPA, and we renovated the existing observation tower in the Parížske močiare marshes SPA. Furthermore, 20 information boards were produced and installed in the areas, educating visitors about the site's natural values.
A film presenting the implementation and results of the project is available on YouTube SOS/BirdLife Slovensko.

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