CZ-SK SOUTH LIFE

# Optimalization of Natura 2000 sites management delivery

in the South Bohemia Region and the territory of South Slovakia

## Layman report

Project partners

Life

NATURA 2000

Jihočeský kraj

MINISTERSTVO ŽIVOTNÉHO PROSTREDIA SLOVENSKEJ REPUBLIKY

ŠTÁTNA OCHRANA PRÍRODY SLOVENSKEJ REPUBLIKY

BROZ ochranárske združenie

český svaz ochránců přírody

KRAJSKÉ ŠKOLNÍ HOSPODÁŘSTVÍ České Budějovice

Ministerstvo životního prostředí České republiky

# Overview of the project

**Project title:**
Optimalization of Natura 2000 sites management delivery in the South Bohemia Region and the territory of South Slovakia

**Programme and sub-programme:**
LIFE; Nature and Biodiversity

**Project acronym:**
CZ-SK SOUTH LIFE

**Reference:**
LIFE16 NAT/CZ/000001

**Start date and end date:**
1. 9. 2017 – 30. 6. 2024

**Budget of the project:**
7 024 703 € (EU Contribution: 5 085 000 €, i. e. 72,39 %)
Contribution of the Czech Ministry of Environment:€ 370,000
Contribution of the Slovak Ministry of Environment: €665 398

## PROJECT GOALS:

The main goal of the project is to improve the unfavourable status of conservation of 11 priority habitats and 3 priority species (focused on endemic species) by optimization and introduction of new methods. Objects of protection are in poor condition due to the long-term absence of locality management, inappropriate practice, spread of invasive plant species etc.

**Coordinating Beneficiary: South Bohemian Region (Jihočeský kraj)**
The South Bohemian Regional Office is responsible for the state administration of regional protected areas according to the Czech Act on Nature and Landscape Protection. Its competences concern 217 nature reserves and 83 Natura 2000 sites. The office was charged with coordinating and leading the project team and activities as well as providing expert guidance for implementing measures in the Czech Republic.


# Project partners

## ASSOCIATED BENEFICIARIES IN THE CZECH REPUBLIC:

**Krajské školní hospodářství České Budějovice (The Regional Education and Management Company České Budějovice)** is an organisation established by the South Bohemian region. Its primary purpose is to administer the property owned by the South Bohemian region which currently includes 236 ponds within the area of 1,434 ha and 1,400 ha of forests. Additionally, the organisation provides practical training for pupils and students in the fields of fishery and forestry. Within the project, it carried out management measures in the localities in the Czech Republic.

**Základní organizace Českého svazu ochránců přírody ONYX (Local branch of the Czech Union for Nature Conservation ONYX)** was founded in 2007. Objectives of the organisation are nature protection and environmental education.
ONYX members have long-term practical experience with projects concerning nature and landscape protection, sustainable development, environmental education as well as LIFE programmes. Within this project, the organisation provided especially PR activities.

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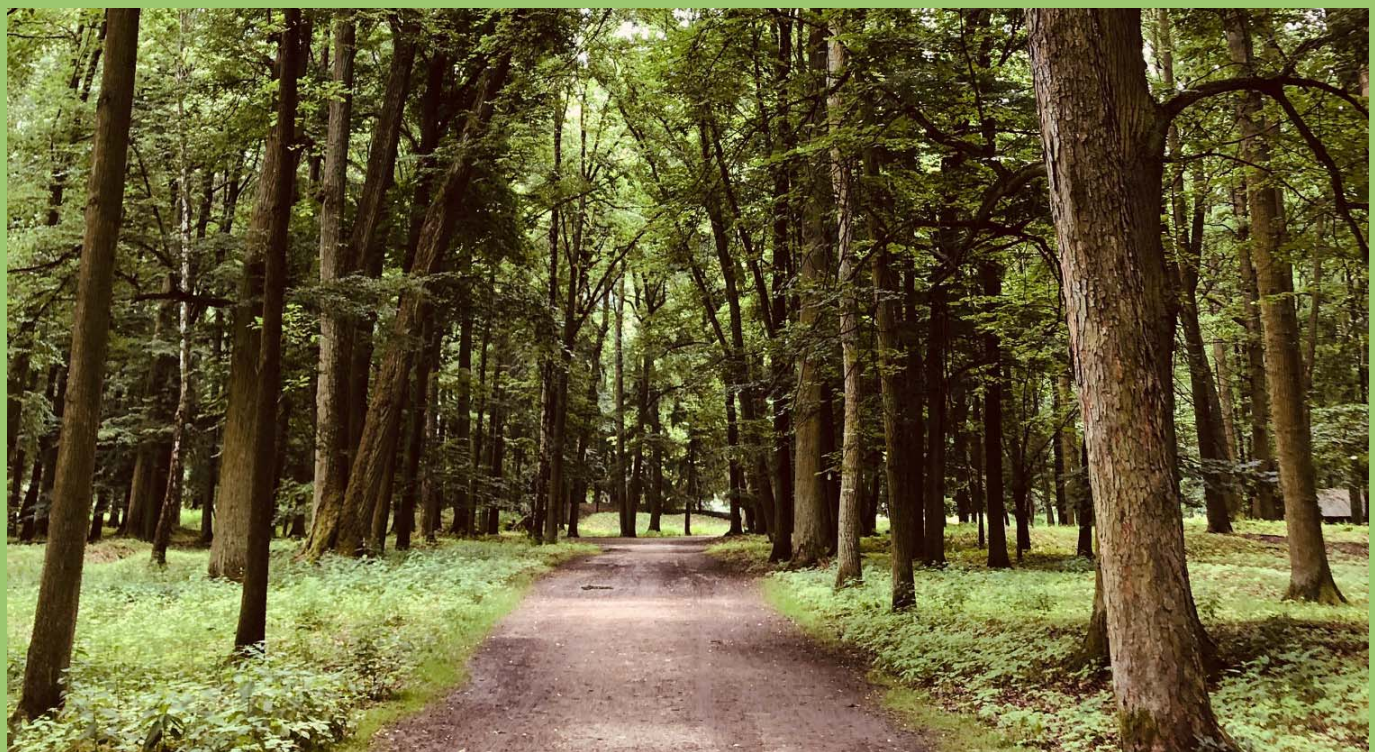
## ASSOCIATED BENEFICIARIES IN THE SLOVAK REPUBLIC:

**Bratislavské regionálne ochranárske združenie (BROZ –Bratislava regional conservation association)** has been implementing management measures of Natura 2000sites for 27 years. Since its foundation in 1997, it has become a leading non-governmental organisation in the field of protecting and restoring precious habitats. They restore wetlands, river side arms, alluvial forests, meadows and pastures especially in the Danube River region. They also make effort to restore traditional landscape management such as willow pollarding, cattle grazing and reed cutting. Within this project, the organisation carried out management measures in Slovakian localities.

**Štátna ochrana prírody Slovenskej republiky (The State Office for Nature protection of the Slovak Republic)** is an expert organisation for nature and landscape protection. The office coordinates both the expert and technical management of the NATURA 2000 network in the Slovak Republic. Main responsibilities of the Office include landscape and species protection, protection of woody plants in non-forest areas, environmental education, monitoring and maintaining relevant information systems. Within the project, it was involved in the expert management and coordination of activities in the Slovak Republic.



# Project activities

The implementation of the project was structured into six groups of activities labelled A–F.

During preparatory activities (A), work positions were filled and the necessary equipment was bought. A key step was to make expert studies which serve as a basis for the practical management of localities. Studies on the management of the hermit beetle and studies on restoration of the water regime, grazing and alluvial forests were prepared.

Activities B took place in Slovakia and consisted of the purchase or long-term rental of plots of land for nature protection in project localities. In total, more than 40 ha of land have been bought and 289.5 ha have been rented on a long term basis.

Activities C included carrying out specific management measuresin localities. A total of eight activities were focused on optimising the management of specific species and habitats to ensure favourable conditions for the development and maintenance of biotopes.

Another important activities (D) analysed impacts of the projects. It involves not only monitoring of the impact of management measureson specific species and biotopes, but also monitoring other factors such as ecosystem services, social and economic impacts, support for employment and local communities etc.

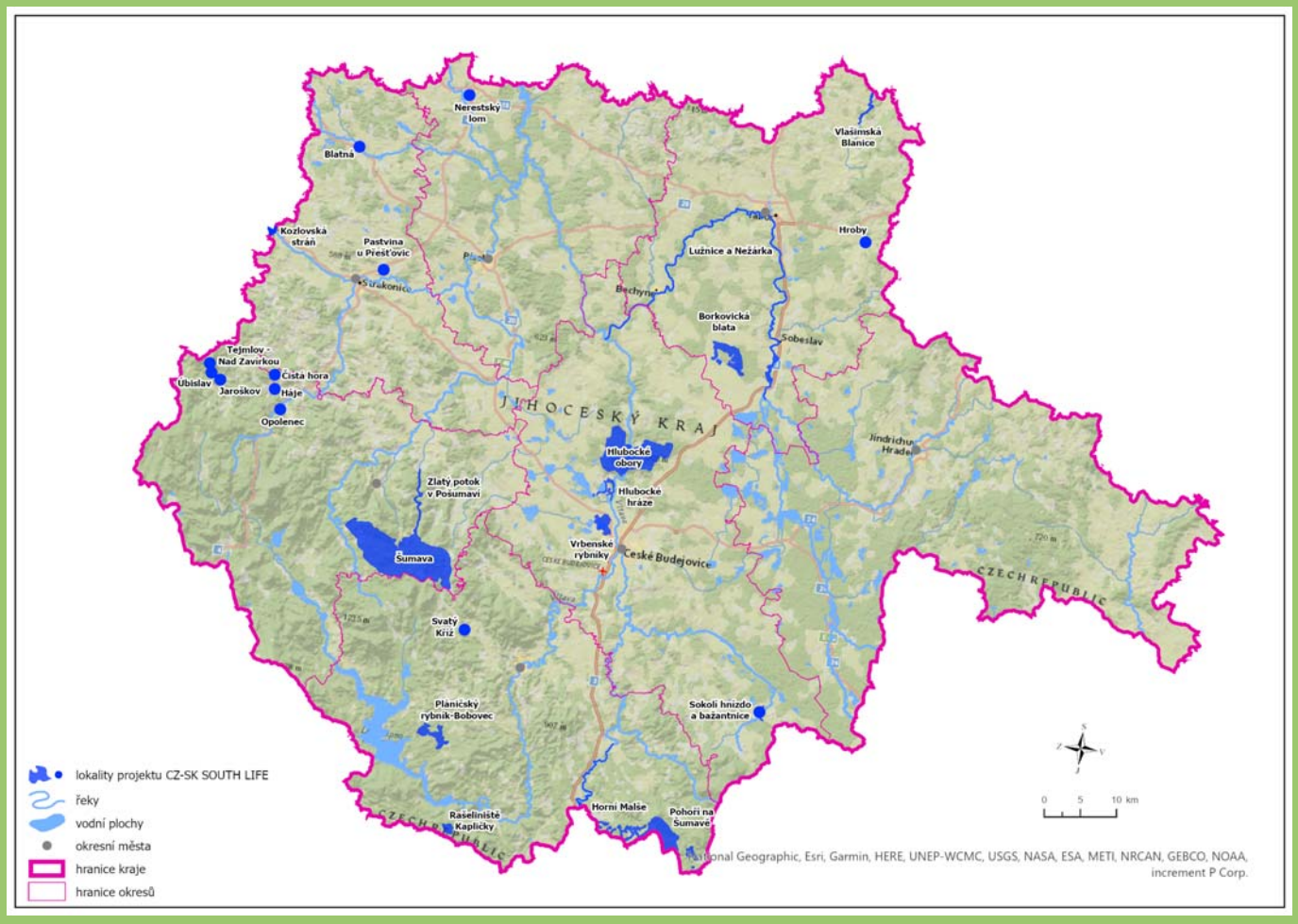
Activities E included coordination with both experts and the general public. Primarily, this concerns the transfer of know-how and results to key stakeholders, round-table discussions, seminars, field trips, conferences, project publicity at public events, networking with foreign projects, workshops and individual consultations.

The last part of activities (F) was related to project management including finance administration and an audit. An important part of these activities is the preparation of the AfterLIFE plan which serves as a guide for future measures in project localities and ensures the sustainability of the project for the next ten years.

# Project localities in South Bohemia

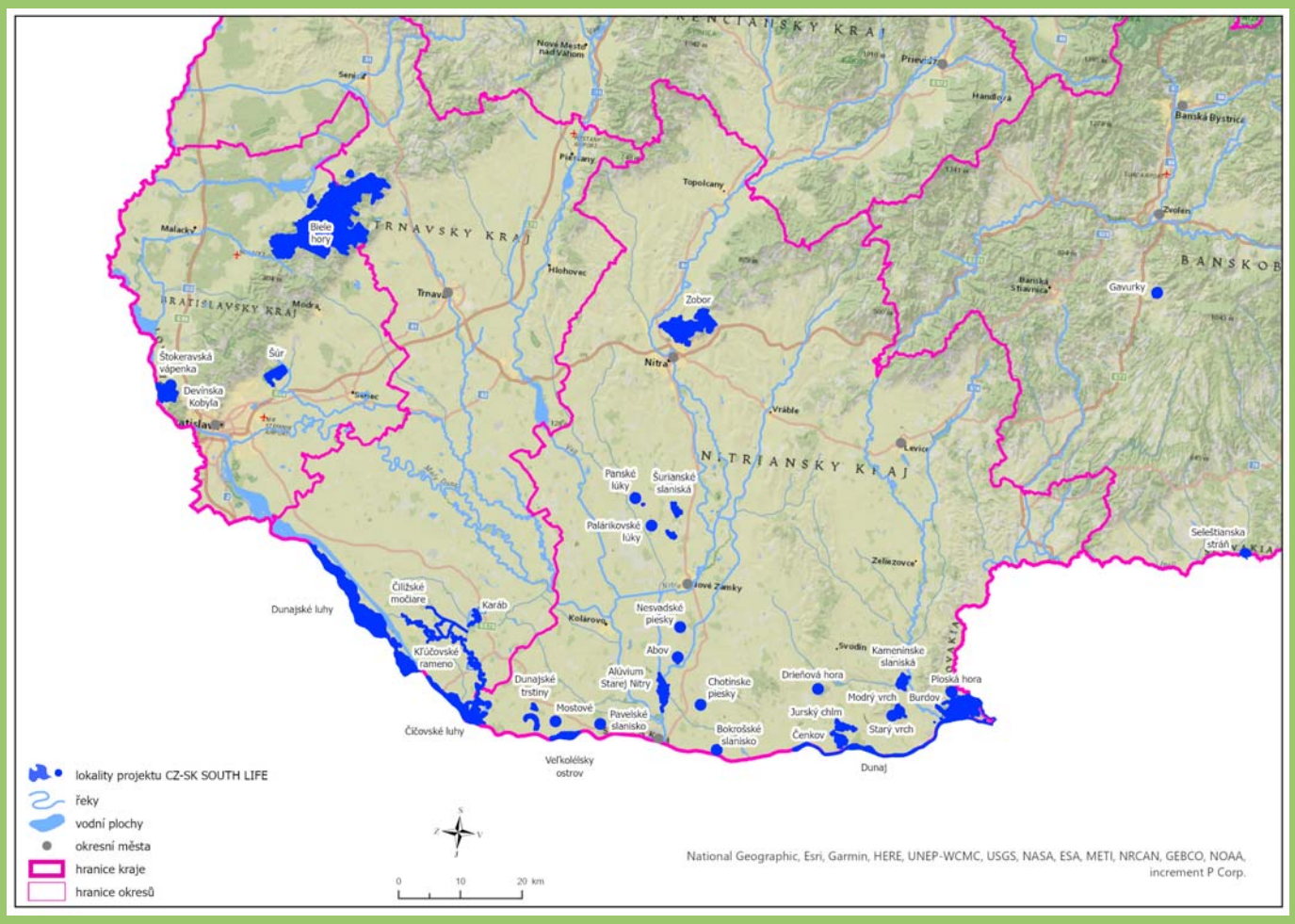
Direct management measures were carried out in 58 special areas of conservation (25 in South Bohemia and 33 in South Slovakia).
Localities in the South Bohemian region:

1. Blatná
2. Borkovická blata
3. Čistá hora
4. Háje
5. Hlubocké hráze
6. Hlubocké obory
7. Horní Malše
8. Hroby
9. Jaroškov
10. Kozlovská stráň
11. Lužnice a Nežárka
12. Nerestský lom
13. Opolenec
14. Pastvina u Přešťovic
15. Pláničský rybník – Bobovec
16. Pohoří na Šumavě
17. Rašeliniště Kapličky
18. Sokolí hnízdo a bažantnice
19. Svatý Kříž
20. Šumava 0
21. Tejmlov- Nad Zavírkou
22. Úbislav
23. Vlašimská Blanice
24. Vrbenské rybníky
25. Zlatý potok v Pošumaví



# Localities in the region of South Slovakia

1. Abov
2. Alúvium starej Nitry
3. Biele hory
4. Burdov
5. Bokrošské slanisko
6. Čenkov
7. Čiližské močiare
8. Číčovské luhy
9. Devínska kobyla
10. Drieňová hora
11. Dunaj
12. Dunajské luhy
13. Dunajské trstiny
14. Gavurky
15. Chotínske piesky
16. Jurský Chlm
17. Kamenínske slaniská
18. Karáb
19. Kľúčovské rameno
20. Modrý vrch
21. Mostová -
22. Nesvadské piesky
23. Palárikovské lúky
24. Panské lúky
25. Pavelské slanisko
26. Ploská hora
27. Seleštianska stráň
28. Starý vrch
29. Štokeravská vápenka
30. Šurianske slaniská
31. Šúr
32. Veľkolélsky ostrov
33. Zobor



# Innovations inmanagement measures

The management of protected localities in the Czech Republic is partly provided by Region Offices which arrange the management of nature reserves outside protected landscape areas and national parks. Recently, the South Bohemian region has been responsible for 216 reserves covering a total area of 8,105 ha.

Region Offices manage protected localities in two ways. The most often approach is hiring an external company within a tender process. However, cooperation with land owners and tenants has been increasing for several years. The arrangement of tenders has been especially relevant in the Czech Republic. Following the principles of equal treatment and transparency during tender processes, it often happens that management is carried out by a successful tenderer, who aims for a contract merely to gain money or provide jobs for their employees. They are not interested in nature conservation at all. Unfortunately, the situation has even worsened because of complicated property relations in some localities or because the owner is not able to manage the locality for various reason such as poor physical condition or the lack of equipment. Therefore, it is not always possible to organise all management just through cooperation with owners and tenants.

The South Bohemian region has developed anentirely innovative system. Its main idea is to form a specialised group of workers who will ensure conservation management in localities that were previously treated by tenderers. This expert work teamshould be equipped with necessary technologies along with responsible and skilled members.

A work group was formed within The Regional Education and Management Company České Budějovice which was equipped with both common and specialised machinery to carry out project measures in the South Bohemian region. Another work group was formed at the same time to take care of localities beyond the LIFE programme. It has been clearly demonstrated that it is one of possible and effective ways how to provide localities with management of good quality. Thus, both work units are going to take care of localities also after finishing the project LIFE with tenders being used only for arranging technical workssuch as construction works.



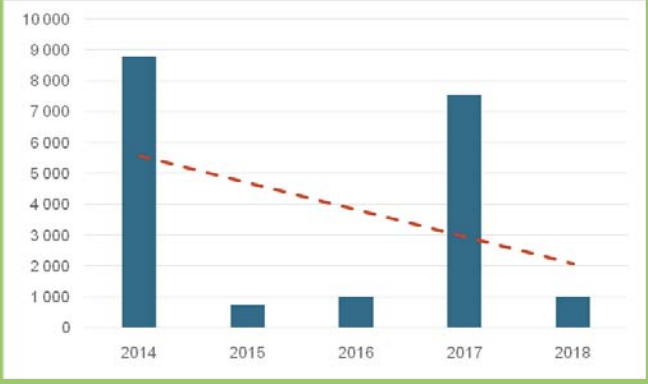
TRUXOR

# Species – Bohemian gentian and hermit beetle

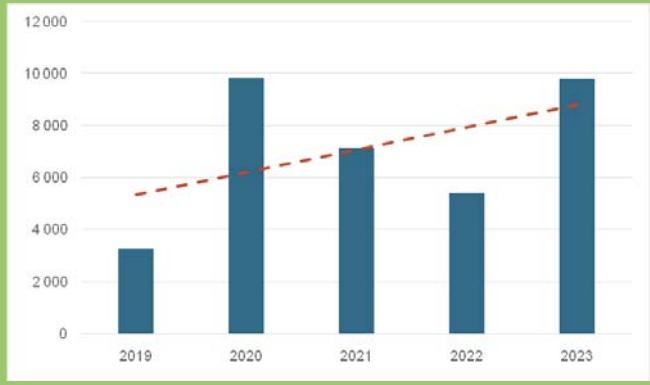
The optimisation of the management of the Bohemian gentian (Gentianella praecox subsp. bohemica) was the aim of the activity C1. This critically endangered species is endemic to Bohemian massif and sub-endemic to the Czech Republic. Its historical distribution range covers mainly the Czech Republic, although it used to occur also in tens of localities in northern Austria, Bavaria and southern Poland. The recent centre of its population is located in the South Bohemian region. The 11 localities included in the project represent 59 % of the fertile population within the Czech Republic.

The aim of the project was to increase the number of flowering plants by 10 %through the optimisation of management measures. The increase of 85.1 %exceeded all expectations. The negative trend of population development has been reversed.

**Reference period (before the start of the activity C1) – the population size of flowering plants shows a decline:**




**Project period – the population size of flowering plants is increasing and the trend in its population dynamics has been clearly reversed:**




## Meadow brushing

The key factor in supporting the Bohemian gentian is to ensure appropriate conditions for seed germination, i. e. litter and mosses removal together with the formation of gaps in the vegetation cover. This is usually achieved by harrowing, raking or verticulation. The aim is not to reduce entire grass turfs, but to remove only the aboveground biomass (litter and mosses). The removal of dead biomass by brushing technology was successfully tested during the CZ-SK SOUTH LIFE project. A special brush was used that gently sweeps away mosses and litter without damaging the vegetation. This is a measure that can be employed to achieve the optimal condition of localities. This method of brushing was tested and approved by experts and it has begun to spread beyond South Bohemian localities.

**The hermit beetle** (Osmoderma eremita) –the aim of the C2 activity was to restore suitable biotope conditions for this priority species and to maintain them in the long term. The secondary positive impact of the applied steps is the increase in population size and the enlargement of biotopes that are suitable for another species of European importantce such as the wrinkled bark beetle Rhysodes sulcatus, the European stag beetle (Lucanus cervus), the violet click beetle (Limoniscus violaceus) or the great capricorn beetle (Cerambyx cerdo). In Czech, the hermit beetle occurs only locally. Its presence is linked to the presence of old broad-leaved trees especially in parks, forests and avenues. The largest amount of localities and findings are known from South Moravia and South Bohemia. The existence of the hermit beetle in Slovak is related particularly to old pollard willows. The species is threatened across whole Europe mainly because of cutting old trees and burning and treating their cavities.

During the project, **1,286 biotope trees were treated in the Czech Republic and 541 pollard willows in Slovakia.** Besides, 1,706 new trees were planted, the area of 27,17 ha was cleared of unwanted seedlings and two loggeries were established. Grazing in the most valuable stands of pollard willows in southern Slovakia was restored. Not only were the biotope conditions for the hermit beetle improved, but the aesthetic value of the willows was also enhanced.

# Grassland habitats

Restoration and management of grassland habitats was the largest part of the project. At the start of the project, these localities were overgrown with dense shrubs and volunteer trees and invasive species spread here as well. Grassland restoration, therefore, included the removal of shrubs and unwanted trees as well as the control of invasive plants. The introduction of long-term management especially mowing and traditional grazing is an important step forward.

Partial activities C6 a C7 were carried out using the expert project study along with experience and know-how gained from previous LIFE projects. Management was optimized for these habitats:

**6110 - Rupicolous calcareous or basophilic grasslands of the Alysso-Sedion albi**
This habitat comprises xerophilic communities of herbaceous plants on rocky slopes and rock debris.

**6210 - Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia, important orchid sites)**
This habitat is significant due to the frequent presence of orchids. It usually occurs on sunny slopes with moderately deep or deep soils and includes communities mostly of annual sandy plants. The habitat faces threats from the spread of unwanted species and changes in landscape management particularly the decline in grazing.

**6250 - Pannonic loess steppic grasslands**
This habitat occurs on loess slopes with deep soils. It consists of dry and semi-dry communities of grasses and herbaceous plants with high species diversity.

**6260 – Pannonic sand steppes**
The habitat is found on dry and calcareous sands with a low level of nutrients. It is formed by communities of grasses and herbaceous plants with high species diversity. Grasses and sedges are the dominant groups, however, short or creeping herbaceous plants along with mosses and lichens grow here as well.

**91N0 - Pannonic inland sand dune thicket (Junipero populetum-albae)**
This habitatoccurs exclusively in Slovakiawithin just one special area of conservation (Čenkov). The biotope is characterised by the mosaic and discontinuous occurrence of the silver poplar

and common juniper.  It was historically formed byextensive grazing on sandy dunes. The locality in endangered by invasive species, especially the tree of heaven (Ailanthus altissima) and the common milkweed (Asclepiassyriaca). This project focused on supressing these invasive species.
The restoration management of grasslands has been applied to a total area of 227 ha. The most problematic invasive species were removed in the special area of conservation Čenkov including the tree of heaven in the area of 74.1 ha and the common milkweed in the area of 254.9 ha.

**Grazing has been restored in 11 project-localities – 428.8 ha in total.** The effect of grazing is long-term and its positive influence on target localities increases over time with the right methods. In general, reintroduction of grazing results intothe change from negative states of grasslands (overgrowth, spread of invasive alien species, decrease in indicator species) to positive dynamics(suppression of most of invasive species,halting or reversing succession, expansion of rare and indicator species).More than 25,000 metres of fences and 10 shelters for animals wereconstructed during the restoration of grazing.

Grazing has been restored in cooperation with local farmersin most localities and they plan to continue grazing after the project´s finalisation. **We have managed to transform neglected and abandoned areas into localities that benefit both nature and farmers.**

# Forest habitats

**91D0 – Bog woodland**
This type of habitat includes these biotopes: bog spruce forests, pine mire forests with Vaccinium, birch mire forests and Pinus rotundata forests. Many localities were harmed by drainage during peat extraction which resulted into a shift of natural species composition. During this project, **125 ha of the habitat have been restored** due to selective cutting of pioneer tree and shrub speciesthat are not wanted in this type of target habitat(birch, the European red pine, spruce, alder, blackthorn etc.) and due to mowing of dominant grasses (Calamagrostis sp.). **20.000 seedlings of the genetically pure pine Pinusrotundata have been planted in the special area of conservation Borkovická blata** to enhance the biotope structure and to restore the optimal tree species composition.

**The water regime of a bog woodland has improved across the area of 13 ha in the special area of conservation Rašeliniště Kapličky** thanks to the installation of 59 blockages of drainage canals during this project. An additional 38 blockages were completed with the financial support of the project INTERREG ConNat AT-CZ. Another barrier was built by beavers and for free.

**91E0 –Alluvial forests with Alnus glutinosa and Fraxinus excelsior(Alno-Padion, Alnion incanae, Salicion albae)**
The habitat is related to watercourse banks, forest spring areas and to terrain depressions with regular flooding that originates from surface water or from a high level of groundwater. The typical vegetation is represented by nitrophilous and hygrophilous species. Goals of the projects were focused on the removal of non-native species and supporting the natural species composition through planting poplars and willows. **A total of 30.505 native trees have been planted in Slovakia and 1.000 trees have been planted in Czech.** Invasive species were removed from an area of 82,5 ha.

# Peat bogs, salt marshes and a ground beetle

Measure staken in the South Bohemian region include the optimisation of the management for the habitat 7110 (active raised bogs) that overlaps with the optimisation of the management for the ground beetle *Carabus menetriesi pacholei* who seoccurrence is linked with this habitat.

A raised bog is a type of bog which develops due to the influence of atmospheric moisture and precipitation. It represents one of the biotopes with the lowest pH and very low nutrient levels, since it is fed exclusively by rainfall. A bog is called active if the process of peat formation happens across most of its area. The most common plant organism in bog localities is the sphagnum moss which actively supports acidity of the habitat and a low level of in nutrients preventing the establishment of other species.

This habitat represents an appropriate biotope for another project species, namely the ground beetle *Carabus menetriesi pacholei*. It is a relict beetle species with shiny coppery wing covers that inhabits exclusively natural bogs and adjacent fen and wet meadows. It lives, reproduces and spends the winter within the layers of the living sphagnum moss. As this species is highly sensitive to environmental purity, it serves as an important bioindicator.

Pioneer tree species were removed during this activities across an area of 20 ha. Furthermore, mosaic mowing has been introduced to the total area of 77 ha. As a result of the restoration and stabilisation of the habitat, the population of the ground beetle *Carabus menetriesi pacholei* has increased by 49.7%.

The southern Slovenian part of the project was focused on the restoration of the hydrological regime of salt marshes. One of the main aims of this activity was the restoration of the habitat 1530 which is on the verge of extinction in the Slovak republic.

The habitat **1530 - Pannonic salt steppes and salt marshes** occurs on muddy edges of periodical salt pools. The habitat in especially endangered by water drainage and the absence of grazing.

The habitat **1340 - Inland salt meadows** is found on salt soils similar in characterto steppe soils. When soil water evaporates, minerals remain in the soil and can be found near plant roots which causes some plant species to produce dwarfed forms. The typical species composition is a combination of halophile, hygrophilous and calcareous species.

**Within the project, 2,490 m of drainage ditches** were filled with clay soil or fitted with outlets and shallow dams. Results were immediately visible: there was a significant increase in water retention capacity – both in terms of the expansion of saline habitat areas with restored periodic flooding and in terms of the longer duration of flooding. Furthermore, a layer of turf was removed over a total area of 17,703 $m^2$ (across 11 areas of various sizes and shapes) and in most cases, it was taken away from the localities. Results were very positive: in some areas where the turf was removed, salinity quickly increased on the soil surface – it was even visible to the naked eye. Even a habitat typical of the rare habitat type 1530 (periodically flooded saline pools) formed within the treated plots in local depressions. As a result, several very rare or critically endangered species of halophytic plants, insects, and birds appeared on the restored areas.

# Project team

The entire project would not have been possible without the participation of dozens of other people and organisations who either directly collaborated with us or enabled the project's implementation. Similarly, the value of the project would have significantly decreased if we had not shared the results as well as the successes and challenges associated with its implementation.

**Stakeholders**
A key factor in the project was establishing cooperation with landowners and tenants and their active involvement in the project from the very beginning. For example, the management of the Bohemian gentian was ensured at most localities by the landowners and thanks to their dedication, significant successes were achieved. In southern Slovakia, the key to success in the restoration of grazing was the cooperation with local farmers.

**Experts**
The project involved a wide range of experts, some of them worked directly on monitoring project's impacts. Based on their findings, activities were continuously adjusted to achieve the maximum positive effect. Many other experts contributed their professional advice on specific issues that needed to be addressed.

**Workshops**
Professional workshops focused on the Bohemian gentian, the hermit beetle Osmoderma eremitaand the ground beetleCarabus menetriesi pacholei were organised for the scientific community, stakeholders and colleagues from other regions and institutions. The exchange of knowledge and experience significantly helped all participants adjust existing management practice, resulting in much higher-quality management of localities. In Slovakia, several


workshops and field trips focused on the restoration of pollard willows and grazing were held. Thanks to these, we were able to spread the good practice developed by the project to other interested parties, who can continue to implement it.

**General public and schools**

During the project, a variety of events were held with the aim of informing the public not only about the project itself but also about the principles and goals of nature conservation in general, primarily focusing on the Natura 2000 network. Special events were aimed at primary school pupils, where they learned through play about species such as the Bohemian gentian or the hermit beetle directly on localities. Several field trips for the general public were organised. Volunteers also participated in project activities (e.g.Volunteer Days with E.ON). They planted trees and mowed localities with the Bohemian gentian. They were also very helpful during grassland restoration in Slovakia, e.g. at the Devínska Kobyla locality.

**PR activities**

PR activities were designed to raise public awareness of the project and its goals. The main tools included updating the project website and social media, media campaigns, and the production of promotional materials, leaflets and information panels for the project localities.


# Achievements and what´s next?

## What have we managed:

- **30,000,000 Kč is the value of special technologies acquired by the South Bohemian region due to the project** which enables high-quality management of natural and cultural heritage.However,significant costs were covered by the South Bohemian region itself. Skilled staff will continue to manage precious localitieseven after the finalization of the project.

- **27 Natura 2000sites in the Slovak republic have been restored and long-term management has been introduced.** We supported local farmers and have restored both natural and cultural values of local regions.

- **We have planted 53,212 trees** to restore alluvial forests in South Slovakia andrare bog woodlands with Pinus rotundatain South Bohemia.

- **The water regime of bogs and salt marshes has been improved** – keeping water contributes to a better condition of these habitats and to more efficient landscape adaptations to climate change.

- **Threenew beetle species and 1 new species of solitary bees of the Slovak republic** were recorded in the area of salt marshes included into restoration actions within the project.

- **1,248 mighty old oak trees have been treated** along pond dams in the South Bohemian region. **541 large pollard willows have been treated** within localities in the Danube River region. These professional measures ensure longer lifespans for the trees and provide visitors with both enjoyable and safe visits to parks, ponds, and other natural sites.

- **428 ha of valuable grassland biotopes have been restored by grazing in South**

**Slovakia.** These sites represent one of the most precious localitiesof salt marshes, blown sands and xerophilous grasslands in the entire region. Grazing has been restored in cooperation with local farmers and will continue in the long-term even after the finalisation of this project, which supports both nature and local people.

- We have built **a 500-meter educational trail** within the special area of conservation Borkovická blata (a bog).

- **178 contributions to regional and statewidemedia** to inform the public about the aims and results of the project

- **Hundreds of meetings** with stakeholders, dozens workshops, field trips and presentations at conferences and seminars

- **Enhanced international cooperation** due to tens of meetings with professional organisations and projects in Czech, Slovakia, Germany, Austria, Hungary, Portugal, Italy, Sweden and other European states

## What´s next?

An essential part of the project is the After-LIFE plan which outlines activities to ensure project sustainability for another ten years. While the project officially ends, its impact tand some of its activities continue to enhance the environment in both the Czech and Slovak Republics. The management of localities also continues including grazing, mowing, the treatment of planted trees etc.

## Natura 2000

Natura 2000 is a network of protected areas which is established according to common principles across all member states of the European Union. It primarily provides protection for animal and plant species as well as for natural habitatst hat are particularly valuable and endangered from the European perspective or that occur only in limited areas.


## Program LIFE

The LIFE Programme is the EU's funding instrument for the environment and climate action.
The objective of LIFE is to contribute to the shift towards a sustainable, circular, energy-efficient economy that is low-carbon and climate-resilient and based on clean energy. The programme also aims to protect and improve the quality of environment including the air, water and soil as well as to halt and reverse biodiversity loss and address ecosystem degradation, e. g. by coordinating the Natura 2000 network.