



## LIFE for Insects

### After-LIFE plan for the LIFE for Insects project LIFE16 NAT/CZ/000731

*Conservation of Selected Natura 2000 Insect Species in  
Transboundary Area (CZ-SK) of Western Carpathian Mts.*

## 1. Overview of the project

The project **LIFE for Insects** was implemented in the period from 7/2017 to 12/2022 (5.5 years) in the border area between Czech Republic and Slovakia, covering Bílé Karpaty SCI, Čertoryje SCI, Beskydy SCI (in the Czech Rep.), and Holubyho Kopanice SCI (in Slovakia), and several important stepping stones. All localities are under national level of protection within the Protected Landscape Areas of Beskydy, Bílé Karpaty (CZ), and Biele Karpaty (SK).

**Project objective** was conservation of selected Natura 2000 insect species and enhancing their populations through restoration of their habitat in the transboundary area (CZ-SK) of the Western Carpathians and interconnection of species metapopulation in this area.

**Target species:** *Lucanus cervus*, *Parnassius mnemosyne*, *Maculinea arion*, *Maculinea nausithous*, *Maculinea teleius*, *Colias myrmidone*, and *Euplagia quadripunctaria*.

**Target habitats:** open-canopy middle forests, pastures (dry grasslands), wet meadows.

### **Main issues addressed by the project:**

The main conservation problems and threats to insects in the White Carpathians are similar to those that face many Central European areas where historical ways of land management were abandoned and modern intensive farming processes degraded high nature valued farmland and its biodiversity. Changes in traditional use of meadows, but also lack of awareness of stakeholders, such as farmers, authorities, and decision-makers were the main causes of the decline in insect species at these project localities.

### Particular issues addressed:

- 1) Shrub encroachment on sites caused by the absence of traditional farming in non-forest habitats, which was significant in the second half of the 20th century when the landscape of the Western Carpathians changed radically as a result of intensive, large-scale socialist agriculture. The traditional way of farming has only been maintained on small inaccessible sites which were not included into co-operative ownership they were initially managed by their owners who gradually lost the motivation to mow or graze them and they become encroached by self-seeding shrubs and trees.
- 2) Increasing fragmentation, isolation, and homogenisation of non-forest habitats. Today the landscape is increasingly being fragmented and non-forest habitats are becoming isolated. Most insect populations operate in so-called metapopulation systems demanding a sufficient number of other areas and their interconnection. For this reason it was necessary to support and create 'stepping stones', i.e. suitable habitats in a dense network so as to balance temporarily unsuitable conditions at some sites with optimal conditions.

- 3) Abandonment of traditional forest management and conversion of broad-leaved and mixed forests to even-aged spruce monocultures. For a long period of history, wood pasture used to be a key element in the agricultural economy. Vegetative sprouting of trees was compatible with grazing, but generative sprouting was less so, as this limited our ancestors in obtaining fuel and forced them to utilise most forests as coppice. Since the 18<sup>th</sup> century, the need increased for construction timber and sizable wood for timbering mines and previous practice was not only abandoned, even forbidden by law, which has not changed till today.

## 2. Overview of the project areas

### **Bílé Karpaty SCI and Čertoryje SCI (Czech Republic)**

The total area of Bílé Karpaty SCI is 20 043.31 ha. Bílé Karpaty SCI is of European importance for species richness of its grasslands and a high concentration of rare and protected plant and animal species associated with grassland communities, ecotones, and open-canopy forests.

The eastern part of Bílé Karpaty SCI (Moravské Kopanice) is formed by a rich patchwork of meadows, pastures, orchards, arable fields, and small woods with scattered farmsteads. The main ridge is largely covered by broad-leaved woodland. The area possesses several nature reserves.

The western part of the SCI (Hornácko) is characterised by large complexes of species-rich grasslands with scattered solitary trees and succession stages towards oak-hornbeam or oak forests. The main ridge is largely covered by broad-leaved woodland.

The total area of Čertoryje SCI is 4 855.06 ha. It represents an extensive complex of woodland and meadows with hedges and solitary trees set in a diverse landscape. Successional stages are going in the direction of oak-hornbeam or oak forests.

The project sites of Bílé Karpaty SCI and Čertoryje SCI were originally covered by grass-herb communities which have locally remained in fringes and clearings. The prevailing vegetation type used to be very species-rich thermophilous grasslands (6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates), a transition between the *Cirsio-Brachypodium pinnati* and *Bromion erecti* alliances, which in isolated moister places pass into intermittently wet *Molinia* meadows on calcareous soils (6410), where *Molinia arundinacea* prevails.

**EU species bound to the project localities:** *Eriogaster catax*, *Lycaena dispar*, *Callimorpha quadripunctaria*, *Lucanus cervus*, *Zerynthia polyxena*

**Critically endangered species:** *Euphydryas maturna*, *Anthaxia hungarica*, *Mantis religiosa*, *Maculinea alcon*, *Lopinga achine*, *Zerynthia polyxena*, *Coracias garrulus*

**Strongly endangered species:** *Eriogaster catax*, *Elater ferrugineus*, *Proserpinus proserpina*, *Maculinea nausithous*, *Maculinea teleius*, *Lycaena dispar*, *Falco columbarius*, *Lacerta agilis*, *Anguis fragifis*, *Lanius minor*, *Coronella austriaca*

**Endangered species:** *Limenitis camilla*, *Limenitis populi*, *Odontes armiger*, *Hyles euphorbiae*, *Meloe rugosus*, *Meloe proscarabaeus*, *Formica pratensis*, *Papilio machaon*, *Iphiclides podalirius*, *Lucanus cervus*, *Carabus arcensis*, *Cicindela campestris*, *Trichius sexualis*, *Trichius fasciatus*, *Protaetia aeruginosa*, *Oxythyrea funesta*, *Crocidura Jeucodon*, *Luscinia megarhynchos*, *Natrix natrix*

Rare and endangered species in the area include many members of the orchid family.

## Beskydy SCI (Czech Republic)

The total area of Beskydy SCI is 120 386.53 ha. It is covered mainly by a mountain and forest landscape with the main ridge and numerous side valleys. It is a preserved natural and landscape unit in the highest Carpathian mountain range of the Czech Republic. The specific landscape shapes the rugged terrain, rivers, vegetation cover and wild fauna, layout and utilization of forest and farm land. To date, Beskydy is only sparsely populated with mountainous grazing farms.

The area of Beskydy SCI is dominated by forests (more than 70 % of the area is forestland). Forest vegetation comprises mainly the beech forests *Dentario enneaphylli-Fagetum* and *Dentario glandulosae-Fagetum* (9130), at a height range from 400-500 m above sea level, and acidophilous beech forests *Luzulo-Fagion* (9110), covering the crests from 700-1 000 m above sea level, but also inverse valley locations. The dominant tree species is European Beech (*Fagus sylvatica*), accompanied to a larger extent by Silver Fir (*Abies alba*), Sycamore (*Acer pseudoplatanus*), and Norway Spruce (*Picea abies*).

On the steep slopes there are small areas of scree woodlands (9180\*). They occur in forest soil often saturated with slope water, as well as on fine skeletal soils on the edges of slopes. Scree woodlands in the high areas transition into mountain beech forests (9140) with a presence of rich meadows. In the lower areas there are the Oak-Hornbeam biocoenosis as. *Carici pilosae-Carpinetum* (9170), which survive only in residues.

On the banks of streams and forest springs in the mountain areas there are surviving unique mountain alder groves with the grey alder (*Alnus incana*) (91E0\*). The substitute vegetation of the wet habitats comprise floodplain wet meadows and peat and spring meadows (7140), in the past, drained to a larger extent.

Characteristic "juniper belts" are created in this way in Beskydy. Only in the treeless crests in the mountain areas have communities developed of mountain Nardus grasslands with alpine types of Nardo-Agrostion tenuis (6230\*). This site has a presence of broad-leaf dry grasslands in small areas, coupled with a presence of juniper and orchids (6210\*, 5130).

**EU species bound to the project localities:** *Aconitum firmum subsp. moravicum*, *Cypripedium calceolus*, *Maculinea nausithous*, *Maculinea teleius*, *Lycaena dispar*, *Maculinea arion*, *Parnassius mnemosyne*, *Lacerta agilis*, *Coronella austriaca*.

**Especially protected species in the critically endangered category:** *Euphrasia slovacica*, *Dactylorhiza maculata*, *Pyrola media*, *Mantis religiosa*, *Maculinea arion*, *Parnassius mnemosyne*, *Vipera berus*, *Emberiza calandra*

## Holubyho kopanice SCI (Slovakia)

Holubyho kopanice is the largest SCI in White Carpathians, with an area of 4333.86 hectares. Small localities of preserved grasslands, orchards, and wetland ecosystems are among the most diverse habitats in Central Europe. The flora of the White Carpathians is surprisingly diverse compared to that of adjacent geographical units. Meadow diversity of is very high, with up to 110 different plant species growing on an area of 24 m<sup>2</sup>, creating biodiversity hot spots of European importance. Semi-natural dry grasslands and scrubland facies on calcareous substrates, important for orchid occurrence (habitat 6210\* important orchid sites), cover warm slopes and consist of many different grass and herb species. These dry grassland habitats are often mixed with wet petrifying springs with tufa formation (habitats 7220\* and 7230).

Several species of community importance live in the area. Important insect species include the butterflies *Callimorpha quadripunctaria*, *Eriogaster catax*, *Marulinea nausithous*, *Marulinea teleius*, *Lycaena dispar*, and *Zerynthia polyxena*; they occur in numerous populations on the site but are shrinking due to inappropriate management. The site is one of the last areas in Slovakia with existing populations of very endangered *Colias myrmidone*. *Parnassius mnemosyne* is also a very rare and decreasing species in the area and actions for its preservation have to be taken. *Phengaris arion* is also very rare and decreasing. Another quite abundant species bound to wood margins and open forests is the beetle *Lucanus cervus*. Populations of rare butterflies of national importance also occur in the meadow vegetation, such as *Brenthis hecate*, *Chloroclysta miata*, *Drymonia obliterate*, *Lemonia taraxaci*, and *Lemonia dumi*. Extensively managed orchards are the habitat of *Saturnia pyri*.

Other species of community importance worth noting include *Vertigo moulinsiana* and *Vertigo angustior* from the Mollusca phylum that live in the moss layer in the spring fens. Amphibians are represented by *Triturus cristatus*, *Hyla arborea*, and *Rana temporaria*. *Bombina variegata* occur in shallow pools. Various reptile species occur here: *Coronella austriaca*, *Elaphe longissima*, *Natrix natrix*, and *Elaphe longissima*. Meadows are inhabited by *Crex crex* and *Coturnix coturnix*.

Rare and endangered species in the area include many members of the orchid family.

### **3. Overview of management practices**

#### **Clear-cutting**

Clear-cutting of overgrown former pastures and meadows by self-seeding woody plants or coppicing of trees to create either woodland pastures or coppiced forests was first measure needed to create target habitats for insect species.

#### **Grazing**

Extensive grazing for target species was carried out, with a smaller number of animals on a given area compared to commercial intensive grazing. Rotation and mosaic grazing management was used – part of the area is left unmanaged for period of time, so there is always vegetation growing at the localities to provide feeding plants and shelter for target species.

On sites in Beskydy, and especially Holubyho Kopanice, grazing was carried out by various animals. In Slovakia 140 animals of different species and breeds were acquired according to the specific needs of the localities,

Cattle are the most effective at suppressing the weed vegetation and also consume high amounts of biomass. Goats feed well on woody vegetation of shrubs and tree shoots, while sheep favour short grasses compared to cows who prefer leafy vegetation. Horses and donkeys suppress woody vegetation by peeling bark from trees and feeding mostly on grasses, leaving plenty of flowering plants in the pasture. Geese were used in wet meadows and near streams to graze the vegetation, with the aim of not disturbing the soil as larger animals would do.

#### **Mowing**

Mowing was carried out in particular time periods and in rather mosaic patterns so that enough nectar was always available for insects species. Also, mowing in combination with grazing was used to reach the ideal state of the sites.

## Change of land use in Slovakia

We have employed measures on 96.62 hectares of intensively used grasslands towards more suitable practices for target insect species (change from mulching to grazing on 11.85 hectares, creation of mowing and grazing patterns on 84.77 hectares). Seeds of nutritious plants were sown at 15 sites (*Onobrychis viciifolia*, *Vicia sativa*, *Dianthus carthusianorum*, *Betonica officinalis*, *Trifolium montanum*, *Trifolium pratense*, *Sanguisorba minor*, etc.). These are further mown or grazed. To re-create a sparse mosaic of shaded and sunny places, as well as wind shelters for target species, 2811 trees were planted in localities where larger blocks of grasslands were restored.

## 4. Project results

### Restoration of target habitats

The objective to restore habitats for target species on 510 hectares within Actions C (280 ha in the Czech Republic and 210 ha in Slovakia) was exceeded to a total amount of 597.55 ha (318.82 ha in the Czech Republic and 278.73 ha in Slovakia). Out of that 216.46 ha in Bílé Karpaty SCI and Čertoryje SCI (Actions C.1 and C.2), 102.36 ha in Beskydy SCI (Actions C.3 and C.4), and 278.73 ha in Holubyho Kopanice SCI (Action C5).

Open canopy middle forests were restored or rather were prepared for future creation of an ideal state of the habitat as it is a long term process; a total area of 275.31 ha in favour of *Lucanus Cervus* and *Parnassius mnemosyne* species. Out of that, 90.43 ha were of future coppice forest and 184.88 ha of wood pasture or wooded meadows.

Pastures and meadows in favour of *Maculinea* butterfly species and other target species were restored on a total area of 214.62 ha.

### Land purchased

In Čertoryje SCI, a total of 4.78 ha were purchased and 7.37 ha were leased for a long term period. Thus the original goal was slightly exceeded.

In Holubyho Kopanice SCI, total of 16.68 ha of land were purchased and 11.06 hectares were leased for 20 years within Action B2. The original goal to purchase 40 hectares in Slovakia was not reached; however, it was not necessary for successful implementation of management measures.

### Equipment, durable goods and infrastructure

Necessary equipment was purchased for the implementation of the project within Actions C.2, C.3, and C.5, such as tractor with accessories, trailers for animal transport, and off-road cars for field work, baling machine for hay, equipment and material for grazing or other smaller tools.

Within Actions C.3 and C.5, infrastructure for field work was built for storing the hay, tools and equipment for management measures.

### Educational programmes

Within Action E.3, two complex educational programmes were created and four schools were provided with educational elements.

### Dissemination activities

Several types of events were organized for children and the public, such as summer camps, summer festivals, competitions, Shepherd's Day, excursions, and workshops. Various materials

were created to disseminate experience gained from project implementation. Thus, tens of thousands of people were influenced by the project.

## ‘SWOT’ analysis

### STRENGTHS

- Charismatic flagship species of butterflies and beetle targeted by the project, therefore easily promoted to the public and stakeholders.
- Competent project beneficiaries.
- Field restoration measures are sustainable and their effectiveness is proven by monitoring.
- Restored sites have reached their required or expected natural conditions.
- The project involved many stakeholders – namely farmers – that will manage the area in the future and gain benefits from the restored habitats, animal production and agricultural subsidies and, therefore, ensure sustainability of the project results.
- Land ownership of NGOs at strategical locations of project actions guarantees definite assignment of the restored areas for nature conservation.
- Project actions and achievements have had strong local support.
- The school programmes on target species educated a great number of children and contributed to raising public awareness. The programmes are successful and will be taught further even after the project ends.
- Engagement of local NGOs to the project helps in effectively addressing and approaching key stakeholders – farmers, municipalities, schools, local inhabitants, and many others.

### WEAKNESSES

- Intensive agriculture in the areas does not allow more ambitious restoration activities outside the boundaries of existing protected Natura 2000 sites and, thus, project conservation management and habitat improvements could be only done in secluded localities without proper connection between them.
- In Slovakia, remnants of a population of the priority species *Colias myrmidone* occur in Holubyho Kopanice SCI. The project focuses its activities on several localities that are directly connected to localities of its occurrence. Even with the sightings of several individuals in recent years, the numbers are so low that, due to unpredictable reasons (e.g. climate change, parasites, moulds), it might become extinct despite our best efforts in habitat management. The habitats created are also suitable for *Maculinea* species, other butterflies and insects that occur in the same localities, so management is not futile – it just might be too late for *Colias myrmidone*.
- While the change to grazing and mosaic mowing is visible and suitable for target species in a short time period, the planting of trees will take a longer period to be seen and.
- Creation of coppice forest habitat is a long term process and it reaches its ideal form in tens of years.
- A rather negative approach of some of the stakeholders towards conservation measures such as land owners of farmers.

## OPPORTUNITIES

- Based on project actions, further monitoring of habitat restoration, socioeconomic benefits and ecosystem services, restoration actions can be initiated and replicated to great extent.
- It is possible to use the experiences gained in the project for planning and implementation of other restoration actions or similar projects.
- Success with restoration of meadows and pastures and positive local acceptance by local farmers creates demand for restoration of other areas.
- The team will continue further communication with stakeholders to support their positive approach to nature conservation efforts and activities.

## THREATS

- Localities are still isolated and contact of local species populations with other localities is restricted; therefore, isolated populations might be subject to genetic isolation, parasites, and illnesses that might lead to their extinction even with the habitats properly managed.
- Limited possibilities to reach owners of valuable land due to a complicated and fragmented land ownership structure, outdated cadastral records, and a large number of untraceable landowners.
- Potential future fluctuation of employees working the project so that established relationship with stakeholders and knowledge of the project background could be maintained (by the end of the project, the majority of project employees continued to work for project beneficiaries).

## **5. Continuation after the LIFE project and its financial outlook**

**Approach and possibilities of how to maintain project sites or soft results of the project differ for each of the project beneficiary according to their establishment and main activities.**

### **Nature Conservation Agency of the Czech Republic** (NCA CR; public body)

#### Management of the localities

Within Actions C.1 and C.4, four types of habitats were created or, in case of the forest habitats, creation started with project implementation and further development is under way. A detail plan for further management (till 2028) for each of the 75 sites is enclosed in Annex 1 – *Site cards C.1, C.4*. The ‘site cards’ also include management measures implemented within the project and description of the character of the site. Basic information and link to a map is also included.

#### Sustainability and financing of the management measures

NCA CR is a public body who operates the Landscape Management Programme in Protected Landscape Areas (PLA) where project SCIs are located. Most of project sites within C.1 and C.4 Actions were managed under this programme as the beneficiary’s own contribution and it will be partly used for their maintenance. A second instrument for management measures are agriculture subsidies. Thanks to the project, former overgrown land was cleared and thus the land owners/farmers could obtain a subsidy. NCA CR officially approves the submitted applications for agricultural subsidies, communicates with the applicants, and supervises

related field works. By the end of the project, 14.8 ha (out of 291.48 ha) were already included under the agriculture subsidy scheme (via LPIS) and another 90.6 ha are planned for 2023.

With the role of NCA CR in the above-mentioned grant instruments, a sufficient overview of the project sites for the future is ensured. Intensive communication is maintained with farmers (landowners or tenants) who are aware of the biological value.

Further monitoring of project sites to see how target and other species react to the gradually developing habitats will be carried out within other activities of the beneficiary.

Soft project activities - NCA CR, as a coordinating beneficiary of the LIFE for Insects project, is the main body for further communication and thus is prepared to continue with networking activities and to actively support transfer and replication of gained experience from project implementation.

Original carved wooden informational boards created for the project will be maintained at their locations in field. To ensure long-term sustainability they were made of well dried oak wood and with a steel rod in its wooden post to avoid it being stolen.

The majority of project employees continue in their work for the NCA CR at equal positions as within project implementation so the established relationships with the affected project stakeholders, namely farmers, will be further maintained – something that is considered as essential.

## **Regional Association for Nature Conservation and Sustainable Development** (BROZ; NGO)

### Administrative

All administrative procedures and permits were obtained during the project. Costs related to animal husbandry and veterinary fees, insurance of equipment, and property taxes on land owned by BROZ are relatively low and can be easily paid from BROZ sources after the end of the project. No additional sources are needed.

### Conservation management

The management of forest habitats is not necessary in the immediate future as the next coppicing should occur within 30-40 years.

BROZ or local farmers will maintain the grazing on localities restored within the project as regular land management by animals purchased from the project (their offspring or animals belonging to local farmers) with equipment that was set up at localities as well as in the overwintering place. The project covered initial costs for restoration of habitats, but consistent recurring management requires BROZ or farmers to obtain regular income for basic daily care, transport of animals, provisions of winter hay and mineral supplements, repairs of equipment, veterinary costs, etc.

Agricultural subsidies and available schemes of the Rural Development Programme have been identified as the main external source of income to support grazing of restored habitats after the project ends. Prior to the project, project sites were not eligible for any kind of agricultural subsidies due to their long-term abandonment. The most difficult and costly restoration measures were carried out and paid for during the project. The quality of grasslands was improved greatly and, consequently, many project sites were included into marked agriculture production plots registered in Land Parcels Identification System (LPIS) by the end of the project (or will be shortly), which is the precondition to apply for agricultural subsidies.



Direct sources of income were also considered from primary agricultural production, such as selling the offspring of animals or animal products. All animals were purchased young and reached reproduction age and will be bred in subsequent years. To maintain grazing in remote areas, in difficult terrain without constant human presence, only meat-producing animals were purchased (not for milk production). Meat of organic quality from animals living in welfare conditions can be produced. But, more importantly, living animals can be produced and sold for grazing on other localities, primarily to local stakeholders, farmers, and inhabitants already contacted during project activities (and where extensive management required for target species can be consulted and monitored by BROZ). The production of animal offspring will also ensure long-term sustainability of the project as new individuals must gradually be added over the years into herds of short-living animals.

We have purchased sturdy animals that are less dependent on human presence, better adapted to natural conditions, and which can over-winter outside. Installed camera systems not only monitor equipment and infrastructure against theft, but also the condition of animals and any malfunctions of equipment during over-wintering of animals. BROZ expects to dedicate no more than two hours per day of its personnel to basic daily care of animals either during winter or during the grazing season. It is also feasible to cover the costs for personnel (approximately 60 hours/month) and travel by the above-mentioned subsidies and direct income.

Planted trees will need some management occasionally, mostly to repair the protection, watering in dry summers while they are still young, or to prune the tree crown. Half of the trees planted are fruit trees and fruit production in 10-15 years will supplement the income to support the necessary expenditure. Planted seeds as food plants for butterflies are incorporated into grasslands and will be mowed regularly in a mosaic, with the hay used to feed animals during the winter. There is no need for special care.

### Communication and public awareness

BROZ will continue to present the project to various groups of stakeholders during excursions, attending conferences and workshops, and presenting results in the media. Close contact with various stakeholders will be kept as the mutual cooperation is an added value to successful continuation of grazing on various project sites. This may also contribute to replication of grazing activities in other localities in the White Carpathians.

### Other

Monitoring of the areas and species, prevention of unwanted or illegal activities, etc. will be partly carried out by the activities of the State Nature Conservancy of the Slovak Republic, employees of Biele Karpaty Landscape Protected Area (as their common duties), and partly by the budget of BROZ.

## FINANCIAL OUTLOOK

The project was focused mainly on one-off investments, which did restore natural habitats for target species of insects and vital ecosystem functions and services. In general, there are three types of project results, with different financial needs after project completion:

1. No further management is needed – coppiced forests where no active management is needed for the next 30-40 years since the restoration actions were successfully implemented. Even for areas where no further management is needed, some financial resources are required to cover necessary costs such as: property taxes, legal evidence according to the type of land (e.g. costs of inevitable expert forest manager for forest land), monitoring of the areas,

control, prevention or removal of unwanted or illegal activities, etc. This will be covered by activities and by the budget of BROZ as well.

2. Occasional maintenance – maintenance of planted trees (repair of tree protection, occasional pruning) will be carried out by project beneficiary BROZ, from the BROZ budget, the maintenance of grazing fences will be carried out by farmers and maintenance of project equipment will be done by BROZ.
3. Regular land management actions – maintaining and recurring management of grasslands or woodland pastures by mowing and grazing. Regular management needs regular income. The sources of income for mowing and grazing of grasslands are primary agricultural production (hay, animal offspring and products), as well as agricultural subsidies and available schemes of the Rural Development Programme. Regular management of meadows will be carried out by BROZ with technical equipment purchased from the projects. Regular use of pastures will be secured by a local farm or BROZ, depending on the locality.

As mentioned above, the results and achievement of this particular LIFE project can be secured and maintained from the own budgets of project beneficiaries and local stakeholders and from the available regular agricultural subsidies. No other sources of finances are needed. However, more available financial resources would allow us to enlarge the positive impacts of conservation actions and to build up on successful results, know-how, and experience gained during implementation of this project.

## **CUNC Salamandr** (NGO)

### **Management (Action C.3)**

Follow-up management, which will maintain the achieved results and ensure their further improvement, will continue to be mainly grazing for all project sites. Grazing will be implemented (at least in the medium term) as an alternation of spring and autumn grazing. Furthermore, possible regrowth and ungrazed vegetation will be mowed about every three years. Management will take place according to the plan for each site – see Annex 2 – *Site cards C.3*.

Management will be carried out using our own resources (employees, our own herd of sheep); part of the management will be provided with the help of volunteers, especially as corporate volunteering has been developing recently. We also assume the involvement of individual volunteers. Commentary on management funding is attached below.

### **Equipment**

The purchased equipment (in particular, an all-terrain vehicle, an animal transporter, a hay barn, a hay press, pasture fence nets) will continue to be used for the management of meadows and pastures in Beskydy SAC, both on the sites included in the project and at other valuable sites that ČSOP Salamandr manages.

In the period of sustainability, increased maintenance is expected only for the all-terrain vehicle (due to the operation of the car in the off-road), for other equipment, only very basic maintenance following its service life is assumed (e.g., changing the tires of the animal transporter). The cost of this maintenance will be included in overheads.

### **Monitoring**

We have been trying to provide monitoring (mainly entomology, botany) at our other sites for a long time, even though they may not even be part of any projects. And we can see that a long series of results is especially valuable in monitoring. It will probably not be possible to carry it

out at the project sites at such intervals as we have done so far, but at least basic monitoring showing development trends will be ensured. We therefore plan to monitor butterflies at least twice in the next six years.

### Beskydy PLA bulletin

We have been publishing the Beskydy PLA newsletter since 2006, and its production and distribution of funding has long been ensured by a combination of project, sponsorship, and possibly our own funds, and exceptionally also co-financing by the state administration. Publication of the Newsletter with a frequency of at least once a year will be similarly ensured in the future.

### Management funding

Management will be financed from multiple sources. We expect to partly finance further management from our own resources, from subsidies, and the largest part will be covered by corporate donations.

Last year, one third of the Salamandr's budget came from donations, mainly from contributions from companies, and additionally from donations from smaller donors-supporters. In particular, corporate donations have been on the rise for a long time; the current trend in corporate social responsibility has changed from financing sports and culture to the benefit of the environment and nature conservation. Even activities that are normally less attractive to sponsors, such as monitoring, can be financed from sponsorship.

Mainly larger companies with multinational owners have this kind of social responsibility set automatically, but even at the level of medium-sized companies, this trend is significant. This is also reflected in the contractual setting of multi-year cooperation, which will enable the provision of a significant part of follow-up management.

Part of the management will be paid for from other own resources, and the involvement of volunteers will further reduce management costs. Only in the case of necessity will we solve additional financing with the help of subsidy programmes – from the national Landscape Management Programme, or even agricultural subsidies, but their conditions are still unclear at the moment. These would be chosen for places where local conditions (especially the terrain) make it possible to choose an appropriate grant title.

### CUNC Bílé Karpaty (CUNC BK; NGO)

#### Leases and purchases of land

We have been dealing with the conclusion of lease agreements and the purchase of land from owners since the 1990s. We have a lot of experience with this. In the coming years, we expect to acquire other surrounding plots of land for lease, as well as possible purchase.

Our organization is part of the National Programme of Land Societies and can use funds from the public fund "Místo pro přírodu" (Space for nature). Sites that are part of the LIFE for Insects project were included in this programme. In 2021 and 2022, with the help of fund raising, we managed to buy several more plots of land at the Dobré hory and Leskovky sites, for which there were no longer funds from the LIFE project.

#### Site management (Action C.2)

Our organization has been involved in site management since 1985. We currently manage over 200 ha of land at 26 sites in the area. We will further manage of the new plots of land that we

acquired thanks to the LIFE project in the future. For detailed plans see Annex 3 – *Site cards C.2.*

In 2022, there was a significant increase in costs (fuel). We hope that in the coming years the management subsidy will be proportionally increased, so that it will be possible to cover the costs associated with land management.

Staffing is also a risk; it is especially difficult to find workers for the fieldwork.

We plan to finance the management of grasslands from agricultural subsidies (SAPS, NATURA 2000, etc.) and the Landscape Management Programme (operated by NCA CR).

### Shepherd's Day

We organized Shepherd's Day for the first time in 2022 within the project, with about 200 people participating. Due to the great response from the public, we are planning to organize another Shepherd's Day in 2023. For this year, we have renamed Shepherd's Day as Farmer's Day and managed to obtain funds from the Ministry of the Environment of the Czech Republic.

If there is interest from the public, we will organize Farmer's Day in the following years as well.

### Bílé – Biele Karpaty bulletin

The "Bílé Karpaty" magazine has been in existence since 1995 with a volume of 24 pages. The magazine is currently published regularly twice a year and we always try to publish it, even if we sometimes do not manage to get funding for it from subsidies and we pay for it from our own resources.

Currently, we face several risks for the future, such as the increased cost of printing the magazine or staffing: editor-in-chief, editors, authors of articles and photos, etc. The public's interest in purchasing printed materials is also declining, as the younger generation has become accustomed to searching for information on the Internet. It is possible that the public's interest in printed materials will decrease and we will be forced to address this (reduction of circulation, digital version).

In 2023, funding from a subsidy is not guaranteed, only small funding for advertising and from subscribers.

### "Karpatáček" summer camp

A summer camp for children was only funded from the LIFE for Insects project in 2018. In the following years, we organized two rounds of summer camps every year, for which we received funds from other sources. From 2019 to 2021, we managed to obtain funding from the Employment Operational Programme; in 2022, we also organized two summer camps, for which we received a small financial contribution from the town of Veselí nad Moravou.

We also have two summer camps planned for 2023; due to great interest we have even increased the capacity from 25 to 30 children. Both children and parents are very interested in the camps, and we are planning them in the future as well.

Parents pay for the summer camp, and the camp can be implemented with a more modest programme that is not demanding on finances even without a subsidy. The only risk is staffing.

## **White Carpathians Education and information centre** (VIS; NGO)

### **Sustainability of E3 educational programme**

For individual types of schools, based on past experience, we assume continued interest in our “Milovník z pařezin” (Love in the Coppice) educational programme. Based on their school education programmes (SEP), schools need to fulfil the expected subject outputs, and the participation of children and pupils in this type of programme will lead to comprehensive education with the possibility of fulfilling not only several expected outputs, but also pupil competences.

The Love in the Coppice educational programme will continue be offered on our website in the section for schools, in both outdoor and indoor versions. Ensuring the implementation of the programme at the school, in its immediate vicinity, or in the Zahrady pod Hájem National Nature Reserve will be subsidized by the schools from their funds or from funds obtained from their pupils. The set price for tuition varies depending on which variant of tuition the school orders. The Templates project intended for primary schools, which the Ministry of Education, Youth and Sports is planning to implement in various forms in the coming years, still appears to be an important element of the possibilities of obtaining funds for schools in the future. As part of the Templates, it is possible for children and school pupils to complete both a project day in class and a project day outside of school (in the scope of at least 4 x 45 minutes for each day) under the guidance of a professional lecturer.

From the point of view of the material provision of the educational programme, we have acquired all the aids of sufficient quality (e.g., research bags and their equipment, printed materials for outdoor and indoor lessons) so that it is possible to work with them for the period of sustainability and not deprive the programme of some important teaching elements, but also to make it possible to lend the methodological manual with all the aids to the school at the request of the teacher for a fee.

### **Sustainability E1 work with public**

As during the project and during the period of sustainability, we expect to organize excursions for the public. The expected dates of the event will be similar to the time of the project, i.e., in the spring months. Promotion of excursions will be ensured in a proven way on our website, social networks, and with the help of printed leaflets. A necessary part of arranging excursions will be the collection of a financial contribution from participants, which will cover the most necessary expenses associated with arranging and implementing excursions.

Presentation of the project to the public will be ensured at verified events. We consider Veselí nad Moravou Earth Day (April), Children's Day (June), Ozvěny Hornácka (August), Days of the Zlín Region (September/October), and the Environmental Education Conference of the Zlín Region (September – November) to be particularly important. We have always reached a large number of participants at these events and we also count on this in the period of sustainability. We consider it important to continue to present the project and its results at irregularly organized workshops for the mayors of the White Carpathian municipalities called the White Carpathian Mayors' Meeting.

Last but not least, we also plan to present the LIFE for Insects project at suitable occasions, e.g., conferences for other LIFE projects in which we participate, and when presenting our work to the general public, schools, kindergartens, etc.

## **infinity-progress** (infinity, NGO)

### Sustainability of E3 educational programme

The Beauty of Butterfly Wings educational programme for kindergartens and elementary schools (including methodological and didactic aids and study excursion to the Upalone project site) became part of the standard offer of the environmental education (EE) programmes of the URSUS experience centre and Beskydy PLA IC operated by infinity. The offer of EE programmes is sent to more than 100 schools in the Moravian-Silesian region every year. The Beauty of Butterfly Wings programme is implemented both in the premises of the beneficiary, the URSUS experience centre, and Beskydy PLA IC in Dolní Lomná, as well as in non-formal education in schools of the Moravian-Silesian region, where expert lecturers of this EE programme travel to. The programme has also become a regular part of the educational programme of health stays that the project beneficiary implements. The didactic set will be preserved in the following years due to the high added value in terms of content, expertise, and aesthetics, and will be offered directly during conferences, fairs, festivals, etc., as well as at an e-shop (under preparation).

The programme included in the offer for other educators – in preparation for the period of sustainability; the programme will include 1) The existing methodological manual and didactic sets. 2) The Beauty of Butterfly Wings presentation or Life of the large blue and dusky large blue. 3) Source materials.

Reprint of the materials and operating costs will be financed from the infinity funds or from the funds of a suitable grant title.

A permanent exhibition with interactive elements – the story of the large blue. The exhibition has become part of the permanent exhibition “U všeho byla a je voda” (Water is part of everything) intended for the centre’s visitors. The exhibition also serves as a didactic aid for EE programmes (environmental education and awareness raising) intended for kindergarten children, elementary school pupils, and secondary school students.

The exhibition includes a set of magnifiers built into the permanent exhibition about selected species of Beskydy butterflies with a description (habitat, points of interest) is used to observe selected species of Beskydy butterflies. It also includes drawers that tell the unique story of the large blue and microscopes to observe selected parts of the butterfly.

In the future, the exhibition will be available to thousands of visitors, tourists, interest groups, families with children, elderly people, children from kindergartens, pupils from elementary schools, students from secondary schools, children and youth from informal organizations, teaching staff, lecturers, as well as other organizations (tourist associations, organization for the blind, university of third age, representatives of cities, municipalities, regions, and many others).

The exhibition is regularly maintained.

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