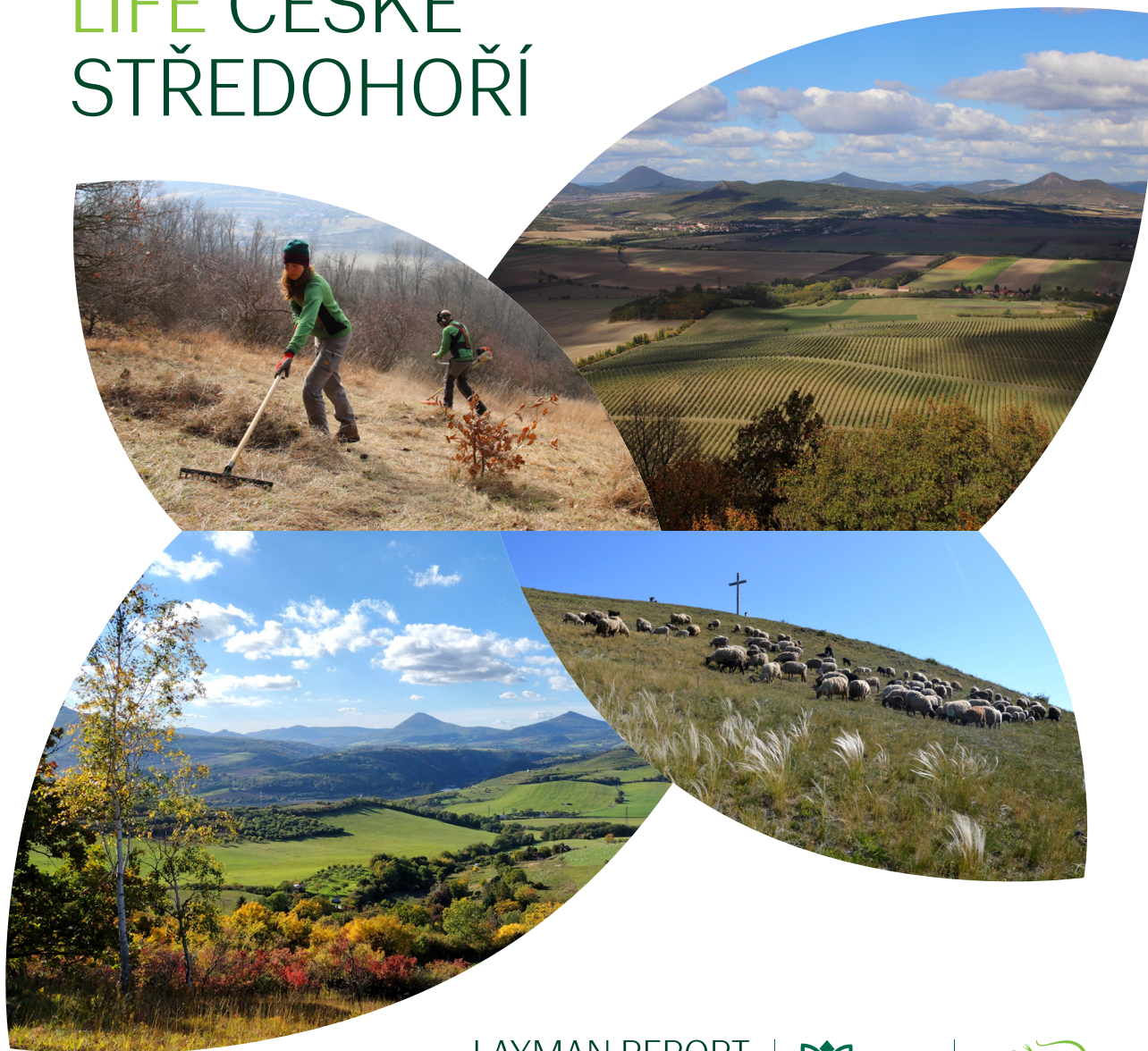


# LIFE ČESKÉ STŘEDOHOŘÍ



LAYMAN REPORT  
2023







# WHAT DO WE WANT TO ACHIEVE?

## LIFE HELPS NATURE

Funds obtained within the LIFE programme contributed to the management of the Sites of Community Importance and Species of Community Importance in České středohoří. LIFE is a financial instrument of the European Union which aims to support nature conservation and mitigate against climate change. Within the LIFE programme, these are two- to five-year projects with long-term positive effects on nature and the landscape, where the subsidy participation of the European Commission makes up

**60-75 %** of the total costs.

Selected parts of the **České středohoří** protected landscape area belong to the **Natura 2000** system, which aims to protect the most endangered European species and natural habitats.

### *Why LIFE project for České středohoří?*

For its extraordinary value within the entire European Union.

The most species-rich and valuable communities in České středohoří include thermophilous dry grasslands, white slopes, and forest-steppes habitats. In the past, they were regularly managed by livestock grazing, mainly sheep and goats, or by mowing. With a gradual decline of these activities, they became overgrown; this led to a decline in both flora and fauna diversity. In the case of forests, inappropriate species of trees were planted, including geographically non-native ones. The **LIFE České středohoří** project aimed to create a colourful varied landscape.





# TARGET HABITATS

## *Dry grasslands full of life*

Dry grasslands are found in warm, dry areas with minimal rainfall, on shallow, nutrient-poor soils, and in places where there are large temperature differences between day and night and throughout the year. Nevertheless, these seemingly inhospitable areas are characterized by a high richness of flora, to which a large number of animal species are bound, especially invertebrates.

## *More resilient deciduous forests for the future*

Although the forest cover of České středohoří is less than

**30 %**, and the stands tend to be fragmented

into smaller areas, the forest composition is relatively rich. Even today, the České středohoří forests are made up of native trees to a certain extent, and thus enable the life of a whole range of valuable species of animals, plants, and fungi. Support from the natural species composition also helps to counter the effects of climate change – mainly soil water retention, improvement of microclimatic conditions, resistance to large-scale fires, and the calamitous outbreaks of various types of „pests“.





# WORK FOR NATURE

## Cutting shrubs

**156.1 ha**

*(of which 4.197 were carried out using climbing equipment)*

Extremes prevail in the current landscape – on the one hand, wide fields of agricultural monocultures, on the other hand, impenetrable thickets or even woods in places of former meadows and pastures. In order to restore meadows and pastures with a mosaic-like structure, it was necessary to remove unwanted trees, using manual cutting, felling or stump grinding.

## Grazing

**95.18 ha**

Today, extensive grazing is one of the optimal ways of managing valuable sites. As part of the project, it was implemented mainly with the help of sheep and goats, which do not mind steep slopes and grazing on tough steppe plants or tree regrowth. In addition, animals help to disturb the grass turf and expose the soil with their trampling, which facilitates the germination of the seeds of competitively weaker plants. Certain types of insects also need areas of bare soil after grazing for their development.

## Mowing

**160.5 ha**

In many sites, mowing has become the standard method of management. Especially where, due to inaccessibility, it was not possible to introduce regular grazing or where a targeted mosaic and cutting of some species is desirable.

## Elimination of non-native plant species

These plants have no natural competition in our conditions, they spread easily and quickly, and as a result they displace native species. The elimination of non-native plants is quite complex because, after removal, they easily regrow from stumps and roots, or they sprout repeatedly from the rich supply of seeds in the soil. Several approaches were used to dispose of them – ring-barking, felling leaving a high stump with subsequent disposal of regrowth, or re-cutting or mowing the regrowth. Herbicide was applied by leaf spraying or injection with good results. Another option, but a very laborious one, is manual uprooting – this measure was applied in the case of woad on more than

**1.1 ha.**





# TARGET SPECIES

## Green lizard

The occurrence of the green lizard in České středohoří is bound to the Elbe river valley. It appears in the vicinity of the village of Dolní Zálezly and in the site of Kalvárie near Velké Žernoseky. The populations from the Elbe gorge are found outside the range of the continuous distribution of the species and are among the most northerly in the world.

### Population status before the project

**Kalvárie near Velké Žernoseky:** Even before the start of the project, there was a relatively stable population of green lizards, with up to 40 individuals.

**6** young individuals were also observed

In Dolní Zálezly, there is a long-term downward trend.

**3** adults were observed before the project

### Population status after the project

**Kalvárie near Velké Žernoseky:** there has been a significant increase in population.

**98** individuals were observed  
(including 35 juveniles)

The green lizards reacted very positively to most of the implemented management measures; they liked the piles of branches after the cutouts, which they immediately used as shelters.

**Dolní Zálezly:** Even after interventions (mosaic mowing and partial cutting of self-seeding woody plants), the population did not increase.

Relocating 30 individuals from Kalvarie did not help.

### Interesting facts about the green lizard management

- Building seven habitat piles serving as a safe refuge from predators and as a wintering place
- Genetic study of České Středohoří green lizard populations
  - The study was implemented in cooperation with the Czech University of Life Sciences, Prague. The aim of the study was to evaluate the status of the genetic diversity of green lizard populations in sites around the village of Dolní Zálezly and Kalvárie near Velké Žernoseky. A total of 22 swabs from the oral cavity were analysed, 17 from the population of Kalvárie and 5 from the population of Dolní Zálezly. DNA isolation was performed for all samples and the genotype was subsequently determined. As expected, the detected genetic diversity of the population from around the village of Dolní Zálezly was significantly lower than that of the population from Kalvárie.
- In 2019 and 2020, 30 young animals were translocated to the site in Dolní Zálezly to ensure greater genetic variability.







### Jersey tiger

This species of butterfly is classified as an umbrella species; its populations respond well to the quality of management of thermophilous habitats. If the Jersey tiger thrives, the numbers of other valuable species also increase.

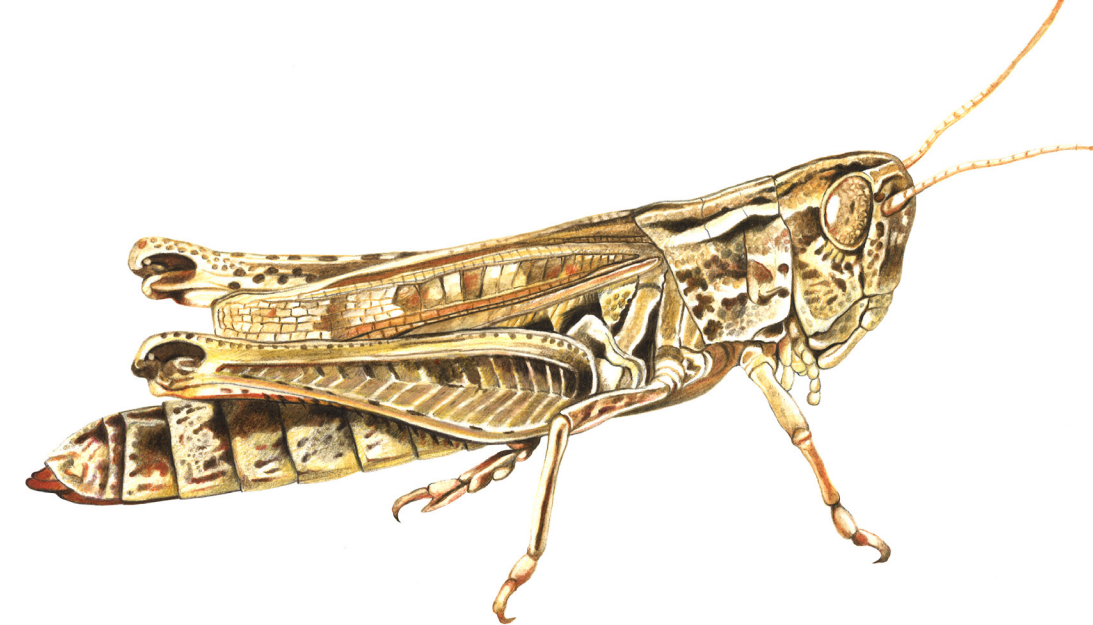
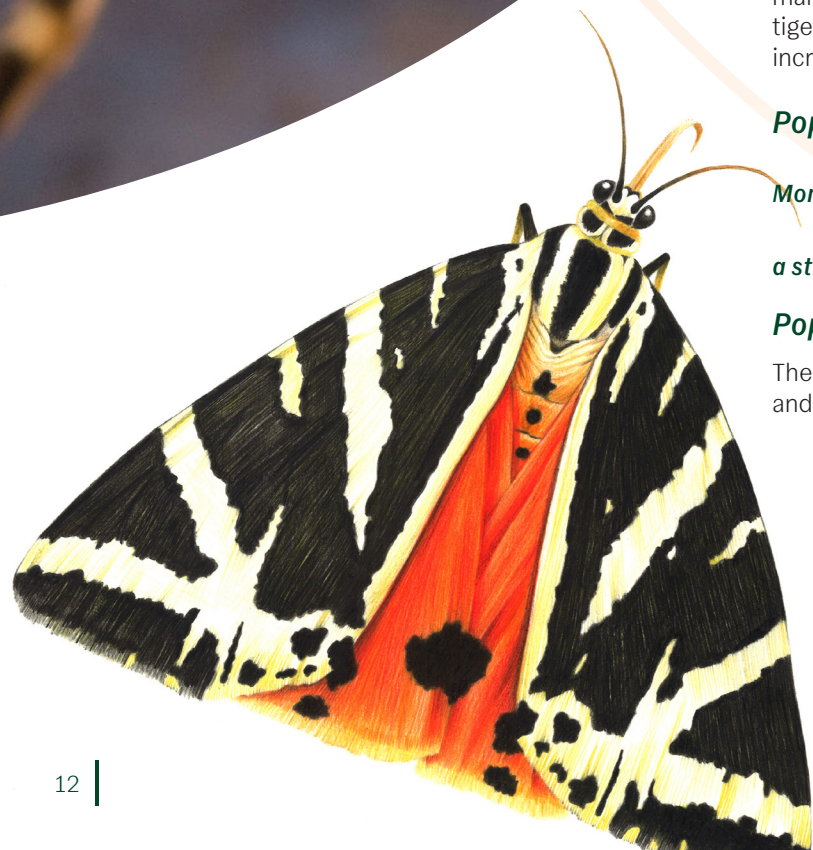
#### Population status before the project

Monitored at **14** separate sub-sites with

a stabilized population status

#### Population status after the project

The occurrence of Jersey tiger was confirmed at all sites and in sub-segments.



### Locust

České středohoří is home to the endemic locust species *Stenobothrus eurasius bohemicus*. By its occurrence, this inconspicuous locust proves the long-term continuity of this steppe habitat. Together with other species, it verifies that the České středohoří steppes have existed for a long time. Within the LIFE České středohoří project, this species occurs only in the Radobýl SCI.

#### Population status before the project

**9–15** individuals were recorded

#### Population status after the project

At the last census in 2022, **78–88** individuals were recorded

The population is strong and healthy in Radobýl.







## Speargrass

In the Czech Republic, speargrass species *Stipa zalesski*, is unique steppe grass found only on the České středohoří hills. Management of this rare species also means management of the entire communities of speargrass steppes, to which butterflies in particular are bound.

### Population status before the project

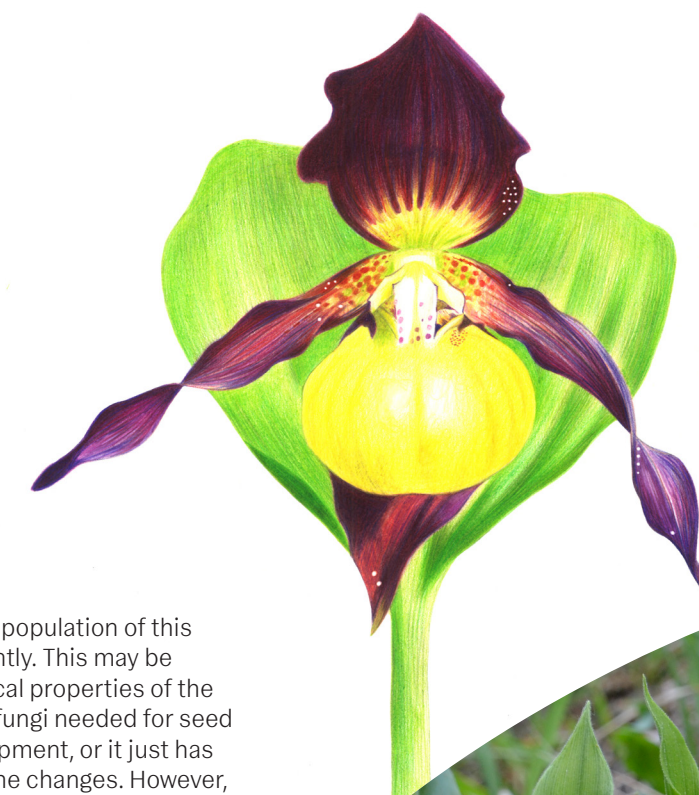
**3** clumps in Košťálov SCI, **54** clumps in the Kostelní vrch site

### Population status after the project

**12** clumps in Košťálov SCI, **78** clumps in the Kostelní vrch site

### Interesting facts about the management of speargrass

On Kostelní vrch, an experimental burning of old grass layers was carried out, which enabled the germination of seeds not only of speargrass, but also other competitively weaker plants.



## Lady's slipper orchid

Despite all the management, the population of this orchid did not increase significantly. This may be caused by changes in the chemical properties of the soil and the loss of microscopic fungi needed for seed germination and seedling development, or it just has been too short a time to notice the changes. However, regular management has strengthened a large number of species associated with white slope communities, including other orchid species.

### Population status before the project

**6** clumps

### Population status after the project

**9** clumps







### Eastern pasqueflower

This iconic species of the Holý vrch near Hlinná site was supported not only by regular mowing and grazing, but also by planting cultivated plants and sowing seeds on the site. A total of 550 plants were planted and 800 seeds were sown. During the project, a rescue programme was approved for the eastern pasqueflower, so even after the end of the project it will be actively supported.

The population decline in Holý vrch near Hlinná SCI was caused by the dry years of 2018 and 2019. As a reaction to the situation, the species was transferred to cultivation and subsequently supported on the site by planting and sowing

#### Population status before the project

Holý vrch near Hlinná SCI **194** plants,  
Borečský vrch SCI **79** plants

#### Population status after the project

Holý vrch near Hlinná SCI **98** plants without  
plantings, with plantings **227**  
Borečský vrch SCI **82** plants without plantings,  
with plantings **117**



### Hermit butterfly

Thanks to the removal of self-seeding woody plants and the restoration of extensive sheep grazing in the area of Radobýl SCI, this rare butterfly, which probably became extinct here in the 1990s, could be repatriated. Since 2020, artificially reared hermit butterfly caterpillars and imagoes have been repeatedly released in the area of the former quarry and the rocky steppe. Monitoring from 2022 and 2023 has confirmed a thriving population.

#### Population status before the project

no individuals - **0**

#### Population status after the project

around **500** specimens  
in Radobýl







## WORKING WITH THE PUBLIC

Awareness of the LIFE České středohoří project was one of the main conditions for its success. The educational activity of the project team was the most important. They organized various regional events aimed at popularizing nature conservation, talks, lectures, field trips for laymen and experts, special educational events and lectures, as well as project presentations at national and international conferences and professional meetings.

**10** information panels and educational trail were built.

Every year, an all-day Pasture Festival event was prepared, especially for families with children. Non-profit organizations from the Ústí nad Labem Region also took part in working with the public.

Also, don't miss the great smart phone application we have developed called GEOFUN, which guides visitors in a playful way around ten interesting sites in České středohoří.

### *In numbers*

Over **250** events for the public

With around **50,000** visitors

Over **2,000** children on our excursions (including those arranged by NGOs)

**21** presentations of project results



# SOCIO-ECONOMIC BENEFITS OF THE PROJECT

Perception of the landscape by visitors? Tourist potential of municipalities? What is the ideal landscape? There is no correct answer, but in a comprehensive study of socio-economic indicators of project impact, we tried to unravel mutual relationships. However, the study shows all stakeholders and affected entities are aware of the České středohoří uniqueness and the need to preserve it for future generations.

## **Excerpts from interviews conducted:**

*„Many areas were used as pastures. And we miss it today. Today we have to find shepherds to maintain where there are valuable forest-free areas. And that is contracted today, shepherds get paid to graze there. Before, it was simply grazed spontaneously. (...) When you drive through České středohoří, you come across two extremes in terms of meadow vegetation. Either it is completely left fallow, so there is no management at all and it is actually overgrown (...) Then you have the other extreme, everything is mowed down and wrapped in a bale.“*

*„The North Bohemian Region, especially České středohoří, is really nice. It has a special charm to it, it's not very well-known, and people leave literally excited.“*

*„České středohoří are hills, and farming in the hills is double the work.“*

*„There are several generations missing here who would realize that the connection between man and the land in the landscape is really essential for any development in the village.“*







## ECOSYSTEM SERVICES OR THE QUANTIFICATION OF NATURE

Nature, in addition to recreation, provides a number of valuable services. For example, regular mosaic mowing of a meadow increases the number of growing herbs and thus more food for pollinators. But is it possible to quantify these benefits? Those that we tried to measure in the project using the TESSA method are, for example, water quality, the nutritional value of new grazing areas, and carbon sequestration (loss of carbon stored in biomass).

*Nutritional value - thanks to the restoration of pastures, it is now possible to graze an additional* **873** *sheep on the project sites*

*(calculated on* **156.11** *ha of pasture)*

*The reduction in carbon sequestration to date is* **53.33** *tons of carbon per year*

*(calculated on* **156.11** *ha of scrub clearing)*



# CONCLUSION

Thanks to the LIFE České středohoří project, there have been significant positive changes in selected sites in the central part of České středohoří over the past six years. Thermophilous communities, which slowly degraded due to lack of management, were restored and strengthened by many interventions. Owners, farmers, and other land users were involved in the care of nature and landscape. The fulfilment of the project goals thus led not only to the improvement of the wildlife of České středohoří, but also to the support of local communities, who can benefit from the favourable state of the countryside in their surroundings.







# ACKNOWLEDGEMENTS

Allow us to take this opportunity to thank all current and former colleagues, cooperating entities, owners and users of the land in question, contractors, representatives of local governments, and state and non-profit organizations. To everyone who has been participating in the success of the LIFE České středohoří project. And, of course, many thanks go to the providers of financial support, namely the European Union and the Ministry of the Environment of the Czech Republic. We thank you all; without you these significant positive changes on the hills and slopes of České středohoří would not have happened.



*Project title:* **Active protection of thermophilous habitats and species of European importance in České středohoří – LIFE České středohoří**

*Project number:* **LIFE16 NAT/CZ/000639**

*Coordinating beneficiary:* **Nature Conservation Agency of the Czech Republic**

*Total cost of the project:* **2,452,784 Euro**

*LIFE EU programme contribution:* **1,471,670 Euro**

*Co-financing of the project:* **Ministry of the Environment**

*Duration:* **1/8/2017 – 31/12/2023**





NATURE IS OUR  
HERITAGE AND FUTURE

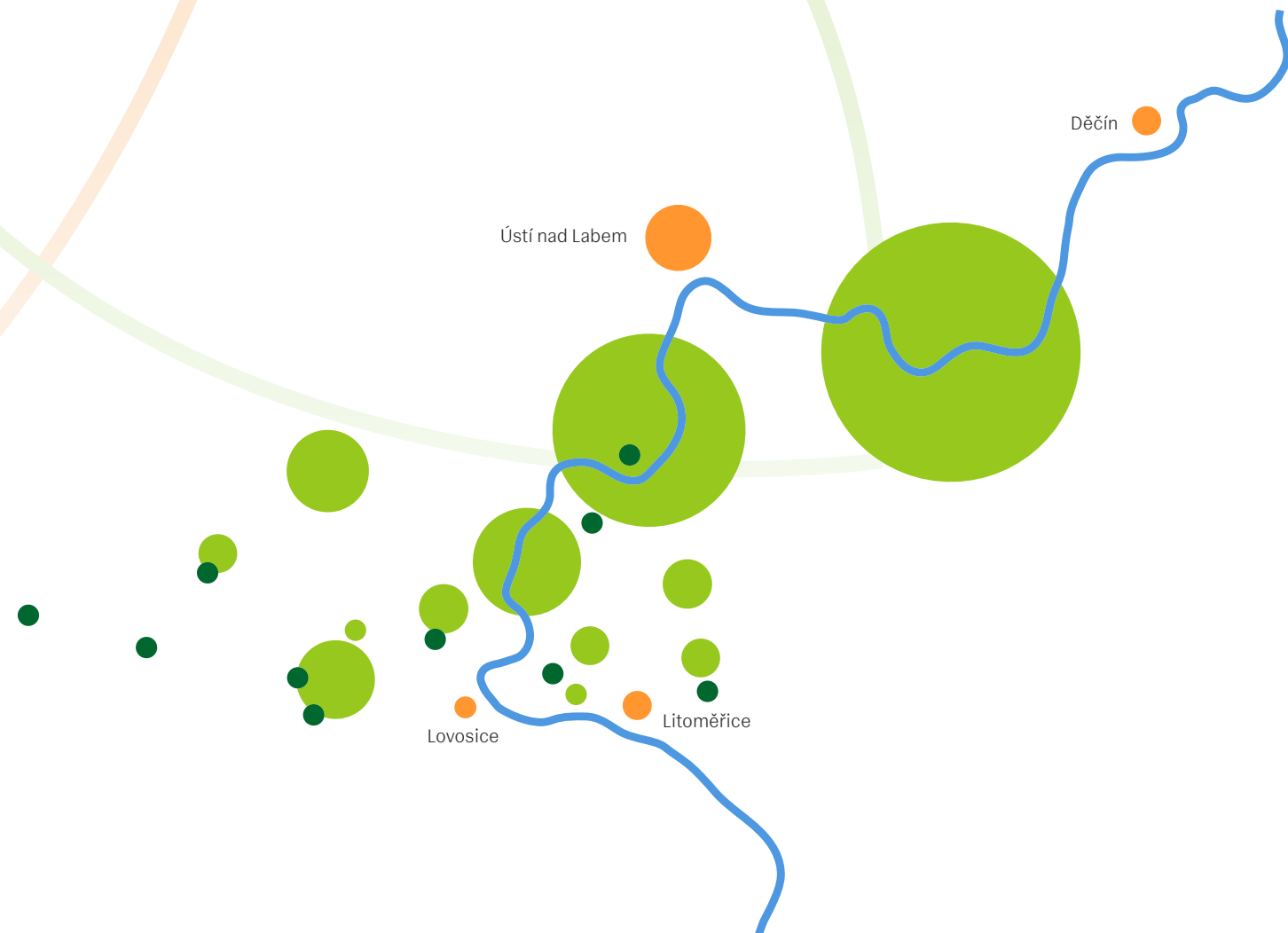


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