



Ministry of the Environment
of the Czech Republic



Field Trip Guide

Protected Landscape Area Bohemian Karst (Český kras)

4th Natura 2000 Biogeographical Seminar
for the Continental, Alpine, Pannonian, Steppic and Black Sea regions

26 June 2024



Photo credit: Lucie Hružová

Prepared by the Ministry of Environment of the Czech Republic with support of the Nature Conservation Agency of the Czech Republic. Authors: Barbora Chmelova, Petr Havel





Ministry of the Environment
of the Czech Republic



Introduction

The Protected Landscape Area Bohemian Karst (designated in 1972) is a remarkable landscape featuring limestone rocks, bright deciduous forests, and the canyon-like valley of the Berounka River. The mission of the PLA is to protect all values of landscape, forming a balanced natural environment shaped by human activities. The limestone influences the microclimate and the diversity of species in the Bohemian Karst. The climate is relatively warm and dry, and thermophilic plant communities rich in species occur in the ecosystems of forests, forest steppes and rocky grasslands. It is home to numerous protected plant, fungi and animal species, some of which are endemic. Covering around 130 km² it represents the largest karst area in Czechia, primarily composed of limestone from the Silurian and Devonian periods (430-380 million years ago). The limestone is abundant in fossils extensively studied in the 19th century by French geologist and paleontologist Joachim Barrande (1799-1883). The biological and geological richness of the Bohemian Karst can be discovered both on the surface and underground, in its unique caves. The area hosts around 700 caves with a combined length of 25 km. The area is also notable for its archaeological significance, with evidence of dense human habitation throughout history. The region's characteristic landscape is best observed around Srbsko and Koněprusy, with the Koněpruské caves situated within the Zlatý kůň National Nature Monument. In 2020, the Bohemian Karst was incorporated into the Barrandien National Geopark.

Interesting facts about the area

- The boundary between the Silurian and Devonian geological systems at Klonk near Suchomasty is the model boundary for the entire world.
- The grey-sheathed feather grass (*Stipa joannis*) is named after a hermit who lived in a cave in Svatý Jan pod Skalou in the 9th century.
- The tree species *Sorbus eximia* is endemic to the Bohemian Karst and is not found anywhere else in the world.
- Twenty-three bat species have been observed in the Bohemian Karst, out of the twenty-seven species living in the Czech Republic.
- Geologist Joachim Barrande, whose work was cited by Charles Darwin, was originally a railway engineer. He described the individual evolutionary series of several species of trilobites. He became famous for giving trilobites familiar Czech names, such as "Chubby lady", "Hairy fella" or "Auntie".



Field trip schedule

08:45 Meeting at the Grand Hotel International parking lot (Koulova 1501/15, 160 45 Prague)

09:00 Departure by bus for the field trip

09:50 Arrival and brief introduction

10:00 Start of the field trip Part 1 – Zlatý kůň / Koněpruské Caves / House of Nature

13:30 Lunch (lunchboxes will be provided by the organisers at the venue)

14:30 Departure by bus to the second part of the field trip

14:50 Start of the field trip Part 2 - Tetín

16:30 Departure from Tetín

17:30 Arrival to Prague

(19:00 Joint dinner at Strahov brewery – Strahovské nádvoří 301, Prague)

Upon the arrival at the House of Nature Český kras, we will divide in three groups with programme as shown by the table below. Your group number should be indicated at the front page of this guide.

9:00	Departure from Prague		
9:50	Arrival at House of Nature Český kras		
	Group 1 – guide B. Chmelová	Group 2 - guide T. Tichý	Group 3 - guide K.Chobot/ J.Prach
10:00 - 10:30	Koněpruské Caves visit	House of Nature exhibition	House of Nature - Movie
10:30-11:00		House of Nature - Movie	Field excursion
11:00 - 11:30	House of Nature exhibition		
11:30-12:00	House of Nature - Movie	Field excursion	House of Nature exhibition
12:00-12:30			
12:30-13:00	House of Nature - Movie	Field excursion	House of Nature exhibition
13:00-13:30	House of Nature - Movie	Field excursion	House of Nature exhibition
13:30 - 14:30	Lunch		
14:30	Departure from House of Nature to the Part 2 of the field trip		



Ministry of the Environment
of the Czech Republic



Practical information

- Outdoor clothing and sturdy shoes recommended
- Sunblock cream and insect repellent advised (sunny weather is forecasted, however an umbrella / rain jacket might come handy)
- Toilets are available at House of Nature only
- Length of the entire route: cca 2 km (walking time with stops approx. 1,5 hour); visit of caves: cca 1 hour
- Nature of the route: slightly uneven terrain, gravel paths, limestone might get slippery when wet
- Group photos are planned
- Important information for Group 1 – Caves: Participants are expected to cover the reduced entrance fee of 180 CZK (approximately 7.30 EUR) themselves. Payment can be made in CZK or by card.

Guides

Ms. Barbora Chmelová, Senior Policy Officer, Ministry of the Environment of the Czech Republic

Mr. Tomáš Tichý, Botanist, Nature Conservation Agency of the Czech Republic

Mr. Karel Chobot, Head of the Biodiversity Monitoring Department, Nature Conservation Agency of the Czech Republic

Mr. Jindřich Prach, Landscape Ecologist, PLA Bohemian Karst Administration, Nature Conservation Agency of the Czech Republic

Zlatý kůň (The Golden Horse) National Nature Monument

Subject to protection are the Koněprusy dripstone caves and other karst phenomena as some of the geologically oldest in Europe, with fossil remains of animals and humans from the late Pleistocene, and with archaeological and historical finds. Legendary hill Zlatý kůň was declared a protected area in 1973 and is classified as a National Nature Monument and Natura 2000 site from 2004. An area of 37 hectares is protected, with the hill itself reaching an elevation of 475 meters above sea level. It is primarily composed of a fossilized coral reef from the early Devonian period. Within its depths, it hides the famous Koněprusy Caves, and on its surface, it displays karst phenomena such as sinkholes, as well as numerous fossils embedded in the rocks. The hill is covered with species rich thermophilic and xerophilous vegetation.



Ministry of the Environment
of the Czech Republic



House of Nature

The Český kras House of Nature is a new information centre of PLA Bohemian Karst. Since its opening in spring of 2024 it offers free indoor and outdoor exhibition to general public and educational programmes to school groups. In walking distance from the House you can see an impressive view to Čertovy schody, an operating limestone quarry. The area is dominated by the Koněpruské caves, opened to public. The caves ticket office and souvenir shop is in the House, along with bistro where you can buy refreshments.

Koněprusy Caves

The Koněprusy Caves are located in the specially protected area of Golden Horse NNM. These caves are among the oldest dripstone-decorated cave systems in the Bohemian Karst. Since the decorations in this cave system have developed in an unbroken sequence, the caves serve as an exemplary site for studying karst features. The caves are situated in the immediate vicinity of active quarries. In agreement with the mining enterprise, the effects of blasting on the stability of the parental rock massif, free cave-in blocks, and the dripstone decorations are monitored throughout the cave system.

Tetín Rocks Nature Reserve

Subject to protection are the remnants of rocky steppes with the original species composition of the vegetation cover and the protection of quarry exposures of underlying rocks. The Tetín area offers beautiful views of the rocky valley of the Berounka River. The location is also an important archaeological site, with remains of a medieval ring wall and castle, linked to the beginnings of Czech history, perched on the rock above the river valley.

Connection with seminar themes: grasslands restoration

Mowing meadows and suppressing shrubs in non-forest habitats began to gain traction in the 1980s. Although coordination between botanical, zoological, mycological, and forestry interests has gradually improved since the 1990s, achieving optimal management distribution among diverse groups of organisms is limited by differing, sometimes even contradictory, ecological requirements of individual species or overly complex logistics. For instance, suppressing dominant grasses through grazing at a specific time requires consideration of preserving sufficient space for phytophagous and nectar-loving insects. Since 2004, it has been possible to restore grazing with mixed flocks of sheep and goats on over 30 hectares of the most valuable dry and rocky sites, the most significant being the extensive former pastures in the Zlatý kůň NNM. A significant shift in understanding the forest management for specially protected areas was the reintroduction of forest grazing. When implementing management methods, such as grazing sheep and goats, interventions must be carefully monitored to prevent negative impacts



or inefficient expenditure. Therefore, from the outset, systems of paired permanent plots, always including a control plot, have been established. Statistically reliable results of monitoring the impact of grazing on vegetation and selected plant species were achieved only after seven years of observation. This, among other things, demonstrates that the regeneration of suppressed grasses after grazing is very high and that only long-term management brings satisfactory results.¹

Natura 2000 sites in the area

There are 7 Natura 2000 SACs in the Protected Landscape Area of the Bohemian Karst: SAC CZ0214003 Zlatý kůň, SAC CZ0210421 Mramor, SAC CZ0214017 Karlštejn-Koda, SAC CZ0213621 Štoly Velké Ameriky, SAC CZ0214002 Karlické údolí, SAC CZ0210409 Kulivá hora and SAC CZ0114001 Radotínské údolí.

Flora and fungi

The Bohemian Karst forms a limestone "island" in the predominantly acidic "sea" of rocks of the Bohemian Massif. The limestone bedrock in warm lowland area, together with other factors including the long-term human influence determines the character of the local flora. Of the total area of the Bohemian Karst, 38 % is forested, dominated by various types of oak-hornbeam forests. Around 80 species of native shrubs and trees grow here, often rare species such as cornelian cherry (*Cornus* sp.), wild service tree (*Sorbus torminalis*), and especially the downy oak (*Quercus pubescens*), which dominates the woodland. Two species of *Sorbus* sp. are endemic to the Bohemian Karst: *Sorbus eximia*, described in 1984, and *Sorbus barrandienica*, described in 2010. There is an abundance of so-called thermophilic and arid-loving species on sunny rocky outcrops, in dry grasslands and thermophilic oak woodlands. Many of them resemble rock plants, such as rock goldentuft (*Aurinia saxatilis*), pasque flower (*Pulsatilla pratensis*), and *Sedum* sp. They are species adapted to extreme conditions: they can cope with the overheating of the summer sun or, conversely, the drying of winter frost without snow cover by means of mechanical or physiological adaptations that reduce evaporation. Examples are feather grasses (*Stipa* sp.) forming the dominant, sturdy component of non-forest vegetation. A remnant of the pastoral landscape is the spring Adonis (*Adonis vernalis*). The pan-European endangered Austrian dragonhead (*Dracocephalum austriacum*) has its distribution centre in the Czech Karst on limestone rocks with siliceous inlays, which apparently have never been covered with forest in the last millennia. The contrast to the sunny rocks are the damp and shady rocks in the Berounka river canyon with *Saxifraga* sp. and *Dianthus gratianopolitanus* covering the rocks. Almost twenty species of wild orchids grow in the forests, woods and pastures, e.g. the pyramidal orchid (*Anacamptis pyramidalis*), the up to half-metre high lady orchid (*Orchis purpurea*), and the tiny pale yellow coralroot (*Corallorhiza trifida*). The herbaceous understory of the limestone forests is characterised by a richness of species and, if the moisture

¹ Translated excerpt from <https://www.casopis.ochranaprirody.cz/z-nasi-prirody/ctyricet-let-cilevedome-pece-o-prirodu-a-krajinu-ceskeho-krasu/>



Ministry of the Environment
of the Czech Republic



conditions are right, a dense cover. A very rare, up to two metres tall plant – the ladybells (*Adenophore liliifolia*), blooms in light oak woods. The combination of limestone bedrock and a warm climate is ideal for the occurrence of fungi, from microscopic to macroscopic of which around a thousand species can be found here. The significance of local mycological sites is nationwide and notable even from a European perspective. For many rare species, this area represents the largest contiguous locations of their occurrence in the Czech Republic. The high number of boletus mushrooms species is worth mentioning; the rarest include the royal boletus (*Boletus regius*) and Fechtner's boletus (*Boletus fechtneri*). Also noteworthy are the Caesar's mushroom (*Amanita caesarea*), the cortinarius (*Cortinarius nanceiensis*), the green earth tongue (*Microglossum viride*), the summer truffle (*Tuber aestivum*), and the rosegill (*Volvariella caesiotincta*).

Fauna

The Bohemian Karst is one of the most faunistically rich and valuable areas in the Czech Republic. Many species here are at the edge of their range and often occur in only one location within Bohemia or even the entire country. The area is particularly rich in invertebrate fauna, which can be divided into two main groups: communities of thermophilic grasslands, forest steppes, and steppes, and communities of original light forests. Traditionally studied mollusks typical for the Bohemian Karst include *Pyramidula pusilla* and *Chondrina avenacea*. Spiders are also relatively well researched, with species like the velvet spider (*Eresus kollari*), a typical element of rocky steppes in midsummer, being noteworthy. Butterfly research has a rich history here, with over 2,200 species recorded. The local population of the critically endangered grayling (*Hipparchia semele*) is likely the largest currently in the Czech Republic. Among beetles, the largest representative of this order in the country, the stag beetle (*Lucanus cervus*), can be found relatively often in the right season. Some other insect groups (*Diptera*, *Hymenoptera*, *Hemiptera*, etc.) have received less attention so far. Nonetheless, even in these groups, notable rarities can be found in the Bohemian Karst, such as the critically endangered grasshopper *Oedipoda germanica* or the rarely occurring owlfly *Libelloides macaronius*. Among amphibians, the fire salamander (*Salamandra salamandra*) is a conspicuous species, while the great crested newt (*Triturus cristatus*) is now rather rare. Reptiles are represented by rarer species such as the smooth snake (*Coronella austriaca*), the Aesculapian snake (*Zamenis longissimus*), and the green lizard (*Lacerta viridis*). The largest owl in the country, the Eurasian eagle-owl (*Bubo bubo*), nests on the rocks and in abandoned quarries. Tree cavities in well-preserved forest stands are inhabited by the stock dove (*Columba oenas*) and black woodpecker (*Dryocopus martius*) and the European honey buzzard (*Pernis apivorus*) also occurs here. The rugged terrain of the karst area provides ideal conditions for bats, with a total of 23 species of bats recorded. The original population of the European ground squirrel (*Spermophilus citellus*) survives in only one place within the Protected Landscape Area Bohemian Karst.



Map of the area

