



are only a very few shrub species in the forest. However, early in the spring the undergrowth is like a colourful carpet because of snowdrops (*Galanthus nivalis*), yellow anemones (*Anemone ranunculoides*), and corydalis species (*Corydalis sp.*). In the summer other species are in bloom such as the bird's nest orchid (*Neottia nidus-avis*), dark red helleborine (*Epipactis atrorubens*) and Turk's cap lily (*Lilium martagon*). A typical inhabitant of a hornbeam-oak forest is the agile frog (*Rana dalmatina*) who is able to jump even 1 m length at a time. Hollows of trees are occupied by tit species (*Parus sp.*), nuthatches (*Sitta europea*) and collard flycatcher (*Ficedula albicollis*). Mammals like the common dormouse (*Muscardinus avellanarius*), fat dormouse (*Glis glis*) and marten (*Martes martes*) can also be observed.

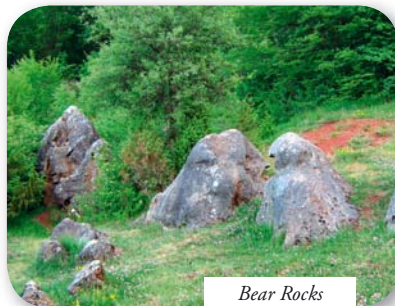
### 13. Vörös-tó (Red Lake) entrance of Baradla Cave

On behalf of the Carpathian Association of Hungary, Kálmán Münich and his colleagues were in charge of constructing the Vörös-tó exit (currently it is used as an entrance). It was ready on 15th March 1890. In 2005 the main passage of the Baradla Cave between the Vörös-tó entrance and Jósvalő was reconstructed as well as a modern visitor centre was built.

### 14. Red Lake and Bear Rocks

The Red Lake is actually a dolina full of rainwater. It is called „red” because terra rossa (or „red soil”) containing a lot of iron-oxide covers the surrounding areas.

The Bear Rocks are about 240 million years old karst formations, they are interesting from geological point of view because they went through karstic evolution two times. The shells of ancient sea animals (calcareous sponges – *Calcarea*, feather stars – *Crinoidea*, bivalved mollusks – *Lamellibranchia*) can be observed on the surface of the rocks.



Bear Rocks



### 15. Steinalm limestone formation

Interesting white coloured „buildings” of ancient blue algae (so called „on-coids”) can be observed on the surface of the nearby rock. Blue algae lived in the shallow tropical sea in the area about 240 million years ago. They lived in lagoons where the water was continuously in motion. They settled down on some solid surface eg a piece of shell, and they grew around it like a ball reaching even 5 cm diameter.

### 16. Béke Cave

It was discovered by Professor László Jakucs in 1952. Its total length is 7 km, it is the second longest cave in the Aggtelek Karst. The temperature is constantly +10 °C, the relative humidity is nearly 100%, there are calcium and magnesium ions in balance in the air and there are no pollens and dust so the air is perfect to cure diseases of the respiratory system (eg. asthma). Béke Cave was declared to be a medicinal cave in 1969.

### 17. Komlós Spring

The spring has a crystal-clear cold water and it is surrounded by a rich vegetation: in the spring a yellow carpet of marsh marigold (*Caltha palus-*



Komlós Spring



*tris*), lesser celandine (*Ficaria verna*) and golden saxifrage (*Chrysosplenium alternifolium*) can be seen, while it is blue in the summer because of water forget-me-not (*Myosotis palustris*).

### 18. Lower Caves of the Baradla Cave

The biggest flood was recorded in the Baradla Cave in August 1955. Researches were carried out at that time revealing that the Jósvalő Spring brings the underground water of the Long and Short Lower Caves to the surface. There is a door made of iron rods at the artificial entrance of the Long Lower Cave. Although, researchers managed to reach the main passage of the cave, it is still not completely discovered. The Short Lower Cave is already fully discovered, its total length is 1 km.

### 19. Jósvalő exit of the Baradla Cave

On the basis of the surveys and plans of Péter Kaffka, the exit of the Baradla Cave in Jósvalő was constructed in 1928. This way it is possible to walk along the 7 km long main passage of the Baradla Cave from Aggtelek to Jósvalő. The Hubert Kessler Memory House can be found next to it where an interesting exhibition can be seen on the life and work of the former director and researcher of the Baradla Cave. He lived and worked in the karst between 1935 and 1945. He was responsible for the construction of the Tengersizem Hotel as well as the Tengersizem Lake.



Hubert Kessler Memory House



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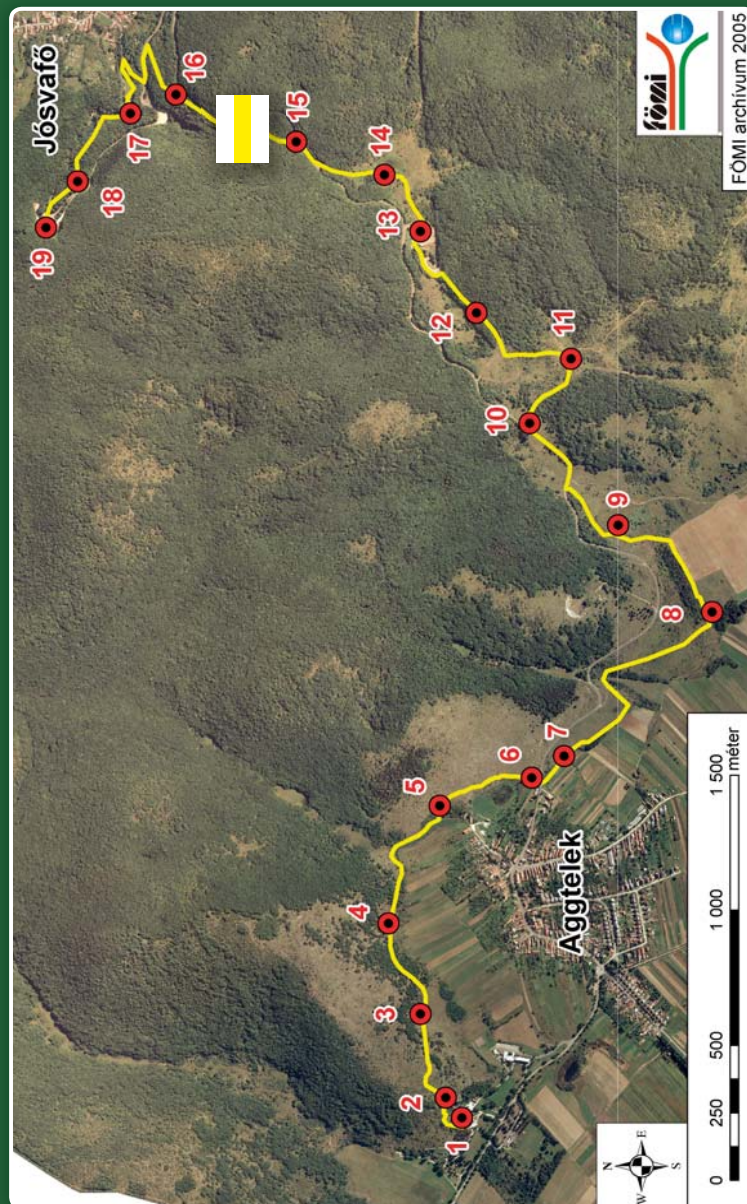
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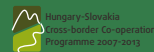


FÖMI archivum 2005



English

## Baradla Education Trail



**Building  
partnership**


European Union  
European Regional Development Fund



The content of this leaflet does not necessarily represent the official position of the European Union.





Mark: yellow line   
Length: 7,5 km  
Duration: about 3 hours

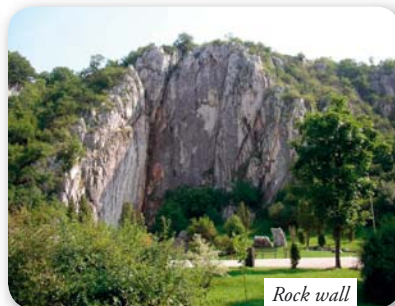
The Baradla Education Trail connects the Aggtelek and Jósvalő entrances of the Baradla Cave. By hiking the trail, it is a good opportunity to get knowledge on the biodiversity of the karst, the surface karst formations and the connections among them.

### 1. Information map (at the entrance of the Baradla Cave, Aggtelek)

Before starting the unforgettable exploration of the education trail, please, read through carefully the information on the board and check the rout on the map. The rout of the education trail can also be found on the maps of the area showing other tourist trails and education trails, too (eg. the map issued by Cartographia).

### 2. Top of the Baradla Hill

The name „Baradla” is supposed to originate from the Slovak word „bradlo” meaning „rock wall”. Probably first it was the name of the 51 m high rock wall at the cave entrance, then it became the name of the cave. This natural entrance of the cave used to be a swallow. Nowadays it is inactive, one of the biggest operating swallow close to it is the Acheron Swallow. About 235 million years ago a shallow tropical sea could have been found in the area which was inhabited by plenty of marine protozoans with calcareous shells (*Foraminifera*). Their tiny remnant parts can be observed on the surface of the rocks. Close to the stop an interesting surface karst formation, the so called „cross-bar” karren can be seen. It was created by rainwater flowing down the slope.



Rock wall



### 3. Flora of the karst

Due to the unique geological location and climate, both Carpathian species preferring cold, wet habitats as well as other species preferring warm habitats can be found in the area. A karst scrub forest, a slope steppe and a rock grassland near the stop are all housing species preferring warm, dry habitats. The foliage of karst scrub forests is not thick, that is why several shrub species can be found in the undergrowth. Typical tree and shrub species are the following: downy oak (*Quercus pubescens*), beam trees (*Sorbus sp.*), mahaleb cherry (*Cerasus mahaleb*). Endangered species of slope steppes: greater pasque flower (*Pulsatilla grandis*), feather grasses (*Stipa sp.*), tuberous Jerusalem sage (*Phlomis tuberosa*). Rock grasslands are interesting because of the several moss, lichen and house-leek (*Sempervivum sp.*) species that can live on the surface of rocks and in their fissures. The Baden's bluegrass (*Poa badensis*) is also a typical species of rock grasslands.



Karst scrub forest

### 4. Fauna of the karst

The fauna of the karst is extremely rich. For example the karst scrub forests of the Aggtelek Karst provide habitat for an endangered bird species, the rock bunting (*Emberiza cia*). Slope steppes and rock grasslands have a special butterfly fauna. Typical butterfly species of the area are clouded Apollo (*Parnassius mnemosyne*), northern brown argus (*Aricia artaxerxes*) and an endemic fritillary species called *Melitaea telona kovaci*. The biggest orthopteroid species of Hungary, the matriarchal katydid (Saga pedo) also lives here. The so called ladybird spider (*Eresus cinnabarinus*), which male has a



Clouded Apollo



characteristic red and black colour, prefers living in slope steppes. Lizards also live there in large numbers like the green lizard (*Lacerta viridis*) and the wall lizard (*Lacerta muralis*).

### 5. Flora of the Lake Hill

The Lake Hill was used to be covered with a forest. After cutting off the trees, rainwater flowing down the slope of the hill removed the thin fertile soil layer that is why now slope steppes and rock grasslands can be found there. By the presence of the specimens of a coniferous shrub species, the juniper (*Juniperus communis*), the slope of the Lake Hill shows a characteristic landscape of the karst.



Stonecrop

### 6. Aggtelek Lake and the „Devil's Plough”

In the beginning of the 1800s the lake did not even exist. Instead of it, a swallow surrounded by cabbage fields could have been found. Rainwater rushing through the former swallow was responsible for the evolution of the Turkish Mosque Branch of the Baradla Cave. Rainwater also carried plenty of stones, mud and pieces of wood that after a while blocked the bottom of the swallow resulting in the accumulation of water. The largest karrenfeld of Hungary can be observed on the slope of the Lake Hill that is called by locals the „Devil's Plough”. Pipe-like holes can be seen in the rocks, they are called root karrens because they were created by acid produced by the trees previously living on the slope.



Aggtelek Lake



### 7. Zombor Hole Swallow

The Zombor Hole leads rainwater into the Red Branch of the Baradla Cave. The swallow has evolved along the border of the non-covered and the clay-covered parts of the karst. Several small farmlands can be seen around the swallow. These relatively narrow, „belt-like” fields are still suitable habitats for those plant and animal species among which several ones have disappeared in the other parts of Hungary because of industrial agriculture.



Corn-cockle

### 8. Ravasz-lyuk Swallow

The Big Tricky Hole (Nagy Ravasz-lyuk) is the swallow of the Radish Branch which is the largest branch of the Baradla Cave in Hungary. The underground passage of the Big Tricky Hole becomes united with the underground passage of the Little Tricky Hole about 200 m north of this place. Rainwater always carries plenty of gravel through these swallows into the cave, they play an important role in the continuous evolution of the 1250 m long Radish Branch that can be visited by taking part in a special cave tour.

### 9. Traditional herding in the karst

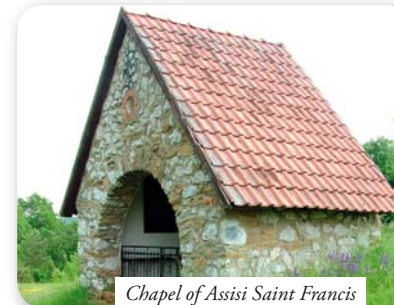
Hay meadows and pastures were created by cutting off trees. Unfortunately, a lot of hay meadows and pastures have been invaded by weeds or shrubs, and trees have begun to spread as a result of the declining number of household animals. Typical endangered species of pastures are the cross-leaved gentian plant (*Gentiana cruciata*) and the stemless carline thistle (*Carlina acaulis*).

### 10. Chapel of Assisi Saint Francis

St. Francis was born as a heir of a wealthy merchant family in the town of Assisi, Italy in 1182. Later he was declared to be the patron saint of



Italy, the animals, the merchants and nature. He established an order, the members of it live a very poor and modest life. His basic theory was that each living creature is the brother and sister of humans. His famous poem, titled the „Hymn to the Sun” expresses his points of view on this topic. He was as well declared to be the patron of nature conservation by Pope John Paul II.



Chapel of Assisi Saint Francis

### 11. Dolinas with junipers

Dolinas are similar to round or oval bowls, they have been evolved by solution of limestone. They can be found in quite a large number in the Aggtelek Karst. The area at the stop used to be a forest. After cutting off trees, the area was used as a pasture where plant species tolerating grazing of animals became abundant. Currently succession is going on, that is why plenty of junipers can be seen. Junipers are coniferous species but there are no resin canals within their trunks and branches. Its wood is strong and good for carpentry. The unripe fruits are green, while ripe ones are dark blue, they are used for preparing medicines, spices and perfumes.

### 12. Hornbeam-oak forest

Hornbeam-oak forest prefer northern cold, wet slopes and valleys. The upper tree stratum consists of durmast oak (*Quercus petraea*), the lower one is of hornbeam (*Carpinus betulus*). Field maple (*Acer campestre*) and bird cherry (*Cerasus avium*) also occur in the forest. Due to the thick foliage of the two tree strata, there



Collard flycatcher