Jezerní slať – Kvilda – Bučina – Finsterau

1 Kvilda Below the Small Fields

Length of Path 23,5 km

Kvilda Below the Small Fields

In close proximity to this road lies the first zone of the Šumava National Park. Specifically, there is a natural monument Kvilda – Below the Small Fields. The Small Fields (Polička) is a local name for a treeless area of formerly arable land on the southern orientated hillside of the Orel (Eagle) Mountain. Below fields are on the western oriented hillside and, as the name suggests, below the Small Fields. The natural monument is separated into two parts. The first one lies on the western slopes on the northern edge of Kvilda, above the road. The second part lies also to the north, but it is in the floodplain and the immediate surroundings of the Kvilda stream. This area is specially protected because of the presence of preserved mountain treeless biotopes and various plant species which are tied to them. We must realise that biotopes of wet and dry meadows and pastures would never have developed if it were not for human intervention and local biodiversity would be a lot poorer.

Matgrass turfs and mountain heaths are home to wolf's bane *(Arnica montana)* and heather *(Calluna vulgaris)*. Transitional peat bogs offer the bog blueberry *(Vaccinium uliginosum)*, the hare's-tail cottongrass *(Eriophorum vaginatum)*, the round-leaved sundew *(Drossera rotundifolia)*, or the arctic starflower *(Trientalis europaea)*. Wet thistle meadows are dominated by the melancholy thistle *(Cirsium heterophyllum)* with leaves with a silver underside, Tephroseris crispa, or bogbean *(Menyanthes trifoliata)*. This area is known for a widespread population of the brown gentian *(Gentiana pannonica)*. The natural monument Kvilda – Below the Small Fields connects to the well-known Lake Bog (Jezerní slať). In a not too distant past, there used to be meadows and peat was even being extracted.

One of the very interesting plant species that grow in the local treeless area is the dwarf birch *(Betula nana)*. It is a small cousin of the well-known trees with white paper-like bark. This woody plant is, unlike its grown relatives, a delicate bush. It creates polycormone formations (growth formation in which more above-ground organs grow out of interconnected underground organs, so the whole seems like a number of separate individual plants, but genetically, it is only one). These polycormones can grow up to tens of square meters and are usually above a meter in height. This dwarfish size is a result of evolution in a tundra and taiga climate. Harsh climate of the open raised bogs formed the shape and properties of this plant. Strong wind, heavy rainfalls, snow, frosts, very low temperatures and an acidic and nutrient-poor substrate can all be withstood more easily by a lower life form. Together with the miniaturisation of the trunks, leaves also became smaller, round, dully fluted, and sticky on the surface. The inflorescence – catkins are also very small. Just like its large relatives, this mountain bush is deciduous.

In the Czech Republic, the dwarf birch grows only on raised bogs and peaty mountain meadows in Šumava, in the Ore Mountains, or Jizera Mountains. Around the world it then grown in a sort of triangle from Greenland to the Urals (continuously) and the mountains of Central Europe (in small islands). This species remained on its stations in the Sudeten mountains from the last Ice Ages and is thus considered a glacial relic. Its pollen is present in sediments of peat bogs which are over 15 000 years old. Other glacial relics in Šumava include the bog-rosemary *(Andromeda polifolia)*, the alpine bulrush *(Trichophorum alpinum)*. Their Ice Age refuges remain in high altitudes with enough cold. The Kvilda area is one of the coldest places in Czechia.

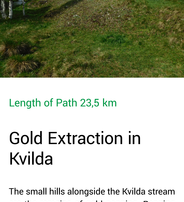
The Ice Age, whose plant witnesses still remain in Šumava, was not merely one single Ice Age as was once said, but there were many. Currently, scientists agree on approximately 20 Ice Ages during the course of the Quaternary, that is the current geological era. Perhaps more will come soon. Ice Ages are proved to have existed during the Palaeozoic Era and even during the Proterozoic (before live organisms). When exactly the dwarf birch got to Šumava is difficult to prove, but we know it was here during the last Ice Age.

It is necessary to add that glacial relics are often specially protected, precisely because of their origins – they are the witnesses of a past long gone and carry seemingly invisible information. It is no different for the dwarf birch. This species is protected by law as a member of the strongly endangered species category and is also on the red list of Czech species in the 2017 category

Vyšný Mojer
Prášilské jezero
Prášily
Kvilda
Lipno
Lipno nad Vltavou
Frymburk
Horní Vltavice
Zátoň
Stožec
Horní Planá
Nové Hrady
Vyšný vrch
Nové Hrady
Loučovice
Dolní Vltavice
Nové Hutě
Nové Hutě
Nové Hutě

Jezerní slať – Kvilda – Bučina – Finsterau

2 Gold Extraction in Kvilda

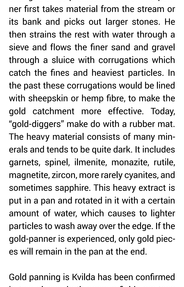


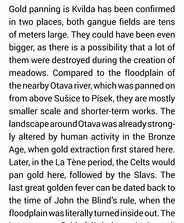
Length of Path 23,5 km

Gold Extraction in Kvilda

The small hills alongside the Kvilda stream are the remains of gold panning. Panning is a prehistoric way of extracting gold from secondary deposits, that being gold-bearing gravel sand created by weathering of the primary deposits. The weathered rock is transported and set by water in floodplains of streams and rivers. The gangue created by panning of the sediment was logically stored close to the place of panning, so that it wouldn't have to be laboriously transported further. Eventually, numerous piles of gangue were created and even formed fields in some places.

Gold panning makes use of simple laws of gravity. Gold is a very heavy element, which falls down much faster than sand when stirred together in water. It is also an element which can be found in rocks, mostly as a pure metal. It got here during the creation of these rocks, most likely through precipitation from hot saturated solutions which flowed through cracks in the surrounding rock. When the rock cooled down, various minerals including gold began to crystallise. Gold is often found alongside quartz veins, but only in small quantities. When the rock begins to fall apart due to weathering, the gold is freed from its hold. If the weathered material enters flowing waters, it is further crushed by stones and gravel and more gold particles are released from it. Those are then taken further downstream and settle in certain places. Tiny golden flakes are the smallest gold particles. 15 000 of them is needed to put together a kilogram of gold. Larger bits of gold are small sheets and nuggets.





The process of panning has basically not changed since prehistoric times. The panner first takes material from the stream or its bank and picks out larger stones. He then strains the rest with water through a sieve and flows the finer sand and gravel through a sluice with corrugations which catch the fines and heaviest particles. In the past these corrugations would be lined with sheepskin or hemp fibre, to make the gold catchment more effective. Today, "gold-diggers" make do with a rubber mat. The heavy material consists of many minerals and tends to be quite dark. It includes garnets, spinel, ilmenite, monazite, rutile, magnetite, zircon, more rarely cyanites, and sometimes sapphire. This heavy extract is put in a pan and rotated in it with a certain amount of water, which causes to lighter particles to wash away over the edge. If the gold-panner is experienced, only gold pieces will remain in the pan at the end.

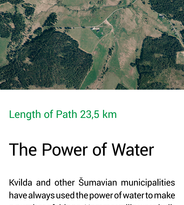
Gold panning is Kvilda has been confirmed in two places, both gangue fields are tens of meters large. They could have been even bigger, as there is a possibility that a lot of them were destroyed during the creation of meadows. Compared to the floodplain of the nearby Otava river, which was panned on from above Sušice to Písek, they are mostly smaller scale and shorter-term works. The landscape around Otava was already strongly altered by human activity in the Bronze Age, when gold extraction first stared here. Later, in the La Tène period, the Celts would pan gold here, followed by the Slavs. The last great golden fever can be dated back to the time of John the Blind's rule, when the floodplain was literally turned inside out. The large gangue fields fell victim to the intensification of agriculture during socialism.

Gold extraction in Kvilda dates back to the rule of John the Blind, that being the mid 14th century. Gold panning is directly related to the influence of the Strakonice commandry of the Knights Hospitaller. But by the end of the 14th century, the order already considers gold extraction to be non-profitable. The amount of gold in local alluviums was small. If we add the relative remoteness from larger centres, the harsh climate (panning could only be done in the summer) and overall means of people in the Middle Ages (tools, transport, supply possibilities, levels and accessibility of medical care, etc.), it is no wonder that gold panning was soon stopped here. Extraction from primary deposits, i.e. mining was also carried out around Kvilda. In the Middle Ages, mercury was used to separate gold from the rest, because together they create amalgam. The amalgam was then heated up, the mercury evaporated, and gold remained. Mercury is a highly toxic metal, which is dangerous not only to human liver and kidneys, but to other organisms as well. In the end, it is for the best that gold extraction in the source area of the Vltava river was ended by the Hussite Wars.

Vyšší Brod
Frýdava
Horní Dvořiště
Kájov
Zvonková
Kvilda
Nové Hutě
Stožec
Nové Hrady
Horní Vltavice
Lenora
Nové Hůrky
Stožecká Lhota
Nové Hůrky
Frymburk
Horní Planá
Nové Spolí
Lipno nad Vltavou
Loučovice
Frymburk
Horní Vltavice
Lipno nad Vltavou
Nové Spolí
Horní Planá
Lipno nad Vltavou
Frymburk
Lipno nad Vltavou
Nové Spolí
Horní Planá
Lipno nad Vltavou
Frymburk

Jezerní slať – Kvilda – Bučina – Finsterau

3 The Power of Water



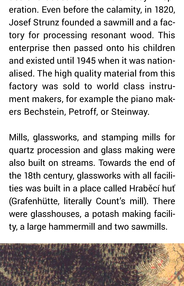
Length of Path 23,5 km

The Power of Water

Kvilda and other Šumavian municipalities have always used the power of water to make a number of things. Hammermills were built on streams. The heart of a hammermill was a large hammer, which was raised using hydraulic power. Just like at mills, water power was used with the help of transmission wheel system. Gravity then sent the up to 200 kg heavy hammer back down. This large kinetic energy of the hammermill was used for forging large iron prefabricates imported from ironworks, which were too difficult for common blacksmithing.

Sawmills which processed local wood were also built on streams. Their unprecedented development at the end of the 19th century was caused by bark beetle and wind calamities of the 1870s. In Kvilda, seven new sawmills were founded after the calamities and added to the five already in operation. Even before the calamity, in 1820, Josef Strunz founded a sawmill and a factory for processing resonant wood. This enterprise then passed onto his children and existed until 1945 when it was nationalised. The high quality material from this factory was sold to world class instrument makers, for example the piano makers Bechstein, Petroff, or Steinway.

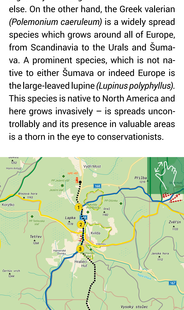
Mills, glassworks, and stamping mills for quartz procession and glass making were also built on streams. Towards the end of the 18th century, glassworks with all facilities was built in a place called Hrabečí huť (Grafenhütte, literally Count's mill). There were glasshouses, a potash making facility, a large hammermill and two sawmills.



The floodplains of local watercourses were full of people, smoke from factories, heaps of material and loud noise. Houses, pastures and meadows then grew up around the manufactories. Fields were mainly on the southern oriented slope of the Orel (Eagle) Mountain, but houses often had small gardens with both ornamental and useful plants.

Currently, you can find signs of these building only if you examine the area very carefully. The proof of the today almost unimaginable industrial complex Hrabečí huť can be found in old maps (for example stable cadastre, aerial photographs from the 1950s) and rare photos. Apart from them it is various kinds of cultivated plants, which people grew for decorative purposes or for practical use. The German people, who used to be the majority population here, liked various plants, often of Alpine origins and they brought them with them. They were mostly various species with distinctive aroma and their parts (mainly roots). Those were added to strong alcohol to create typical bitter liquors. A typical alpine plant used to make liquors and as a soup spice is masterwort *(Peucedanum ostruthium)*, from the Apiaceae family. It is speculated that the well-known and unmistakable species of Šumavian plains, the brown gentian *(Gentiana pannonica)*, had similar origins to the masterwort, meaning it comes from the Alps and here is merely a garden-deserter. Another plant which, though native to Šumava, was also commonly grown in gardens for its healing properties and adding to liquors was wolf's bane *(Arnica montana)*. The case is similar for the alpine lovage *(Ligusticum mutellina)*. An interesting fact is that the European larch *(Larix decidua)* is not native to Šumava. It is home in the Alps and in the Carpathians, it spread to us with German speaking inhabitants and especially during the growth of forestry. In the Sudeten mountains it was often used as a landmark to mark borders of properties or crossroads because of its longevity and durability. It thus took the role of the pear tree which was used for the same purpose in lower altitudes. Young branches of the larch then ended up in an alcoholic drink called Lárchert.

In the past, the floodplains of local streams were heavily altered as a result of building various mill races towards hammermills and sawmills. The waterflow was diverted, forked, deepened or redirected completely to achieve an optimal result. Today there are no obvious signs of these interventions. The floodplain of Warm Vltava consists mostly of thistle meadows grazed by cattle. In some places these meadows carry signs of peat bogs or in fact transitions into mat-grass turfs in dryer places. Meadows with marsh marigold *(Caltha palustris)*, Tephroseris crispa, mayflower *(Cardamine pratensis)*, or the common bistort *(Bistorta major)* sometimes include the highly poisonous garden monkshood *(Aconitum plicatum)*, which is endemic to Central Europe, meaning it only natural grows there and nowhere else. On the other hand, the Greek valerian *(Polemonium caeruleum)* is a widely spread species which grows around all of Europe, from Scandinavia to the Urals and Šumava. A prominent species, which is not native to either Šumava or indeed Europe is the large-leaved lupine *(Lupinus polyphyllus)*. This species is native to North America and here grows invasively – is spreads uncontrollably and its presence in valuable areas is a thorn in the eye to conservationists.


Vyšší Brod
Frýdava
Kvilda
Horní Vltavice
Zátoň
Stožec
Nové Hutě
Nové Hutě
Horní Vltava
Horní Vltava
Modrava
Modrava
Filipova Huť
Filipova Huť
Srní
Srní
Nové Hutě
Nové Hutě
Nové Hutě

Jezerní slať – Kvilda – Bučina – Finsterau

4 Bučina

Length of Path 23,5 km

Bučina

The relatively short yet intense history of Bučina (founded towards the end of the 18th century and disappearing in the middle of the 20th) left both very clear as well as quite inconspicuous marks on the local landscape.

The most prominent feature of the local landscape is the network of clearance cairns made out of boulders and stones to mark borders between property. They were created out of the necessity of people who came here in relation to the expansion of timber industry to make a living through agriculture. The lands granted by prince Schwarzenberg in 1790 had to be grubbed up and destoned in order to start farming on them. The amount of work this presented can be guessed from the mighty walls, which are similar to medieval hillforts. People here mostly used the land for grazing, but they also grew (in 1000 m.a.s.l.!) grain, potatoes, swede, or flax. Currently, the landscape is dominated by large sycamores *(Acer pseudoplatanus)* with marble bark covered in a number of lichens. Similar landscapes are typical even for the close German enclaves around Fünsterau.

Hundreds of hands of forest workers at the same time worked on the local forests. The name "Bučina" (Beech Forest) leads us to believe that beeches were dominant. Today, there are no more beech forests here, apart from small fragments towards Knížecí plains. After beeches were cut down, Norway spruces of various provenance were planted, whose monoculture growths were and still are challenged by bark beetle and wind calamities. The first came at the turn of the 1860s and 70s. The last ones in the 1990s and at the beginning of the new millennium.

The majority of the inhabitants of Bučina during its peak were Germans (1930 – 36 houses, 343 people, out of that 337 of German nationality). After WWII, when German populations were forcibly displaced, the village began to near its end. In 1947 there were only 58 people living here. Its definite end came with the Iron Curtain in 1956, when the abandoned houses were torn down. The only building which remained standing was the former Pešl's hotel.

Bučina's history is reflected in the current landscape and the biodiversity of fauna and flora. Amongst the network of stone walls are a number of variously wet meadows, which are being either grazed or cut down again. Large part of the hardly wooded areas has now been lost to succession (vegetation growth), and is covered in trees such as goat willow, grey willow, aspen, silver birch, and mainly the Norway spruce.

The other meadows clearly show the variety of the wetness gradient. The wettest places are covered in peat-sedge vegetation called non-calcareous moss fens. It includes species such as hare's-tail cotton grass *(Eriophorum vaginatum)*, common sedge *(Carex nigra)*, wood horsetail *(Equisetum sylvaticum)* or the rare Willemetia stipitata. In shadowy places grow mosses like dotted thyme-moss *(Rhizomnium punctatum)*. Wet thistle meadows commonly feature the marsh marigold *(Caltha palustris)*, wood club-rush *(Scirpus sylvestris)*, Tephroseris crispa, or Chaerophyllum hirsutum. Moist soils produce different meadows, so-called oatgrass meadows with species such as the meadow crane's-bill *(Geranium pratense)*, melancholy thistle *(Cirsium heterophyllum)*, Cardaminopsis halleri, meadow buttercup *(Ranunculus acris)*, spotted St. Johnswort *(Hypericum maculatum)*, and common bistort *(Bistorta major)*. Places with higher concentrations of nutrients produce the common dandelion *(Taraxacum sect. Ruderalia)*. Drier places with shallow soil and few nutrients then form mountain Nardus grasslands with species such as matgrass *(Nardus stricta)*, common heather *(Calluna vulgaris)*, viper's-grass *(Scorzonera humilis)*, or the harebell *(Campanula rotundifolia)* and wolf's bane *(Arnica montana)*. In the shadows of the sycamores, we can find the beautiful red campion *(Silene dioica)*, the rare large white buttercup *(Ranunculus platanifolius)*, the adorable heartsease *(Viola tricolor)*. Nostalgic witnesses of German settlement are the clusters of poet's daffodils *(Narcissus poeticus)* growing alongside the road, on the wrecks of gardens and houses of the former inhabitants. This species is native to southwest Europe from Spain to the Alps.

In the open meadows, among the piled stones, in bushes and forests live a plethora of animals. The typical Sumavian snake, the adder *(Vipera berus)*, thrives here. This "feared" snake is very good at detecting vibrations in its surroundings, so it is rarely seen and if it does encounter a human, it disappears quickly.

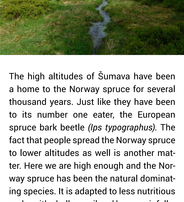
Jezerní slať – Kvilda – Bučina – Finsterau

5 Czech-German border

Length of Path 23,5 km

Czech-German border

Many visitors of Šumava are surprised when they see the impact of the bark beetle calamity that hit in the early years of the millennium. There are large areas of dead trunks of spruce trees pointing towards the sky and creating a pitiful mess on the ground. Where there used to be a forest, the landscape has now gained a wholly new character. Fear of losing the typical character of the forest with its mighty trees is perfectly natural and strong perceptions cause strong emotions. The economic damage is certainly high, but ecologists see the death of old trees as a natural process. In the cyclical process of the environment, a bark beetle calamity is but a fleeting moment.



The high altitudes of Šumava have been a home to the Norway spruce for several thousand years. Just like they have been to its number one eater, the European spruce bark beetle *(Ips typographus)*. The fact that people spread the Norway spruce to lower altitudes as well is another matter. Here we are high enough and the Norway spruce has been the natural dominating species. It is adapted to less nutritious rocks with shallow soil and heavy rainfalls. Other woody plants grow in these altitudes only sporadically and often hit the limits of their physiological possibilities (beech, fir, sycamore). Even natural spruce biotopes (cane spruce or waterlogged and peat bog spruce forests) fall victims to disasters during their development.

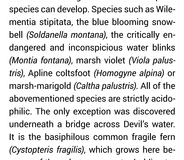
It works the same way in the northern taiga. Old spruce growth with shallow growing roots easily gives way to strong winds and creates windfalls. These are a good environment for the bark beetle, which reproduces on the unusual amounts of easily accessible food (a healthy spruce tree can often use its resin to get rid of the bark beetle and is not as affected by it), and begins to attack living trees and then migrate into more distant areas (it can travel kilometres thanks to wind). The result is a "spruce graveyard".

But this forest only seems dead. After several years, seedlings of new spruce trees begin to emerge from below the dead trees, which continue to break and succumb to complete destruction by external influences. Other woody plants which grow here include mostly birch, smaller willow species, rowan and in some accessible diasporas even fir or beech. The last named suffer from being nibbled on by deer, which slows down their expansion process. After a couple of decades, even forests in extreme climates return to their original state. This process of self-renewal can be seen right in this place.

High rainfalls, nutrient-poor rocks, the level of snow cover, wood-decaying fungi, seed dispersal by wind *(anemochory)*, by animals *(zoochory)*, distance from the diaspora source, success rate of the seedlings attaching themselves to rotten wood, animal nibbling and a host of other factors, including fire, time and humans, all play their role in the self-renewing process.

Apart from the forest which here succumbed to a periodic disaster, there are very nice fragments of preserved biotopes in the near surroundings. These preserved islands are a source of biodiversity. They are mainly waterlogged and peat spruce forests and bits of primary treeless areas – raised bogs. Primary in this case means that there has never been a forest in these areas. Here the cause is high rainfall (over 1000 mm annually) and high water levels above impermeable nutrient-poor subsoil. The creation of raised bogs is dated back to the end of the last Ice Age. They are created by specific peat moss species and other mosses, the hare's-tail cottongrass *(Eriophorum vaginatum)*, berry shrubs *(the European blueberry Vaccinium myrtilus, bog bilberry Vaccinium uliginosum, lingonberry V. vitis-idaea, bog cranberry Oxycoccus palustris)* and a number of herbaceous plant species such as the arctic starflower *(Trientalis europaea)* or star sedge (*Carex echinata*).

In the floodplain of the border stream Čertovy vody (Devil's waters), species-richer woodland margins with mountain plant species can develop. Species such as Wilementia stipitata, the blue blooming snowbell *(Soldanella montana)*, the critically endangered and inconspicuous water blinks *(Montia fontana)*, marsh violet *(Viola palustris)*, Apline coltsfoot *(Homogyne alpina)* or marsh-marigold *(Caltha palustris)*. All of the abovementioned species are strictly acidophilic. The only exception was discovered underneath a bridge across Devil's water. It is the basiphilous common fragile fern *(Cystopteris fragilis)*, which grows here because of the calcareous mortar holding together the bridge.



Kvilda
Finsterau
Zwiesel
Prášily
Modrava
Stožec
Horní Vltavice
Horní Planá
Frauenau
Spiegelau
Neuschönau
Lenora
Nové Hutě
Nové Hůrky
Nové Hůrky
Nové Hůrky

Jezerní slať – Kvilda – Bučina – Finsterau

6 Raised bog

Length of Path 23,5 km

Raised bog

North of Finsterau lies the Finsteraueer Filz raised bog, which is approximately 400 m long and 200 m wide. A raised bog is a type of peatbog, which is raised above its surroundings are its cross-section is lentil shaped. The creation of raised bogs dates back to the end of the last Ice Age, when the basin shaped depressions which remained in the landscape after the retreat of glacier tongues were filled with nutrient-poor water and created small lakes. In the cold mountain climate with plenty of rainfall, mosses and peat bogs especially thrive. These non-vascular plants are eventually able to fill the water area in full. On the bottom, their decayed bodies form an organic sediment (humoid, also known as peat) and new ones keep growing at the top. If the place is sufficiently supplied with water, the accumulation of humolid leads to the centre arching above the sides and the layer of peat can be several meters high. Peat bogs are small islands in northern landscapes (tundra and taiga) which remain in Central Europe.

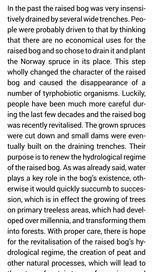
Raised bogs have their ecological specifics. The soil is organic and highly acidic. The soil and the water include very little nutrients, which results in a limited growth of vascular plants. Specialised plants, such as the common sundew *(Drosera rotundifolia)*, compensate the lack of nutrients, mainly nitrogen, by catching and processing small insects thanks to the sticky substance excreted through the typical small glands in their leaves. Important factors which influence the peat bog and its biodiversity the most are the thickness of the peat, the fluctuation of water throughout the year and its size (edges are penetrated by species from surrounding forest biotopes).

The importance of peat bogs lies in their ability to hold large amounts of water and release it gradually. By doing so, they help to even out the water regime of the landscape.

Another significant feature is the creation of a memory, a sort of palaeochronicle of a given place. Each year, plants bloom and produce pollen. Pollen, just like any other solid particle, fall to the ground. If it falls on a peat bog, it is deadened by the growing peat and stored together with the dying parts of the stem in one of its layers. Pollen can be preserved in peat for thousands of years, without changing its form and is species specific. Each plant species has its own typical pollen. After a professional analysis, it can provide a lot of information. The result of a careful pollen analysis is a diagram which shows when certain species of plants appeared in an area and when they disappeared. From that it is possible to draw out the evolution of vegetation, temperature, wetness, and other variables of a locality far into the past.

Another reason for peat bogs' significance is that they create biotopes, which provide living space to a whole range of organisms. They are so narrowly specialised that they cannot exist anywhere else but in peat bogs – the technical term is typobionts. They include for example various species of moss (peat), higher plants of the such as sedges – *Operaceae* (true sedges, cotton grass), the heather family – *Ericaceae* (common heather, bog-rosemary, and a number of Vaccinium shrubs including the bog blueberry). Peat moss and herbs create typical Sumanian biotopes without trees. Various kinds of peat moss grow specifically on small hills, in depressions, even in water columns. Dry places are then dominated mostly by heather, blueberry or hare's-tail cottongrass. Treeless biotopes are in our case in a mosaic pattern with bushy pine vegetation. It is most likely a cross species of the creeping pine *(Pinus mugo)* and Scots pine *(Pinus sylvestris)*. Other bog wood species include the white birch *(Betula pubescens)*

Animal species dependant on peat bogs include various species of spiders, for example the wolf spiders *(Pardosa hyperborea)*, members of the Pirata genus or the dwarf spider *(Aphileta misera)*. Water species include typhobiotic species of small crustaceans of the Cladocera order, for example the Streblocerus serricaudatus, and the Cyclopoida order like the Diacyclops crassicaudatus. More specific inhabitants of raised bogs are insects, like dragonflies, including the subarctic darner *(Aeshna subarctica)* or the northern emerald (*Somatochlora arctica*), butterflies from the Lycaenidae family – yellow *(Colias palaeoneuropome)*, the cranberry blue *(Vaccinina optilete)*, or the Manchester treble-bar (*Carsia sororiata*). Also typical are species of beetles, hymenopterans, dipterans, etc. Vertebrae are represented by the vivipaous lizard *(Zootoca vivipara)*, or the common adder *(Vipera berus)*. Typhobiotic birds include the black grouse *(Lyrurus tetrix)*. There are also some smaller species of mammals such as the field vole *(Microtus agrest)* or the common shrew *(Sorex araneus)*.


Finsterau
Finsteraueer Filz
Finsterauer Ache
Finsterau
Finsterau
Finsterau

Jezerní slať – Kvilda – Bučina – Finsterau

7 Landscape and vegetation around Finsterau

Length of Path 23,5 km

Landscape and vegetation around Finsterau

A history of a place is always tightly linked to its biological diversity. The village of Finsterau was founded in 1704 on the Kašperské Hory branch of the Golden Trail by the Passau bishop Johann Philipp von Lamberg. Up until the mid-18th century it was called "Hallwald" ("Half of the forest"), because it lied exactly halfway between Kreuzberg and Kašperské Hory (Bergreichenstein). The landscape around the village began to be systematically colo-nised in the early 18th century. The time period of its existence seems very short especially compared to the lowlands, which were settled since prehistoric times. It can be presumed that before the first ten settlements were founded, the area was fully covered by forests. Discussions can be had about the make-up of these forests, but palaeontological studies show that in that time, the mountains were dominated by the Norway spruce, European beech, to a lesser extent the silver fir and in certain places other trees such as the downy birch, common pine, grey alder, goat willow, etc.

The local climate and geomorphological conditions defined the ways in which people could make a living. Firstly, it was the forest and its sources. Later on in the colonisation process, deforested areas began to emerge around the individual settlements. These areas then con-tinued to grow. They were used for agricultural purposes, mainly for grazing and to get fod-der to store for winter. Pastures and meadows were created. This differentiation was not always strictly followed, during some years all deserted would be cut down and meadows would be grazed. Even forest grazing was common on nursery grounds. A by-product of meeting basic human needs was the creation of deforested biotopes, so-called secondary deforested areas. Primary deforested areas are created naturally due to natural conditions (too wet or too dry for trees to dominate – for example rocks or peat bogs). In local condi-tions, human activity led to the development of grass-herbal biotopes. Their qualities and species composition are mainly influenced by the gradient of wetness and nutrients.

The wettest places are covered in types of thistle meadows and non-calcareous outfl-ows – they are marsh-marigold (*Caltha palustris*), melancholy thistle (*Cirsium heterophyllum*), water horsetail (*Equisetum fluviatile*), Valeriana dioica, Montia halli, large bitter-cress (*Car-damine amara*), common bistort (*Bistorta major*), etc. Dry places with few nutrients and shallow soil are covered in matgrass dominated by the Nardus stricta species. These give the least fodder and can be quite poor in biodiversity. The species which grow on them in-clude spotted St. Johnswort (*Hypericum maculatum*), sulphur cinquefoil (*Potentilla recta*), sweet vernal grass (*Anthoxantum odoratum*). Alternately wet but nutrient-poor soils pro-duce biotopes of moor grass meadows. They include visually attractive and valuable species such as common lousewort (*Pedicularis sylvatica*), viper's-grass (*Scorzonera hummilis*), common sedge (*Carex nigra*), and on wetter spots even cottongrass (*Eriophorum latifolium*). Medium wet and nutrient-rich produce types of oatgrass meadows. Those are dominated by tall oat-grass (*Arrhenatherum elatius*), red fescue (*Festuca rubra*), germander speedwell (*Veronica chamaedrys*) and often the common dandelion (*Taraxacum sect. Ruderalia*).

There are loose transitional areas between the individual types of meadows and it is rare to find them in crystal structure. Individual grass plots commonly create mosaics, in which in-dividual types of meadows are either separated or smoothly transition into one another de-pending on the depth of the soil, wetness, nutrients, or geographical orientation. Fertilized, nutrient-rich and nutrient-poor meadows can be easily distinguished by colour. Fertilized meadows are darker green and in spring are full of yellow dandelions. Nutrient-poor meadows are noticeably lighter.

Clearance walls are an inseparable feature of the landscape around Finsterau. With consid-erable effort, people picked up boulders and stones preventing agricultural use of deforest-ed areas and lined them along-side the borders of their property. These walls create a net-work, which defines the spatial layout of the landscape. Due to suc-cession (vegetational development) these walls were overgrown by vegetation. There are shades of mature trees, in-cluding species such as the sycamore (*Acer pseudoplatanus*), rowan (*Sorbus aucuparia*), silver birch (*Betula pendula*), Norway spruce (*Picea abies*), goat willow (*Salix caprea*), bird cherry (*Prunus padus*), etc. Near houses grow fruit trees, for example cherry trees. The un-der-growth hides various types of meadows, forests and stream leas. Common species in-clude the European blueberry (*Vaccinium myrtillus*), windflower (*Anemone nemorosa*), mat-grass (*Nardus stricta*), raspberry (*Rubus idaeus*), false oat-grass (*Arrhenatherum elatius*), red campion (*Silene dioica*), etc. Tens of lichen species grow on boulders and wood.

Such biodiversity could never exist here if it weren't for human activity and settlement. And it can only be maintained by careful cultivation. Without cutting or grazing, succession will turn the pastures and meadows back into forests. Heavy fertilisation will cause the disap-pearance of sensitive and rare plant species on account of preserving a couple of common ones.

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