UNESCO'S world natural heritage Bettlachstock

ANCIENT AND PRIMEVAL BEECH FORESTS OF THE CARPATHIANS AND OTHER REGIONS OF EUROPE

Large areas of Europe were covered by a thick ice layer 12,000 years ago. Forests were only found in Southern Europe. As the glaciers melted, the beeches started spreading slowly again. This spreading process has occurred up until now. The phenomenon of a species of tree reconquering an entire continent over millennia is unique and of universal value. Therefore, UNESCO has nominated 94 ancient and primeval beech forests in 18 countries as world natural heritage sites as witnesses to this reconquest. Switzerland has also been represented by two regions since 2021. They are the old beech forests at Bettlachstock and in the Ticino valleys of Lodano, Busai and Soladino.

Photos: G. Kaufmann

Eastern view of the Bettlachstock.

UNESCO'S WORLD NATURAL HERITAGE BETTLACHSTOCK

The Bettlachstock is a special mountain located in front of the first Jura chain. It is part of the Swiss second-largest beech forest reserve, Bettlachstock-Hasenmatt, with an area of 414 hectares. The central zone of the world natural heritage perimeter has not been cultivated since 1985. The oldest trees are about 200 years old. The beech is the most common tree species by far. Besides, firs and spruces also exist. The Bettlachstock plateau was used for agricultural purposes in the past. Since 2001, uncultivated pastures and meadows have been able to develop without human influence.

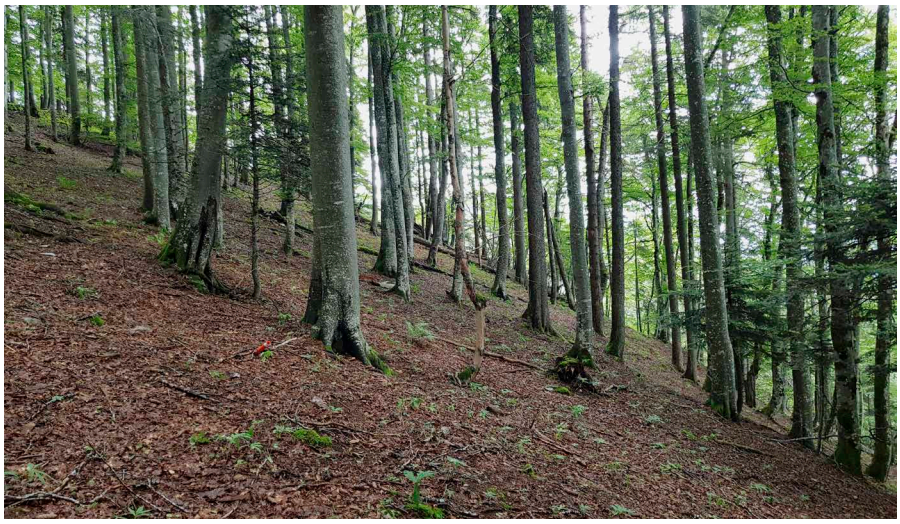


Photo: C. Kaufmann

Beech forest site

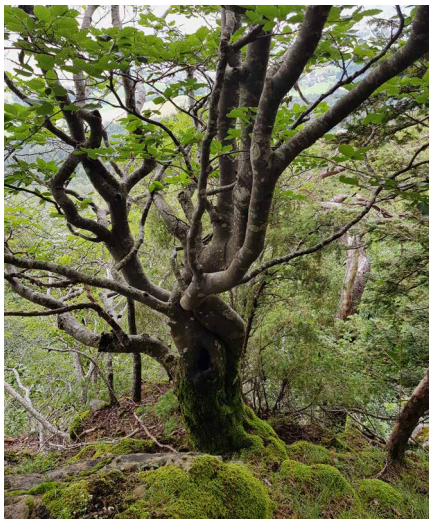
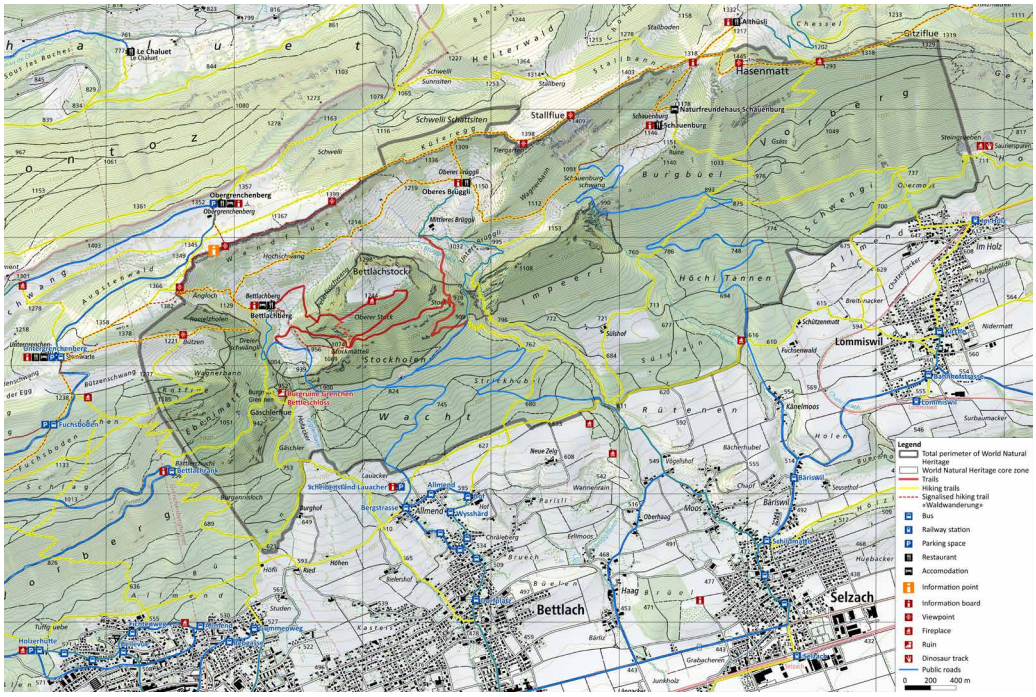


Photo: C. Kaufmann

Habitat beech



Background map: swisstopo

HIGHLIGHTS IN THE WORLD'S NATURAL HERITAGE

OBSERVATIONS

You can receive the best view of the entire world natural heritage from your current location – at the information point on the Wandflue. Information boards, a telescope and a see-through frame let you discover the special features of the Bettlachstock here.

EXPERIENCE

You can explore the world natural heritage best on foot. Marked hiking routes will lead you through the area and give you insights into the uniqueness and diversity of the European beech forests. The unsignposted routes on the Bettlachstock are only suitable for sure-footed, nature-interested visitors in good conditions. Don't leave the trails and meet nature with regard and respect.

LEARN FROM THE NATURE

You will come across a research area of the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) on the southern slope of the Bettlachstock. On the basis of regular measurements, the WSL has examined the condition of the forest on the Bettlachstock and its reaction to natural and man-made stress since 1995.

RULES OF CONDUCT


DO NOT LEAVE MARKED TRAILS


NO WILD CAMPING


USING OFFICIAL FIREPLACES


AVOID NOISE


LEADING DOGS ON A LEASH


NO DRONES


TAKE AWAY THE WASTE

Beech and beech forests, variety of flora and fauna

BEECH AND BEECH FORESTS

Whether on rocky soil on the sunny southern slope or on profound, slightly moist and argillaceous soil on the shady slope – the extraordinarily adaptable beech grows naturally almost everywhere.

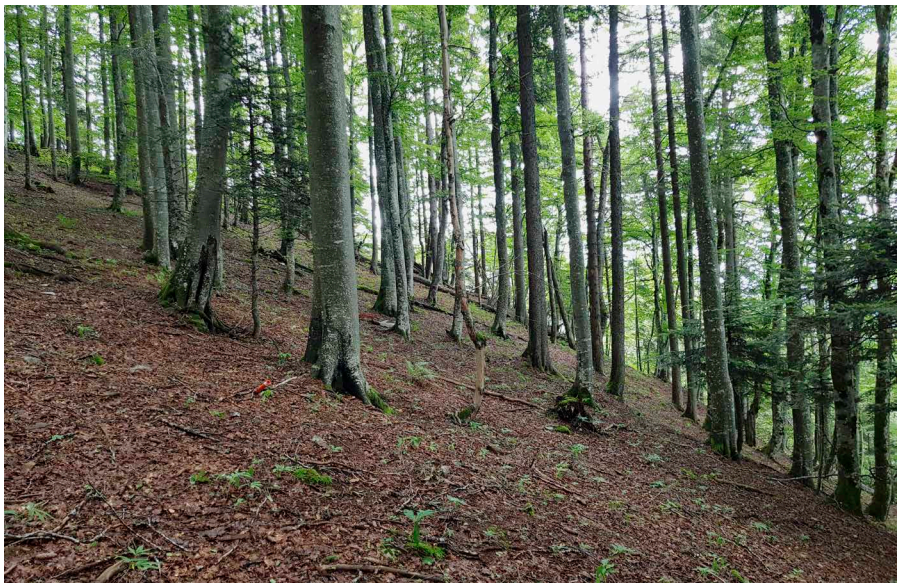


Photo: C. Kaufmann

BEECH FOREST

The beech inherently dominates the forest image with its remarkable silver-grey stems and distinctively lush and thick canopy of foliage. Other species of trees prevail only in extreme habitats: pines on rocky and marlaceous subsoil; limes and maples on loose debris slope; maples and ash trees along the burns and in moist habitats. In higher areas, silver fir grows naturally, adding its beauty to the forest image.

Photo: C. Kaufmann

TREE MONUMENTS

The oldest beeches on the Bettlachstock are up to 200 years old. There are several habitat trees overgrown with mosses, lichens or fungi with deadwood, tree cavities, special habits or tuberous outgrowths.

Photo: C. Kaufmann

LYING DEADWOOD

The lying deadwood provides habitat and nutrition for a lot of wood-decomposing fungi and insects.

VARIETY OF FLORA AND FAUNA

The Bettlachstock provides a diverse locational mosaic with undisturbed habitats. Tree cavities in old trees are home for birds and bats; beetle larvae and wild bees develop in dead trees; and butterflies rejoice in the uncultivated pastures and meadows at the splendour of the blossoms.

Photo: M. Voyame

MASTER BUILDER

The large black woodpecker digs spacious holes by itself in old beeches. As a master builder, it has many subsequent tenants: stock doves, dormice, pine martens, bats and others.

Photo: M. Voyame

PEREGRINE FALCON

Can reach up to 350 km/h while swooping on his prey.

Photo: M. Voyame

RESETTLING

In 1951, the chamois were resettled in the canton of Solothurn. It is particularly common in rocky and steep forests. Since the 1980s, it has also had to watch out for the lynx, which has also been released.

Photo: M. Voyame

MARTAGON LILY

In the summer, the light purple blossoms of attractive martagon lilies and orchids decorate the isolated, clear patches in the forest and on the Bettlachstock.

KANTON solothurn
Amt für Raumplanung
JURA SONNENSEITE

Photo: M. Schmutz

PASTURES AND MEADOWS ON THE BETTLACHSTOCK

Since 2001, the pastures and meadows have been left uncultivated. They are growing without human influence. The process of the forest's return is very slow, not least because of the browsing of roe deer and chamois.

Photo: T. Schwaller

HEATH FRITILLARY

The heath fritillary limbers up in the spring sun.

Photo: T. Schwaller

GERMAN GENTIAN

Along with the yellow gentian, the typical German gentian is also found on the unfertilized Jura pastures.

Photo: T. Schwaller

WART-BITER

An imposing bush-cricket

Formation, Prehistory, Research on the Bettlachstock

FORMATION OF THE BETTLACHSTOCK

The Bettlachstock exists there like an island. The Gigler and Brüggli streams modelled it out for over thousands of years from the first chain of the Jura Mountains.

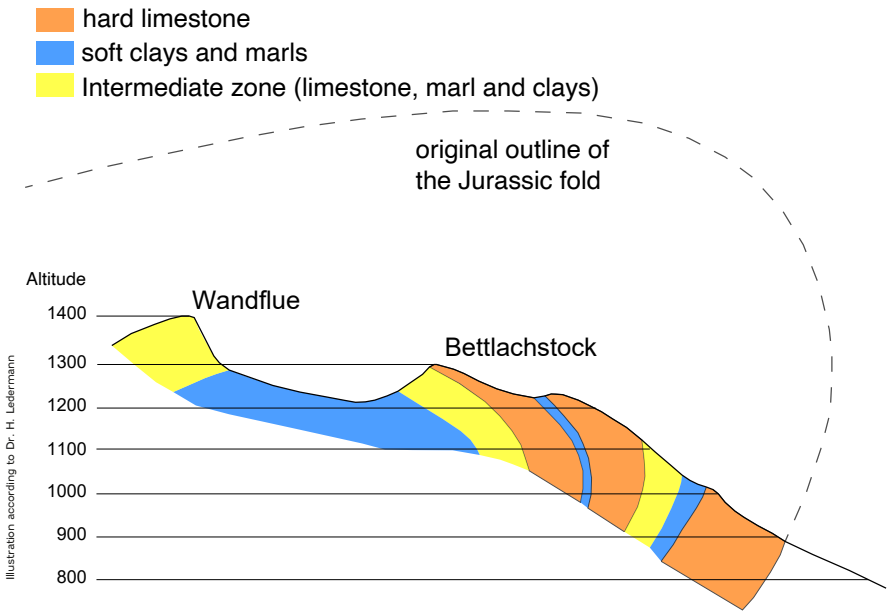
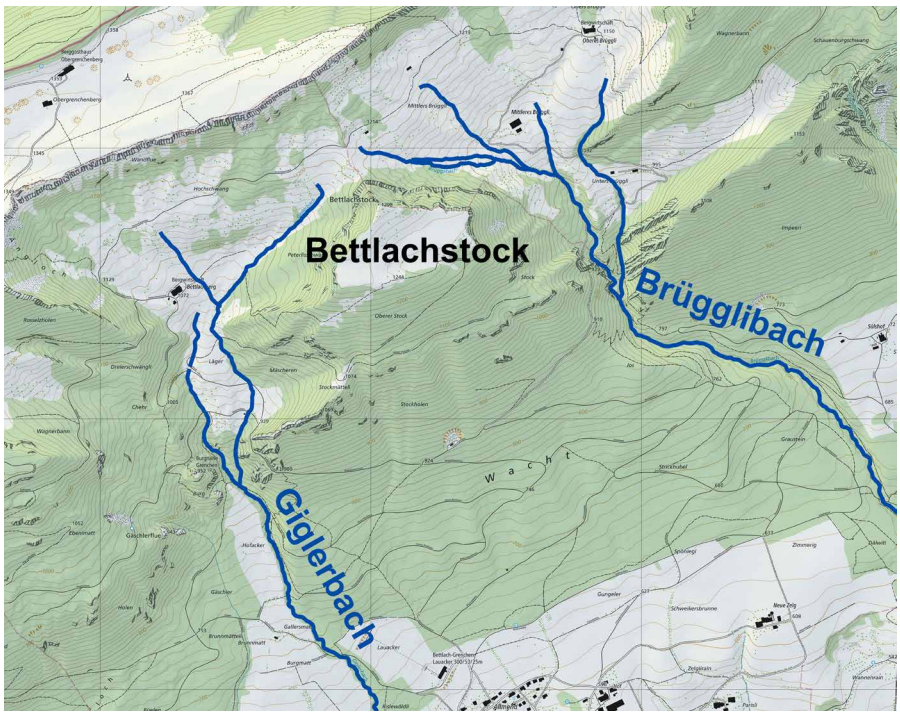


Illustration according to Dr. H. Ledermann

ONCE A SHALLOW SEA

Here is a lagoon landscape during the Jurassic age 150 to 200 million years ago. Clay and lime accumulated at the bottom of the sea. They consolidated into hard limestone and soft marl over millennia. Around 12 million years ago, the rock layers started to unfold through pressure from the south – the Jura Mountains were formed. Originally, the Jura was about twice as high. The combined forces of water, ice and wind carried away about half of the mountain during the course of time. Hard limestone layers remained thereby as prominent ridges. Soft clays and marls form gentle little trough valleys between the limestone ribs.



Background map: swisstopo

INSELBERG BETWEEN TWO HALF VALLEYS

The Gigler and Brüggli streams rise under the Wandflue at a distance of around one hundred metres. Both streams flow into the gentle trough valleys eastwards or westwards between Wandflue and Bettlachstock before they break through the chain of Jura Mountains on both sides of the Bettlachstock and flow downstream into two half valleys.

KANTON solothurn Amt für Raumplanung
JURA SONNENSEITE

Photo: M. Schmutz

WANDFLUE

The 50-metre-high Wandflue was formed due to a landslide as the glacier receded at the end of the last ice age.

PREHISTORY

The cantonal Bettlachstock-Hasenmatt Forest Reserve is the second-largest Beech Forest Reserve in Switzerland, with a total area of 414 hectares.

PROTECTED IN 1985

When the Bettlach community wanted to open up the Peterlisschwang on the north-west slope of the Bettlachstock with a new forest road in the 1980s, the canton suggested establishing a nature reserve. It was successful in convincing the owners of the protected isolated, diverse forest land that had previously been cultivated in a near-natural way. Since 1985, the forests in the cantonal nature reserve have not been used for commercial purposes.

Photo: C. Kaufmann

ONCE CULTIVATED

The forest on the Bettlachstock was cultivated before the protection. Five grinding paths on the southern slope still remain as witnesses today to the former removal of the wood.

Photo: Grenchner Tagblatt

FORMER FARMHOUSE

On top of the Bettlachstock, there were three small potatoes and grain fields, along with meadows and pastures, until the 1980s. The military demolished the empty farmhouse in 2014.

THE WAY TO THE WORLD NATURAL HERITAGE

The 1972 World Heritage Convention strives for the protection of natural and cultural heritages of exceptional universal value for all mankind. The Federal Office for the Environment (FOEN) is in charge of world natural heritage sites in Switzerland in close cooperation with the cantons. In July 2021, UNESCO's panel of experts recorded both of FOEN suggested sites, the beech forest areas at Bettlachstock and in the Ticino valleys of Lodano, Busai and Soladino in the World Heritage List.

RESEARCH ON THE BETTLACHSTOCK

The Swiss Federal Institute for Forest, Snow and Landscape Research (WSL) established one of the 19 research stations of the LWF programme on the Bettlachstock in 1995. It regularly measures the environmental conditions and the state of the forest here. The study of nutrient cycles is an important focus of LWF research. Thus, a lot of measuring instruments are installed on the research area on the southern slope of the Bettlachstock.

Photo: S. Blaser

BETTLACHSTOCK IN CLIMATE CHANGE

An increase in dry summers could lead to additional die-off of firs and beeches in the middle term at parts of the reserve. In the long term, drought-tolerant deciduous tree species could become native, especially on south-exposed sites.

YOU CAN FIND HERE DAILY UPDATED MEASUREMENT DATA OF THE BETTLACHSTOCK.

YOU CAN FIND HERE AN INTERACTIVE GRAPH OF AN LWF STATION RESEARCH – DISCOVER THE MEASURING INSTRUMENTS!