



coast of Finland; they were planted at Punkaharju in the 1930's. Of the above-mentioned trees only small-leaved lime grows

as an indigenous species also at Punkaharju. At the edge of the area, there are two large-sized and broad-crowned Scots pines on the left side of the path and western red cedars (*Thuja plicata*) on the right side of the path.

7. European larch stand

The stand of 3.3. hectares of European larches was planted in 1880 and it is one of the oldest cultivated forest stands at Punkaharju. When the Punkaharju crown park forests were transferred to the Finnish Forest Research Institute in 1924, three experimental sites were established for this stand. One of them is this plot left in natural state. It has not been thinned and trees felled by storms have not been removed, as they have been in other parts of the stand. The differences related to management are clearly visible in trees: in the virgin part of the stand the trees are more slender and their crowns are smaller than in the parts that have been regularly thinned.

8. A lush grove

This spot represents what is, according to Forest Law, one of the particularly important ecosystems. This type of legally protected environment must be managed and used in a manner that preserves the characteristics of the ecosystem, in this case the moisture and shadiness as well as the demanding and rich undervegetation growing in the grove. Of the species typical to moist groves, the ones growing here include grove bushes, e.g. fly honeysuckle (*Lonicera xylosteum*), glossy buckthorn (*Rhamnus frangula*), guelder rose (*Viburnum opulus*) and double cinnamon rose (*Rosa*

majalis), as well as ferns, e.g. lady fern (*Athyrium filix-femina*) and spreading wood fern (*Dryopteris expansa*). As for herbaceous plants represented in the area, the lesser butterfly orchid (*Plantathera bifolia*) and serrated wintergreen (*Orthilia secunda*) should be mentioned. Thyme-moss (*Pseudobryum* sp.) are the dominant moss species.

9. The tallest tree in Finland

The trail continues through the same European larch stand. Hiking downwards along the gentle slope, the European larches slowly become taller and the tallest ones are on the bottom edge of the slope, near to Kokonharju. There are about 50 trees taller than 40 metres, including the tallest tree in Finland: measured in 2003, the height was 46.3 m and volume approximately 9 m³. By comparison, the tallest indigenous tree in Finland is a 44.5 m high Norway spruce that grows in the Vesijako nature park.

10. Scots pine stand

This Scots pine stand grows in the area that was added to the Kokonharju virgin forest area in 1991. The stand has regenerated naturally and over time it will develop into an old virgin-like pine forest.

METLA

PUNKAHARJU

Punkaharju Research Unit
 Finlandiantie 18
 FI-58450 PUNKAHARJU
 tel. +358 10 2111 fax +358 10 211 4201
 www.metla.fi/pu

Editing and layout: Metla/ E. Beuker, K. Huttunen, J. Hyvärinen,
 E. Matikainen, T. Nikkanen and E. Oksa / I.2007
 Photos: J. Lehto, E. Matikainen and T. Nikkanen
 ©Translation: Pirkko Huuskonen

METLA

PUNKAHARJU RESEARCH PARK AND NATURE CONSERVATION AREA

NATURE TRAIL



Hiking through the Kokonharju Nature Trail provides visitors with a unique chance to get acquainted with the pristine, indigenous forest ecosystem of Punkaharju. The trail follows the ridge of the beautiful Kokonharju esker, and along the way hikers can admire Finland's tallest trees of several species. The trail passes through a European larch (*Larix decidua*) stand, where the average tree height is greater than in any other stand in Finland. The trail starts and ends at the arboretum, where visitors are introduced to more than 100 tree species and special forms of trees.

The Kokonharju Nature Trail starts at the parking lot of the old school. The trail is 3 km long and it is signposted with yellow marks on trees and direction signs.

Suomi

English

1. Arboretum



The arboretum, a park for different tree species, was established at Punkaharju in the late 1920's and 1930's. By 1938, 72 mostly coniferous tree species had been planted in

the arboretum. When repair and renovation work was started in 1991, 48 of the species planted 60 years earlier had survived. Now there are 16 new coniferous and 33 broad-leaved species. Furthermore, there are several special forms of domestic forest trees, such as curly birch, birches and alders with special leafshape and many special forms of spruces..

2. Punkaharju nature conservation area

Soon after the arboretum the trail meets the border of the Punkaharju nature conservation area. When the Punkaharju Crown Park was established in 1840, a prohibition order was enforced against cutting and burn-beating. Since 1924 the Finnish Forest Research Institute (Metla) has looked after the esker as a landscape preservation area. A new phase was initiated in 1991, when the Punkaharju esker area was established by law as a nature conservation area run according to a confirmed management and use plan. The total land area of the nature conservation area comprises 180 hectares, of which 42 hectares is preserved, as a virgin forest, while the remaining part is tended by conservative cuttings. The aim of the cuttings is to maintain the landscape unchanged as much as possible, and to ensure that the view from the ridge to the lakes will be maintained.

3. Kokonharju virgin forest area

The Kokonharju virgin forest area, through which the trail passes, is part of the completely virgin



section of the Punkaharju nature conservation area. It is divided into two parts: the old part (15.5 ha) was preserved

already in 1924. When the Punkaharju nature conservation area was established in 1991, an area of 9.1 ha was added to the virgin forest area. Since no management or cuttings are allowed in the virgin forest area, occasionally one can encounter seedlings of exotic tree species that have spread from the research park.

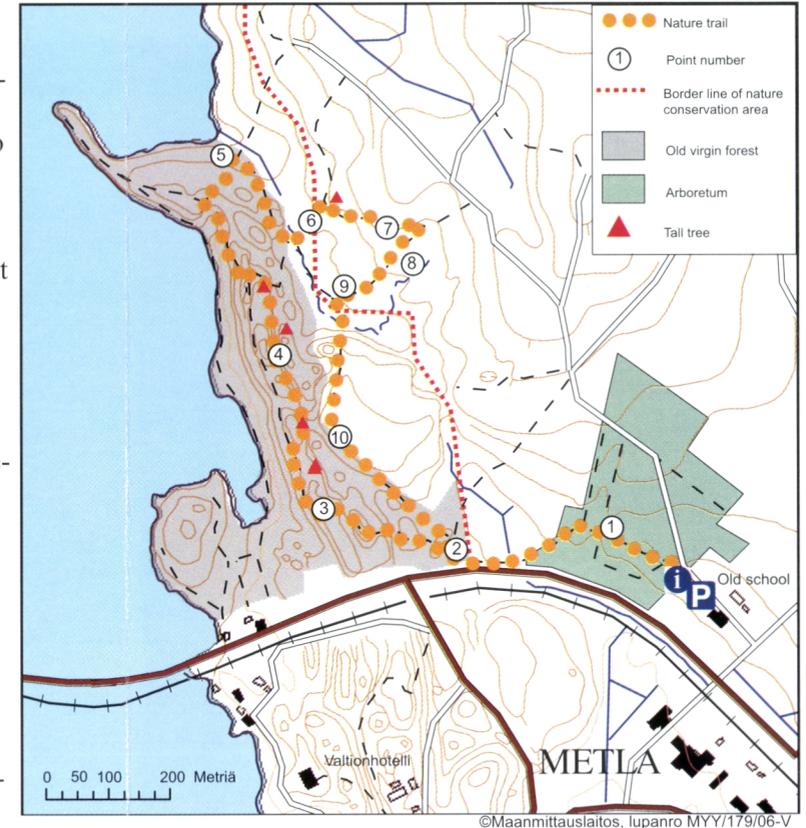
Plant species typical to the Punkaharju ridge and growing at Kokonharju include slender crazyweed (*Oxytropis campestris*) and Alpine milkvetch (*Astragalus alpinus*).

4. The tallest pine in Finland

Tall trees grow in the lush basins of Kokonharju virgin forest area, and one of them is actually the tallest Scots pine (*Pinus sylvestris*) in Finland. In 2003, at the age of 175 years, it had reached the height of 40.5 m and its volume was 4.8 m³. It is surrounded by several pines of almost 40 meters, some of which are marked both in the field and on the map. Further away, 100 meters south from the pine, there is a 41.8 m tall Norway spruce (*Picea abies*).

5. A historical landing point

Old 19th century maps indicate that this spot has been used as a landing point. Puruvesi is a part of Lake Saimaa, separate from the main water flow; it comprises wide open waters divided by esker islands and capes. As a waterway, Puruvesi represents a very oligotrophic lake with excellent water quality, characterized by the presence



of aquatic lobelia. The lake has low nutrition and humus contents, and hence the water is very clear. Typically, aquatic vegetation grows abundantly on the lake bottom, the main species being aquatic lobelia (*Lobelia dortmanna*) and spring quillwort (*Isoetes echinospora*).

6. Noble hardwood trees

Small stands of noble hardwood trees have been established on this old burn-beaten area. The trail passes first some elms (*Ulmus leaves*) and then small-leaved limes (*Tilia cordata*). A bit later, a few oaks (*Quercus robur*) in poor condition grow on the left side of the path. All noble hardwood trees growing in the area originate from the area of Tammisaari on the south-western