

ENVIRONMENTAL SPECIMENS IN A BANK OF THEIR OWN

Metla has centralised the storage of its research samples in a purpose-built "warehouse", the Paljakka Environmental Specimen Bank. This is a unique facility at the international level even. At five-year intervals Metla collects moss samples from all parts of Finland as its contribution to the Pan-European, heavy-metal monitoring programme. The samples are dried and pre-treated. Some of the samples are milled ready for analysis, some are retained intact for future research. In 50 years' time, for instance, new techniques will probably be available for studying changes in the environment. Dried moss material, so-called reference moss samples, are prepared at the specimen bank for checking the analytical standard of laboratories participating in heavy-metal deposition surveys. Forest litter samples collected from a large number of stands in different parts of the country are also stored there to provide invaluable research material for contemporary science.

The Environmental Specimen Bank houses a permanent exhibition of the latest advances in forestry research.

RESEARCH ACTIVITIES

The purpose of the research forests is to serve the needs of Metla's research programme, and to provide, through the management and use of the forests and the natural environment, the facilities required for large-scale field research. The high-altitude forests in the area have the features typical of forests growing on such sites: poorly-growing, low-density forests that are repeatedly damaged by the build up of ice, rime and snow in the tree crowns, with birch and wavy hair-grass filling the forest openings. The soil in the area is fine-textured and fertile, the low effective temperature sum forming the minimum factor limiting tree growth. In these difficult conditions, researchers have an ideal opportunity to identify the factors influencing forest ecosystems and the growing of tree stands.

Several research projects are currently being carried out in the Paljakka Research Area on topics associated with the special conditions of the area:

- Forest regeneration in high-altitude areas
- Effect of prescribed burning and soil amelioration on forest regeneration
- Development of under-storey trees following release
- Effect of elevation on temperature conditions and the snow cover
- Restoration of the natural forest cover following slash-and-burn agriculture and forest management
- Experiments in natural stands

COME, SEE AND EXPERIENCE

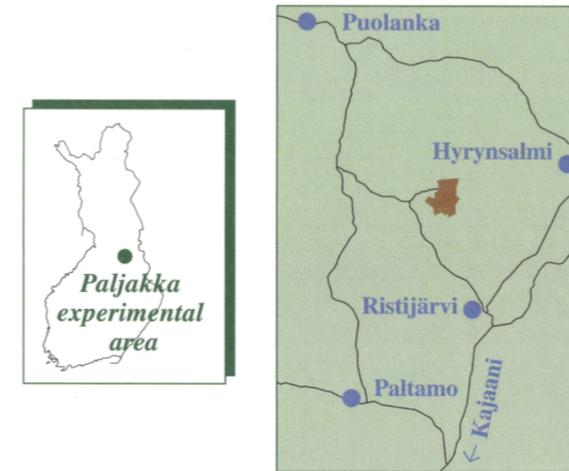
The Paljakka Research Area is renowned for its excellent crops of wild berries, and there is unrestricted access in accordance with the public right of access (Everyman's Rights). The camping locations have informative noticeboards telling about the nature around you and Metla's activities. The area is also highly suitable for bird enthusiasts, insect collectors and photographers. The illuminated ski track is very popular in the autumn. The snowy landscape, crystal-clear air and thick blanket of snow in late winter will entice you to spend the whole day on skis.



Springtime view overlooking the highlands of Paljakka

FINNISH FOREST RESEARCH INSTITUTE

Metla was established in 1917 as a research institute under the jurisdiction of the Ministry of Agriculture and Forestry. Metla comprises the Research Centres of Helsinki and Vantaa, and eight research stations in different parts of Finland. With the continuity of long-term research as the objective, Metla has been entrusted with the management of about 150,000 hectares of research forests. Conservation areas amount to almost 70,000 hectares, and demonstration forests (meeting the needs of forestry education) total 4,600 hectares.



FURTHER INFORMATION

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FINNISH FOREST RESEARCH INSTITUTE

PALJAKKA EXPERIMENTAL AREA AND ENVIRONMENTAL SPECIMEN BANK

SUOMI
ENGLISH
SVENSKA



Autumn day in Paljakka

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PALJAKKA EXPERIMENTAL AREA

The Paljakka Research Area, set amidst the highlands of Kainuu, was established in 1961 by the Finnish Forest Research Institute (Metla) in the districts of Puolanka and Hyrynsalmi. The area lies at an elevation of between 200 m (in the west) and 375 m (at Mustakumpu, in the middle of the area).

Paljakka remained hunters' country for a long time. More intensive forms of land use first appeared in the area at the beginning of the shifting agriculture (slash-and-burn) period, around the 16th century.

The research area includes about 200 hectares of land cultivated by slash-and-burn in the 19th century. In some places, the presence of birch as the predominant tree species forms a relic of the vegetation that developed after



The trees at Paljakka bear the weight of thousands of kilos of snow, ice and rime

shifting agriculture. The most recent slash-and-burn areas date back to the 1870's.

Exploitation of the wood resources in the research area began in the early 1900's. However, the fellings were rather small and the area has retained its wilderness character.

The research area is 1,324 hectares in size, with about half of the area in forestry use. Landscape forests, high-elevation forests and protection forests account for 30% of the area. The proportion of the forest area used for research purposes is close to 20%. The majority of the forests are spruce-dominated, upland stands. Only about 6% of the area is wetland.

The Paljakka Strict Nature Reserve, administered by the Finnish Forest and Park Service, lies to the north of the research area.

ECOLOGY OF THE AREA

The highlands of Paljakka are located within the Kainuu schist zone, which runs north-to-south through the province. The bedrock is quartzite, which is highly resistant to weathering. The area was released from the grip of glaciation at the end of the last Ice Age, about 9,000 years ago. At that time the sea was almost 190 metres higher than its present level, only the tops of the ridges lying above the highest shoreline of the Baltic Sea.

Short summers without any really hot periods, and long, relatively mild winters with heavy snowfall are typical in the Paljakka highlands. One rather special feature of the local climate are the large temperature differences during the winter: the air temperature on top of a ridge can be as much as 10°C higher than that down in the valley. There is often snow still in the forests at midsummer. The persistent snow cover, the relatively low effective temperature sum, and the fertility of the soil, provide favourable conditions for the growth of e.g. mosses. The thousands of kilos of ice, snow and rime that collect in the tree tops cause considerable forest damage almost every year. In fact Paljakka, together with the north-western arm of Lapland, is one of the "snowiest" parts of Finland.

