

Finnish Forest Research Institute
The Department of Peatland Forestry
Ruotsinkylä
1977

The Finnish Forest Research Institute was founded by law on the 24th of October, 1917. At present it consists of 9 research departments:

- Department of Soil Science
 - Peatland Forestry
 - Forest Inventory and Yield
 - Forest Economics
 - Silviculture
 - Forest Protection
 - Forest Tree Breeding
 - Forest Technology
 - Mathematics

In addition to these there are an Administrative Office, and an Experimental Forest Office. There are also 4 independent research stations for special regional investigations and 4 experimental stations for special projects.

The Department of Peatland Forestry was established in 1928 in order to clarify the principles of the utilization of peatlands for forestry purposes and to investigate basic forest-improvement work covering the nutrient balance and need for fertilization, scarification, hydrology and biology of peatlands. Furthermore, the activities of the department include investigations of silviculture on peatlands, the yield of wood after drainage, afforestation methods, development of machines used in forest improvement and the structure of forest roads, among other topics.

For field experiments, the Forest Research Institute has experimental areas (79 860 ha in total) in different parts of Finland (Appendix 1) and a further 62 196 ha in national parks, nature parks and conservation areas.

The experimental area at Ruotsinkylä, which is the destination of this excursion, was established in 1923 and has an area of 1 117 ha.

Mean values of some climatic factors:

Mean annual temperature	+ 3.9° C
Mean temperature in July	+16.5° C
"- in February	- 8.1° C
Sum of daily mean temperatures (> +5° C)	1 300° C
Average duration of growing season (>+5° C)	175 days
Annual precipitation	640 mm
Altitude	60 m
Latitude	60° 22'

In Finland, the classification of swamps for agricultural and forestry purposes is based on plant sociology and ecology. The plants and plant communities found on swamps and having known ecological features reflect the properties of the habitat, especially the nutrient contents. The swamps are first divided into three main categories: spruce and hardwood swamps (SS), pine swamps (PS) and open swamps (S). Each of these is further divided into swamp types and the corresponding nutritional levels (site quality classes 1..6), according to the ground-vegetation communities. By means of the swamp types, it is possible to calculate quite accurately such things as the optimal tree species, the need for fertilization and the yield of wood after drainage. In this respect, it is necessary also to take into consideration the climatic location of the area.

Production experiments

Point 1

The purpose of the experiment is to find economically the most profitable way of handling an old pine stand at the time of drainage. On plot 1a, the original pine stand has had thinning treatments. Plot 1b has been clearcut after drainage and seeded with pine in 1930. On plot 1c,

the old pine stand was grown until 1946, when it was cut so that only some seed trees were left on the plot, These were finally cut in 1953 (information on stands available in the Appendix 2).

Point 2




The original mixed pine-birch stand has been grown on the plot. A young spruce stand appeared in the understory after thinnings in 1951 and 1956. This will form the second tree generation after drainage.

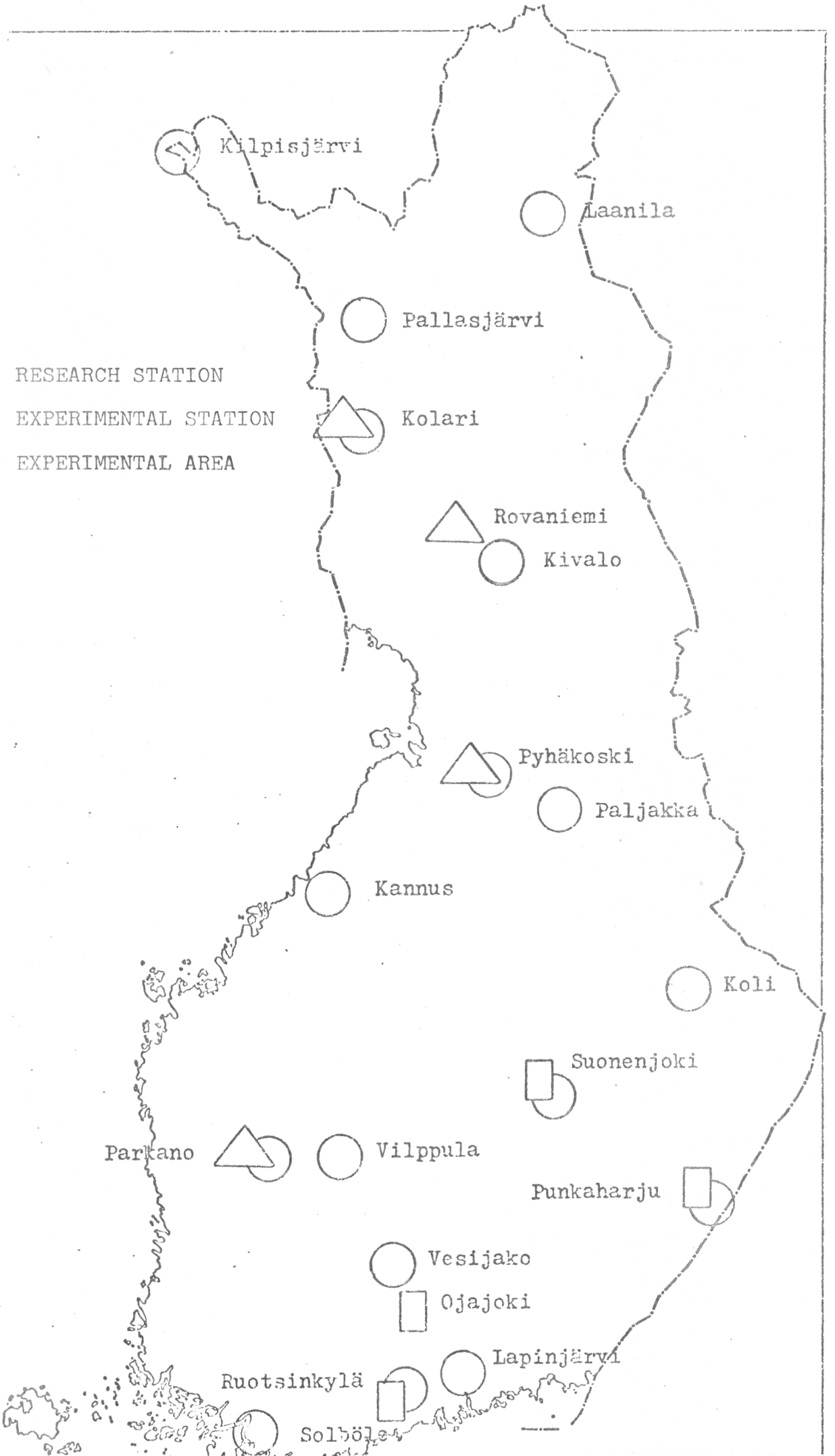
Point 3

On this plot there is growing a regularly thinned, very highly productive spruce stand which became established before drainage.

Point 4

The original tall spruce-pine stand is growing on the plot. A young spruce stand appeared in the understory after heavy thinnings in 1951 and 1956. This will form the second tree generation after drainage.

-  RESEARCH STATION
-  EXPERIMENTAL STATION
-  EXPERIMENTAL AREA



Point No.	Sample plot No.	Original peatland site type x)	Peat layer, m	Site quality class (1..6)	Tree stand				Annual increment	Total production	Measured in
					Pine	Spruce	Birch	Total			
					solid m ³ /ha						
1a	20	Cg PS	0.8	5	187	-	-	187	3.7	217	1975
1b	21c	"	0.8	5	190	-	-	190	10.0	232	"
1c	22	"	0.8	5							
2	43	C PS	0.6	3	132	32	48	212	8.1	290	1970
3	41	M SS	0.6	3	6	187	55	248	13.0	347	"
4	38	H SS	1.5	2	127	114	-	241	6.6	382	"

- x) Cg = Cotton grass
 PS = Pine swamp
 C = sedge (Carex)
 M = Myrtillus
 SS = Spruce swamp
 H = Herb