

Metadata form of Silva Fennica

This form is designed for writing the elements of metadata, which are used in the description of research materials such as data and codes. The form is based on the work done in the Work Group “Description of research materials” under the Finnish Open Science Coordination.

Item	Description	Responsible
<i>Nuutinen, Y., et al.</i>	Comparing the characteristics, removals and incomes of zone- and low-thinned stands of Norway spruce	Author
<i>Author & ORCID</i>	Nuutinen, Yrjö (0000-0003-3360-4444); Miina, Jari (0000-0002-8639-4383), Muhonen, Timo; Uutera, Janne; Ovaskainen, Heikki (0000-0001-5063-6662)	Author
<i>Authors' affiliation(s)</i>	Natural Resources Institute Finland, Yliopistokatu 6B, 80100 Joensuu, Finland, https://ror.org/02hb7bm88	Author
<i>Owner of the material</i>	Nuutinen, Yrjö, Natural Resources Institute Finland https://ror.org/02hb7bm88	Author
<i>Publisher</i>	Zenodo	Author
<i>Funder</i>	Natural Resources Institute Finland, https://ror.org/02hb7bm88 European Union's Horizon 2020, JATKUVA - Multi-objectively targeted implementation of continuous cover forest management -project (grant number A81140, European Regional Development Fund); NordicForestry - Planning, management methods and technology for young boreal forests (grant number 20370327, European Regional Development Fund)	Author
<i>Description</i>	The data collected from the experimental plots were used to describe and compare the stand characteristics and spatial patterns of Norway spruce-dominated stands after zone and low thinning at the first thinning phase, as well as the volumes harvested by these treatments. Removals of subsequent thinning and clearcutting were simulated.	Author
<i>Methods</i>	The thinning treatments were established in four stands dominated by Norway spruce (<i>Picea abies</i> (L.) H. Karst.) in Finland. Stands 1 and 2 growing on mineral soil represent young thinning stands at the stage of the first commercial thinning, whereas Stands 3 and 4 on drained peatland represent advanced thinning stands that have not been thinned previously. In younger stands, zone thinning was aimed to improve harvesting productivity, and in peatland stands, zone thinning was used as a transition to CCF. In each stand, rectangular treatment plots of 30 × 30 m (900 m ²) or 20 × 30 m (600 m ²), depending on the distance of strip roads, were established and all remaining trees (height > 1.3 m) were mapped and measured by species and diameter at breast height (dbh) and the height (dm) of sample trees was measured. The harvester production (hpr) files were used to calculate the thinning removals. The post-thinning stand characteristics were calculated using the KPL software of Luke. Removals of the subsequent thinning and clearcutting were predicted by using a distance-dependent, individual-tree simulator. The effects of the thinning treatments on the measured stand characteristics after thinning and the harvested and simulated removals were evaluated by means of analyses of variance using the Univariate GLM procedure of IBM SPSS Statistics. The stand and treatment effects, as well as their interaction, were used as fixed factors. Initial differences between plots were corrected for using pre-thinning stand volume as a continuous covariate. The pairwise multiple comparisons between the treatments were	Author

	performed using the Least Significant Difference (LSD) test with a significance level of 0.05.	
<i>Variables</i>	For each sample plot: stand number, plot number, thinning treatment, stand characteristics after thinning treatment, removal harvested in the thinning treatment, simulated removals from the subsequent thinning and clearcutting and total removals during rotation as well as incomes from all the cuttings. Thinning treatments: low thinning (i.e., thinning from below) and zone thinning.	Author
<i>Author keywords</i>	first thinning; hpr-data; peatland; <i>Picea abies</i> ; simulation; thinning removal	Author
<i>Vocabulary keywords (community standard)</i>		Author
<i>Discipline</i>	Forest science	Archive/Repository/Publisher
<i>Type of material</i>	Research data	Author
<i>Language</i>	ENG	Author
<i>Time range covered</i>	2022–2025	Author
<i>Geographic region</i>	Finland	Author
<i>Version</i>	1	Author
<i>File format(s)</i>	.csv	Author
<i>Availability of the materials (open, embargo, registration, limited, registration required)</i>	Openly available in Zenodo	Author
<i>Justification for access restrictions</i>	None	Author
<i>Licence</i>	CC BY-SA 4.0	Author
<i>Connections with other research materials</i>	None	Author
<i>Access to the connected research materials</i>		Author
<i>Codes only: hardware/software requirements for running the code</i>	Univariate GLM procedure of IBM SPSS Statistics 30 (IBM SPSS Inc., Chicago, IL, USA)	Author
<i>Connections to other products of research</i>	None	Author
<i>Personal data</i>	None	Author
<i>Confidential or secret data</i>	None	Author
<i>Publication date</i>	Not yet in archive or repository	Archive/Repository/Publisher
<i>Preservation policy</i>	The data is also stored in database of Natural Resources Institute Finland permanently as a part of the institutes data policy.	Author
<i>Permanent identifier (PID)</i>	https://doi.org/10.5281/zenodo.20068293	Archive/Repository/Publisher