

## 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>Name of the data / code</i>	Pathfinder: a tool for operational planning of forest regeneration on clearcuts	Author
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<i>Owner of the material</i>	Authors	Author
<i>Publisher</i>	Springer Nature	Author
<i>Funder</i>	This research was partly conducted within Trees For Me, a center of excellence supported by the Swedish Energy Agency [P2021-90272] and almost 50 stakeholders. In addition, this work was supported by AutoPlant, which was funded by the Swedish Innovation Agency, VINNOVA [2023-02747]. Finally, sincere gratitude is expressed to Holmen Skog for providing the PlantMax and hpr data.	Author
<i>Description</i>	Article and figures	Author
<i>Methods</i>	-	Author
<i>Variables</i>	-	Author
<i>Author keywords</i>	Forest regeneration, Autonomous planting, Path planning, Optimization, Decision support, Digital elevation models	Author
<i>Vocabulary keywords (community standard)</i>	Autonomous site preparation, Regeneration planning, Forestry GIS, Soil moisture, Planting density	Author
<i>Discipline</i>	Forest Engineering, Forest vehicle systems, Precision Forestry	Archive/Repository/Publisher
<i>Type of material</i>	Article and figures	Author
<i>Language</i>	Eng, swe	Author
<i>Time range covered</i>	2024-06-01	Author
<i>Geographic region</i>	SE	Author
<i>Version</i>	-	Author
<i>File format(s)</i>	.docx, .png, .jpg, .shp	Author
<i>Availability of the materials (open, embargo, registration,</i>	DEM and DTW maps are licenced, and is available at these authorities <a href="https://www.lantmateriet.se/sv/geodata/vara-produkter/produktlista/">https://www.lantmateriet.se/sv/geodata/vara-produkter/produktlista/</a> <a href="https://www.skogsstyrelsen.se/e-tjanster-och-kartor/karttjanster/geodatatjanster/rest/">https://www.skogsstyrelsen.se/e-tjanster-och-kartor/karttjanster/geodatatjanster/rest/</a>	Author

<i>limited, registration required)</i>	The coverage path planners are not commercial software, but it is possible to set up a similar model by following the steps and equations in this previous paper.	
<i>Justification for access restrictions</i>	Licensed maps for input data.  The source code for the two coverage path planners are not available due to intellectual property, but it is possible to set up a similar model by following the steps and equations in this paper.	Author
<i>Licence</i>	CC BY-SA 4.0	Author
<i>Connections with other research materials</i>	-	Author
<i>Access to the connected research materials</i>	DOI provided for the published article: DOI: <a href="https://doi.org/10.1007/s11676-025-01834-x">10.1007/s11676-025-01834-x</a>	Author
<i>Codes only: hardware/software requirements for running the code</i>	<a href="https://github.com/LTU-Machine-Design/CPP_comparison_mechanized_forest_regeneration">https://github.com/LTU-Machine-Design/CPP_comparison_mechanized_forest_regeneration</a>  Pathfinder is not commercial software, only algorithms that are developed within a research project.  The code of the coverage path planners is not open source, but it is possible to set up a similar model by following the steps and equations in this paper.	Author
<i>Connections to other products of research</i>	<a href="https://doi.org/10.1007/s11676-025-01834-x">https://doi.org/10.1007/s11676-025-01834-x</a> <a href="https://doi.org/10.1080/14942119.2025.2469201">https://doi.org/10.1080/14942119.2025.2469201</a> <a href="https://doi.org/10.3390/f15020263">https://doi.org/10.3390/f15020263</a>	Author
<i>Personal data</i>	None	Author
<i>Confidential or secret data</i>	The source code is not available, but it is possible to set up a similar model by following the steps and equations in this, and the previous papers.	Author
<i>Publication date</i>	2025-03-18	Archive/Repository/Publisher
<i>Preservation policy</i>	Open Access under Creative Commons; no specified retention period	Author
<i>Permanent identifier (PID)</i>	DOI: <a href="https://doi.org/10.1007/s11676-025-01834-x">10.1007/s11676-025-01834-x</a>	Archive/Repository/Publisher