

## 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>	Handheld mobile laser scanning (HMLS) data Drone laser Scanning (DLS) data Harvester light detection and ranging (LiDAR) data R script for estimation of low vegetation characteristics Data on low vegetation characteristics (plot wise)	Author
<i>Author &amp; ORCID</i>	Kafle, Binod: 0000-0003-0744-3480; Kärhä, Kalle: 0000-0002-8455-2974	Author
<i>Authors' affiliation(s)</i>	Kafle, Binod <sup>1</sup> ; Kärhä, Kalle <sup>1</sup> School of Forest Sciences, University of Eastern Finland (UEF), P.O. Box 111, FI-80101 Joensuu, Finland ( <a href="https://ror.org/00cyydd11">https://ror.org/00cyydd11</a> )	Author
<i>Owner of the material</i>	UEF ( <a href="https://ror.org/00cyydd11">https://ror.org/00cyydd11</a> )	Author
<i>Publisher</i>	-	Author
<i>Funder</i>	UEF ( <a href="https://ror.org/00cyydd11">https://ror.org/00cyydd11</a> )	Author
<i>Description</i>	This study aims to evaluate the performance of a harvester-mounted LiDAR system for measuring low vegetation during forest harvesting in Finland. It compares the system with handheld and drone laser scanning using point cloud data from 46 small grid plots (5 m × 5 m) to support research in biodiversity monitoring and sustainable forest management.	Author
<i>Methods</i>	Point cloud processing was carried out using 3 softwares: ArcGis Pro, LASTools, and CloudCompare. Further, low vegetation characteristics using point cloud were estimated using lidR program on R studio.	Author
<i>Variables</i>	Variables are low vegetation height, volume and cover (will be mentioned clearly on excel file).	Author
<i>Author keywords</i>	Harvester, LiDAR, point cloud data, low vegetation	Author
<i>Vocabulary keywords (community standard)</i>	-	Author
<i>Discipline</i>	Forest Sciences, Remote Sensing	Archive/Repository/Publisher
<i>Type of material</i>	Research data and analytical code (R script)	Author
<i>Language</i>	eng	Author
<i>Time range covered</i>	2023-07-19 to 2025-04-01.	Author
<i>Geographic region</i>	Evo, Finland. The coordinates of the study area are 61°11'N and 25°06'E.	Author
<i>Version</i>	-	Author
<i>File format(s)</i>	.LAZ or LAS, CSV, XLSX and RData	Author
<i>Availability of the materials (open, embargo, registration, limited, registration required)</i>	The data are available upon request from Binod Kafle.	Author
<i>Justification for access restrictions</i>	The research data will be available to everyone.	Author
<i>Licence</i>	CC BY 4.0 Creative Commons licences.	Author

<i>Connections with other research materials</i>	No	Author
<i>Access to the connected research materials</i>	-	Author
<i>Codes only: hardware/ software requirements for running the code</i>	R studio (lidR)	Author
<i>Connections to other products of research</i>	No	Author
<i>Personal data</i>	No	Author
<i>Confidential or secret data</i>	No	Author
<i>Publication date</i>	-	Archive/Repository/Publisher
<i>Preservation policy</i>	-	Author
<i>Permanent identifier (PID)</i>	For R script, LiDAR data (laz files) and low vegetation attributes estimated data (Excel files) <a href="https://doi.org/10.5281/zenodo.16785717">https://doi.org/10.5281/zenodo.16785717</a> .	Archive/Repository/Publisher