

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>	Forest fire data supplemented with open spatial data	Author
<i>Author & ORCID</i>	Emergency Services Academy Finland, https://ror.org/02d8tke50 National Land Survey of Finland, https://ror.org/05tkycb73 Finnish Forest Centre Natural Resources Institute Finland, https://ror.org/02hb7bm88 Statistics Finland, https://ror.org/01n1rg855 Knaappila Aleks, 0009-0007-7130-1141	Author
<i>Authors' affiliation(s)</i>	University of Eastern Finland, School of Forest Sciences, 80101 Joensuu, Finland, https://ror.org/00cyvdd11	Author
<i>Owner of the material</i>	–	Author
<i>Publisher</i>	Silva Fennica	Author
<i>Funder</i>	University of Eastern Finland, https://ror.org/00cyvdd11	Author
<i>Description</i>	The dataset was compiled to assess how selected environmental and human-related factors are associated with forest fire ignition probability and fire size in Finland. It included information on forest fire occurrence, fire size, the Finnish Forest Fire Index (FFI), and ignition cause compiled by rescue authorities across mainland Finland during 2014–2023. The dataset was supplemented with information on key factors influencing fire ignition and spread, including soils and topography, stand structure and composition, and human-related factors. The unit of observation is an individual forest fire or pseudo-absence observation. The dataset contained 10,284 forest fire observations and an equal number of pseudo-absence observations.	Author
<i>Methods</i>	Forest fire data were extracted from the PRONTO statistics system. Wildfires occurring in closed-canopy forest, forest clearings, or peatlands were classified as forest fires, and ignition causes were reclassified into three categories: human, lightning, and unknown. Observations containing obvious recording errors were excluded. An equal number of pseudo-absence observations were generated. Environmental and human-related predictors were derived from open spatial datasets and linked to fire and pseudo-absence observations using geographic information system analyses. For selected variables, values were extracted within a 25-m buffer around observation locations. Two GAM models were fitted in R: one for relative ignition probability, and the other for fire size.	Author
<i>Variables</i>	Fire occurrence (0 or 1) Fire size (ha) Coordinates (KKJ3) Year (2014–2023) Trafficability (classes 1–6) Slope (°) Canopy cover (%) Dominant species (Pine, Spruce, Deciduous, or Mixed) Day of year (0–366) Finnish Forest Fire Index (FFI, 1.0–6.0)	Author

	Ignition cause (Human, Lightning, or Unknown) Population density (persons km ⁻²) Distance to nearest road (km)	
<i>Author keywords</i>	Finland; fire size; forest fire; ignition probability; official fire records; spatial analysis; wildfire	Author
<i>Vocabulary keywords (community standard)</i>	Forest fire, https://agrovoc.fao.org/ Fire ecology, https://agrovoc.fao.org/	Author
<i>Discipline</i>	Forest disturbance ecology	Archive/Repository/Publisher
<i>Type of material</i>	Research data	Author
<i>Language</i>	Finnish (fin) English (eng)	Author
<i>Time range covered</i>	From 2014-01-01 to 2023-12-31	Author
<i>Geographic region</i>	Mainland Finland: the Republic of Finland excluding the Åland Islands.	Author
<i>Version</i>	–	Author
<i>File format(s)</i>	.csv	Author
<i>Availability of the materials (open, embargo, registration, limited, registration required)</i>	Access to the wildfire data is restricted and managed by the Emergency Services Academy Finland. The supplementary predictors were derived from open spatial data produced by the National Land Survey of Finland, the Finnish Forest Centre, the Natural Resources Institute Finland, and Statistics Finland.	Author
<i>Justification for access restrictions</i>	The wildfire data are confidential and contain sensitive information; access is restricted and managed by the Emergency Services Academy Finland (https://ror.org/02d8tke50).	Author
<i>Licence</i>	–	Author
<i>Connections with other research materials</i>	IsBasedOn: Wildfire data from PRONTO statistics system. HasPart: Trafficability data; Elevation model 10 m; Multi-Source National Forest Inventory data; Population grid data 1 km x 1 km; Topographic Database.	Author
<i>Access to the connected research materials</i>	Trafficability: Finnish Forest Centre Slope: Elevation model 10 m, National Land Survey of Finland, https://ror.org/05tkycb73 Canopy cover: Multi-Source National Forest Inventory, Natural Resources Institute Finland, https://ror.org/02hb7bm88 Dominant species: Multi-Source National Forest Inventory, Natural Resources Institute Finland, https://ror.org/02hb7bm88 Population density: Population grid data 1 km x 1 km, Statistics Finland, https://ror.org/01n1rg855 Distance to nearest road: Topographic Database, National Land Survey of Finland, https://ror.org/05tkycb73	Author
<i>Codes only: hardware/software requirements for running the code</i>	–	Author
<i>Connections to other products of research</i>		Author
<i>Personal data</i>	The original PRONTO statistics system may contain personal data. The research data does not contain personal data.	Author
<i>Confidential or secret data</i>	The wildfire data are confidential and contain sensitive information; access is restricted and managed by the Emergency Services Academy Finland (https://ror.org/02d8tke50).	Author

<i>Publication date</i>	22 October 2026	Archive/Repository/Publisher
<i>Preservation policy</i>	The research dataset is not preserved after completion of the project and will not be deposited in a public repository due to the data use agreement with the Emergency Services Academy Finland. The original wildfire data remain under the management of the Emergency Services Academy Finland (https://ror.org/02d8tke50).	Author
<i>Permanent identifier (PID)</i>	—	Archive/Repository/Publisher