



ForestMap

The next generation of forest maps - adapting a Nordic success story across the globe

ForestValue Final Conference, Madrid, 29-30 September

Project name: The next generation of forest maps - adapting a Nordic success story across the globe

Project acronym: ForestMap

Prof. Johan Fransson (Linnæus University, Sweden)



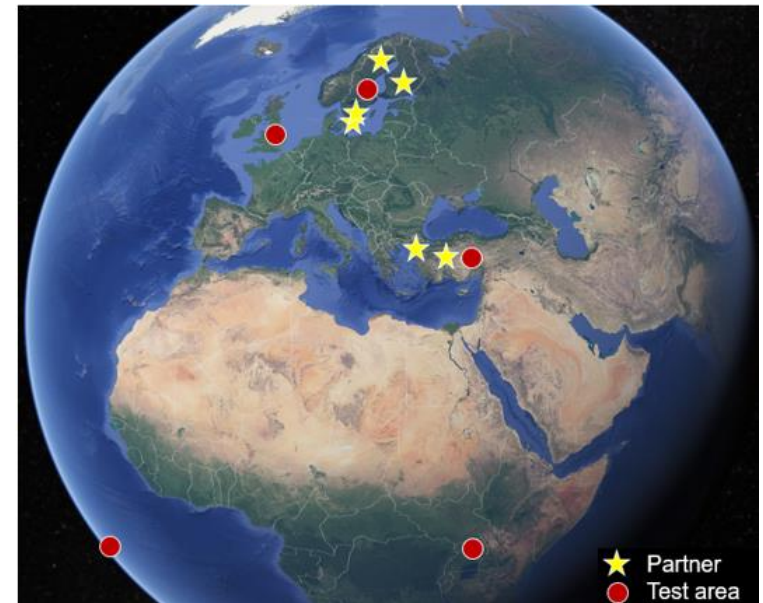
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 773324



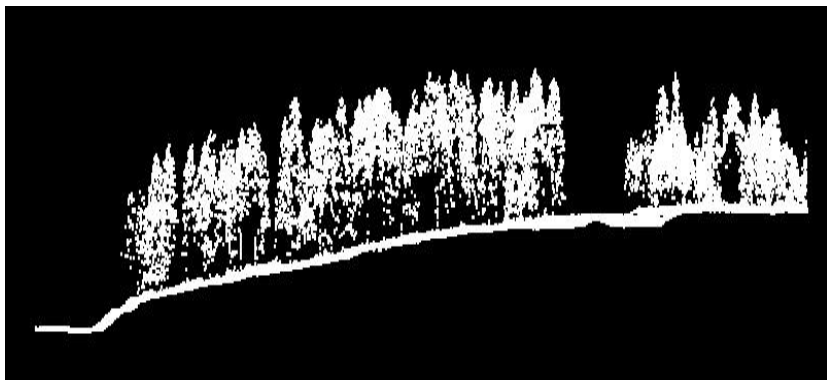
Project partners

- Linnæus University, Sweden
- Swedish University of Agricultural Sciences, Sweden
- Katam Technologies AB, Sweden
- Marmara University, Turkey
- Istanbul Technical University, Turkey
- University of Helsinki, Finland

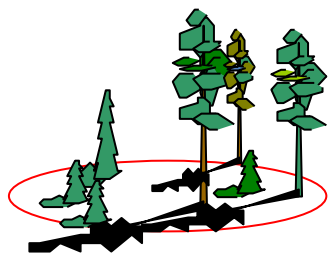
- 10 M€ for 2022-01-01 to 2024-12-31



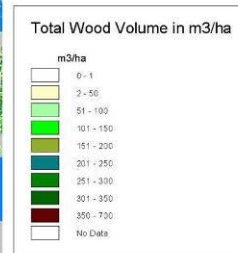
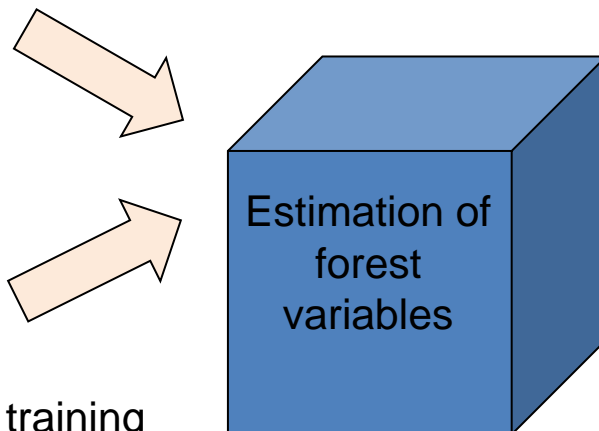
National forest maps – the good examples from Scandinavia



Remote sensing data



Field surveyed plots, training data, from the Swedish National Forest Inventory



Raster databases with estimated forest variables

National forest maps from satellite image data



Time-series of maps for years 2000, 2005, 2010, and 2015. Produced by combining satellite image data (Landsat, SPOT, Sentinel-2), canopy height from aerial images (year 2015), and field data from the Swedish National Forest Inventory.

Provided as open data by SLU (SLU Forest Map).

Variables

- Stem volume
- Mean tree height
- Mean diameter
- Basal area
- Above-ground biomass
- Tree species

Cell size

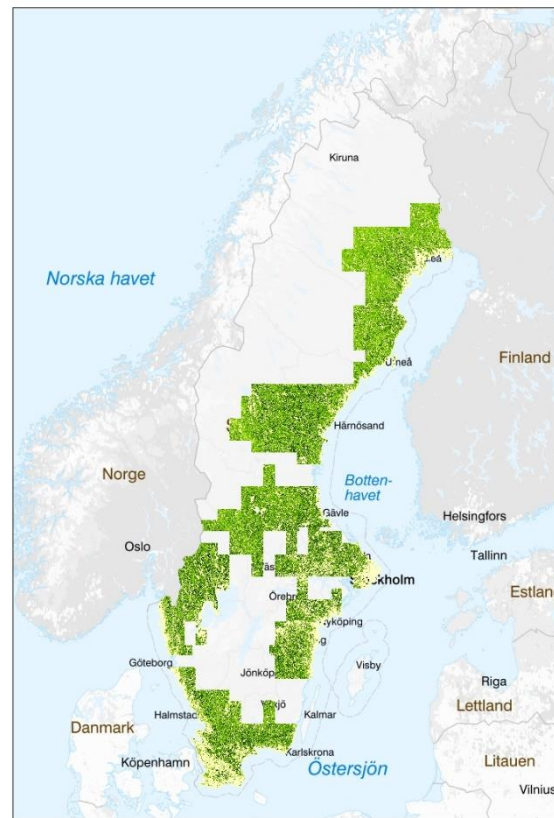
- 25 × 25 m

National forest maps from airborne laser scanning

Version 1
2009-2019



Version 2
2021-11-17



Produced by combining laser data from the Swedish National Land Survey and field data from the Swedish National Forest Inventory.

Provided as open data by the Forest Agency (Forest attribute map)
(<https://www.skogsstyrelsen.se/skogligagrunddata>)

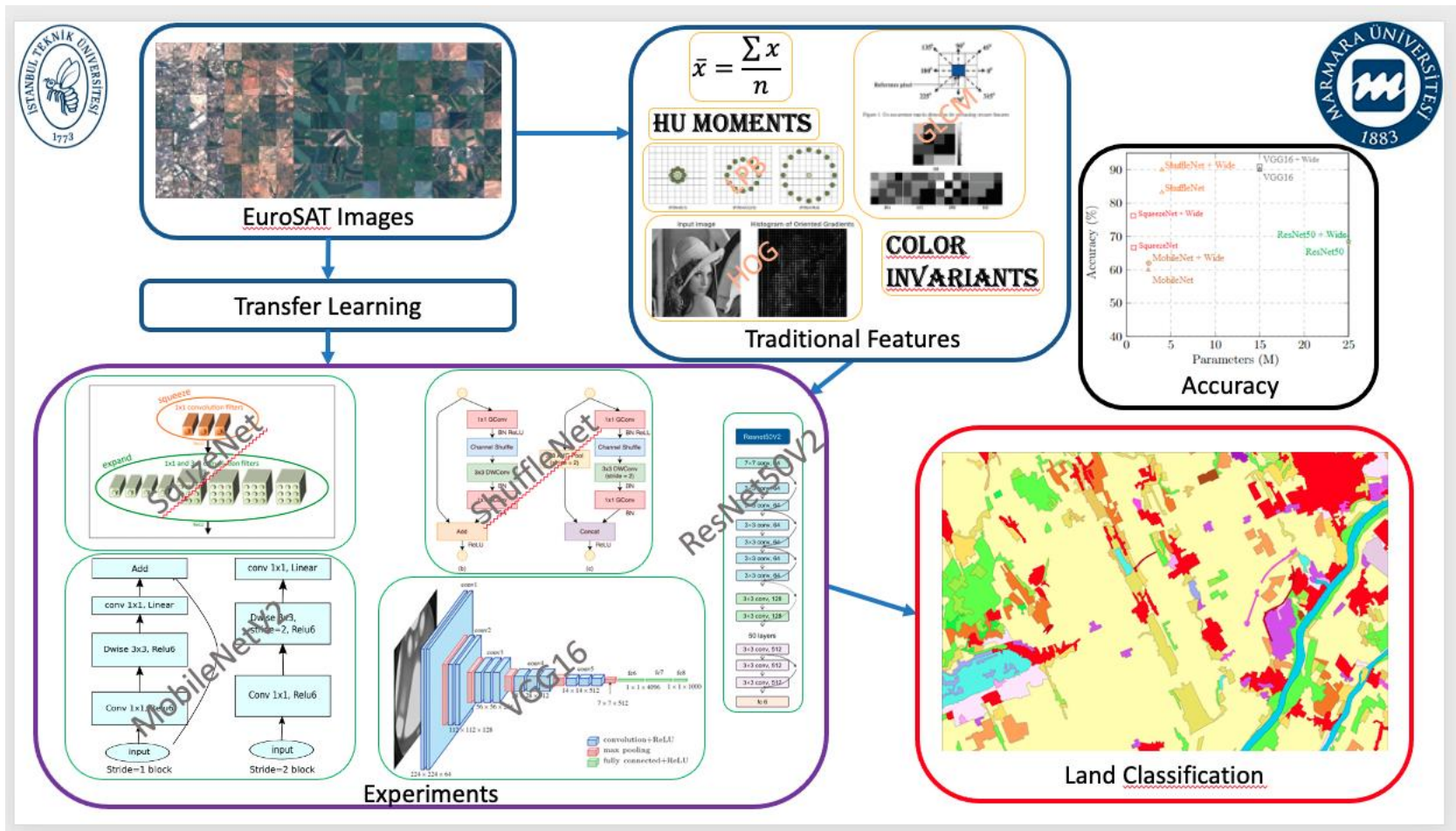
Variables

- Stem volume
- Mean tree height
- Mean diameter
- Basal area
- Above-ground biomass

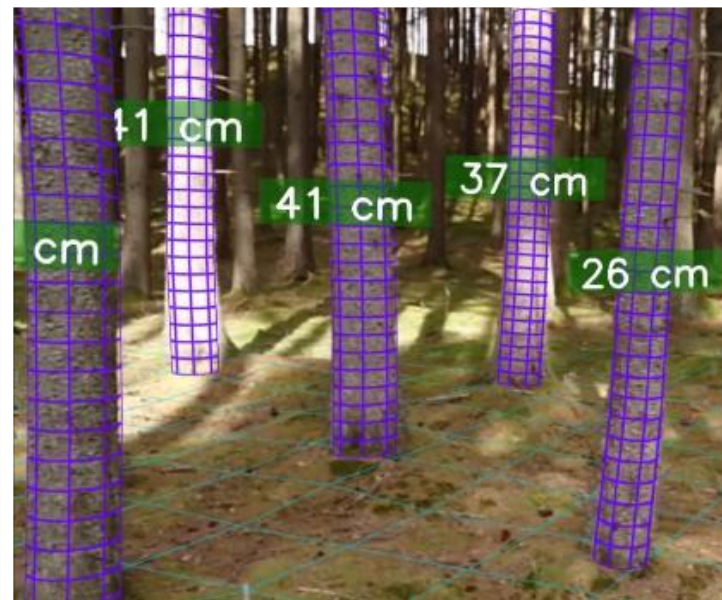
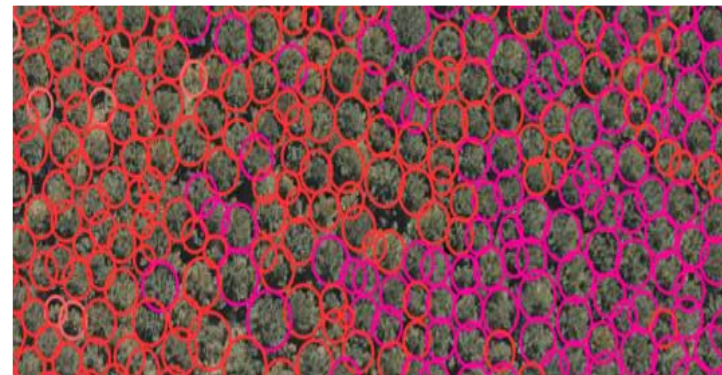
Cell size

- 12,5 × 12,5 m

New AI methods in remote sensing



KATAM Forest Engine (training data)

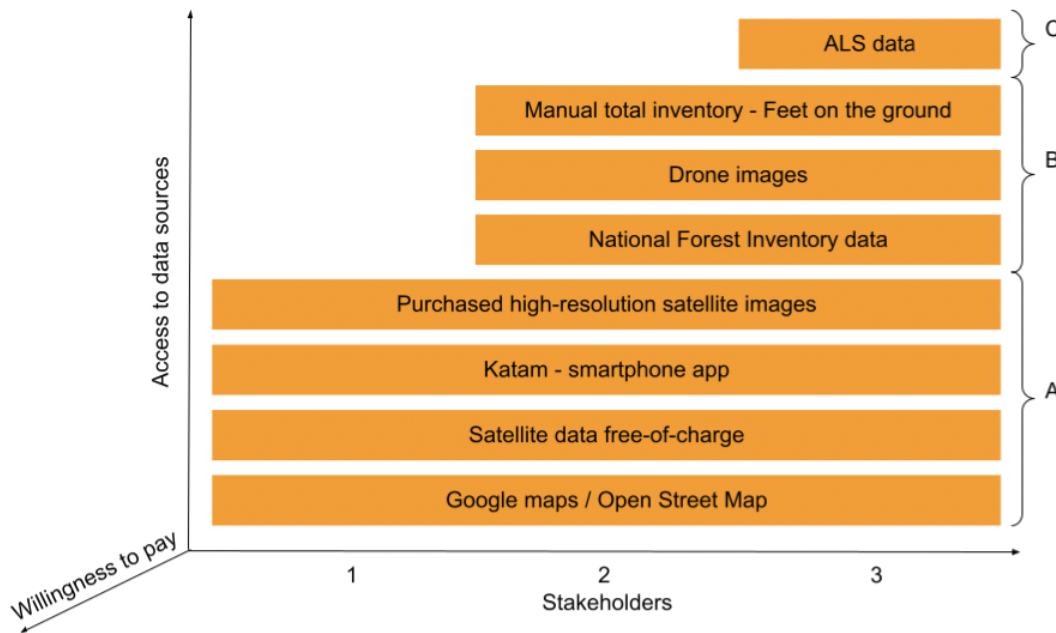


A photograph of a forest with tall, thin trees and a prominent tree trunk in the foreground.

Societal values

- First the current ways of using forest inventory and mapping data is researched.
- Then novel (e.g. AI) ways of forest mapping are developed where several layers and types of forest data are used in tandem.
- The outcome of the WP societal values of forest mapping is the business case of the forest mapping by responding to two research milestones.
- **Milestone 5.1:** Current state analysis of societal value use of the forest maps (M18).
- **Milestone 5.2:** Road maps developed for the future societal value use of the forest maps (M36).

Project focus



Three stakeholders:

1. E.g., governments, NGOs, certification organizations (A),
2. E.g., private forest owners, timber merchants, start-ups (A+B),
3. E.g., forest companies, timber merchants, start-ups (A+B+C).

A photograph of a forest with tall, thin trees and a prominent tree trunk in the foreground.

Project structure

WP1 – Project management and coordination

WP2 – Field data collection and extraction of remote sensing data

WP3 – Hierarchical decision-making system for efficient forest mapping

WP4 – Demonstration cases (Sweden, England, Turkey, Uganda, Chile)

WP5 – Societal values

WP6 – Dissemination and communication

Acknowledgements



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Thank you!

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