
Next steps
Correlation
different str
Changes be
Precision of
Precision of


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INSTITUTE FINLAND


Thank you!


ThinkPad
lenovo


NIBIO


NBC


NIBIO
Skogportalen


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Skogportalen
NIBIO


NIBIO
NORSK INSTITUTT FOR
BIOØKONOMI

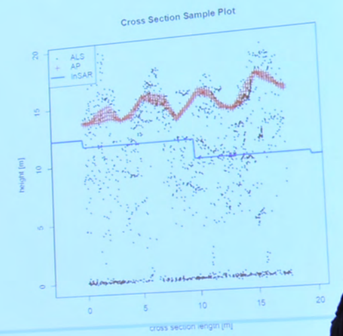

2014
MS-NFI-2013 taken into
of NFI1. 2009-2013
of mean volume estimates from
over 15 m³/ha
the growing stock was over one mill
rest land (FPPF)
taking into account the volume
's period
MS-NFIs less prone to significant


THE USE OF 3D SAR DATA FOR
Svein Solberg
NIBIO


NIBIO
Skogportalen
NIBIO

Digital Aerial Photogrammetry

- 3D information extracted from overlapping digital aerial images
- accuracy comparable to airborne laser scanning predictions
- bi-product of orthophoto generation



Produce, maintain, and manage spatial data

Legacy data and fresh data.
Hosting for other organizations.

- Routines for updates
- Efficient use and analysis
- Handling of time

Simple feature, Raster, Topology?

SLU Forest Maps

Background

- The Swedish NFI provides forest statistics on a county, regional and national level
- Need for more localized forest statistics than produced by the Swedish National Forest Inventory (NFI)
- Need for geographically explicit forest information
- Availability of national datasets with optical satellite data (Landsat and SPOT)

People and reports

Key people who have influenced the Finnish Multisource forest inventory (MS-NFI) recently:

- Erkki Tomppo
- Matti Katila
- Jouni Peräsaari

A recent report, including lots of references:
Mäkisara, K., Katila, M., Peräsaari, J., and Tomppo, E.: The Multi-Source National Forest Inventory of Finland – methods and results 2013. Natural resources and bioeconomy studies 10/2016. Available from:
http://urn.fi/URN:ISBN:978-952-326-186-0

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HNV mapping
Forest continuity
NIBIO
Thomas Nord-Larsen


Area-level models
Steen Magnussen
and
Fransisco Mauro, Johannes Breidenbach, Adrian Lanz, and Gerald Kändler
CARISMA and EFINORD-SNS Workshop on large-scale mapping and estimating of forest resources, Ås NO, Sept. 26-28, 2016

Motivation

ETH zürich

Timber Volume Estimations on Forest Management Levels

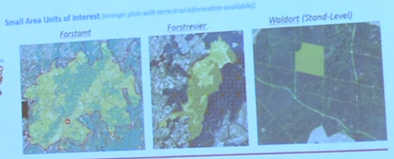
Forest Management Levels

- 46 '*Forstämter*'
- 427 '*Forstreviere*'
- 104'184 '*Waldorte*'

Terrestrial Inventory in RLP:

- 2 x 2 km Grid
- *8092 Sample-Plots* à *2810 Clusters*
- *Angle Count Sampling* at Plot-Level
- Last Survey in 2012 (BWI3)

Small Area Units of Interest (orange: plots with terrestrial information available)



Sample Size — Spatial Detail

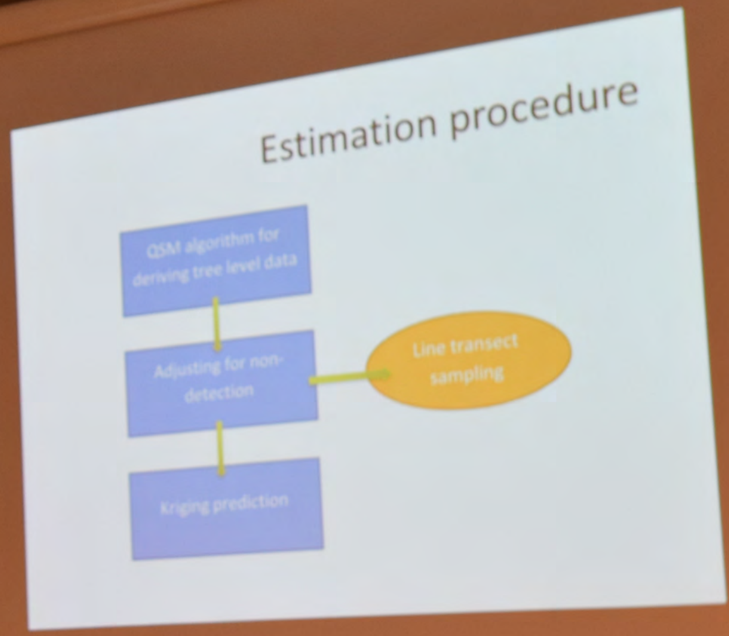
Motivation

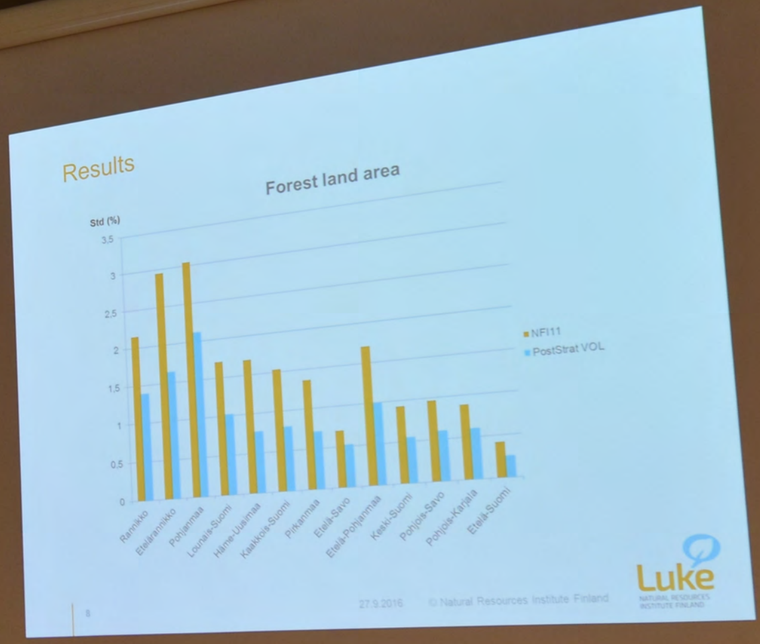
- Using ALS as a strip-sampling tool already used for decision-making at community and agency level in Alaska
  - Kenai Peninsula (Andersen et al. 2009)
  - Upper Tanana Valley (Andersen et al. 2011)

- Because the field data is severily limited and expensive, all available field data form probabilistic and non-probabilistic field samples should be used

Andersen, H.-E., Barrett, T., Winterberger, K., Strunk, J., & Temesgen, H. (2009). Estimating forest biomass on the western lowlands of the Kenai Peninsula of Alaska using airborne lidar and field plot data in a model-assisted sampling design. *Proceedings of the IUFRO Division 4 Conference*: "Extending Forest Inventory and Monitoring over Space and Time," Quebec City, Canada, May 19-22, 2009.

Andersen. H.-E., Strunk, J., & Temesgen, H. (2011). Using airborne light detection and ranging as a sampling tool for estimating forest biomass resources in the upper Tanana valley of interior Alaska. Western Journal of Applied Forestry, 26, 157-164.


Estimation procedure
QSM algorithm for deriving tree level data
Adjusting for non-detection
Line transect sampling
Kriging prediction


Results
Forest land area
Std (%)
3,5
3
2,5
2
1,5
1
0,5
0
NFI11
PostStrat VOL
Ranikko
Etelärannikko
Pohjanmaa
Lounais-Suomi
Häme-Uusimaa
Kaakkois-Suomi
Pirkanmaa
Etelä-Savo
Etelä-Pohjanmaa
Keski-Suomi
Pohjois-Savo
Pohjois-Karjala
Etelä-Suomi
27.9.2016
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Workshop on large-scale mapping and estimating of forest resources

Joint workshop of the CARISMA and EFINORD-SNS LiDAR networks

26-28 Sept 2016

NIBIO, Ås, Norway

NIBIO

26 September: Mapping of forest resources – towards a harmonized Nor

Chair: Johannes Breidenbach

Time	Speaker	Topic
8.00-9.00		Registration and coffee
9.00-9.15	Rasmus Astrup	Welcome
9.15-9.30	Johannes Breidenbach	Introduction
9.30-10.00	Svein Solberg	The use of 3D SAR data for mapping forest
10.30-11.00		Coffee break
11.00-11.30	Johannes Rahlf	Large scale forest parameter prediction with photogrammetry and NFI data
11.30-12.00	Susann Klatt	New approaches for tree or plot-level mea
12.00-13.00		Lunch
13.00-13.30	Knut Bjørkelo	Mapping of forest resources in Norway – T solutions
13.30-14.00	Mats Nilsson	Mapping of forest resources in Sweden – solutions
14.00-14.30	Kai Mäkisara	Mapping of forest resources in Finland – T
14.30-15.00	Thomas Nord-Larson	Mapping of forest resources in Denmark
15.00-16.00		Panel discussion: Is a harmonized Nordic so mapping of forest resources possible? What from other examples?
16.30		Wrap up and coffee


Forskningsdagene
Forskningsdagene
Forskningsdagene
AND PRIX