Country report
Sweden

Anna-Lena Axelsson, Jonas Fridman, Mats Nilsson and Göran Ståhl

Department of Forest Resource Management
Swedish University of Agricultural Sciences

Monitoring programs within the Dept. of Forest Resource Management

- National Forest Inventory (NFI)
  - Management of the National Soil Inventory (NSI)
  - Historical NFI data
- National Inventory of Landscapes in Sweden (NILS)
- Forest Health Monitoring
  - Taylor designed operative forest monitoring
  - Strategic forest health monitoring (NFI data)
- Habitat monitoring (Natura 2000 habitats)

Environmental monitoring and assessment

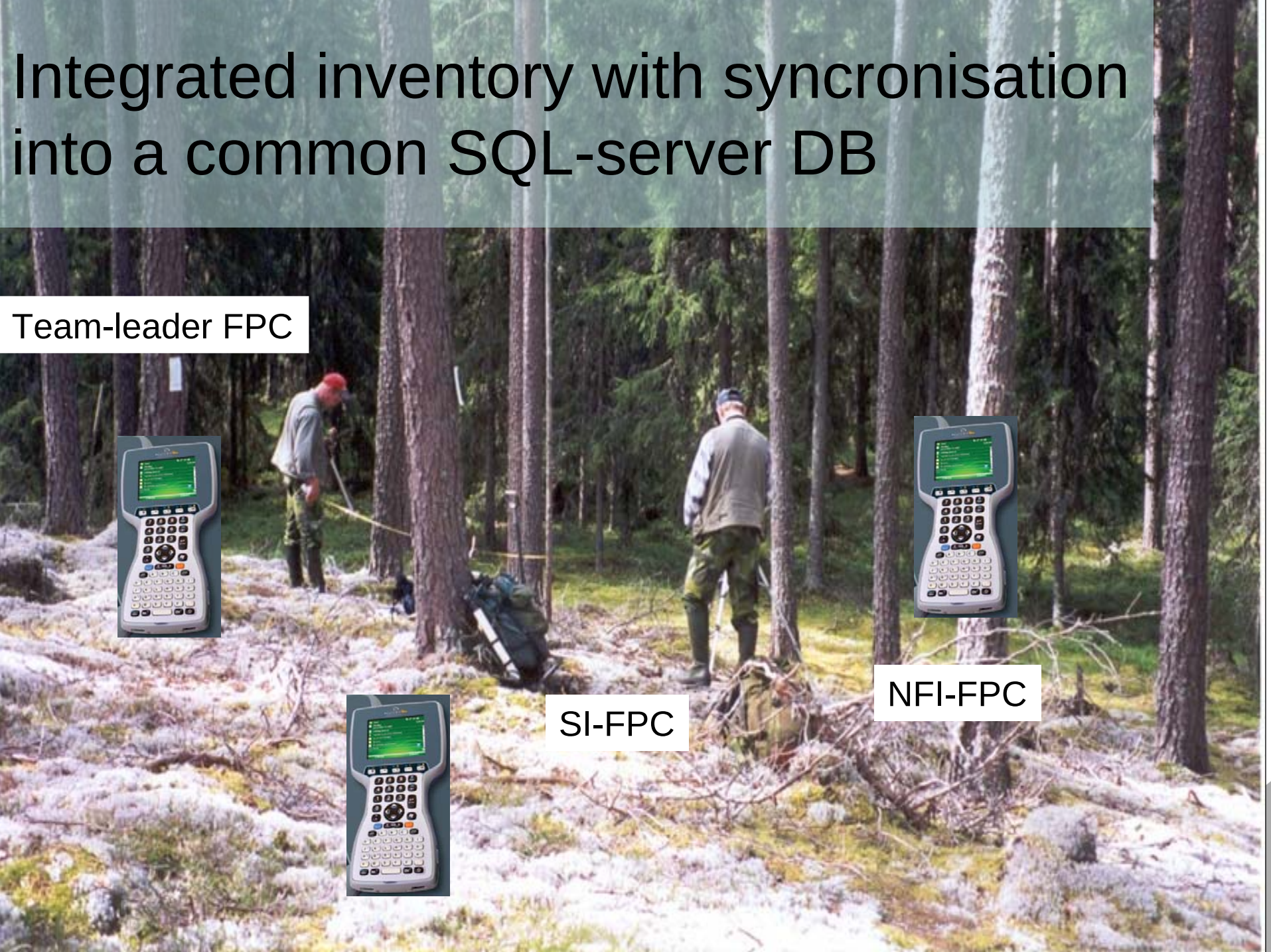
(www.slu.se/?id=158)

- Beside research and education the third task of SLU
- Organized in 11 programs according to the national environmental objectives
- Vice dean Göran Ståhl

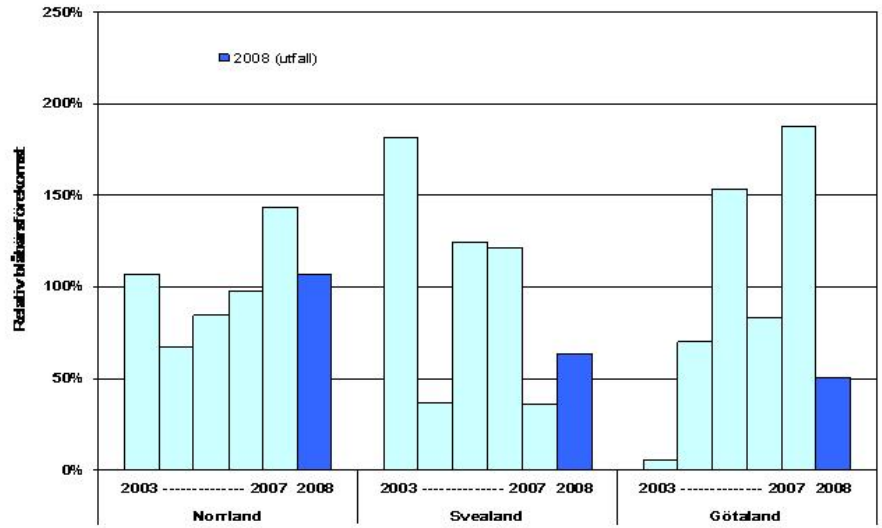
The Swedish NFI
- ongoing activities

- Control inventory of the stratification of field inventory tracts (clusters)
- Integration of the NFI and the NSI
- New functions for predicting D_{bh} from stump diam
- Transforming the reporting database and functions for calculated variabels from Ingres to SQL Server
- Berry crop forecasts
  - Blueberry, lingonberry
- Report on accuracy and precision
  - Control inventory data, data from training excercises, estimated variances

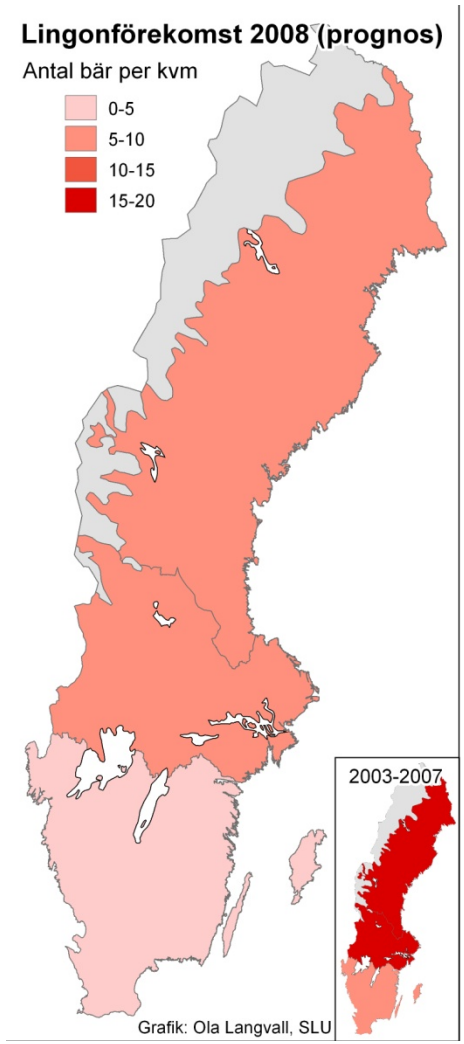
Integrated inventory with syncronisation into a common SQL-server DB



Berry crop forecasts



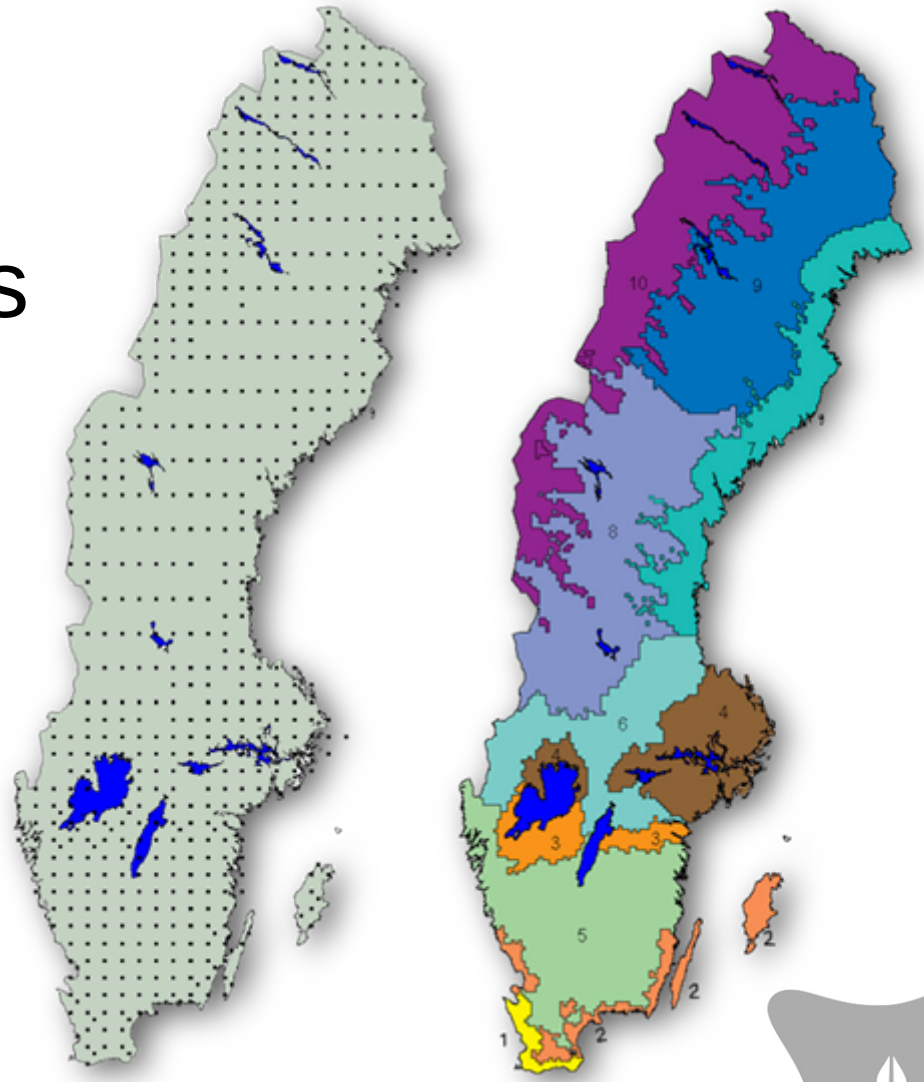
Grafik: Ola Langvall, SLU



National Inventory of Landscapes in Sweden (NILS)

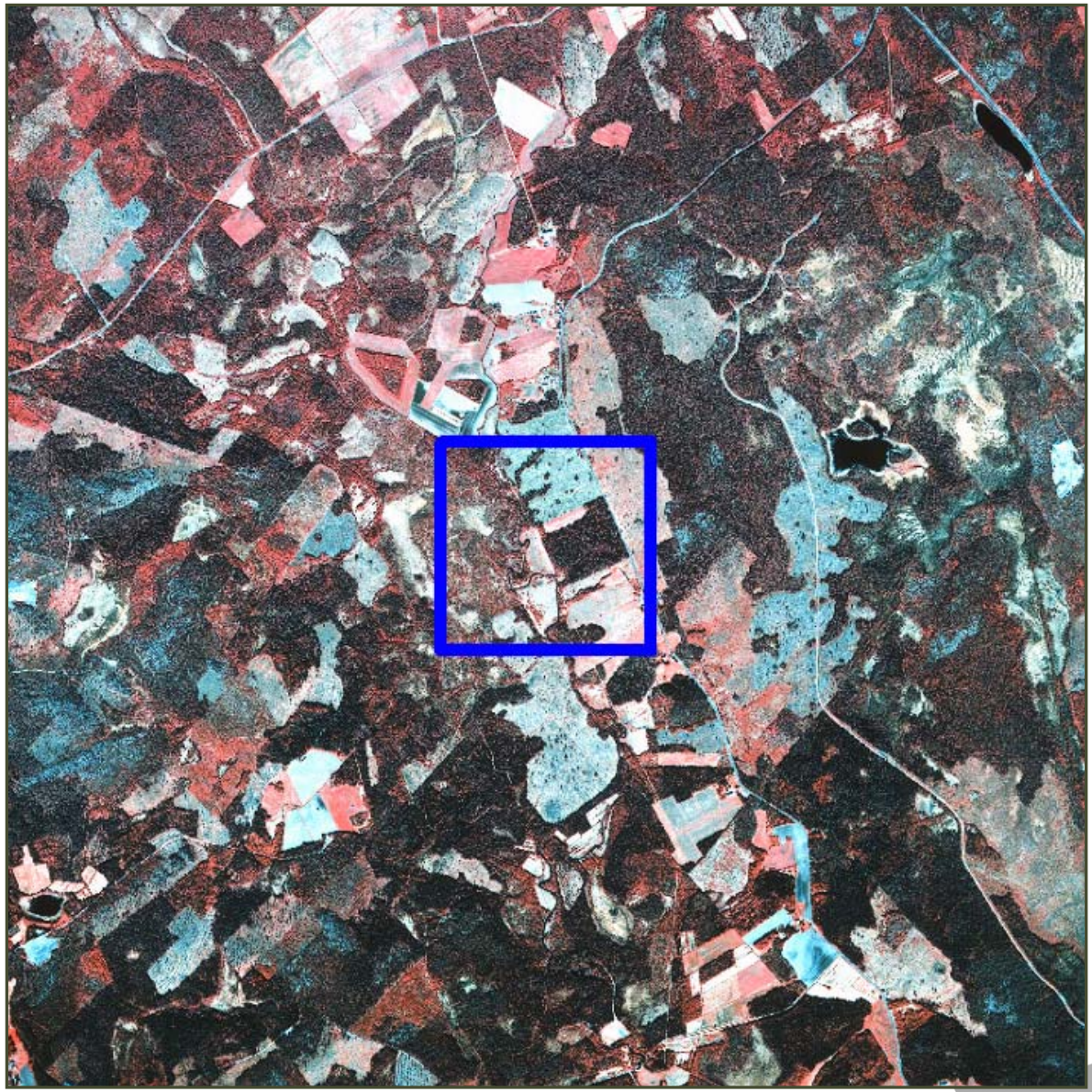
Landscape squares and strata in NILS

- 631 landscape squares
- 10 strata



Landscape square 5x5 km

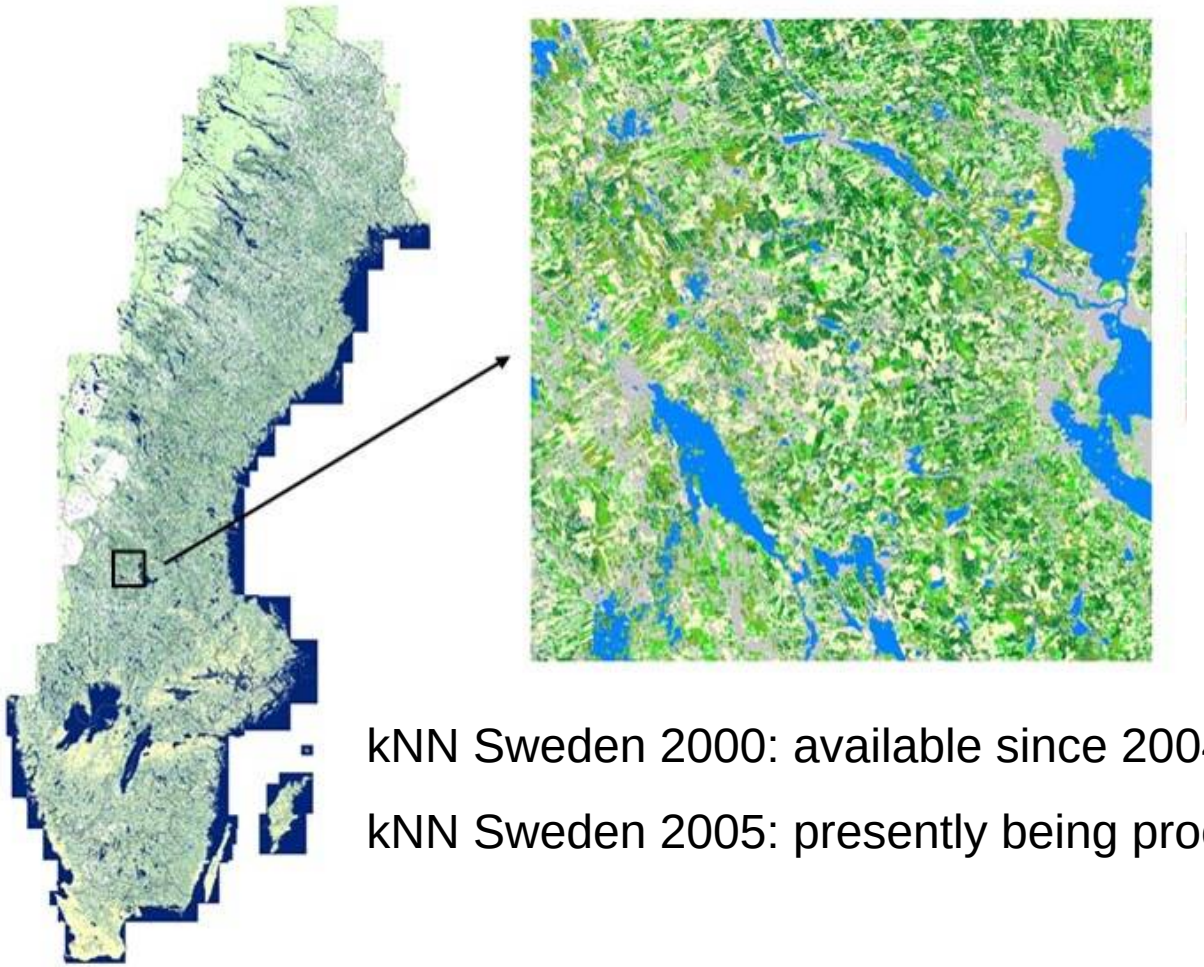
Km-square 1x1 km



Research and development

- Nation-wide estimates of forest variables (kNN-estimates)
- Heureka
- Laser scanning
- UAV

Nation-wide wall-to-wall maps with estimated forest variables



kNN Sweden 2000: available since 2004

kNN Sweden 2005: presently being processed

The Heureka Research Programme

Development of analyses and planning systems for multi-purpose forestry

- Swedish University of Agricultural Sciences (SLU)
- Swedish Forest Research Institute (Skogforsk)
- Second programme period 2005 - 2009

Applications of the Heureka system

Following software now operational:

- RegWise for regional analyses based on NFI data only or e.g. ”kNN Sweden”
- PlanWise for long term planning at large and small forest companies/holdings
- StandWise for stand wise analyses

heureka!

SLU

PhD Thesis

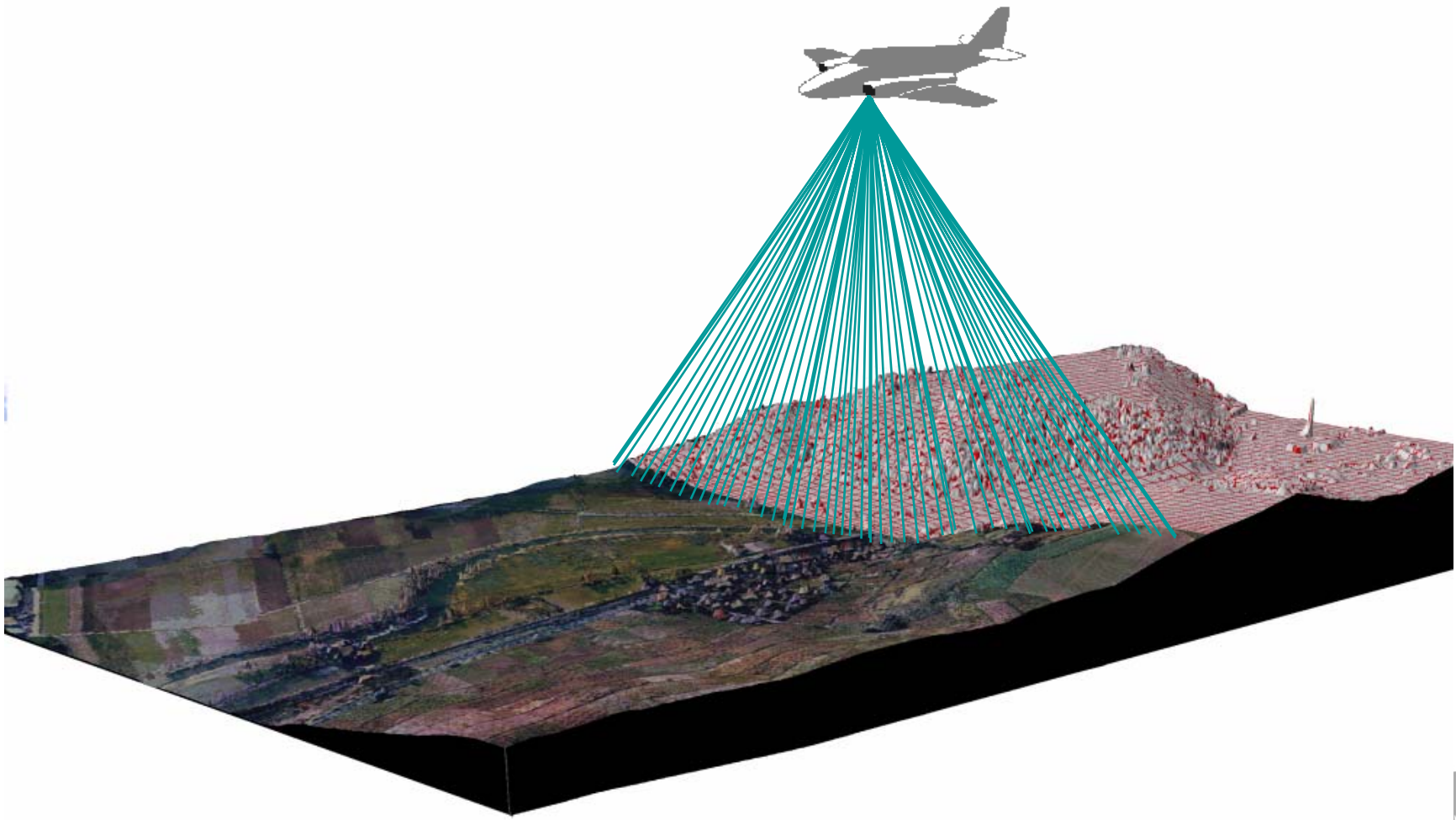
- Spatially comprehensive data for forestry scenario analysis: consequences of errors and methods to enhance usability (Andreas Barth)
- Evaluation of remote sensing techniques for estimation of forest variables at stand level

  (Mattias Magnusson)

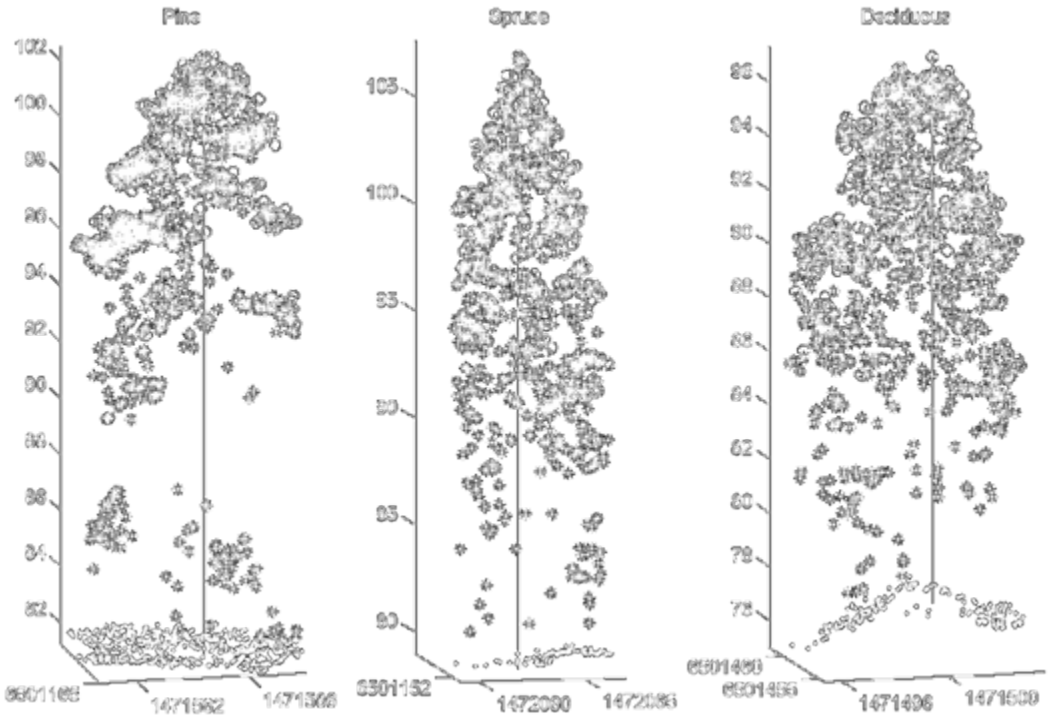
New PhD projects

- Monitoring of invasive species (e.g., pine wood nematode)
- Enhanced estimation of growth in Swedish forests
- Laser scanning of forest

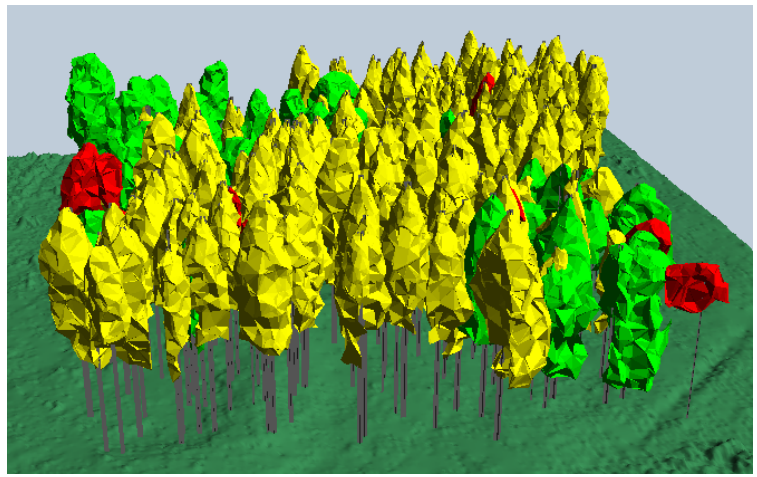
Airborne laser scanning

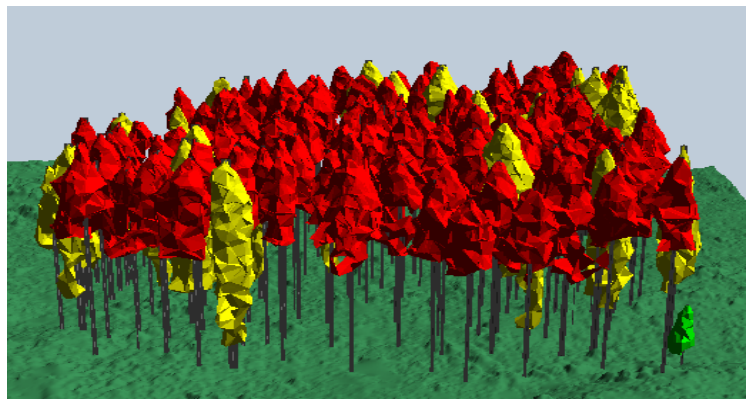


Laser scanning - Single trees



Pine Spruce Birch



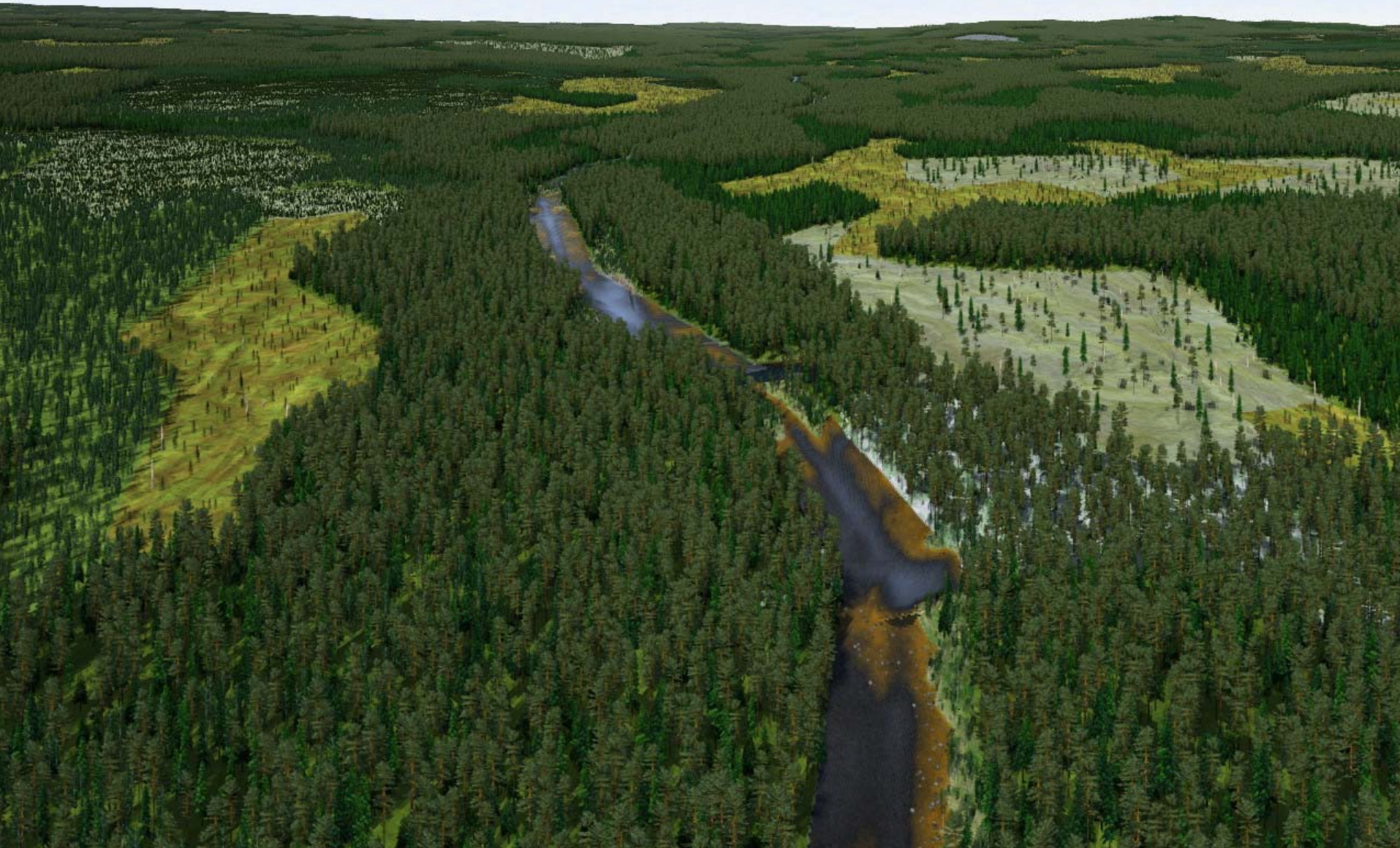


Pine, Spruce, Birch

UAV

Visualization

Software: Visual Nature Studio II ,
Onyx Tree



Thank you!

www.srh.slu.se