



skog+
landskap

NORWEGIAN FOREST AND
LANDSCAPE INSTITUTE

The Norwegian National Forest Inventory

2008 Country Report

Rasmus Astrup, Landsskogtakseringen



skog+
landskap

NORWEGIAN FOREST AND
LANDSCAPE INSTITUTE

Outline

1. Who we are
2. Where we are in the inventory cycle
3. Expansion of the NFI grid due to carbon reporting
4. Complementary Hotspot Inventory
5. Use of NFI plots in LiDAR projects - New potential and challenges

Norwegian NFI Staff

The NFI is one of 13 sections at the Norwegian Forest and Landscape Institute

The Norwegian Forest and Landscape Institute has approximately 220 employees

NFI Staff:

- Rasmus Astrup
- Rune Eriksen
- Gro Hysten
- John Larsson
- Øyvind Moss
- Roar Norderhaug
- Stein Tomter
- Knut-Ole Viken
- Kjertil Vistad



skog+
landskap

NORWEGIAN FOREST AND
LANDSCAPE INSTITUTE



skog+
landskap

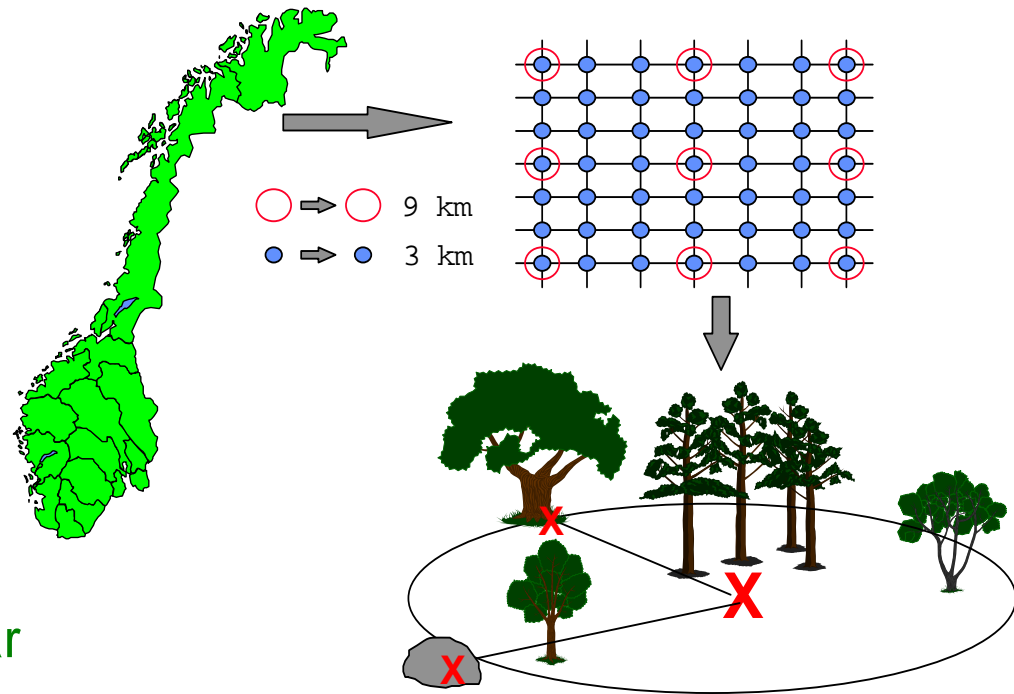
NORWEGIAN FOREST AND
LANDSCAPE INSTITUTE

9th National Forest Inventory Cycle

> The Norwegian Inventory is based on a 3×3 km grid with permanent inventory plots

> 5-year measurement cycle

> In the fourth year of the 5-year inventory cycle

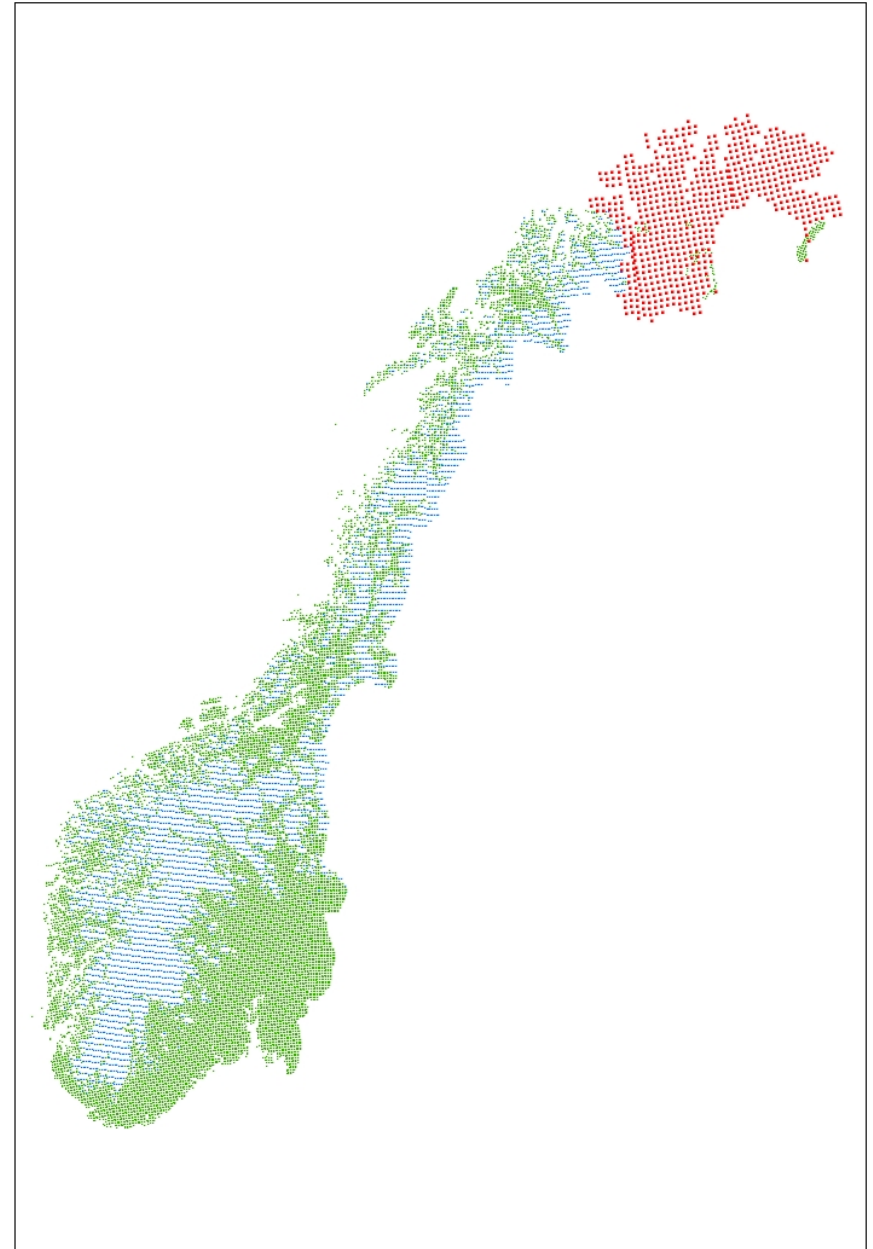


NFI Land Categories

> Forest areas with potential for conifer-dominated stands (Green)

> Alpine birch forests and non-forested alpine (Blue)

> High latitude birch forests (Finnmark) (Red)



Alpine birch forests and non-forested alpine



skog+
landskap

NORWEGIAN FOREST AND
LANDSCAPE INSTITUTE

- > **Prior to 2004: not measured**
- > **2004 – 2008: Plots that fall inside mapped forest are visited and measured**
- > **2009 - : All plots will be checked on orthophotoes. If there are trees the plot will be measured**
- > **Two main drivers:**
 - > **International Carbon reporting**
 - > **Substantial interest around changes in alpine vegetation and tree lines**





skog+
landskap

NORWEGIAN FOREST AND
LANDSCAPE INSTITUTE

High latitude birch forests (Finnmark)

- > **Plots have not been established or measured**
- > **2009 - will be measured**
- > **9×9 km grid with permanent plots**
- > **Motivated and funded by Carbon reporting**





skog+
landskap

NORWEGIAN FOREST AND
LANDSCAPE INSTITUTE

Complementary Hotspot Inventory

- > **Norwegian approach developed for protection of biodiversity in managed forests (~ year 2000)**
- > **Hotspots: Areas with a particularly high number of target (red list) species compared to the surroundings**
- > **Implemented in Norwegian forest planning through:**
 - (1) Mapping of hotspots
 - (2) Ranking of importance
 - (3) Implementing appropriate management around hotspots
- > **In 2007, the NFI completed a full inventory of Hotspots on all permanent plots**



skog+
landskap

NORWEGIAN FOREST AND
LANDSCAPE INSTITUTE

12 Hotspot Categories

Hotspot Types	Important Species Groups
Snags	Insects, fungi, birds, bats
Logs	Fungi, insects, bryophytes
Late successions of deciduous trees	Insects, fungi, birds
Trees with pendent lichens	Insects, spiders, mites, lichens
Old trees	Insects, spiders, mites, lichens
Hollow deciduous trees	Insects, bats
Recently burned forest	Fungi, insects, plants
Luxuriant ground vegetation	Fungi, plants, insects, snails
Trees with nutrient-rich bark	Lichens, bryophytes
Rock walls	Bryophytes, lichens
Clay ravines	Lichens, bryophytes
Stream gorges	Bryophytes, lichens

The National Hotspot Inventory

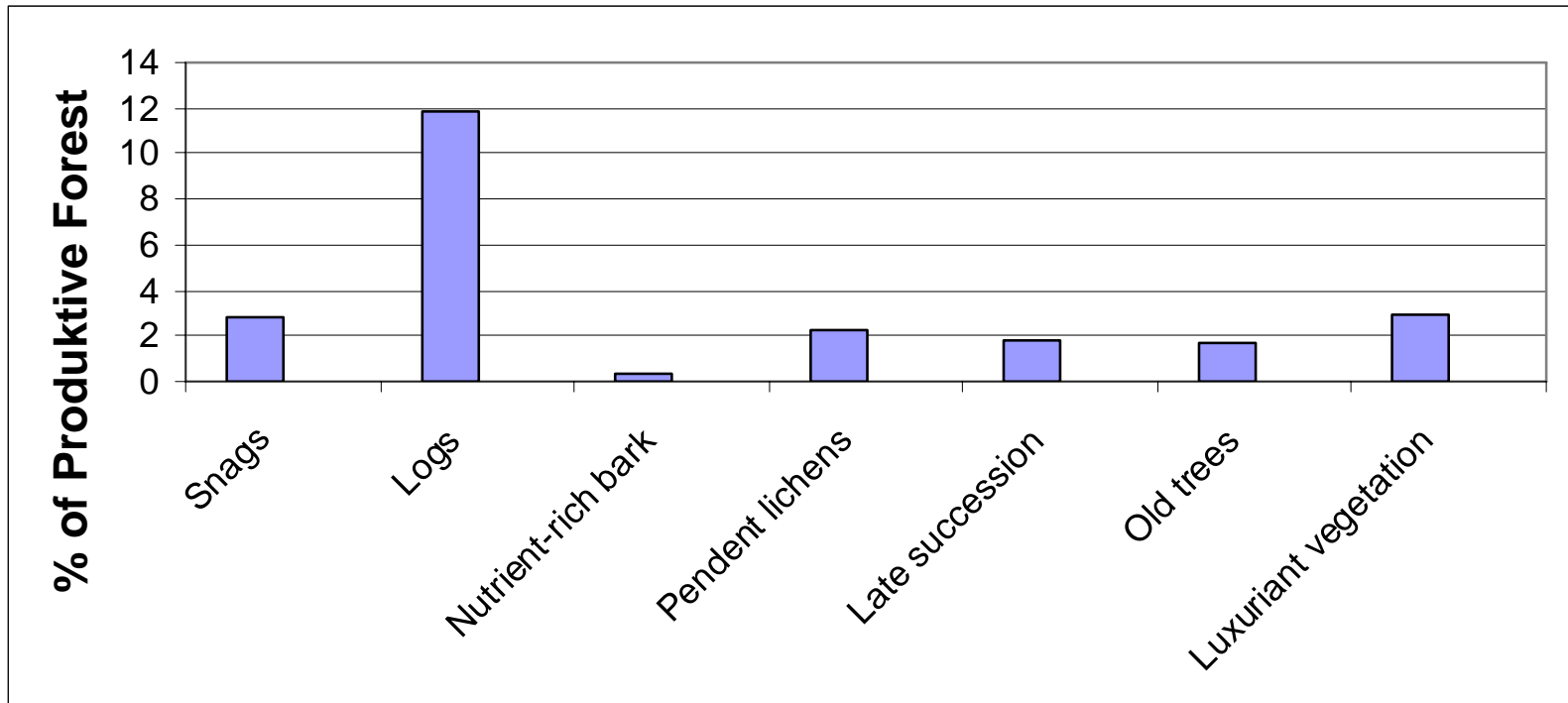


skog+
landskap

NORWEGIAN FOREST AND
LANDSCAPE INSTITUTE

The NFI Hotspot Inventory can now be used in the ranking of Hotspots

Re-measurements will track changes in Hotspot abundance and attribute change to natural change, change due to management, or error in the previous registration



Use of NFI plots as calibration plots for regional LiDAR based forest inventory

> Interest in NFI plots:

- > Research projects (The Hedmark Project)
- > Private inventory companies

> This is a positive development – increased utilization of plots is good

> Challenges:

- > Accurate GPS coordinates
- > Public access to plot locations

> Thank you



skog+
landskap

NORWEGIAN FOREST AND
LANDSCAPE INSTITUTE
