



Dr Lars Drössler coordinates the search for more knowledge about uneven-aged forestry in northern Europe. Photo: Mats Hannerz

Eriksköp in southern Sweden, one of 60 experiments used by the network. Photo Mats Hannerz

Coordinated research will shed new light on regeneration in uneven-aged forestry

Uneven-aged forestry has gained increasing attention in the Nordic countries, despite lack of experience and research support. An EFINORD/SNS-supported network will combine research resources in the Nordic, Baltic, Russian and UK regions to provide a more firm basis for practical guidance.

– We have invested much less of our research on uneven-aged forestry than on traditional even-aged forestry, says Lars Drössler, coordinator of the network.

He is a researcher at SLU in Alnarp, specialising in uneven-aged forestry and mixed forests. His background in Germany makes him familiar with different harvesting methods and silvicultural traditions, including continuous-cover forestry.

– Traditional uneven-aged forestry relies on a narrowly defined stand structure with trees in all size classes. These forests are rare, both in the Nordic countries and in Germany. In fact, only about 1–2% of German forests are managed according to a true selection cutting system, although many Swedes believe that this is the dominant forest system in Germany, he says.

Many questions

Uneven-aged forestry is often discussed in terms of social concerns, including avoiding clear-cuts close to cities and places of recreation. It is also promoted as a system that encourages biodiversity.

– Whatever the motives and the scientific support for the arguments, we need to give more practical guidance to those who want to

manage the forest this way, says Lars Drössler.

There are many questions that still have no good answer. What are the economics when transforming the management system? What is the best method for harvesting? What are the effects on biodiversity? One issue that is crucial for the sustainability of uneven-aged forestry relates to regeneration, and this is also the focus of the network's activities.

– We do not have enough experience of regeneration in gaps and under different shelter conditions in our conifer-dominated forests in Northern Europe, but we have scattered experiments that could help to provide answers, Lars Drössler continues.

The network activities will therefore concentrate on regeneration processes,



but also on growth increments and damage to the remaining stands. Researchers in the participating countries will provide an overview of regeneration experiments and, thus, a platform for further research on regeneration, ingrowth and growth.

60 experiment sites

– We have so far identified about 60 experimental sites throughout Sweden, Finland, Norway, Estonia, Latvia, Lithuania and northern England where regeneration has been studied. Data from these experiments can give us an overview of how regeneration is controlled by climate, vegetation type, soil scarification etc.

Network meeting i Jämtland

The network has one workshop planned in Umeå in September 2014. Participants will discuss the

Some uneven-aged terms

Continuous-cover forestry (CCF)

No clearcutting, but differently defined in different countries. For example, Finland and Germany define it loosely, with the main focus on successful natural regeneration. Other countries have a narrower definition, meaning strict single-tree or group selection cutting. The term was originally not invented by foresters. Instead, they had their own classifications, while CCF was often demanded during public debates.

Single-tree selection system

This is a clearly defined silvicultural system in terms of harvesting a small number of large trees (e.g. 5–6 trees per ha annually), and sufficient regeneration and ingrowth over all harvest periods (e.g. 20–25 new trees reaching a height of 1.3 m per ha and year).

Target diameter harvest

(equal to diameter limit cutting). Trees are cut when they reach a defined target diameter. This diameter can vary, but if it is set too low, the stand will become depleted. Sustainable management requires successful regeneration.

regeneration data, aiming to produce a joint research article. The core-team will also undertake a field tour in the county of Jämtland in central Sweden. This activity will be combined with a PhD-course.

– We will teach the students how to measure regeneration efficiently. The standard procedures used in even-aged stands have to be adapted to the large natural variation in establishment and height growth of seedlings. But, we do also have methods that would allow reasonably fast and reliable estimates of regeneration in uneven-aged forests.

Conference in Tartu

Another activity is the participation in a conference in Tartu in August 2014, jointly organised with the networks PRIFOR and FORDISMAN (see News and Views No. 3, 2014 and the right column here).

– The cooperation with other countries has already opened up new ideas and collaboration plans. We have, for example, already applied for an EU-project on uneven-aged forestry, he discloses.

Contact

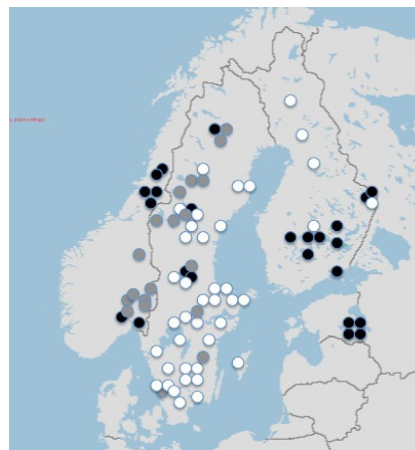
Dr Lars Drössler, SLU.

lars.drossler@slu.se

Read more on the networks webpage

<http://larsdrossler.wix.com/sns-efinord-ccf>

Map showing experiments handled by the network. white = transformation of even-aged to uneven-aged stand structure just started; grey = multilayered forest under transformation; black = uneven-aged single-tree and group selection forest.



Time to meet!

Several SNS-funded networks and projects have scheduled conferences and workshops in 2014. Here are some forthcoming events:

2nd Nordic Conference on Forest Policy Science

The topics include, inter alia, forest governance, studies on actors, interests and conflicts, forest policy instruments and discourse analyses.

November 12–14, 2014, Malmö, Sweden.

Contact: Vilis Brukas, vilis.brukas@slu.se

10th Annual Meeting of the Network for Wood Science and Engineering

The scope includes wood physics and mechanics, engineered wood products and composites, wood protection and modification, applications of wood-based materials and wood engineering.

October 13–14, 2014, Edinburgh, UK.

Contact: Conference secretariat

WSE2014@napier.ac.uk

International Conference on Urban Tree Diversity

The conference, “the first of its kind”, brings together researchers on aspects of urban tree diversity from around the world.

June 16–18, 2014, Alnarp, Sweden.

Contact: Johan Östberg

johan.ostberg@slu.se

Nordic Baltic OSCAR14

“Solutions for sustainable forestry operations” is the title, and the conference will focus on demonstrating solutions and possibilities offered by forest operations research and development.

June 25–27, Knivsta, Sweden.

Contact: Rolf Björheden

rolf.bjorheden@skogforsk.se

Forest Landscape Mosaics

This international conference with the subtitle “disturbance, restoration and management at times of global change” will bring together scientists, practitioners, policymakers and other experts to share experiences of disturbance management.

August 11–14, 2014, Tartu, Estonia.

Contact: conference webpage

www.forestdisturbances.com

Shortcuts from Nordic forest research

Finland

Untapped potential of berries and mushrooms

Non-wood forest products such as berries, cork, nuts and mushrooms represent value in addition to timber. However, these products receive little attention in the Nordic countries, despite having substantial potential worth.

Finland is currently participating in the EU-funded STARTREE project. The project, running for the period 2012–2016, comprises regional case studies on the availability of non-wood forest products. Fourteen cases from 11 countries span products from honey and sauna whisks to birch sap and ornamental leaves.

Finland is contributing with a case study on mushrooms and berries in North Carelia, with the aim of identifying the value chain of these products. There are possible new services that could be created around them, and the Nordic countries could learn a lot from the rest of Europe. One example is the Italian region of Borgotaro, where 22 000 hectares of community-owned forests are managed with special focus on the farming and use of mushrooms. These are exploited by local and professional pickers, who need a mushroom-picking permit. In 2006, 36 000 permits were sold.

Source: www.metla.fi

The project webpage: www.star-tree.eu

Mushrooms, a product that adds value.

Photo Mats Hannerz



Sweden

Actively managed forests have the greatest climate change mitigation benefit

A study from SLU and the research programme Future Forests concludes that if we continue to manage the forests in Sweden as we do today, forestry will continue to contribute to avoided and/or reduced CO₂ emissions of approximately 60 million tonnes annually. This is in the order of the current annual emissions. With forest practices focused on increased productivity of forest biomass, these climate change mitigations could increase even more.

The study by Lundmark et al. is published in *Forests Vol 5(4)*

Norway

Severe winter damage in coastal Norway

The forest along the entire coast from the county of Rogaland in the south to Bodø in the north of Norway has experienced severe damage in the past winter. Forest and Landscape Norway reports that conifer trees turned brown and dropped needles to a large extent in late April this year. The explanation could be strong winds, lack of snow cover and low precipitation. Seedlings have been particularly affected. Many of the last summer's new spruce plantations have been completely destroyed.

Source: www.skogoglandskap.no

Both spruce and pine were damaged.

Photo Halvor Solheim



Sweden

SLU highly ranked by THE

Times Higher Education is one of several ranking lists for the world's universities. THE ranks "young" universities, not older than 50 years.

Swedish University of Agricultural Sciences (SLU) is ranked 24 in the top-100 list, and, thus, has the highest ranking of the Nordic universities. University of Southern Denmark (rank 37), University of Eastern Finland (53) and University of Tromsø (64) were the highest ranked universities in each of the other Nordic countries.

Source: www.timeshighereducation.co.uk

Sweden

Negative impact of slash and stump harvest can be compensated for

Stumps, tops and branches left after logging harbour many species of beetles, lichens, bryophytes, and fungi. Today, these logging residues are increasingly removed to be used as bioenergy. Researchers from SLU have analysed the effects on biodiversity of such energy wood extraction. They conclude that losses can be compensated for by leaving more high stumps than usual on a clear cut.

The study by Ranius et al. is published in *Biological Conservation Vol 169*.

Need for compensation. Photo Mats Hannerz



Expert forecast: "New technology challenges university learning"

Thomas Fürth is director of Kairos Future, a Swedish-based international consultancy for future research. At a conference on research communication in Gothenburg in May 2014, he outlined important trends that will have implications for tomorrow's lecturing at traditional universities and institutes.

1/ Communication costs will go down, almost to zero, thanks to the internet.

2/ New actors are challenging the universities. One example is the free education available from the Khan Academy.

3/ MOOCs are on the rise. A Massive Open Online Course is aimed at unlimited participation and open access via the web. Several US universities already require that students first have a basic education from a MOOC. Tomorrow, students might prefer to have a MOOC qualification from MIT instead of a traditional qualification from a European university.

4/ Gaming will also be used in education. Students are challenged and strive to "survive" and jump



Traditional class-lectures will be challenged by digital top-of-the line courses, said Thomas Fürth. Photo Mats Hannerz

to the next level. Mathletics is one example, already used by thousands of students across Europe.

All these trends will put a pressure on the universities, who will see a reduced interest in traditional class lectures. A popular teacher of tomorrow will be one who acts and inspires on a web-based platform, reaching thousands of students.



The best teacher of tomorrow? Photo from Demaure du Chaos, Thierry Ehrmann."



Salt Lake City is the host of the 24th IUFRO World Congress to be held 5–11 October 2014. The expected 4500 forest researchers from more than 100 countries will meet to hold discussions under the theme *Sustaining forests, sustaining people: the role of research*.

SNS and its journals *Scandinavian Journal of Forest Research* and *Wood Material Science and Engineering* will be visible at the congress. A side event will focus on research in bioeconomy in a broad sense. The event, with the working title "Research for a fossil free society – the Nordic example", will include short presentations providing an overview of bioeconomy from a policy, economic, biomass production and industry innovation perspective. The side event will be accompanied by the release of a special issue of *Scandinavian Journal of Forest Research* on bioeconomy.

SNS will also be active in booths together with both SLU and Taylor & Francis.

Reserve Thursday 9 October evening for the side event!

Contact: Mats Hannerz,
mats.hannerz@silvinformation.se
or Inga Bödeker, bodeker.sns@slu.se

Contact News & Views

Write to the scientific editor:
Mats Hannerz,
Silvinformation AB
mats.hannerz@silvinformation.se
More info about SNS:

www.nordicforestresearch.org

News & Views is a newsletter from SNS containing short, popularized articles covering Nordic forest research and forestry. Articles presenting SNS-supported activities are prioritized. The newsletter is published eight times per year, and is available for download from the SNS and Scandinavian Journal of Forest Research websites.



News & Views is edited by Mats Hannerz, Silvinformation AB
mats.hannerz@silvinformation.se
and produced by Carl Henrik Palmér. chp@areca.se