

from Nordic Forest Research SNS



Supporting networks is one of the core missions for SNS. Photo: Mats Hannerz.

Cooperation for the benefit of the Nordic-Baltic forests

Issues addressed by SNS-supported networks in 2019 include celebrating the centennial of Nordic forest inventory, technical innovations for better regeneration, and the ecological impact of wood ash. Seven networks have been granted financing for the current year.

100 years of Nordic forest inventory

The first national forest inventory in the Nordic countries was established in 1919 in Norway. Its 100th anniversary will be marked with a conference northwest of Oslo in May 2019. The conference will reflect on past challenges, lessons learned, and future large-scale and landscape inventory programs. The network organizing this celebration, the Nordic Cooperation Group for Forest Inventory, was founded in the 1970s

and has held regular meetings since then.

Network: 2019-07 Nordic Cooperation Group for Forest Inventory.

Contact: Aksel Granhus, aksel.granhus@nibio.no

Details: <https://nibio.pameldingssystem.no/nfi100years>



Promoting sustainable forestry to EU policy makers

A new network will focus on sustainable forestry in a circular economy and particularly the synergies and trade-offs between primary wood production and ecosystem services. The network will organize workshops and a seminar on climate-smart forestry in Brussels. Among the target groups are EU policy makers. Through this

network, young researchers will have opportunities to gain experience in policy briefing in Brussels.

Network: 2019-06 Promoting sustainable forestry in a growing bioeconomy for Europe – PROFOR

Contact: Leena Paavilainen, leena.paavilainen@luke.fi



EU policy makers are among those who will learn more about sustainable forestry in a circular economy. Photo Glyn Lowe Photoworks, CC BY 2.0.



Networks 2019, cont.

Long-term field experiments in focus

Nordic growth and yield researchers have held network meetings since the 1960s. The main event in 2019 will be a 3-day conference on the value, maintenance and use of data from long-term forest experiments. Long-term monitored experiments are underway in all network countries; such experiments are invaluable in forest research because changes in forest ecosystems take time, and conclusions from early observations must often be revised as more long-term observations become available.

Network: 2019-05 Nordic Growth and Yield researchers Network

Contact: Saija Huuskonen, saija.huuskonen@luke.fi



Long-term field trials are invaluable. Photo: Mats Hannerz.

Conference on technical innovations for regeneration

The forest regeneration network was established at the SNS board's initiative in 2001, and activities take place roughly every other year. In 2019, a workshop on infotechnological solutions in forest regeneration will be organized. The Nordic-Baltic countries are world leaders in technological innovation in silviculture, which is exemplified by their use of technologies such as drones, remote sensing, and virtual/augmented reality solutions.

Network: 2019-04 Nordic Network of Forest Regeneration

Contact: Marek Metslaid, marek.metslaid@emu.ee

Moisture and durability of wood

The wood science and engineering network was officially launched in 2004 (see N&V No. 2 2012) but builds on cooperations between Nordic wood scientists that have been ongoing since the early 1970s. The network arranges annual meetings, and workshops. In 2019, a 2-day workshop with the main theme of "Moisture and durability related aspects of wood-based materials" will be held in Lund, Sweden.

Network: 2019-03 Northern European Network for Wood Science and Engineering

Contact: Erik Larnøy, lae@nibio.no

Ecological impacts of wood ash

A new network, **NORDASH**, will focus on the effects of recycling wood ash from power plants to forests. Previous research has mostly focused on nutrient cycling, leaching, and tree growth rather than biological effects. This network shares knowledge among researchers studying wood ash, forest ecology, and soil processes.

The network's core activity in 2019 will be a workshop in Copenhagen on the ecological impacts of wood ash, which will be attended by participants from eight countries.

Network: 2019-02 Integrating knowledge of nutrient cycling and organismal responses for sustainable use of wood ash in Nordic forests – NORDASH

Contact: Rasmus Kjøller, rasmusk@bio.ku.dk



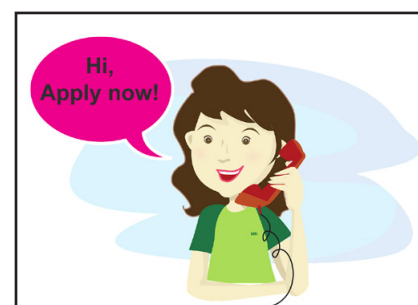
The network will share knowledge about ash recycling. Photo: Ulf Sikström.

An integrated approach to climate impacts

Climate change will have many different impacts on forest ecosystems, and it will be impossible to manage these impacts one by one. The new **NordicProxy** network will overcome the barriers between scientific fields by synthesizing their knowledge of climate impacts. Subjects of analysis will include biomass productivity and carbon storage, patterns of forest fire activity, pathogen outbreaks, and forest composition. Several ongoing national projects will be involved in the network. Network activities planned for 2019 include student visits, a joint field seminar, and a mini-conference.

Network: 2019-02 Predictability of climate risks to Nordic forest ecosystem services through multi-proxy data comparisons and modelling (NordicProxy).

Contact: Igor Drobyshev, igor.drobyshev@slu.se



Call for applications: Networks 2020

The annual call for research networking applications will be open between 1 March and 1 June. Proposed networks should address topics relating to sustainable forest management in a growing bioeconomy, maintenance and utilisation of ecosystem services, or climate change mitigation and adaptation. Funding will be given for activities in 2020, and networks must include participants from at least six different countries, with at least three being affiliated with research institutions in the Nordic region.

Read more on www.nordicforestresearch.org

Shortcuts from Nordic forest research

Finland: Small clearcuts

Among family-owned forests, the average size of a regeneration felling (clearcut) in 2018 was 1.3 hectares in southern and 1.9 hectares in northern Finland. This is a slight increase since 2014 (1.2 and 1.8 hectares respectively).

The share of continuous-cover loggings in Finland was 3.4% in 2018. Of this, close to one third consisted of small-diameter clearcuttings, the rest of selective loggings. Continuous-cover loggings increased heavily in eastern Finland, probably due to snow damage. Continuous-cover logging in these stands was an alternative for the forest owners to avoid regeneration cutting.

Source: Finnish Forest Association, <http://forest.fi>

Sweden: No trade-off between rot resistance and yield

Resistance to root rot infection is genetically controlled and it is possible to select for less vulnerable trees during tree breeding. If the most resistant trees are selected, the rate of root rot can be reduced by up to 50%. Recent studies have shown that there is no trade-off between resistance and yield or wood properties. Consequently, there is no barrier to the inclusion of rot resistance in operational breeding work.

Source: www.slu.se

Norway: Tree breeding to combat climate change

Genetically improved regeneration material used in Norway was found to increase forest yields by 10-15%. This corresponds to the sequestration of an additional 1.5 to 1.8 million tons of CO₂. The next generation of improved material is expected to have a gain of 25%, increasing CO₂ sequestration by 2.4 million tons CO₂ per year according to calculations from Miljødirektoratet.

Source: www.nibio.no

Sweden: SLU high on university rankings

According to the Centre for World University Rankings (CWUR), the Swedish University of Agricultural Science is the world's top-ranked university for the subject "Forestry". The university is also within the top five for soil science and number seven for biodiversity.

World leading universities in the subject "Forestry" according to CWUR 2017.

| Rank | Institution | Score |
|------|---|-------|
| 1 | Swedish University of Agricultural Sciences | 100.0 |
| 2 | Oregon State University | 99.4 |
| 3 | University of British Columbia | 95.4 |
| 4 | University of Helsinki | 94.2 |
| 5 | University of Alberta | 93.3 |

Source: www.cwur.org

Another ranking released by the QS organization in 2019 ranked SLU as the world's third best university for "Agriculture & Forestry"; two more Nordic universities were in the top 15. The overall top-ranked university (all subjects) was Massachusetts Institute of Technology (MIT).

Top list in 2019 for "Agriculture & Forestry" according to QS World University Rankings.

| Rank | Institution |
|------|--|
| 1 | Wageningen University, Netherlands |
| 2 | University of California, Davis, USA |
| 3 | Swedish University of Agricultural Sciences Sweden |
| ... | |
| 12 | University of Copenhagen, Denmark |
| 14 | Norwegian University of Life Sciences, Norway |

Source: www.topuniversities.com

Finland: App evaluates the results of root rot treatment

Finlands skogscentral and Luke are developing a cost-efficient method for controlling stump treatment to protect against root rot. After harvesting trees, the stumps are often sprayed with *Phlebiopsis gigantea*, an antagonistic fungus that prevents new root rot infections. The effect of spraying can now be checked more efficiently by using a cloud-based computational service to analyse photos taken with a mobile phone app.

Source: www.luke.fi

Denmark: TV audiences monitor phenology

Over the last 15 years, the Danish public broadcaster's weather service has used its audience to collect information on beech phenology. Researchers at University of Copenhagen verified that the observations agree well with scientists' predictions. Beech leaves in Denmark normally spring out when the temperature sum reaches 120 day-degrees, measured as the sum of all degrees above 0° from 1 March. An early budburst is predicted in 2019.

Source: ign.ku.dk

Finland: the DIABOLO project strives for harmonised data

Improved and harmonised data from national forest inventories are needed to support policymaking at many levels. The EU Horizon 2020 project DIABOLO has delivered evaluations of integrated remote sensing techniques and data from national forest inventories for multipurpose forestry. A final conference with participants from 30 countries was held in Koli National Park, Finland. DIABOLO is coordinated by Professor Tuula Packalen from Luke, Finland.

Source: www.luke.fi

Project webpage: <http://diabolo-project.eu>

Meeting cultures in Nordic countries

According to the speaker and author Colin Moon, Swedes spend 25% of their time at work in a meeting room, and 33% of them wonder what they are actually doing there. Nevertheless, Swedes love meetings. What about the other countries? There are certainly differences. Do you agree?

The Swedes discuss it.

They go to meetings. Lots of them. It's a national hobby. They have a meeting on Monday morning but never on a Friday afternoon. They have meetings to end up sharing the same opinion. It's called the *förankringsprocess*.

The Danes dismiss it.

They agree to something at a meeting, especially if there are lot of Swedes present. The Swedes of course believe them. Being the individualists of the north, the Danes go home and do something completely different. *Det var riktig hyggeligt!*

The Norwegians get around to it.

They are in no hurry. After a brown cheese sandwich for lunch at 11, they leave work at 4 pm. If Norwegians work overtime, for example by staying an extra half-hour to 4.30 pm, then their employer is bound by law to feed them pizza - it's called *overtidsmat*.

The Finns just do it

It's called *sisu*. The power of the Finn is the *sisu* within. They just get on with it. They've already done it before the Swedes have their *måndagsmöte*, the Norwegians their brown cheese *matpakke* and the Danes their Friday morning *morgenmad* sammen på kontoret. In Finland, an awkward silence is never awkward. In meetings, you may think Ari looks as if he has mentally gone to lunch. He is just concentrating.



Image from Pixabay.

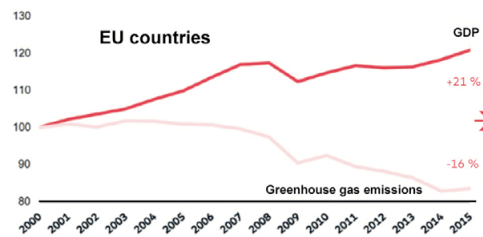
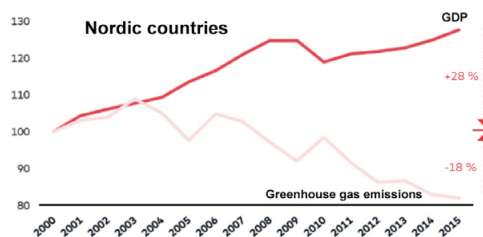


Colin Moon. Photo: Sebastiaan ter Burg, CC BY 2.0

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Greenhouse gas emissions fall in Nordic countries

Since 2000, the Nordic countries' greenhouse gas emissions have decreased by 18% while their GDP (gross domestic product) has increased by 28%. The corresponding figures for the EU are a 16% reduction of greenhouse gas emissions and a 21% increase in GDP.



Gross domestic product and greenhouse gas emissions in the Nordic and EU countries.

Source: Nordisk statistik 2018, www.norden.org

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