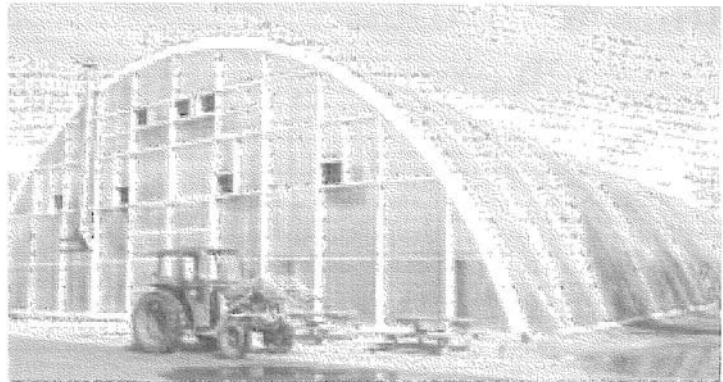


Editor's summary

The following is the editor's condensed summary of the articles in this issue.



A study of pesticide leakage in forest seedling production is reported in this issue.

Photo: Bengt Dahlfors

The first two papers report results from genetic experiments with Norway spruce performed in climate chambers, and provide comparisons with results from the field. **Johan Sonesson** and **Gösta Eriksson** found that families varied with respect to drought tolerance. Drought tolerance was also genetically correlated with early budset. However, no correlation between drought tolerance and growth was detected, either in the climate chamber or in the field.

In the second paper, **Samuel Mari** and his colleagues studied another set of spruce families and variation in their nutrient utilization. Families were grown with both free and restricted access to nutrients. Correlations between growth traits and nutrient utilization varied, but families with high N and P utilization belonged to the taller families.

A third genetic paper, by **Reza Yazdani** and colleagues, focuses on molecular markers associated with autumn cold acclimation in Scots pine. They found a number of markers for height growth, growth cessation and hardiness. The study confirms that major QTLs (Quantitative Trait Loci) control a large part of the variation in growth rhythm and cold acclimation.

The effect of forest management on insect damage to trees was the theme for **P-O Hedgren** and colleagues. It

had been suspected that piles of fresh logging waste could constitute breeding material for a bark beetle that feeds on young spruce trees. Thus, hypothetically, damage to surrounding trees could increase in the presence of such waste. The authors found that attacks increased when logging waste was left, but very few trees died. So, in practice, the effect of leaving the logging waste was very minor.

Marja-Liisa Juntunen and **Veikko Kitunen** studied the risk of pesticide leakage in forest seedling production. Two common fungicides were compared, and they found that the peat substrate effectively absorbed the fungicide chlorothalonil, since less than 1 % of it leaked, while 4–29 % of the propiconazole leaked.

Little has been known about how snow cover and soil frost depth varies with the density of the stand. Now, **Mikaell Ottosson-Löfvenius** and his colleagues have shown a number of correlations. For example, the winter soil frost is deeper close to shelter trees, but snow melting and frost thawing occur earlier here than in patches more distant from shelter trees.

Mortality is a key element in models forecasting forest production. **Tron Eid** and **Bernt-Håvard Öyen** present new models of mortality that are applicable to even-aged forest stands in Norway.

The Samis have had an impact on the northern Swedish forests for a long time. **Lars Östlund** and colleagues present a study of the traces of past Sami forest use. Trees with scars from bark peeling, and blazes for marking trails and borders, can be used to identify Sami forest use.

Bark peeling has been used in Scots pine to induce so-called "lightwood", a timber with enhanced durability. What actually happens chemically in the stem after debarking was investigated by **Gabriella Gustafsson** and her colleagues.

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SNS: "Networks important for research exchange"

Networks are important elements of the forestry activities of SNS. Linked groups, formed at the initiative of either SNS or the researchers themselves, can provide information channels to other researchers. They are also valuable clusters of competence that SNS can call on to carry out specific tasks and investigations. The groups are organisationally independent, but can apply for finance for workshops, projects etc. from SNS. To the right you can find a list of currently registered network groups.

New SNS network group: Forest regeneration

A new network has been established under the SNS umbrella. At a meeting of Nordic researchers held in Asa, Sweden, in May 2002, the participants identified a clear need for networking activities in the area of forest regeneration. The network will facilitate information exchange amongst Nordic forest regeneration researchers; arrange workshops, especially for young researchers; organize doctoral and other courses; and provide a

forum for discussing research activities to avoid research efforts overlapping in the Nordic countries.

Dr Taneli Kolström of the University of Joensuu was appointed coordinator. The next activity will be a workshop in Suonenjoki, Finland, in June 11–13, 2003.



Taneli Kolström, coordinator of the new Forest Regeneration network group.

Current SNS networks and groups

- **Arboretum committee**
Per Harald Salvesen, *per.salvesen@bot.uib.no*
- **Management of genetic resources of trees**
Throstur Eysteinson, *throstur@skogur.is*
- **Forest pathology**
Risto Jalkanen, *risto.jalkanen@metla.fi*
- **Forest entomology**
Åke Lindelöw, *ake.lindelow@entom.slu.se*
- **Wood science**
Marketta Sipi, *mhsipi@silvia.helsinki.fi*
- **Multipurpose use of forests**
Roland Gustavsson, *roland.gustavsson@lpal.slu.se*
- **Forest fertilization**
Morten Ingerslev, *moi@fsl.dk*
- **Forest technology**
Øystein Dale, *oystein.dale@skogforsk.no*
- **Forest Economics**
Heikki Pajuoja, *heikki.pajuoja@metla.fi*
- **Communicators at Nordic forest research organisations**
Ellen Juel Nielsen, *ejn@fsl.dk*
- **Forest inventory**
Erkki Tomppo, *erkki.tomppo@metla.fi*
- **Forest history**
Lars Östlund, *lars.ostlund@svek.slu.se*
- **Gender research in forestry**
Gun Lidestav, *gun.lidestav@ssko.slu.se*
- **Forest regeneration**
Taneli Kolström, *taneli.kolstrom@joensuu.fi*

3.5 million Euro for bilateral programme on wood materials science

Research agencies in Sweden and Finland have launched a new wood material science programme. The programme focuses on three themes for the period 2003–2006:

1. Raw material properties of wood.
2. Means to improve the material properties of wood and fibres.
3. Modification and proces-

sing of raw wood material into innovative, eco-efficient products.

One aim is to establish a knowledge base to enable the development of innovative forest-based products. The research programme gives priority to joint Finnish-Swedish projects.

"Sweden and Finland are important forest nations,

and we are very happy to establish this cooperation", says Lisa Sennerby-Forsse, head of Formas*. "We hope this research programme will lead to increased research cooperation in a broader EU-perspective".

Source: www.formas.se

*The Swedish Council for the Environment, Agricultural Sciences and Spatial Planning.



"This will strengthen wood's position as an ecologically sustainable raw material", says Lisa Sennerby Forsse.

Finished SNS projects

Mixed-stand forestry has minor effects on wood properties

The growing interest in mixed stands in the forestry sector has raised questions about their implications for wood quality. In a joint-Nordic project (SNS-61), led by Bohumil Kucera of the Norwegian Forest Research Institute, data were collected from spruce trees grown in monocultures and mixtures with birch.

In general, growing spruce in mixtures with birch had very little effect on its wood quality traits, including basic wood quality parameters such as annual ring width, knot characteristics and density, as well as bending strength and elasticity of the planks.

Trees growing in mixtures had slightly lower wood density than trees growing in pure stands of the same diameter, but otherwise the materials were very similar.

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Effects of climate on carbon and nitrogen in forest soils

Concentrations of dissolved organic carbon and nitrogen (DOC and DON), were quantified in forest soils along north-south and east-west transects, across Norway, Sweden and Finland. The measurements were made as part of the SNS project "Climatic effects of pools of organic carbon and nitrogen and fluxes of dissolved carbon and nitrogen in forest soils" (SNS-70), for which Nicholas Clarke at the Norwegian Forest Research Institute was the coordinator.

Some variables, such as tree biomass, belowground litter and soil N pools, were influenced by the latitude or altitude of the sampling site. For other variables, such as soil C pools, DOC and DON, there were no clear trends in their variations with the climate of the sites. However, there were clear seasonal trends in DOC concentrations, which peaked in late summer/early autumn.

Contact: Nicholas.Clarke@skogforsk.no

Gene conservation of trees

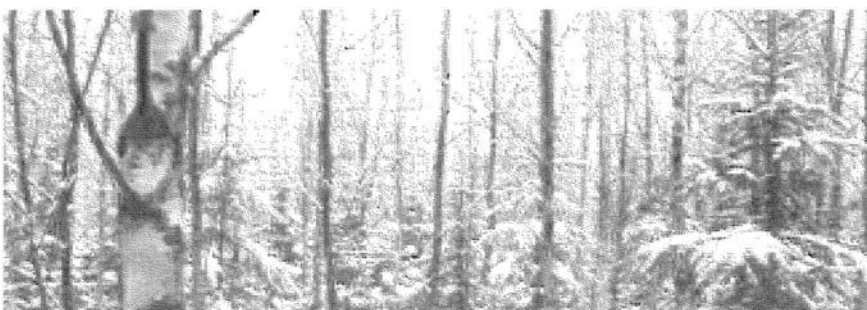
Should gene conservation plans be uniform or should they be specifically adapted to targeted species? To address this question, a project (SNS-71) with participants from Sweden, Finland, Denmark and Norway studied populations of two species with different life histories. Norway maple is insect-pollinated and occurs in patchy, small populations while silver birch is wind-pollinated and has a wide, continuous distribution. Three main hypotheses were considered:

- 1) Population differences are more pronounced in maple than in birch,
- 2) within-population variability is lower in maple than in birch, and
- 3) phenotypic plasticity is greater in birch than in maple.

The results were inconsistent, and did not give unqualified support to any of these hypotheses. One reason for the inconsistency is that gene flow may be stronger in maple than expected from its patchy distribution. Both species could advantageously be included in a network of gene resource populations, according to the authors of the final report.

Contact: Project coordinator, professor Gösta Eriksson, gosta.eriksson@sgen.slu.se

A birch shelterwood covering a spruce regeneration. Photo: Martin Werner



Enhanced Nordic cooperation in higher education

Nordic cooperation in research and higher education in forestry and agriculture is to be strengthened. This was decided by the Nordic ministers of Agriculture at a meeting in Greenland this summer. A working group should produce detailed suggestions, which will

form a basis for the 2004 budget of the Nordic council of ministers.

A new framework for agriculture and forestry research will be established, and regulations for education will be adjusted to facilitate cooperation. NOVA, the Nordic Forestry, Veterinary and Agricultural

University, will have a central role in the enhanced cooperation.

The goal of NOVA is to strengthen and develop scientific cooperation among the Nordic agricultural universities.

"Adjustment of national regulations for skills, education content and

finance is important", says NOVA's head, Paul Jensén, on the homepage of NOVA. "We want to make it easier to arrange common educational efforts at thematic or programme levels".

Source: www.nova-university.org

Gender in Nordic-Baltic forestry

Forestry a man's world

Women in forestry appear as "deviants" and usually have, or had, some form of mentor (father, teacher etc.) who introduced them to it. Forestry is generally a man's world, and both communing with nature and hunting are seen as part of the masculine culture. These patterns were found by Gun Lidestav and Annika Sjölander from Sweden after analysing job

advertisements and articles in forest owners' journals. They found that very small changes had occurred in the patterns over the last 10 years. This was one of many findings presented in an SNS-sponsored



"Forestry is a man's world", says Gun Lidestav, Sweden

Nordic-Baltic workshop, "Gender perspectives in forestry – why and how?", held in conjunction with an IUFRO working party meeting in Umeå in November 2001.

Forest work less heavy for women

Most Norwegian women involved in practical forestry would answer yes when asked "Would you recommend youngsters to take up forestry work?". Most men would answer no. This difference between genders, was reported by Merete Furuberg,

Furthermore, Merete Furuberg also found that women considered forest work less heavy than their male counterparts. Fifty percent of the Norwegian women answered yes to the question "Is forest work heavy", compared to 100% of the men.

Forest ownership in Lithuania

Diana Mizaraitė reported the results of a survey of private forest owners in Lithuania. She found that men were motivated significantly more strongly than women by the possibilities of a stable income and investment offered by forest ownership. Both men and women recognised problems such as their "forest property being too small for efficient farming". However, women were significantly more concerned with problems related to lack of knowledge and experience, and lack of money for silviculture.

Female forest owners important group

30–40% of the forest owners in Finland and Sweden are women, and this proportion is expected to rise with urbanisation. However, marketing activities in the forestry sector are strongly oriented towards males. In Finland, Marjatta Pikkarainen and Minna Komulainen surveyed the attitudes of female forest owners. In 75% of the cases where the forest was owned together with a spouse, the man took the lead in decision-making. Even when the women had sole ownership of the forests, only 60% of them took the main responsibility. The survey also showed that the women had problems in identifying themselves as forest-owners "like any other forest owner". This lack of identification seemed to be related to an appreciation of environmental values. Those who emphasized timber production most highly, could more easily identify themselves as forest owners.

Source: Lidestav, G. & Chaseling, J. (eds.), 2002. *Gender perspectives in forestry – why and how?* Swedish University of Agricultural Sciences, Dept of Silviculture, Working papers 178.

No dramatic change in forestry costs & revenue in Sweden 2001

Forestry costs in 2001 remained much the same as in the preceding year. One exception was stumpage sales and cutting commissions in the south of the country, the cost of which fell somewhat because of lower timber-procurement prices. These are some of the findings that emerged from the annual questionnaire survey, conducted jointly by SkogForsk and the National Board of

Forestry, on forestry costs and revenue in Sweden.

Thinning costs in the south fell slightly but, for the most part, the conclusion was the same as that for the year before: the steady fall in thinning costs has bottomed out.

The proportion of the total forestry costs accounted for by silviculture was the same as in 2000 in the south, but increased slightly in the north.

The price of pine sawlogs fell in the south of the country; as for other assortments, the cost of raw materials to the mills was unchanged.

Source: Results no 5 2002 from SkogForsk

The steady fall in thinning costs in Sweden has bottomed out, despite the ongoing mechanization.

Photo: Areca



Forest engineering in the Nordic of keen interest for the Baltic forestry

There is a lack of infrastructure in forest operations R&D and training in the Baltic countries. This problem was identified at a conference, arranged by the Nordic network group for forest technology (NSR) in November 2001. As a consequence of the conference, a study tour was arranged this summer for key personnel in forest-operations in the Baltics. In total nine persons from Estonia, Latvia and Lithuania under the lead of Professor Peeter Muiste from the Estonian Agricultural University, visited Sweden and met with representatives from Denmark, Norway, Sweden and Finland.

Some problems discussed:

- Availability and cost of labour does not impose any immediate problem in the Baltic countries, but is expected to

change rapidly. A future shortage of skilled labour coupled with increasing labour costs is a dangerous combination.

- Mechanisation of forest operations is expanding. However, due to the lack of training facilities and funding, machines put in operation by Baltic forestry companies are generally operated by relatively untrained personnel. Furthermore, also company supervisory staff generally lack enough training and experience from the new technique in order to put it to best use.
- There is no systematically organised R&D in the field of forest engineering, and no funds are set aside for research or post-graduate education.

Activities proposed

At a more operative level, the following activities were proposed to be launched, provided the necessary funding:

- Development and implementation of further-training programs for teachers and industry management personnel in Forest Technology and Operations in cooperation with one or more Nordic partners such as e.g. the Swedish School of Forest Engineers in Skinnskatteberg.
- Development of a project proposal for the creation of development strategies and infrastructures for long-term development of forest operations in the Baltic countries.

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Fireproof wooden houses

Wooden houses have been associated with fire risks in the past, and fire safety regulations have often prevented multi-storeyed houses being built with a wooden frame. The old, negative attitude towards wooden houses was a relic fostered by the significant hazards posed by earlier, densely built blocks of houses with wooden roofs and fronts. Now, there is a consensus that wood can be as fire-resistant as any other frame material.

The project "Fireproof wooden houses" is part of the Nordic Wood project (see News and Views 17.4). Its second phase has recently been completed, and its findings have been encapsulated in a new handbook (in Swedish) on how to build fireproof

wooden houses. The new element considered in the second phase was the use of large amounts of wood in the frames.

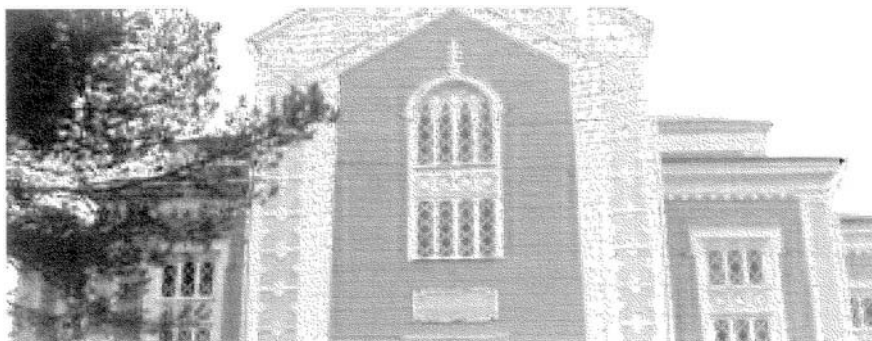
Building regulations have become more relaxed towards multi-storeyed wooden houses. The old Nordic rules limited the use of wood to 2-storeyed houses (3-storeyed in Norway). However, new regulations are based on the degree of fireproofing, and not on the material itself. Therefore, there is no upper limit in the Swedish and

Norwegian regulations, although in practice wooden houses have a maximum of 6–8 storeys, and 3–4 storeys is more normal. Finland is still more restrictive towards wooden houses, and allows a maximum of four storeys, and only then if a sprinkler system is installed. Denmark also has a limit of four storeys, but is presently re-evaluating the rules.

Source: *Träinformation* No. 4/02, www.tratek.se

Kerimäki church. The largest wooden church in the world with a seating capacity of 3,000 people and a height of 27 meters.

Photo: Mats Hannerz



Clippings

Urban nature rated

In collaboration with the municipality of Copenhagen, researchers at the Danish Forest and Landscape Institute (FSL) have established an index that can be used to rate urban natural resources with respect to both diversity and recreational values.

"We have chosen a hundred animal and plant species to examine", says Tove Hels and Flemming Rune from FSL. "In addition, we also register factors such as noise, smell, colours, visibility and water, that may indicate recreational values. The index can be used to rate areas as well as to compare changes over time in an area".

Source: *Nyt Skov & Landskab*, www.fsl.dk

Danish forests ready for certification

A large part of the forests (covering a total of 43 million hectares) in a number of European countries are certified according to the PEFC framework (Pan-European Forest Certification). PEFC recognizes national and regional schemes for certification. Denmark is now ready to join their number, under a scheme for the state approved in October by the PEFC Council in Luxemburg. The Rangle Mølle/Dønnerup Gods estate will be the first to have its forestry certified. The process is expected to be completed in early 2003.

Source: *Skoven 11*, 2002

Lund University leads research on carbon sinks

The concentration of greenhouse gases in the atmosphere and the mean temperature of the earth have markedly increased over the past fifty years. Most climate-change scenarios indicate there will be a further temperature rise of 1.4–5.8°C over the next 100 years.

According to the Kyoto protocol, each country is obliged to reduce its emissions of greenhouse gases. The protocol also allows countries to consider carbon sinks as tools to reduce carbon emissions. However, very little is known about the impact of such carbon sinks, and how they are affected by different factors. Some researchers fear that the effect of carbon sinks will decrease with increased temperature, others that the carbon sinks will become more important.

The Nordic Council of Ministers has noted the importance of the research on carbon sinks conducted at the University of Lund, in Sweden. The university will now lead a new Nordic network, with researchers from Sweden, Denmark, Finland and Iceland, that will study the exchange of carbon dioxide and methane between the atmosphere and the ecosystems. The research

is supported by the national agencies.

The network will measure the exchange of carbon dioxide and methane at some 30 stations. The data and conclusions can be used in new models of climate change. The new network involves 41 senior and 24 junior researchers and 74 PhD students.

Source: www.formas.se, contact Prof. Anders Lindroth, Lund University. Anders.lindroth@nateko.lu.se



The Nordic forest – a carbon sink

429 million DKR for restocking after storm

The large storm in December 1999 clearfelled over 15,000 hectares of forest in Denmark. Now, the accounts show that the subsidies paid to forest owners for reforestation of these areas amount to 429 million Danish crowns.

The reforestation has brought a change in the structure of the forests. Most of the felled trees were conifers – 30% of the conifers in the forests hit by the storm were

felled, but only 5% of the deciduous trees. Of the total storm-felled stock, 90% were conifers and only 10% deciduous. But, 66% of the area was reforested with stands of pure deciduous species, while just 12% was planted with pure coniferous stands. The rest was restocked with a mixture of deciduous and conifer species.

Source: *Skoven 10*, 2002

Contact News & Views

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- short
- relevant to the Journal
- interesting for the readers.

Examples: comments on papers published in the Journal, views on ongoing research, trends in research policy, opinions about forestry practice etc.

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