

## Greener forests campaign in Sweden

In Sweden, the National Board of Forestry has launched an educational campaign named Greener Forests. The campaign was officially kicked-off in September 1999 under the patronage of HM Carl XVI Gustaf, The Swedish King.

The objective of the campaign is to give private forest owners a tool to:

- develop more effective silviculture and improve forest yields
- understand the forest's ecology and environmental value
- plan for rational and sustainable forestry

A central part of the campaign is the Greener Forests-book and a course programme. The book comprises more than 200 pages and the course some 20 study hours, including visits to prepared Greener Forest-properties. Here, the participants can see how the knowledge incorporated into the campaign is implemented.

The goal is to reach some 100,000 forest owners. That is appr. one third of all private forest owners in Sweden.

One central issue in the book and the campaign is to present a new goal classification system for forests stands. Four classes are given:

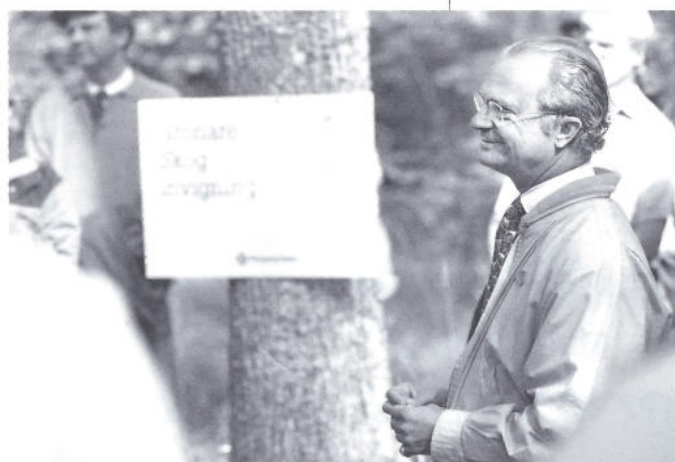
**PG:** production goal with general environmental considerations

**PF:** production goal with reinforced environmental considerations

**NS:** nature conservation goal with management

**NO:** nature conservation goal based on no management.

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HM Carl XVI Gustaf, The Swedish King, at the kick-off of the campaign.  
Photo: National Board of Forestry, Sweden

### Nordic forum: From research to application

## Be interesting!



Ingemar Nordansjö,  
SkogForsk, Sweden.  
One of the organizers  
of the forum

– Be interesting. That was one of the “take-home” messages from a Nordic conference on communication of forest

research results

in August 1999. – Nobody in practical forestry has the time or inclination to read long, dry, academic scientific articles. We must learn from the journalists. They are professionals in “tricking” an unwilling, and often ignorant public to read and adopt new ideas.

SNS, the Nordic Forest Research Cooperation Committee, initiated the conference. The objective was to promote a Nordic network for research communication – for sharing knowledge and exchanging experience. More than 30 information officers from 20 different research bodies in Sweden, Norway, Finland and Denmark participated.

During the two-day conference, many different channels for communication and information were discussed. Much enthusiasm was, of course, focused on IT. A range of expert-systems on the Internet were demonstrated. But, there was also a

strong belief that “old” information channels, such as publications, films and traditional courses are still effective in extending knowledge to machine operators, foresters and forest owners – but perhaps in close co-ordination with new digital facilities.

The need for a more formal future network is now under discussion. Interested in information and communication in forest research? Or more about the network? Don't hesitate to contact one of the organizers of the conference: Ingemar Nordansjö, SkogForsk, Sweden. [ingemar.nordansjo@skogforsk.se](mailto:ingemar.nordansjo@skogforsk.se)



## New information system on the Internet

# Forest damage

In Sweden, an expert tool for assessing forest damage has been launched. It is an Internet site that leads you step by step to a diagnosis and provides a key to identify causes of damage to your forest, be it an insect, a fungus - or a weather event like drought.

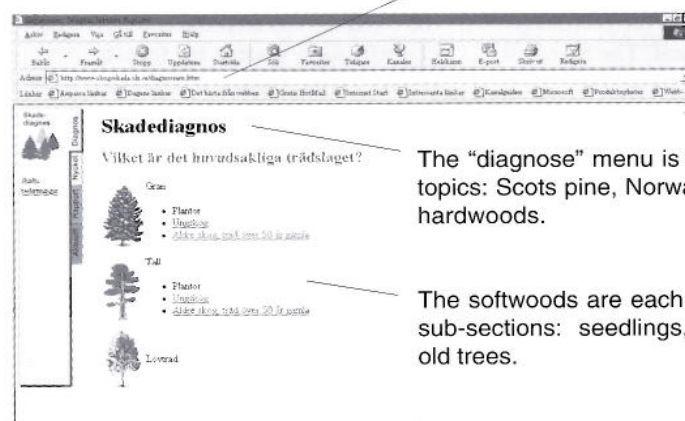
But the site is not only meant to be a guide for foresters and forest owners. The objective is also to provide feedback to the experts. All users of the system are encouraged to report damage observed, thus helping to map damage status across the country. This user's information database will give early warning for potential epidemics.

The system, sponsored by the National Board of Forestry, is being set-up by a group of researchers at the

Swedish University for Agricultural Sciences. It is still under construction, but it can already be used today for quite a number of types of damage.

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The "diagnose" menu is divided into three topics: Scots pine, Norway spruce and hardwoods.

The softwoods are each divided into three sub-sections: seedlings, younger trees and old trees.

## Action to increase Nordic co-ordination

# Long-term field experiments essential

Long-term field experiments are a natural and indispensable tool in forest research. The value of maintaining such experiments for future reference is undisputed. Notwithstanding this, many countries are currently facing problems in financing them. In the Nordic countries alone, the number of long-term field experiments is estimated at more than 9,000, and the costs of maintaining them are more than the universities and research institutes can cope with. External funding provides no solution either, since most research councils and foundations consider long-term commitments of this kind beyond their scope.

The Nordic Forest Research Co-operation Committee (SNS) has now launched an action plan for Nordic collaboration on long-term experiments. Apart from the obvious scientific advantages made possible

by increased availability and exchange of experimental data, collaboration of this kind may facilitate national decisions concerning financial priorities.

The first steps in this process are to obtain a good overview of existing experiments in the five Nordic countries, and to make information about the experiments available for all. The individual institutions involved already have documentation in the form of computer databases. In most cases, however, the information is

more or less inaccessible to outsiders, and not very easy to grasp.

A small working party, appointed by SNS, is currently looking into the possibility of establishing an integrated, easy-to-access database of all Nordic field experiments. The task includes suggesting practical technical solutions and the introduction of a common classification system, with area keywords, etc. The working party will present a plan for implementation to the SNS board. The first steps towards actual implementation are expected to be taken in 2000.

In the long-term, the action is aimed at identifying common Nordic interests, examining the possibilities for cost cutting through merging existing projects, and the establishment of new, jointly financed experimental programs.

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## Indoor larch seed orchard in Iceland

A new greenhouse is being built at the tree nursery at Vaglir in northern Iceland. The purpose is to house a containerised seed orchard of Russian larch (*Larix sukaczewii* Dylics). The larch clones that will form the parental population in the new seed hall were selected from plantations in Iceland and thus comprise a "land race" of Russian larch for Iceland.

The original selections were made on the basis of straightness, lack of damage and height, in the hope that the resulting progeny would be both well adapted and fast growing.

Research, supported by the Icelandic Research Council, into flower stimulation, pollination and seed production potential has been carried out in a small prototype breeding orchard since 1993. At the same time, a few of the original clones have already been removed from the program because of poor flowering.

The first progeny trial from the prototype indoor orchard, with a total of 30 families, was planted in two locations in 1999. More progeny trials, including progeny of most of

the 50 clones originally selected, will be planted during the next 2-3 years. Within the next 10 years, results of these progeny trials will be used for selection among the parental population, further improving the land race.

Indoor containerised orchards are very useful for breeding and tree improvement research, but the feasibility of seed production of larch in a greenhouse is still not certain. However, seed production in the

prototype orchard has given promising results. This year, roughly 150,000 seedlings from seed produced last year in a 280 m<sup>2</sup> greenhouse are being grown in nurseries in Iceland. That is about 10% of the total larch seedling production.

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## No acute need for vitalization of the trees

"In the four Norway spruce stands we have studied, there is no evidence of any need for liming or vitalization". That was the take-home message from an excursion arranged by SkogForsk, The Swedish Forest Research Institute.

The forests studied are located in southwest Sweden, in an area with high deposition of air pollution. The trials were established in 1991, and plots were treated with limestone, potassium and nitrogen in a number of combinations.

Some results from the extensive measurements on trees, vegetation, soil and soil-water:

- The nutrient status of the trees was acceptable even before treatment – despite the very acid soils, pH values being under 4.5 in the spodic layer in all trials.
- The tree increment increased somewhat after a yearly low-dose fertilization with nitrogen.
- Liming also resulted in a limited increase in increment.
- Neither canopy density nor resin flow was affected by the treatments.
- Liming resulted in a small increase in pH in the upper layers of the soil.
- Soil analyses showed an increased potential for nitrogen mineralisation and nitrification after liming. This

increases the risk of nitrogen leaching.

- Water collected under the rooting zone was very acid – and the acidity was not affected by liming!

Source: SkogForsk-Nytt no.3 1999.

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# Water stress despite heavy rainfall

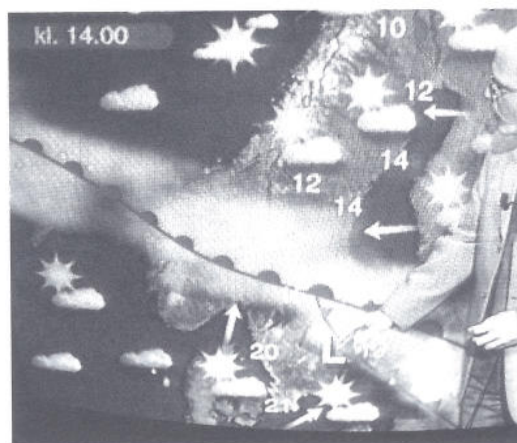
Perhaps it is deficiency of water rather than acidification that poses the biggest threat to the forests in south-west Sweden. This hypothesis has been presented by Ghasem Alavi in a thesis at the Swedish University of Agricultural Sciences.

In dense stands, common in modern forestry, a substantial part of the water is caught by the canopy and evaporates. In addition, a lot of water is consumed in transpiration. With computer-based models, Ghasem Alavi has shown that water deficiency can lead to growth reduction even in areas with an annual rainfall of more than 1,100 mm.

A simulation of processes in a mature stand of Norway spruce in south-west Sweden covering 1975 to 1997 showed that the most severe water deficiencies occurred in 1976 and 1981–1983. This coincides with years when reports of forest damage and forest decline were most prominent. Thus forest death ("waldsterben") seems to be closely related to water deficiency.

Source: *Notiser från SLU*, June 1999.

Rain over Scandinavia. Good for the forests.



## New site on the Internet

# Meet the Finnish spring

The Finnish Forest Research Institute (METLA) has established a monitoring network, covering the entire country, whereby the phenology of forest trees and other forest vegetation is being recorded.

Phenology is a discipline studying the rhythms in biological phenomena, and how various factors affect them. The biological phenomena monitored are

- flushing (bursting into leaf)
- yellowing, shedding of leaves
- flowering of trees
- height growth and flowering of conifers
- flowering and ripening of various forest berry species.

Long-term phenological observation series yield valuable information about the effects of climate change on forest ecosystems. More exact knowledge is also gained about the rhythm of height growth of forest trees in different parts of the country.

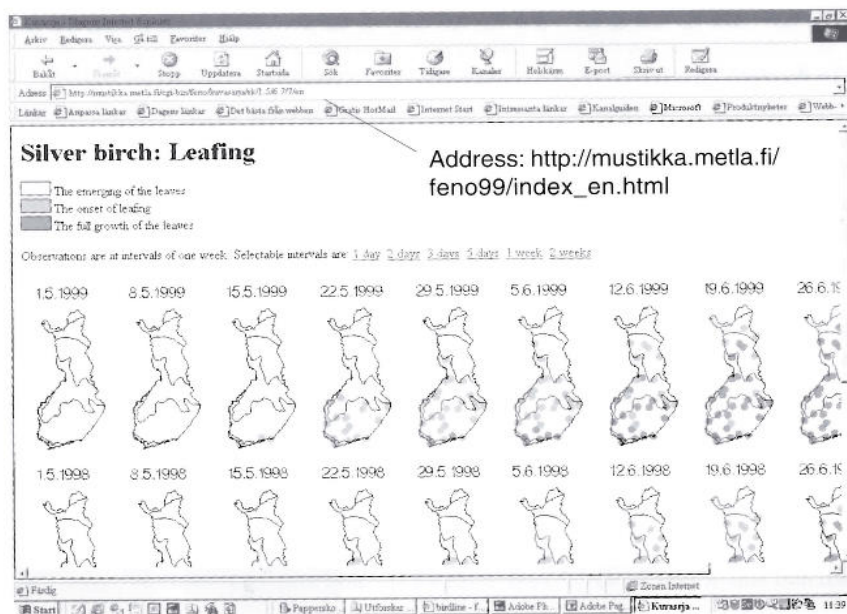
This is useful for making forecasts of important features such as growth. Data on the flowering of trees also help generate seed crop forecasts,

which are closely connected to pollen forecasts for plant species causing allergies. The monitoring network helps other areas of forest research, too; e.g. monitoring of forest damage, and forest berry and mushroom crop forecasting.

A popular version of the results is published on the Internet. In "slide

shows", anyone can follow, for example, the leafing of silver birch (*Betula verrucosa*) in different parts of Finland in 1997, 1998 and 1999. Visit the site. It is most amusing to follow the Finnish spring week by week in a 30-second-show.

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## Recent PhD's in forestry: Sweden

**Eliasson, Lars.** Analyses of Single-Grip Harvester Productivity

**Vasiliauskas, Rimvydas.** Ecology of Fungi Colonizing Wounds of Norway Spruce (*Picea abies* (L.) Karst.) with Special Emphasis on *Stereum sanguinolentum* (Alb. & Schw.: Fr.) Fr.

**Edlund, Marie-Louise.** Durability of Wood in Ground Contact Tested in Field and Laboratory

**Bergman, Inger.** Microbial Carbon Mineralisation in Peat from a Boreal Mixed Mire.

**Morén, Ann-Sofie.** Carbon Dioxide and Water Exchange in a Boreal Forest in Relation to Weather and Season

**Linder Per.** Stand Structure and Successional Trends in Forest Reserves in Boreal Sweden

**Witzell, Jesper.** Risks Associated with the Introduction of *Pinus contorta* in Northern Sweden with Special Attention to *Gremmeniella abietina* and North American Rusts

**Rönnerberg, Jonas.** Incidence of Root and Butt Rot in Consecutive Rotations, with Emphasis on *Heterobasidion annosum* in Norway Spruce

**Andersson, Erik W.** Gain and Diversity in Multi-Generation Breeding Programs

**Oleskog, Gunilla.** The Effect of Seedbed Substrate on Moisture Conditions, Germination and Seedling Survival of Scots Pine

**Pape, Rolf.** Effects of Thinning on Wood Properties of Norway Spruce on Highly Productive Sites

**Löf, Magnus.** Environmental Stress on Establishment and Growth in *Fagus sylvatica* L. and *Quercus robur* L. Seedlings

**Jonsell, Mats.** Insects on Wood-Decaying Polypores: Conservation Aspects

**Mace, Richard D.** Human Impacts on Grizzly Bear *Ursus arctos horribilis* Habitat, Demography, and Trend at Variable Landscape Scales

**Nordvall, Hans-Olof.** Studies on Market Analysis of Forest-based Products

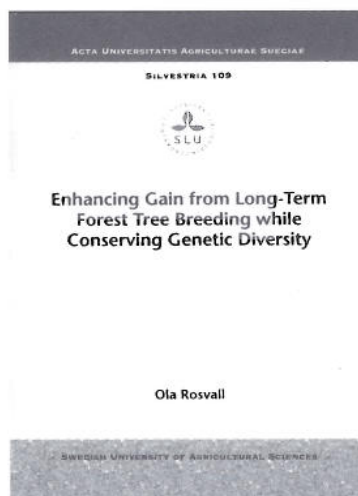
**Hannrup, Björn.** Genetic Parameters of Wood Properties in *Pinus sylvestris* (L.)

**Ericsson, Göran.** Demographic and Life History Consequences of Harvest in a Swedish Moose Population

**Mörling, Tommy.** Effects of Nitrogen Fertilisation and Thinning on Growth and Clear Wood Properties in Scots Pine

**Khalili, Sadia.** Microscopical Studies on Plant Fibre Structure

**Danusevisius, Darius.** Early Genetic Evaluation of Growth Rhythm and Tolerance to Frost in *Picea abies* (L.) Karst



One of the Swedish dissertations from 1999

**Hannon, Gina E.** The Use of Plant Macrofossils and Pollen in the Palaeoecological Reconstruction of Vegetation

**Fransson, Johan.** Analysis of Synthetic Aperture Radar Images for Forestry Applications

**Stattin, Eva.** Root Freezing Tolerance and Storability of Scots pine and Norway spruce Seedlings

**Hannerz, Mats.** Early Testing of Growth Rhythm in *Picea abies* for Prediction of Forest Damage and Growth in the Field

**Hazell, Per.** Conservation and Yield Aspects of Old European aspen *Populus tremula* L. in Swedish Forestry

**Köhler, Stephan.** Quantifying the Role of Natural Organic Acids on pH and Buffering in Swedish Surface Waters

**Eshete, Getachew.** Assessment of Fuelwood Resources in Acacia Woodland in the Rift Valley of Ethiopia. Toward the development of planning tools for sustainable management

**Kalela, Brundiin Maarit.** Climate Information from Tree Rings

**Bergqvist, Göran.** Stand and Wood Properties of Boreal Norway Spruce Growing under Birch Shelter

**Rosvall, Ola.** Enhancing Gain from Long-Term Forest Tree Breeding while Conserving Genetic Diversity

Address and more information:  
[www.slu.se](http://www.slu.se)

## Recent PhD's in forestry: Norway

**Nygaard, P. H.** Effects of sulphur and nitrogen on boreal forest vegetation, soils and nutrient uptake.

**Solberg, Sveinn.** Forest health monitoring: Evaluation of methods trends and causes based on a Norwegian nationwide set of monitoring plots

**Sølvernes, Kari Anne.** Effects of elevated CO<sub>2</sub> and increased temperature on plants and soil.

**Øyen, O.** Wood quality in old stands of Norway spruce (*Picea abies* (L.) Karst.)

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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, opinion about forestry practice etc.

News & Views is edited by Areca Information AB. **Contact:** Carl Henrik Palmér. [chp@areca.se](mailto:chp@areca.se)