Editor's summary

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

After the storm. Photo: Areca

• *Sorbus mougeotii* is a tree that is native to central Europe, but used in Denmark in hedgerows and shelterbelts. Its red fruit crop, which is retained through the winter, makes the tree popular for ornamental reasons. Seeds of many *Sorbus* species become dormant when they mature, and require moisture and low temperature treatments before they can germinate. **Martin Jensen** evaluated how the dormancy and germination ability were affected in this species by factors such as harvest time and drying. He found, *inter alia*, that drying and post-harvest ripening of the seeds could reduce the time needed to break dormancy.

• A quite common opinion, with little evidence to support it, is that increased nitrogen deposition may reduce the frost hardiness of trees. In order to test this opinion, **Lucy Sheppard** and an international team evaluated the variation of hardiness with nitrogen supply in controlled field experiments with Sitka spruce and Norway spruce. They found, amongst other things, that the nitrogen supply did not negatively affect hardiness. Instead, shoots that had received nitrogen were generally the most hardy.

• Cronartium rust is an epidemic disease that causes severe damage in Scots pine tree tops. The rust *Cronartium flaccidum* infects the trees via spores that are formed on leaves of alternative hosts. A few of these hosts have been previously identified. But in their article, **Juha Kaitera and Heikki Nuorteva** show for the first time that both *Melampyrum arvense* and *M. pratense* are able to produce telia spores from *Cronatium flaccidum*. In addition, they show for the first time that these spores can occur on leaves' upper surfaces.

• Another agent that can seriously damage Scots pine is the pine looper. A few years ago, major outbreaks of pine looper were noticed in Sweden. In one place, 7000 hectares were defoliated by the insect. **Jan Cedervind and Bo Långström** studied its effects and found that most trees survived if less than 90% of the needles were defoliated. However, if defoliation exceeded this level a third of the trees died and half of them suffered from top-kill.

• Liming of forest soils is known to stimulate nitrification, but the response to it depends on a number of factors, including nitrogen availability. An increased rate of nitrification may increase the risks of adverse effects such as nitrate leaching. The risk is probably low on most Scandinavian soils, where nitrogen is limited but, with increased N-deposition it may be more pronounced. **Jenny Bäckman and Åsa Kasimir Klemedtsson** used a novel incubation technique to investigate the effects of liming on nitrification. They found that nitrification was stimulated, and the response was strongest at a site with high N deposition.

• The storm "Lothar" caused severe disruption to European forests in December 1999. After its passage there was an urgent need for reliable information on the extent of the damage it had caused. Remote sensing data can be extremely useful for such assessments. **Markus Schwarz** and his colleagues have compared various types of satellite and radar data for classifying the windthrown forests in mountainous areas in Switzerland. They found that several different methods could be used to detect the stormfellings early and reliably. Most methods had advantages, but the best choice depends on the questions addressed.

• Another study on remote sensing comes from **Timo Saksa** and his colleagues in Finland. They compared different methods to detect clear-cut areas, and many of them generated valuable information. An essential step is to apply a "digital forest mask" when interpreting satellite data.

Cont. page 478 ⟶

Forest research in the North

Denmark page 475–477

Signing off volume 18

This is the last issue of volume 18 of Scandinavian Journal of Forest Research. The year has passed without any major changes that are likely to be detectable to the readers or authors. However, although the number of submitted manuscripts and the rejection rate have remained almost unchanged, the impact factor has increased significantly.

Fifty-three high-quality articles were published, on a variety of topics: from molecular biology, through management methods and growth models, to peoples' preferences for recreational sites in forests.

The founder of the journal, SNS, discussed the future of the journal last year, and decided to continue providing support in the same manner as before. Some ideas for further improvements were proposed, and these will be introduced in the near future.

Origin of manuscripts submitted to Scandinavian Journal of Forest Research and referees used from 1 November 2001 to 30 October 2002

Origin [1]	No. submitted manuscripts	No. referees
Sweden	29	40
Finland	24	17
Norway	5	15
Denmark	4	5
Western Europe [2]	5	32
Eastern Europe [3]	5	1
Canada	4	22
USA	1	26
Others [4]	10	5
Total	**87**	**163**

1) The address of the first author is considered the origin of the article

2) Austria, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Switzerland, UK

3) Estonia, Lithuania, Poland, Russia

4) Argentina, Australia, China, Japan, Korea, New Zealand, Turkey

87 submitted manuscripts

In the last year, from 1 November 2002 to 30 October 2003, about 87 manuscripts were submitted, compared with 88 manuscripts the year before. Most of the manuscripts (71%) originated from the Nordic countries, with Sweden being the source of 29 (33%) and Finland 24 (28%). The proportion of manuscripts submitted from outside the Nordic countries remained almost unchanged from the year before.

During the same period, the editor took advantage of the time and skills of 163 referees, some of whom reviewed more than one paper. The referees were from 20 countries, and 53% came from outside the Nordic countries, so the referees were much more internationally dispersed than the authors of the manuscripts. There was a particular preponderance of referees (in comparison to the numbers of papers submitted) from western Europe, Canada and the USA.
A challenge for the journal is to increase the proportions of manuscripts submitted from these regions as well.

Rejection rate

Of the 87 submitted manuscripts, 51 have been processed to a final decision. Twenty-eight were rejected and 23 were eventually accepted for publication. Another 13 have been evaluated and are currently under revision. Most of these will finally be accepted, and if this group is included amongst the accepted papers, the rejection rate for last year's papers so far comes to 44%, which is lower than for the previous year (49%).

Impact factor

The impact factor is a measure of how often articles are cited. The ISI ® Journal Citation Reports (JCR®) impact factor has increasingly become the main quantitative measure of the quality of a journal or group of researchers, e.g. an institution. The JCR impact factor for a given year shows how often articles published by a journal during the two previous years were cited in that year. Scandinavian Journal of Forest Research is placed in the Forestry category in JCR. Of 28 such journals, Scandinavian Journal of Forest Research is ranked tenth in terms of impact factor. The highest impact factors in the category are found for more specialised journals, such as Agricultural and Forest Meteorology and Tree Physiology. Among the journals open to general forest research, Scandinavian Journal of Forest Research is one of the "top 5". It still lags behind Canadian Journal of Forest Research, Forest Ecology and Management and Forest Science, but the gap has been reduced since previous years. The impact factor of Scandinavian Journal of Forest Research increased to 0.835 from 0.692 the year before.

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Impact factors for 2002 for journals in the ISI JCR category Forestry. The selected journals are all open to general forest research.

Journal	Impact factor
Canadian Journal of Forest Research	1.120
Forest Ecology and Management	1.128
Forest Science	0.965
Annals of Forest Science	0.936
Scandinavian Journal of Forest Research	0.835
Forstwissenchaftlichen Centralblatt	0.603
Silva Fennica	0.507
Forestry	0.464
Forest Chronicle	0.497
New Forest	0.435

Danish forest research in brief

Denmark is the last country to be portrayed in the series *Forest research in the north.* In terms of forest production, Denmark is the "little brother" among the Scandinavian countries. However, it contributes significantly to the diversity in Nordic forestry.

In Denmark, only 11% of the land area is covered with forests, and the economic importance of the Danish forests is low and declining. The wood-processing industry is characterized by small units and generally has low competitiveness.

The secondary wood-processing sectors (e.g. the furniture-making, building materials and energy sectors) are economically much more important, but also less dependent on domestic wood production.

However, if visions presented in the Danish National Forest Programme in the year 2000 are fulfilled, the role of the forests will be markedly upgraded. According to these ambitious plans, the forest area is to be increased to cover 20–25% of Denmark within a single tree generation. The forests will also be multi-purpose, supplying high quality wood, while offering diverse opportunities for outdoor recreation, conservation of biological diversity, landscape improvement etc.

Although the economic importance of Danish forestry is relatively minor, it is diverse with respect to both species composition and forms of utilization. This is also reflected in a relatively strong research input. One single actor – *Skov & Landskab*, which has 300 employees – dominates forest research in the country. Several other bodies are also involved in more industrial aspects of forest research, such as building and furniture-making.

Danish forests in figures

- Productive forest land: 486,000 hectares (11% of the land area. 0.1 hectare per capita).
- Annual increment: 5.1 million m³
- Annual harvest: 1.7 million m³
- Growing stock: 76 million m³ (63% conifers, 37% broadleaves)

Tree species, land area

- Norway spruce: 28%
- Sitka spruce: 7%
- Nordmann and noble firs: 9%
- Other conifers: 19%
- Beech: 17%
- Oak: 9%
- Other broadleaves: 11%

Ownership, land area

- Private individuals: 47%
- Companies, associations and foundations: 25%
- Public: 28%

Forest industry

- Wood consumption: 8 million m³ (6 million m³ imported)
- Sawnwood industry, value: Dkr4 billion/year
- Furniture industry, value: Dkr14 billion/year

Employees

- Primary forest sector: 2,000
- Wood product industry: 14,000

Source: The Danish National Forest Programme. www.sns.dk

Skov & Landskab

The main forest research body in Denmark

The Danish Centre for Forest, Landscape and Planning (*Skov & Landskab*) dominates forest research in Denmark, and also serves as a centre for education and extension concerning forest, landscape issues and planning.

Skov & Landskab has been in existence for three years as an officially recognised organisation composed of the present Danish Forest and Landscape Research Institute, the Danish Forestry College and part of the Royal Veterinary and Agricultural University. From 1 January 2004, these elements, together with Danida Forest Seed Centre, will be merged formally into the independent centre *Skov & Landskab* under the Royal Veterinary and Agricultural University. The main areas of activity are:

- Research and development
- Education, training and refresher courses
- Monitoring forest status and the National Forest Inventory
- Advisory services and dissemination
- Decision support for official bodies
- Developmental and environmental guidance

Skov & Landskab has a budget of Dkr150 million and about 300 employees. About 150 are researchers, of whom around 100 have at least a doctorate. The staff are currently based in six locations – four in Copenhagen and northern Sjaelland, and two in Jutland in the western part of Denmark. The long-term plan is to transfer most of the staff into a new building at the campus of the Royal Veterinary and Agricultural University in Copenhagen.

The new leadership team of Skov & Landskab *gathered for their first meeting. Rear row, from left: Bo Jellesmark Thorsen, Henrik Paaby, Ole Quist Jensen, Karsten Raulund Rasmussen, Kjell Nilsson and Gertrud Jørgensen. Front row, from left: Søren W. Pedersen, Søren Fløe Jensen, Lars Graudal, Jens Dragsted, Niels Elers Koch (director of the centre) and Nils Wilhjelm (chairman of the board).*

Education

The new centre has responsibility for all levels of forest education – from teaching basic grade forest workers to doctoral level studies. Each year, 30 foresters and 30 landscape architects are awarded masters degrees at the centre.

The research

The research is grouped into six departments

- Gene resources in woody plants
- Applied ecology
- Silviculture, forest operations and wood products
- Parks and urban landscapes
- Urban and regional development, landscape management and recreation

Skov & Landskab is also responsible for monitoring the status of the forests and for forest statistics.

Examples of activities at *Skog & Landskab*

Urban forestry

Since Denmark is a densely populated country, in which forests are seldom located far from the cities, research into urban forestry is also, naturally, important. Through *Skov & Landskab*, Denmark is coordinating EUFORIC: the European Urban Forestry Research and Information Centre. EUFORIC is a regional project centre of the European Forest Institute (see *News and Views 18.4*).

EUFORIC aims to strengthen the European network of urban forestry research through a range of activities, e.g. compiling a database of urban forestry research and education, disseminating research results, organizing workshops, and training.

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Examples of activities at *Skog & Landskab*

Christmas trees and greenery

Supplying Christmas trees and decorative greenery has become a major alternative source of income for many private forest owners in Denmark. Hence, research in this field is important. Since 1991, *Skov & Landskab* and its predecessor have been pursuing an objective to become one of the global leaders in research related to Christmas trees and greenery production. The centre has a budget of Dkr7 million for this purpose per year.

Research is focused on a number of specific target areas, such as provenance selection and genetic breeding, crop establishment, fertilization, damage limitation and growth manipulation. The research is partly financed by the land owners, through a fee for each hectare with greenery. The research is highly interdisciplinary, and it is divided amongst several departments at *Skov & Landskab* to guarantee scientific quality in diverse fields, such as nutrient application, insect damage and crop establishment.

The most important species are *Abies nordmanniana* and *A. nobilis*. Genetic selection and a breeding programme are ongoing, and specific seed orchards have been established to ensure that suitable seeds are available.

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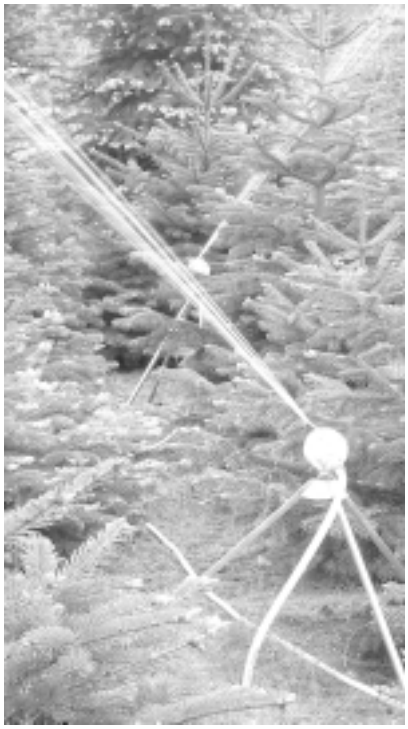

Irrigation of Christmas trees.
Photo: Ulrik Bräuner Nielsen.

Forest and Water

Because of the intense use of agricultural and urban ecosystems the importance of groundwater from forests is increasing in Denmark, and new forests are being planted on arable land to protect groundwater resources used for drinking water. The quality of forest waters is generally good, but air pollution and some management practices may have negative effects on it. Over the last decade *Skov & Landskab* has initiated national and international projects, as well as long-term experiments designed to elucidate the principal factors affecting nitrate leaching from forests, especially those related to air pollution and management practices. The most recent research efforts have focused on the quality and quantity of water from new forests on arable land. Here, increased evapotranspiration may lead to lower water yields, while accumulations of nitrogen and heavy metals from the old plough layer may potentially contaminate the groundwater. The aim of the project is to provide guidance on forest management strategies that maintain and develop the protective functions of forests on water.

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Soil water sampling at Vestskoven near Copenhagen
Photo: Lars Vesterdahl.

Danish wood material research coordinated

The current research within wood science in Denmark is divided among a number of smaller groups. At present, research is ongoing at the Royal Veterinary and Agricultural University, the Technological University of Denmark, Aalborg University and the Danish Technological Institute. However, recently the Danish Center of Excellence for Wood, an initiative to coordinate and strengthen the ongoing research, was launched. As a result of this initiative, it is expected that the area of wood science will strengthen and grow within the next five years. The present funding for research within wood science is provided by the Danish Forest and Nature Agency and the Danish Research Agency. The main focus areas for applied and basic research are wood joints and bearings, new methods for wood preservation, lignin nanostructures and wood/water relations.

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New chairman of SNS

Johs. Kolltveit from the Research Council of Norway is taking over the chairmanship of the Nordic Forest Research Cooperation Committee (SNS) from Olav Hepsø, who has been chairman for the last two years.

Photo: Mats Hannerz.

Johs. Kolltveit will serve as chairman until 2005. The chairmanship will then be rotated to another country, in line with the traditions of SNS. The Research Council of Norway has recently been reorganised, and it would not have been possible for Olav Hepsø to combine his new and expanded responsibilities with the chairman's duties.

Johs. Kolltveit is a 53-year-old Bachelor of Commerce, currently working as senior adviser in the Division of Innovation within the Research Council in Norway. He focuses on strategic development of the research institutes and their finance, budgets and reports. He should know the workings of Nordic cooperation very well, as he worked for six years in the Nordic Council of Ministers in Copenhagen as Director of the department responsible for agriculture, forestry and the environment.

As chairman of SNS Johs. Kolltveit's ambition is to make SNS a visible and effective adviser to the Nordic Officials Committee and Council of Ministers for Agriculture and Forestry in matters concerning forests and forest research. SNS should also strive to promote and finance new and more effective forms of contact for networks linking researchers from the Nordic countries and adjacent areas.

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Editor's summary, cont.

• When planning the use of natural resources, the opinions of many different interested parties often need to be considered. Knowledge about the relationships between these groups and their roles in regional networks can help to understand and improve the planning process. **Jukka Tikkanen** and coworkers studied the networks of forest-related organizations in northern Finland. They were able to group the organizations depending on whether they were essentially private-forest oriented, nature-oriented or had other connections, of varying sorts, with forests or forestry. They analysed aspects such as their attitudes towards other organizations, and found that environmental and forestry organizations clearly distrusted each other.

• The effect of public support for private forest investments was the subject of a study by **Mikael Linden and Jussi Leppänen**. They analysed data from Finland in the years 1963–2000, a period in which there was extensive governmental support. The public support usually had a positive impact on the private investments, for which it was complementary. In some cases, public support even led to over-investment by the forest owners. In other cases, public support provided a substitute to private investment.

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