

Editor's summary

The following is the editor's condensed summary of the articles in this issue. The articles cover a wide range of subjects and methodologies, from growth chamber studies, through field bird surveys and gender research, to X-ray technology in sawmills. As usual, authors also represent diverse nations, with contributions from at least seven countries.

- Autumn frost damage seems to be an important constraint for the distribution of common oak in northern Europe. **Jan Svejgaard Jensen** and **John Deans** found large differences in autumn frost hardiness among provenances. Oaks from Atlantic areas were less resistant than Nordic oaks. The study was based on artificial freeze tests, where different test methods were also evaluated.
- Very weak short-term effects of pollutants on seedling growth and mycorrhiza have been found by **Oili Tarvainen** and colleagues after testing pine seedlings in open-air chambers with elevated levels of ozone, sulphur dioxide and nitrogen oxide. The experiment lasted for four months, and a longer duration is probably needed to observe pronounced effects on the seedlings.
- Nutrient loading of seedlings in the autumn before planting could improve outplanting success, since improvements in the nutrient status could help the seedlings to grow and compete with other vegetation. **Risto Rikala** and his colleagues investigated the effects of adding fertilizer to the seedlings in August. They found that nutrient loading



Photo: Skogforsk

Where are all the women foresters?

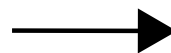
increased growth up to three years after planting, and recommend the approach, especially when planting seedlings in nutrient-poor soils.

- Salal and huckleberry are two North American woody plants that compete severely with conifer regeneration. Salal can develop a dense cover on the ground a few years after stands have been harvested. **Barbara Hawkins** and **Gordon Henry** investigated if the two species were affected by nitrogen and shade, and they found that fertilization with nitrogen reduced the performance of salal.
- Finnish Lapland is one of the most northern parts of the world with forest cover, and yet the forest has been commercially exploited for over 100 years. Experience gained over the years can thus provide unique insights concerning sustainable forestry strategies in harsh conditions. **Martti Varmola** and his colleagues have now compiled a comprehensive review of earlier studies, many of them presented to an international audience for the first time.
- For stand management it is often valuable to have information on the volume of all trees, but usually only

measurements of the diameters are available. **Mahadev Sharma** and **Shu Yin Zhang** here present a method to model the heights of the trees too, thereby making it possible to estimate volumes. They used information on parameters such as stand density, basal area and site index, to establish height-diameter models for jack pine and black spruce in Canada.

- Clearcuts along lakes may have strong negative effects on the environment. Therefore, it is often recommended to leave a buffer strip to preserve biodiversity, aesthetic values and water quality. However, little is known about the biological value of such strips. **Sigmund Hågvar** and colleagues have now studied the birdlife in 370 forest strips in Norway. Based on their results, they recommend that a buffer strip of about 30 metres should be left, to ensure that sufficient bird species are present.

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Forest research in north-western Russia
part II. 386–388



Forest research in northwestern Russia part II

In the previous issue (no. 4, 2004), *News and Views* began a description of forest research in northwestern Russia, with a regional overview followed by a presentation of activities in the Arkhangelsk area. This issue continues, by outlining research in St Petersburg, Petrozavodsk and Syktyvkar.



St Petersburg Forestry Research Institute

St Petersburg Forestry Research Institute was established in 1929 as the State Forestry Research Institute, and it was the primary research institute in the Soviet Union for a long period.

The institute has changed its name and role over the course of time. The 1990s saw harsh cutbacks in its funding, and the volume of research and development was slashed, followed by a three-fold reduction in staff numbers and the loss of a network of experimental forestry stations. Despite these difficulties, the institute has managed to maintain a

leading position at an all-Russian level in a number of fields, including:

- fire control, e.g. fire prevention, detection, fire extinguishing, development of machines and tools for fire control, ecological effects of fire.
- accelerated growth of industrial coniferous plantations, including establishment techniques, use of improved seeds, soil improvement and growth models.
- chemical treatment in the forest, especially the use of herbicides.

The institute currently has about 130 employees, 10 of whom are professors and 32 have a PhD.

Publications

Proceedings of St Petersburg FRI is published annually. In addition, 4–6 monographs are published in Russian, with English summaries.

The last publication in English was “Statistical data on forest fund of Russia and changing productivity in the second half of 20th century” by V.A. Alexeyev, M.V. Markov and R.A. Birdsey, St. Petersburg FRI, 2004. 272 p.

International cooperation

The institute participates in several formally agreed international projects, with organizations such as the Finnish Forest Research Institute, the Dutch Agricultural University and Research Centre, Wageningen, the Lithuanian Forest Research Institute, the University of Helsinki (Finland) and the Swedish University of Agricultural Sciences.

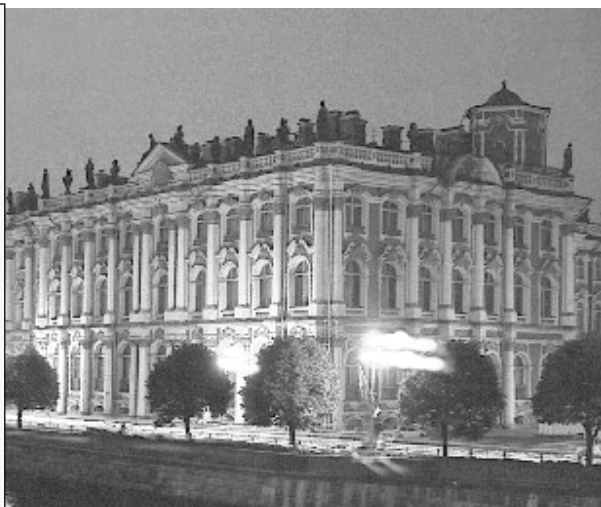
Source: Dr Anton Doroshin
www.spbniil.ru

The picture shows the classically-inspired Winter Palace (built 1754-64)

Read more about forest research in the North in previous issues of *News & Views*:

- Iceland No. 2, 2003
- Finland No. 3, 2003
- Norway No. 4, 2003
- Sweden No. 5, 2003
- Denmark No. 6, 2003
- Estonia No. 1, 2004
- Latvia and Lithuania No. 3, 2004
- NW Russia I No. 4, 2004

www.nordicforestresearch.org



St Petersburg State Forest Technical Academy

St Petersburg State Forest Technical Academy is the oldest and largest forest educational institution in the world, funded from 1803 by Tsar Alexander I.

"The Academy is widely recognised, even in the most remote regions of Russia, to be staffed by highly-trained experts and excellent teachers, incorporating 200 years of pure forest science and practical forestry", says Professor V. I. Onegin, Rector of the academy.

Its name has changed several times during its history, but its main purpose has remained the same: educating forest specialists.

Professionals are trained in the fields of forest ecology, forestry, wood processing, forest chemistry, and pulp/paper processing. In addition, the academy conducts basic and applied research.

The research is carried out by professors and scientists, among whom 84 are doctors of science and 350 are doctoral candidates.

For many years the Academy has fruitfully cooperated with leading universities

and scientific organisations in Finland, USA, Germany, France, Sweden, China and other countries.

Source: Olga Shaitarova & Evgeny Kuznetsov. www.ftacademy.sp.ru



Karelia – the Petrozavodsk State University

The Forest Engineering Faculty of Petrozavodsk State University is the only university department in the republic to offer professional forestry courses towards the degrees of Engineering Diploma (MSc), Science Candidate (PhD) and Doctor of Science (DSc). Currently, 230 students are in their first year.

The faculty conducts research in a large range of forestry topics. Several projects are being pursued in cooperation with foreign organizations, such as Joensuu University and Helsinki University in Finland, and the Swedish University of Agricultural Sciences. The institute would welcome further cooperation, especially in the field of forest engineering.

Some examples of ongoing research projects:

Planning and manufacturing forest machines

The goal of this project, which is being run in cooperation with the University of Joensuu, is to develop digital models, and related software, of their performance to ensure the effectiveness of forest machines at the

planning stage and their presentation as algorithms and programs. In addition, failures during use are investigated. The researcher with overall responsibility in this field is Professor A. Pitukhin.

Species diversity and game numbers in the taiga

This project is concerned with characterization of the species diversity of the undisturbed taiga in Karelia, and compares the number of game species in the taiga of Karelia and Finland. The project is led by Yu Kurhinen in cooperation with counterparts at the Game and Fisheries Research Institute in Finland.

Development of forests under natural conditions

The species composition, resistance and structure of primeval forests, as well as their regenerative processes, are being studied here. The project is led by V. Sakovets at the Forest Research Institute, the other of the two research bodies in Karelia. The project involves cooperation with the Finnish Forest Research Institute.

Source: www.karelia.ru/psu

About Karelia

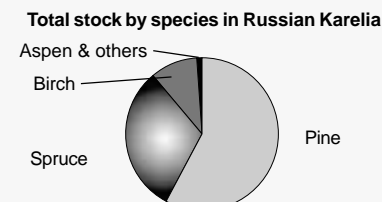
The republic of Karelia is a vast and sparsely populated region in the north-west of Russia. Its total land area is 18 million hectares, 51 % of which is covered with forest.

A large proportion of the land is covered by water bodies, such as the great lakes of Ladoga and Onega.

The population is about 760,000, 40% of whom live in the capital Petrozavodsk.

The average population density is only four inhabitants per km².

The forest industry is the most important economic sector, accounting for 44% of the total industrial production (by value) in the republic.



Komi Science Centre

The most easterly part of European Russia – the Komi Republic – is the home of the Institute of Biology, Komi Science Centre of the Russian Academy of Sciences. Its office is in Syktyvkar, capital of the Komi Republic.

The institute was founded in 1962 and currently has a staff of about 340 employees. The institute has several departments and laboratories, covering the fields of botany, soil science and animal ecology. The forest research is carried out by the Forest Biological Problems of the North Department, which has 24 employees. The main research areas are:

- forest ecology
- tree breeding and forest genetics
- forest health
- tree physiology



The Institute of Biology participates in several international projects together with bodies in the Netherlands (RIZA), Switzerland (WSL/FNP), Finland (Metla), Sweden (SLU and Skogforsk) and several Norwegian universities and institutes.

Larch seedlings aimed for establishing a progeny trial in cooperation with Scandinavia. Photo: Jaap Buitink.

Source: Aleksey Fedorkov, e-mail: fedorkov@ib.komisc.ru

PROCES – the centre of a network

The European Forest Institute (EFI) has a regional project centre in Russia, with the acronym PROCES.

This forest research and training centre was established in 1999 and is located within the St Petersburg State Forest Technical Academy, but its work is carried out under the scientific umbrella of EFI.

PROCES' main tasks are to:

- conduct research in the field of sustainable forest management
- create a scientific network for universities, research institutes and other organizations linked to the forest sector.

Research at the centre:

Initially, a project was set up to analyse and model the development of the forest resources in European Russia. Two main sub-projects are running at present:

- Forest resource scenario modelling for the European part of Russia. The project leader is A. Lioubimov at SPb SFTA.
- Economic evaluation and implementation strategies for forestry scenarios relevant to the European part of the Russian Federation. The project leader is Professor Anatolij Petrov of the All-Russia Research Institute for Silviculture and Forestry Mechanisation.

Other projects:

- Planning and management systems for the St Petersburg Forest Greenbelt, led by Cecil Konijnendijk at the Danish Forest and Landscape Research Institute, Denmark.
- Risk assessment in forest scenario modelling, led by Andrey Selikhovkin at SPb SFTA.

Since networking is one of the main intended functions for PROCES, many partners within and outside Russia are linked to the centre. The highest priority partners are located in the European part of Russia, Ukraine and Byelorussia, but the centre also has partners in Finland, Germany, Sweden, Norway and the Baltic countries.

www.efi.fi/rpc/proces

Call for cooperation

The EFI Regional project centre in St Petersburg is interested in cooperating with research and educational institutes, commercial companies, other organizations and individual persons in activities related to various scientific and educational projects, publications, seminars, workshops and conferences. Interested? Send an email to: proces.fta@home.ru

Cont from cover page (385)

● Women own much of the private forest land, and women also work in the forestry sector, but still they are often invisible in the media (in this context) and in forestry organizations. The article by **Berit Brandth** and her colleagues investigates the role of a separate women's organisation for increasing women's influence. They also studied how women have been described in forestry media over time. Twenty years ago women in forestry were assistants, daughters or spouses of forestry professionals, but now they are often presented as experts in their own right.

● Bucking is the process whereby a stem is cut into logs. This process determines much of the product value of the trees. Better information about the internal qualities of the stem would allow bucking and log sorting processes to be improved. **Urban Nordmark** and **Johan Oja** found that 3D scanning of stems, particularly in combination with X-ray scanning, would provide information about internal knots and other properties in the stems, that would help to grade logs and suggest higher precision bucking strategies.



Shortcuts

Norway Environmental award for polymer research

Stig Lande, a former student at the Agricultural University of Norway, has been awarded the "Glass-bear" environmental prize. Lande developed a method that induces polymer formation in the wood with the use of a byproduct from sugar production. The polymers makes the Nordic wood

hard as tropical wood, and resistant to rot and other pests. The company Wood Polymer Technology is responsible for the future development of the innovation.

Stig Lande receives the prize for his environmentally friendly method to improve wood. Photo: Kjell Magne Kaasa

**Sweden Fresh cloudberries for Christmas**

The first crop of cloudberries cultivated under controlled conditions in the greenhouse is seeing the light in Alnarp in southernmost Sweden. Cloudberries (*Rubus chamaemorus*) grow naturally on mires in Scandinavia, but efforts to crop the berries in their natural environment have usually failed due to frost damage. Researchers are now developing methods to grow cloudberries in greenhouses instead. It is no longer a dream but a realistic alternative to harvest fresh

cloudberries for Christmas or Easter, according to Swedish University of Agricultural Sciences.

Source www.slu.se



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- relevant to the Journal
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