



FR Eye
April 2008

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Welcome, to the April issue of *FR Eye*!

Well, I would say this is the spring issue, but with the recent snow and ice I'm no longer sure just what season it is anymore... Just as well we have our own climate experts to assist with such deliberations!

This month's issue has an international flavour, with news of a recent visit by the Russian Federal Forestry Agency, as well as collaboration with colleagues at the Norwegian Forest and Landscape Institute in Ås, Norway. We also have news about ongoing work towards peatland restoration and management in the UK, and details of a workshop to discuss techniques for encouraging natural regeneration in native pinewoods. And much more...!

If you've missed any previous issues, they can be accessed via our archive at:
www.forestresearch.gov.uk/freye

If you would like to contact the editorial team or to request an email notification of future issues as they go live, write to us at: **newsletter@forestry.gsi.gov.uk**

Members of the Russian Federal Forestry Agency recently had a whirlwind tour of the UK, including meetings with Forestry Commission's Director General, Forestry Commission Scotland and Forest Research at Alice Holt Research Forest, in Surrey.

The visit to the UK followed from a discussion between Phil Woolas MP, Minister of State, Department for Environment, Food and Rural Affairs (Defra), and Valery Roshchupkin, Head of Federal Forest Agency, Russia, at the 5th Ministerial Conference on the Protection of Forests in Europe, in Warsaw in November 2007. The purpose of the visit was to help inform the forestry debate on climate change in Russia, build links between UK and Russian forestry and climate officials, and identify areas for future co-operation.

Tim Rollinson, the Director General of the Forestry Commission, hosted the first stage of the Russian visit, which included presentations and detailed discussions on climate change, forest monitoring, inventory work and certification. Forestry Commission Scotland organised a visit to the Cowal and Trossachs Forest District, before the group travelled to meet timber trade organisations in London. Their visit to Forest Research focused on the proven knowledge and expertise of Forest Research and the wider FC in the key area of forests and climate change. The party was welcomed by Acting Research Director Professor Andy Moffat and received presentations from climate change experts James Morison and FC England's Mark Broadmeadow. In the afternoon the group visited Alice Holt Research Forest where they saw FR's climate change tower,



eddy flux monitors, soil carbon experiments and long-term monitoring plots. The delegates were impressed by the attractive spring feel of a mixed broadleaved woodland and the extent of public access. They were also very interested in the labelling of some hardwood logs stacked at the roadside, since illegal logging is a significant challenge in Russia.

The Russian forest industry urgently needs decision-support information to support its vast areas of forest and are interested in the Forestry Commission's policy, research and position on sustainable forest management and climate change. Climate change poses a serious threat to Russia's boreal forests, with drought in Northern Russia causing dieback in about 5 million hectares of forested land. Russia's Federal Forest Agency is hosting an international conference on forests and climate change in St Petersburg later this year and it is hoped that the FC and FR can share expertise and know-how with Russian colleagues, both at this conference and in future work. Following these initial discussions, the Forestry Commission's International Policy team will look to develop further collaboration with the Russian Federal Forest Service.

Climate change is among the UK Government's highest priorities. That Russia and its forests are, and will play, a vital role in how the world confronts the challenges of climate change is perhaps less well known. This visit and its follow-up opportunities will increase its prominence and give Russian efforts on climate change and sustainable forest management a considerable boost.

Hugh Williams

Research Liaison Officer (England)

Forest Research social scientist Anna Lawrence gave a keynote presentation at a recent international conference in Vienna on 'Mountain Forests in a Changing World'. Organised by the University of Natural Resources and Applied Life Sciences (BOKU), the conference highlighted the significance of mountain ecosystems as responsive indicators of climate change.

Anna's talk, entitled 'More than production: forests, livelihoods and social significance for mountain people', considered adaptive and collaborative approaches to forestry, which are especially important in the mountain context. One of only two keynote speeches focusing on social aspects of mountain forestry, it was based on Anna's previous work on case studies in Nepal, Bhutan, Philippines and Romania.

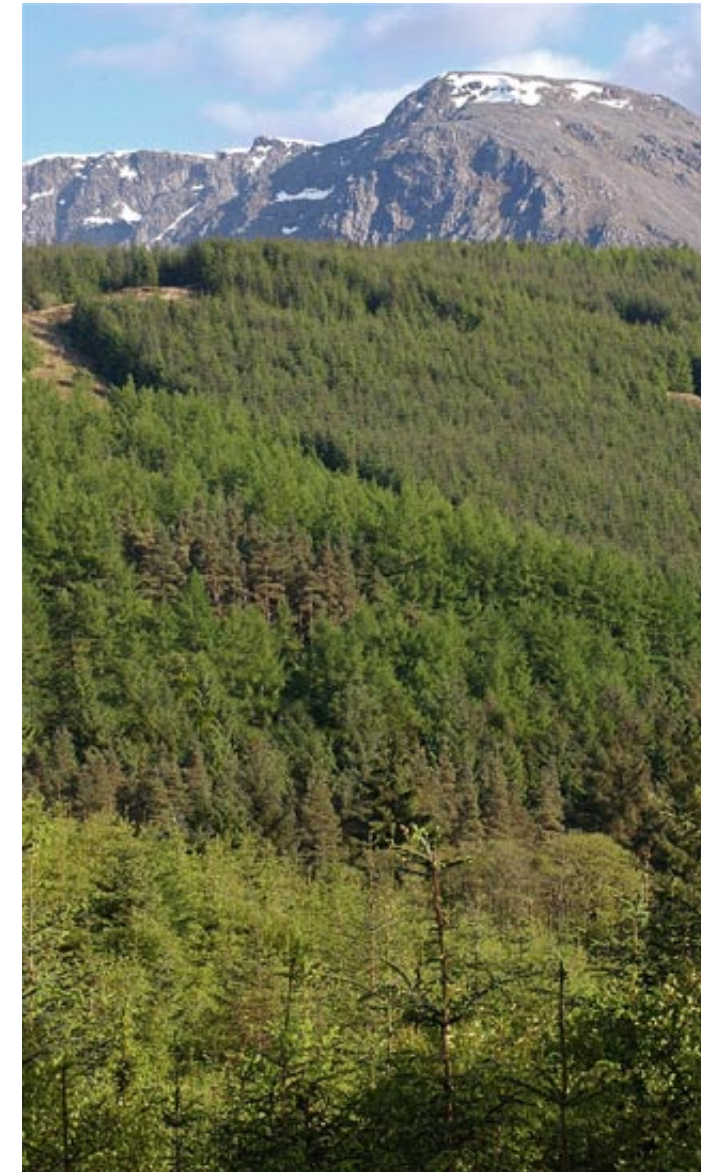
Anna explains: "In mountain forestry, the close relationship between people and forests requires attention to cultural and institutional aspects, and the processes by which forestry knowledge develops."

The final lively plenary session discussed the need for forestry education to be more broad-based, for forestry students to recognise good quality social science and to be more aware of the value of different forms of knowledge.

Anna commented: "There are many interesting studies of mountain forest use being carried out, but there is more scope for increasing the links between social science and forestry practice and policy. We also need to consider the role of cultural meanings in contributing to forest management."

The event was funded by a number of global organisations, including the International Union of Forest Research Organizations (IUFRO), the Mountain Partnership, and the United Nations Environment Programme (UNEP).

For more information about FR's social science research, contact **Anna Lawrence**.



The Scottish crossbill (*Loxia scotica*) is the UK's only endemic bird species and is on the World Conservation Union (IUCN) red list of threatened species. The bird is dependent on conifer woodlands for survival and is thought to rely on a range of conifer species for food, switching between species in response to seed availability throughout the seasons. The first ever full census of crossbills is currently underway in Scotland as part of the Statutory Conservation Agency/Royal Society for the Protection of Birds (RSPB) Annual Breeding Bird Scheme (SCARABBS). One component of the work is a survey by Forest Research to determine the availability of the Scottish crossbill's food, conifer seed.

Coning assessments are being carried out at selected sites in Scotland on Norway spruce, Sitka spruce, larch and lodgepole pine. At each site, cone production is being scored on a selection of 20 to 24 trees, recording the current year's cones on spruce and larch, and the green cones on pines (the seeds of which will become available to crossbills in the winter and early spring). This information will then be added to existing data for Scots pine from the Forestry Commission's Forest Condition Monitoring survey.

The coning data, together with the results of the crossbill survey, will show how the birds use forests and the differing importance of particular conifer species, especially in relation to cone productivity. It will also clarify the birds' habitat requirements and how best to manage conifer forests to suit their needs.

Information on coning, and therefore their food resource, will be linked to an RSPB national survey of Scottish crossbills, which aims to estimate population size.

For more information see www.forestresearch.gov.uk/fr/INFD-6ACEGS



Male Scottish crossbill feeding female at nest, © David Whitaker

Sam Catchpole

Forest Research has a team of three Research Liaison Officers (RLOs) who provide dedicated links between FR and the Forestry Commission, and the many private and public forestry and land-use stakeholders throughout Great Britain. The team includes Hugh Williams (England), Chris Jones, (Wales) and Steve Penny (Scotland). They work to find ways of making access to research information and expertise both easy and relevant to users, enhancing the knowledge of forest research output for practical use, and assisting in the delivery of national policies. Equally importantly, they listen to outside requests for information and seek the forest industries' and users' views on research needs.



Left to right: Steve Penny, Hugh Williams and Chris Jones

The RLOs can be contacted as follows:

- Hugh Williams, Alice Holt Lodge, tel: 01420 526188; mob: 07909 906976; e-mail: **hugh.williams@forestry.gsi.gov.uk**;
- Steve Penny, Northern Research Station, tel: 0131 445 6989; mob: 07808 900331; e-mail: **steve.penny@forestry.gsi.gov.uk**;
- Chris Jones, Talybont, tel: 01874 676444; mob: 07770 735114; e-mail: **chris.jones@forestry.gsi.gov.uk**.

Forest Research's Russell Anderson presented a poster on his work at a recent conference on 'Peatland restoration and management in the UK' and was enthusiastic about the opportunity to share details about the Forestry Commission's work in developing techniques for restoring peatlands.

Peatlands have been described as 'Britain's rainforests', because they are very valuable both for their role in carbon storage and as essential habitats to some important UK species. However, drainage, pollution, over-grazing and fire can damage them.

Russell's poster demonstrated the large number of forest-back-to-bog restoration projects in Britain and the FC research projects supporting this activity. He found that many participants were surprised to see the extent of the commitment by the FC and other forest owners, especially the RSPB, to this effort.

Organised by the Moors for the Future partnership, the conference brought together peatland restoration practitioners to inform them of a new compendium of UK peatland restoration and management projects being compiled by the partnership on behalf of Defra. A number of Forestry Commission projects will be included in the compendium and Jonathan Spencer from Forestry Commission England described two examples of restoration projects on Kielder's Border Mires and the New Forest Valley Mires.

A web-based version of the compendium is being developed and additional projects can be added by submitting a short questionnaire to Moors for the Future.

Russell explains: "It is so important that all the FC's peatland restoration projects are included in the compendium and we join the growing network of practitioners able to exchange practical information to restore these valuable habitats".

For more details of Forest Research's work on peatland restoration, contact **Russell Anderson**.



Earlier this year, Forest Research pathologist Sarah Green spent three weeks at the Norwegian Forest and Landscape Institute in Ås, Norway, to learn the theory and techniques of real-time polymerase chain reaction (PCR) for detection of tree diseases.

Real-time PCR is a highly specific, sensitive and rapid method of identifying pathogens based on the detection of specific DNA regions unique to each organism. The technique can also be used to quantify accurately the level of pathogen infection in the host tissue.

During her stay, Sarah worked alongside staff of the molecular biology lab, including Senior Research Scientist Carl Gunnar Fossdal, whose particular area of interest is forest health. The group has considerable experience in developing real-time PCR tools for the detection and study of tree diseases important to Norwegian forestry.

Sarah says: "I was able to work with an already established real-time PCR method for detection of a species of *Phomopsis* associated with drought-damaged Sitka spruce in Scotland, and we also developed a real-time PCR method to detect the bacterium *Pseudomonas syringae* pv. *aesculi* that causes bleeding canker of horse chestnut in the UK.

"It was exciting to learn the necessary skills to use quantitative real-time PCR as a research tool for forest pathology and I came back very keen to use them in working with my FR colleagues. The visit also resulted in an ongoing collaboration between Forest Research and the Norwegian Forest and Landscape Institute. For both these reasons, I think the Senior Fellowship funding by the British Society for Pathology is a hugely valuable initiative for researchers such as myself and for making the best use of research expertise."



Only a healthy and happy operator can be a productive operator! This is the message from COMFOR, a collective research project co-funded by the European Commission, which is tackling the common problems of occupational health and performance in European forest operations.

The three-year project currently has ten forestry small and medium enterprises (SMEs) around Europe, supported by a team of researchers, working to develop guidelines, methods and tools to analyse the health and well-being of forest machine operators. The goal of the project is to improve operators' health and well-being, reducing lost time and money caused by illnesses and poor well-being, which in turn will improve overall productivity.

As a COMFOR partner, Forest Research is working with one of the ten SMEs, Harpers Harvesting and Transports Ltd, based in Aberdeenshire. In the initial phase of the project, FR collected information about forestry and socio-economics on a national level, as well as information about the partner SMEs. This information, along with that from other partner countries, was essential to help COMFOR understand the conditions and constraints of forestry businesses.

At present, FR and Harpers are working to test and refine the methods and tools developed by COMFOR for use in the UK. The SMEs' experience and feedback is critical to help ensure both the design and content of the tools will be applicable and useful for other contractors. Together, FR and Harpers have contributed towards defining a series of guidelines and checklists for forestry contractors, including:

- ▶ checklist for a good work environment in an operator's cab (e.g. safe access and temperature control)
- ▶ assessment of an operator's health and well-being
- ▶ assessment of 'work load points' (i.e. physical strain on a worker) depending on the organisation of activities in a day

Following a meeting in Finland earlier this year, Forest Research and the other COMFOR project partners are preparing for the dissemination phase of the project, where the findings will be used to train forestry contractors throughout Europe.

For more information, contact **Stephanie Roux**.



FR's Colin Edwards recently held a one-day workshop for foresters and conservationists to consider techniques for encouraging natural regeneration in native pinewoods, particularly in areas under deer pressure, and to explore forest managers' expectations of these techniques.

Kicking off proceedings at Glenmore Lodge (Grampian Region, Scotland), Helen Armstrong described the effects of deer and cattle on Scots pine regeneration and presented results from a cattle grazing experiment in Glen Garry. Sarah Taylor then gave a presentation on 'Regeneration dynamics in pinewoods'. This study is part of a larger project developing a stand-level population model for native pinewoods.

Colin Edwards gave a talk on 'Seventy-seven years of natural regeneration trials: results to date'. He presented data from two long-term monitoring plots, which indicate that current pinewood populations lack young trees, but that this may be addressed using locally intensive site disturbance. Anne Elliott from Scottish Natural Heritage introduced the Kinveachy long-term fenced exclosures and presented data on the slow growth rates of seedlings from this area.

Mark Hancock (from the RSPB) discussed the impact of a deer cull in Abernethy and the resulting increased seedling numbers. He explained how the RSPB are also using controlled fires and cattle that mimic trampling by large wild herbivores to imitate natural disturbance in their efforts to manage for forest expansion.

After the presentations, an animated discussion of the wider implications of deer management and regeneration was followed by site visits to Glenmore long-term research plot and Kinveachy Estate.

The workshop enabled participants to understand that their expectations of seedling growth were unrealistic compared to the actual rates of height and density development measured in research trials. They recognised that longer time frames were needed for natural regeneration to take effect, and that techniques to increase growth may need to be considered where rapid results are essential.



A new herbicide field trial at Forest Research's nursery in Headley will be treating woody weeds with a range of herbicide mixes. The results will be assessed and analysed over the next 12 months by Forest Research's Technical Services Unit (TSU) for a commercial client.

Such trials must be carried out under strictly controlled conditions, and FR's nursery at Headley provides over 6 ha of flat, free-draining soil with full irrigation, flexible power supplies and fencing to exclude deer and rabbits. With its close proximity to skilled staff and research expertise at Alice Holt, Headley Nursery is an ideal location for complex, field-based research, providing more controlled conditions than would be possible in a conventional forest setting. Forest Research is also certified by the Pesticide Safety Directorate (PSD) to undertake efficacy testing of pesticides on site and all such work is subject to Quality Assurance standards.

Anyone seeking further details of facilities and services offered at Headley Nursery should contact **Mark Oram**, TSU Field Station Manger, or visit www.forestresearch.gov.uk/fr/infd-5veb6r



Forestry Commission Bulletin

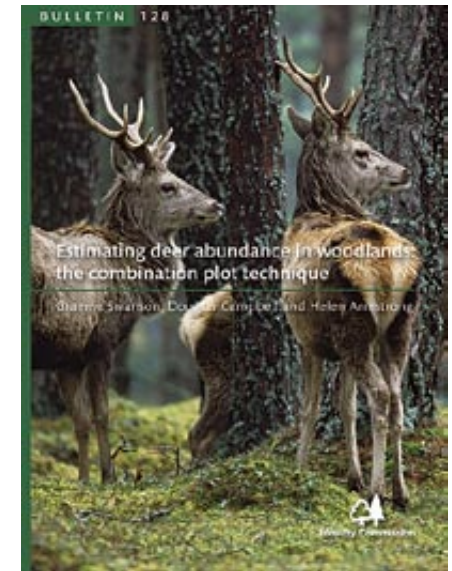
Estimating deer abundance in woodlands: the combination plot technique

Graeme Swanson, Douglas Campbell and Helen Armstrong (FCBU128)

Price £17.50

There are six species of deer living in Britain today and one or more species can be found in most woodlands. At low densities deer browsing rarely impairs tree growth and can enhance the biodiversity value of woodlands. At higher densities, however, deer may affect the success of woodland establishment and damage biodiversity. It is often necessary to control deer populations through culling to limit these effects. Land managers need a means of measuring the numbers of deer on their land to help them set appropriate culling targets and discover how effective control measures have been.

This Bulletin describes a technique for measuring deer abundance in woodlands. The technique is a variation of the faecal accumulation rate method and was developed and refined using data from more than ten years of monitoring and research by Strath Caulaidh Ltd. In justifying their choice of each element of the technique, the authors also provide one of the most comprehensive overviews of dung counting methods available. This Bulletin will be of use to both deer managers and deer researchers as well as being of interest to those considering using a dung counting method to monitor the density of other herbivore species.



National Inventory of Woodlands and Trees 1995–1999

Justin Gilbert (online only)

A report of the management and biodiversity data collected during the survey but not included with the main statistics on woodland area that was published in 2008. This can be downloaded at: **Analysis of Management and Biodiversity Data**.

Forestry Commission Field Guide

Timber Measurement

Ewan Mackie and Robert Matthews (FCFG002)

Price £16.00

The Forestry Commission Field Guide *Timber Measurement* was first published in 1983 as Booklet 49. Its punchy, practical style proved popular with practitioners trying to work out how to take basic measurements on trees and timber and apply standard forest mensuration procedures in the field.

This revised edition has been produced primarily to achieve consistency with the second edition of *Forest Mensuration: a handbook for practitioners*. The aim has been to retain as much as possible of the content and style of the original book but the new edition includes a number of significant changes.

The main changes are to the section dealing with weight measurement, which has been completely revised, while the content of the discussion of abbreviated tariffing has been amended for consistency with *Forest Mensuration: a handbook for practitioners*. In addition, we have strengthened the guidance given on how to estimate the volume of timber that has been felled and removed from site. The opportunity has also been taken to make small refinements to the information in all sections to improve clarity. In a departure from the original format we have included a number of decision trees to help guide users through the various methods and procedures.

The Guide is designed for field use. It assumes some knowledge of, and training in, the forest measurement procedures which are more fully described in *Forest Mensuration: a handbook for practitioners*. There are three sections in the Guide. The first section, 'General aspects of measurement', is intended as a reference section, and includes definitions of various terms, the conventions used in forestry in Britain, and the basic measurement methods. The second section, 'Measuring standing timber' includes specific methods for a variety of possible situations, which makes the Guide easier to use, although it has led to some duplication. It is hoped that this section will help to standardise the measurement of standing timber, and that sales negotiations will be simpler if both parties can agree, for example, that the volume should be estimated using abbreviated tariff method 'B6'. The final section, 'Measuring felled timber' outlines the methods for measuring both individual logs and stacks of logs, as well as the measurement of timber based on weight.



Monitoring urban greenspaces using Methuselah

Methuselah is a strategy for monitoring the sustainability of urban greenspaces and assessing their effectiveness in delivering their purported benefits.

www.forestresearch.gov.uk/fr/INFD-7D4J9Q



Growing Places — Social and Economic Research Group newsletter, first issue

The Social and Economic Research Group is part of the Environmental and Human Sciences Division of Forest Research and carries out research to develop a better understanding of the ways in which trees and woodlands can benefit society.

www.forestresearch.gov.uk/growingplaces



Rural Research and Strategy Partnership

The Partnership has been formed by Forest Research and other leading research organisations to broker and develop collaborative thinking between South East England's rural policy makers and the research community.

www.forestresearch.gov.uk/rrsp

Full details of FR's events are available from the FR website: www.forestresearch.gov.uk/events

23–24 April

Carbon Lean UK – A role for our trees, woods and forests? – Institute of Chartered Foresters (ICF) National Conference 2008, University of Edinburgh
www.forestresearch.gov.uk/fr/INFD-7AMGLM

29 April

Evaluating and classifying timber for the wood processing industry – Seminar to review research to date with emphasis on its application to predominant commercial species in south-west England. Forest Research, Confederation of Forest Industries (ConFor) and South West Woodland Renaissance, Exeter Racecourse, Exeter
www.forestresearch.gov.uk/fr/infd-64EAUS

19–21 May

Towards understanding wood, fibre and paper – deeper knowledge through modern analytical tools – Final seminar of COST Action E41 (Analytical tools with applications for wood and pulping chemistry) and Workshop of Action E50 (Cell wall macromolecules and reaction wood). Åbo Akademi Process Chemistry Centre, Åbo, Finland
www.forestresearch.gov.uk/fr/INFD-7D3G99

26–30 May

Alien invasive species and international trade – Second Meeting of IUFRO Working Party 7.03.12 covering invasive organisms, including insects pathogens and plants Sheperdstown, USA
www.forestresearch.gov.uk/fr/INFD-7AME84

14–19 September 2008

The Woodfuel Supply Chain – Sharing experience

Workshop to present shared experience of the development of the woodfuel supply chain in England and elsewhere; problems solved, milestones achieved and hurdles yet to be overcome. Biomass Energy Centre in conjunction with IEA Bioenergy Tasks 31, 38 and 40, University of Warwick

www.forestresearch.gov.uk/fr/INFD-7BHETH

17–19 September 2008

SilviLaser 2008: LiDAR applications in forest assessment and inventory

Conference themes include LiDAR data fusion, forest applications, algorithm and techniques development, large-scale applications of LiDAR, operational LiDAR and new technologies.

www.forestresearch.gov.uk/silvilaser2008

17–19 September 2008

Impacts of pollution in a changing urban environment

Conference to address the challenges posed by pollution in cities.

PURC consortium, University of Manchester

www.forestresearch.gov.uk/fr/INFD-7CAC5U