

FR News

News from Forest Research, Autumn 2011

FR News is a free quarterly newsletter that is distributed to a wide range of organisations and individuals who have interests in trees, woods and forests.



Woodland for Water

Forest Research and ADAS UK Ltd have just completed a major review of the water services provided by woodland. The Environment Agency and Forestry Commission England funded the work in order to gauge the potential for utilising woodland to tackle a number of growing pressures on the water environment, including diffuse pollution and flooding.

The review, which has now been published, evaluated both the interactions between woodland and water, and the policy options to control risks and promote benefits. While the focus was on native woodland creation, consideration was also given to the impact of new conifer woodlands and bioenergy plantations.

There is strong evidence to support woodland creation to benefit the water environment. The case is greatest for woodland acting as

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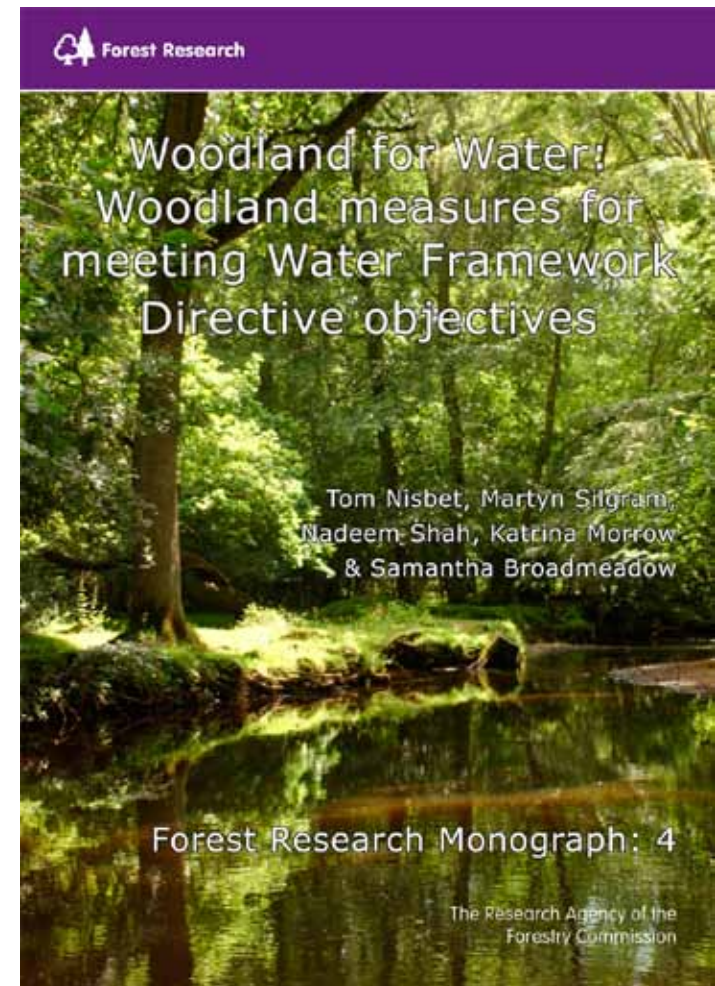
a sink and trap for diffuse pollutants, such as sediments, nitrogen, phosphate and pesticides. There is also increasing evidence that riparian and floodplain woodland could make a significant contribution to flood alleviation. This factor, together with the ability of woodland to control summer water temperature extremes, is expected to become increasingly important for mitigating the impacts of climate change.

The review cites examples from around the world of effective payment schemes for water-related forest services that have succeeded in achieving woodland creation for water protection. A case study is also presented showing how 'opportunity mapping' can help target the best sites for planting. It is hoped that the work will lead to incentives and regulatory controls being used more effectively to secure woodland opportunities for water.

The main report on this work can be found, along with the mapping and summary reports, at www.forestry.gov.uk/fr/woodlandforwater.

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Tom Nisbet



Cultural and spiritual values of European forests

Forest Research's Social and Economic Research Group (SERG) was asked to prepare a data collection protocol, and to analyse and report on 'Cultural and spiritual values' for an overall assessment of the State of Europe's Forests 2011. A full report was launched this summer at the FOREST EUROPE Ministerial Conference in Oslo, Norway, which provided a comprehensive, up-to-date description of the status and trends of forests and forest management in Europe as a means to support policy decisions relating to forestry.

Forest Research's work focused on recording the cultural and spiritual values of forests, which is one of a number of indicators being investigated through the assessment. A rich diversity of cultural and spiritual values is known to be associated with forests, although many are intangible and difficult to define or quantify. This work recorded the number of sites within forests and other wooded land that are officially recognised for their cultural or spiritual values.

Following an examination of the data and comments provided by each country for previous reports on the State of Europe's Forests, and after consultation with cultural heritage experts, the categories and definitions previously used for this indicator were modified to reflect important distinctions in types of sites and features. Four categories were used:

- **Cultural heritage:** archaeological or historical sites and features
- **Forested landscapes:** areas that manifest the interaction between humans and our natural environment
- **Trees:** veteran or champion trees; trees associated with religious and spiritual practices and beliefs
- **Other sites:** sites of contemporary cultural and spiritual importance, e.g. venues for cultural performances, ceremonies or gatherings, or installation art



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Cultural and spiritual values of European forests (cont.)

In total, around one million sites were reported, of which around three-quarters were classed as being 'Cultural heritage'. There was considerable variation in the figures provided by different countries and the data must be treated with caution. Nevertheless, we argue that inclusion of this indicator is important because it helps to ensure that cultural and spiritual values are recognised in the definition of sustainable forest management, and places a duty on national governments across Europe to establish mechanisms to monitor them alongside the more tangible services that forests provide.

For more information or to download the report, visit www.forestry.gov.uk/fr/INFD-8LYBFP.

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David Edwards



New plant tissue culture laboratory opens

Forest Research has opened a new plant tissue culture laboratory at its Northern Research Station near Edinburgh. The lab aims to establish efficient and reliable protocols for the propagation of improved Sitka spruce tree material by somatic embryogenesis, i.e. the production of multiple embryos and then plants by proliferating tissues removed from seed-derived embryos.

This procedure has not previously been used commercially in the UK for conifers, but will aid the roll-out of the best performing 'varietal' Sitka material to the UK's foresters. The embryogenic tissues can also be cryo-preserved in liquid nitrogen so as to be available indefinitely.

The laboratory is fitted with all the equipment needed for making plant tissue culture media, including a temperature-controlled shaking incubator, a sterilising oven, a water polishing machine for providing the ultra-pure water that this work demands, and two laminar air flow benches for the sterile work itself. The workspace is divided into two parts; one area functions as a 'clean lab' where the delicate tissue culture work itself is undertaken, while the second part is a 'media lab', where the preparatory work is carried out.

The new facility will greatly improve progress in this key work area. Good success has already been achieved with Sitka spruce, and once we also have full confidence in the cryo-preservation protocols, these approaches could also be applied to other tree species, whether for commercial or conservation needs, or for research into disease resistance. The new lab follows the opening of a new seed research lab at Alice Holt earlier this summer.

For more information on our research into breeding and production of conifers, visit: www.forestry.gov.uk/fr/INFD-65FBR9.

Trevor Fenning



New publications

Research Reports

UK-India Forest Landscape Restoration

Edited by Mike Smith and Sandeep Tripathi

This report summarises a new UK-India collaboration on forestry that aims to develop knowledge exchange between the UK and Indian forest sectors, and to provide an overview of forest restoration activities in India and the UK. The report shows how Forest Landscape Restoration can safeguard biodiversity by taking a landscape approach using appropriate technologies and practical applications to produce real benefits for communities by working in partnership with them.

www.forestry.gov.uk/fr/INFD-6J9F7V

Human dimensions of adaptive forest management and climate change

Anna Lawrence and Sarah Gillett (FCRP016)

Adaptive forest management is a systematic process for continually improving forest management, in conditions of complexity and uncertainty, by learning from the outcomes of experiments and operational practice. Adaptive management has often been proposed as a suitable approach for dealing with uncertainty and complexity in natural systems, particularly in relation to climate change. Some of the most significant challenges for implementing adaptive management are social and institutional. This study reviews published evidence, to assess international experience in adaptive forest management and its implications for woodland management in the UK.

www.forestry.gov.uk/forestry/HCOU-4VXJ5B



(Cont.)

New publications (cont.)

Research Note

Environmental effects of stump and root harvesting

Andy Moffat (FCRN009)

The removal of tree stumps and coarse roots from felling sites as a source of woody biomass for bioenergy generation is well established in parts of Europe, and interest has been expressed in replicating this practice in some regions of the UK. Overseas research shows that stump harvesting can pose a risk to sustainable forest management, unless care is taken in site selection and operational practice. Poor practice can lead to detrimental effects on soil structure, increasing the risk of soil erosion, and depletes soil nutrient and carbon capital. Stump and root harvesting can also have impacts on woodland biodiversity, archaeological heritage and tree health. This Research Note offers a synthesis of available evidence on the effects of stump harvesting, drawn from largely overseas sources but critically considered for their applicability to British conditions.

www.forestry.gov.uk/forestry/HCOU-4VXJ5B



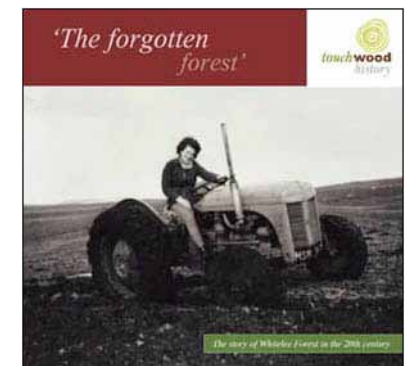
Forestry Commission Booklet

The forgotten forest: The story of Whitelee Forest in the 20th century

Ruth Tittensor (FCMS118)

This is the story of forestry in and around Whitelee Forest, based on the memory of those who lived and worked in forestry, knitted together from personal recollections.

www.forestry.gov.uk/forestry/HCOU-4VXJ5B



Our other newsletters:

Our scientists carry out research into many different aspects of forestry and land use. Some of their work is highlighted in several more-specific newsletters:

Growing Places

The Social and Economic Research Group (SERG) newsletter.



Latest issue covers:

- Human dimensions of species management
- Reducing the impacts of pests and diseases in our forests
- Models to support forest landscape decision-making in Scotland
- Assessing and communicating animal disease risks for countryside users

www.forestry.gov.uk/fr/growingplaces

Path News

The pathology bulletin.

Latest issue covers:

- *Phytophthora austrocedrae*
- Storm damage
- Larch casebearer
- One to watch for – *Chalara fraxinea*
- Oak Jewel beetle
- Massaria disease of London plane



www.forestry.gov.uk/fr/pathnews

Ecotype

The biodiversity and conservation newsletter from the Centre for Human and Ecological Sciences.



Latest issue covers:

- Woodland structure and birds – effects of woodland management and deer browsing
- LiDAR continues to discover new woodland heritage
- People-wildlife interactions
- Adaptive genetic variation of Scots pine in Scotland

www.forestry.gov.uk/fr/ecotype

Events

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

Alternatively, an email service providing details of newly announced events and other events that are organised or sponsored by Forest Research, or where Forest Research is participating. If you would like to receive this e-newsletter, please send your contact details to: fr.events@forestry.gsi.gov.uk

28 October 2011

Forest Health Day – England

Forest Research, assisted by Forestry Commission England, is running several Forest Health Days in England this Autumn. The next event will be held in Santon Downham on 28 October. Forest Research pathologists and entomologists will provide an update on the latest information about tree pests and diseases.

Santon Downham, Suffolk

www.forestry.gov.uk/fr/INFD-8J4BDM

3 and 4 April 2012

Valuing ecosystems: policy, economic and management interactions

A joint Scottish Agricultural College (SAC) and Scottish Environment Protection Agency (SEPA) Biennial Conference, in association with Forest Research, The James Hutton Institute and Scottish Natural Heritage.

University of Edinburgh

www.forestry.gov.uk/fr/INFD-8J9C5J

What's new on our website

Research projects

Health benefits of street trees

A literature review assessing the economic evidence for the health benefits provided by street trees, focusing on their role in moderating urban climates and environments.

www.forestry.gov.uk/fr/INFD-8JCEJH

Human dimensions of adaptive forest management

A project to assess the international experience in adaptive forest management and its implications for forest management in the UK.

www.forestry.gov.uk/fr/INFD-8JSC88

Human dimensions of species management

A project to understand the human-wildlife interactions in forest environments.

www.forestry.gov.uk/fr/INFD-8LBE9P

Woodland for water

An evaluation of the key issues relating to woodlands and the Water Framework Directive.

www.forestry.gov.uk/fr/woodlandforwater

Pathway evaluation and pest risk management in transport (PERMIT)

The multiple pathways for the transfer of invasive alien species internationally are poorly characterised, leading to increasing transfer and establishment of new damaging organisms. This EU COST Action aims to address this shortfall in knowledge and practice, and focuses on reducing threats from exotic pests through promoting enhanced pathway management.

www.forestry.gov.uk/fr/permit

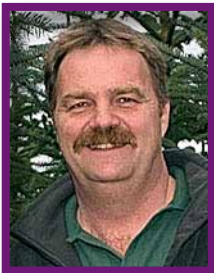
A review of the Forest Education Initiative in Britain

A review of the Initiative across Britain and the activities of the cluster groups that carry out education projects and activities.

www.forestry.gov.uk/fr/INFD-8K7D4Q

Contact details

Research Liaison Officers



Chris Jones

Email: chris.jones@forestry.gsi.gov.uk

Tel direct: +44 (0)1874 676444



Steve Penny

Email: steve.penny@forestry.gsi.gov.uk

Tel direct: +44 (0)780 8900331