

# Forest Research

## FR Eye

February 2007



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# EDITORIAL

Welcome to this year's first issue of *FR Eye*. Already, the excesses of Christmas and New Year seem a distant memory, but although the days are beginning to get longer it's still well and truly winter.

This month's issue of *FR Eye* brings details of a study for Defra into the ability of floodplain woodland to help alleviate floods, as well as further news from Jeskyns farm and information on research into the social and cultural values of European forests...and more!

It also has a new, regular page that shows you what's new on the FR website. Take a look...

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

All submissions and feedback to: [newsletter@forestry.gsi.gov.uk](mailto:newsletter@forestry.gsi.gov.uk)

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# CAN BIOENERGY REALLY CONTRIBUTE TO MITIGATING CLIMATE CHANGE?

The recent OECD\* meeting on bioenergy was attended by policy makers and scientists from 15 countries. Professor Jim Lynch, Chief Executive of Forest Research was invited to Chair the scientific sessions at the meeting, which was held in Sweden in January 2007.

North American participants raised concerns that using maize as fermentation feedstock to generate bioalcohol may cause significant environmental damage. Indeed, the recent dramatic rise in price has already compromised the supply of maize as cattle feed.

However, in Scandinavia, the principle interest is in woodfuel and wood and forestry secondary products as sources of feedstock to produce bioalcohol and biodiesel as well as traditional biomass for heating or combined heat and power. The Swedish Prime Minister's endorsement has encouraged the manufacture of large numbers of hybrid cars. As part of the meeting, participants visited a biorefinery in Northern Sweden where spruce wood chippings are used as feedstock to produce bioalcohol.

Jim says "Science and technology are sufficiently far advanced to make bioenergy a major prospect in the search to mitigate carbon emissions. To produce carbon-neutral fuel for transport would make a major contribution and we need to convince people that this can work and that the economics can stack up."

The meeting concluded that social scientists, particularly economists, must work more closely with scientists and engineers to seek a global carbon economy able to mitigate against climate change. More detailed recommendations will flow back to the 30 member countries of the OECD.



\*OECD – Organisation for Economic Cooperation and Development

# RESEARCH AT JESKYNS

The previous edition of *FR News* reported on the Forestry Commission's significant progress towards creating a new 146 ha (360-acre) community greenspace in Kent. In addition to supporting our Forestry Commission colleagues in their endeavours, Forest Research has now begun formal experimentation at the site to address one of the key silvicultural challenges for new woodland creation on such fertile, high-quality land: how to manage competing vegetation that threatens young tree growth.

This collaborative research project will investigate the practicality of using a range of biodegradable mulch materials for vegetation management, such as photo-degradable and bio-degradable plastics, wood-fibre composites and reusable materials. The research is funded by the Forestry Commission through their award from the Department for Communities and Local Government.

## **The problem**

On fertile, ex-agricultural land, such as the Jeskyns site, weeds can rapidly become established once rotational cropping ends. Where woodland creation is planned, they can be serious competitors, very often swamping and killing young trees. In many such cases, some form of vegetation management is essential in the early years of the young trees' lives.

Often the only economically viable way of suppressing vegetation sufficiently to allow trees to establish is by the carefully targeted and controlled use of herbicides. This is far less intensive than for agricultural crops — typically, only a 1.2 m spot or band around each tree needs to be treated once or twice a year until young trees are large enough to tolerate competition from weeds. The conversion from intensive agricultural production to trees usually takes 3–5 years, after which time the planted areas are effectively 'organic' and no further pesticides are used for 50–100 years.

When used correctly, herbicides can be very safe and effective, but European Union and UK Government policy is to reduce pesticide use for all land uses as far as practicable and many managers, particularly those participating in voluntary certification schemes, are keen to try to adopt non-chemical approaches where possible.

CONT.

# RESEARCH AT JESKYNS (CONT.)

## A possible solution

One potential alternative to the use of herbicides is to lay a plastic sheet mulch around the base of each tree to suppress weed growth. Although expensive compared to herbicides, mulch materials have the advantage that most of their cost comes during their initial set up — this is important as funding for greenspace development projects is sometimes only available for a limited period. Unfortunately, the most durable, and hence most economical, mulch materials are currently plastic. Not only does this involve the use of non-sustainable hydrocarbons, it also means introducing a further synthetic chemical into the woodland environment. The waste material also needs to be collected at the end of its useful life.



The research at Jeskyns will help determine whether biodegradable mulch materials are a viable alternative. The results from this work will help to support managers involved in future greenspace development projects as they strive to adopt the most sustainable, practical and economically viable methods for creating the woodlands of the future.

## Further information

For more information on the Forestry Commission Jeskyns project, visit:  
[www.forestry.gov.uk/forestry/INFD-6CHHQC](http://www.forestry.gov.uk/forestry/INFD-6CHHQC)

Forest Research – integrated forest vegetation management and direct seeding research [www.forestresearch.gov.uk/vegman](http://www.forestresearch.gov.uk/vegman)

Alternatively, contact **Ian Willoughby** or **Victoria Stokes**.

In relation to FR's continuing presence at Jeskyns, we are now in discussion with the Forestry Commission about the design of a monitoring package to evaluate the site's success following its opening in April. More on this in a future issue...

# RESEARCH FUNDING COUP FOR FLOODPLAIN PROJECT

Forest Research has won £224,000 worth of funding from Defra to conduct a study into the ability of floodplain woodland to contribute to flood alleviation. It is one of six pilot study projects — selected from 55 applications — that Defra is funding to look at ways of meeting the challenges of flooding and coastal erosion posed by climate change.

The study builds on work already undertaken through the Ripon Multi-objective Project, which looked at the impact of land use and management on flood risk. It aims to establish about 15 hectares of floodplain woodland in the catchment of the River Laver, above Ripon in Yorkshire. The work forms part of the Government's 'Making Space for Water' programme, which is a strategy for taking a long-term, sustainable approach to flood and coastal erosion risk management. Flooding is a key issue for the Yorkshire and Humber regions and the project will help inform and influence the developing Regional Forestry Strategy Delivery Plan.

Tom Nisbet, Head of Water, Soil and Heritage Research Group at Forest Research, said:

“We are extremely pleased that our project has been selected for Defra funding. The pilot will allow us to test whether floodplain woodland can make a significant contribution to reducing flood risk at Ripon as part of a whole-catchment approach to sustainable flood management.”

For further information, contact **Tom** or **Crispin Thorn**, Forestry Commission Conservator for Yorkshire & the Humber. Alternatively, visit [www.forestresearch.gov.uk/fr/HCOU-4U4JAM](http://www.forestresearch.gov.uk/fr/HCOU-4U4JAM) or **Defra website**.



# BEYOND THE FOREST – ENVIRONMENTAL FUTURES

The Environment Agency's annual conference took place at the QEII conference centre last November and this year the theme was 'Environmental Futures'. The event attracted a wide range of professionals from Local Authorities, industry, non-government organisations as well as Environment Agency staff. Forest Research took part in the exhibition, promoting its varied activities across many aspects of the environment. Visitors to the FR stand were welcomed with the gift of an indigenous tree — albeit 280 small ones.

*Danni Sinnett*



*FR representatives (l to r): Danni Sinnett, Matt Wilkinson, Cécile de Munck*

# SOCIAL AND CULTURAL VALUES OF EUROPEAN FORESTS

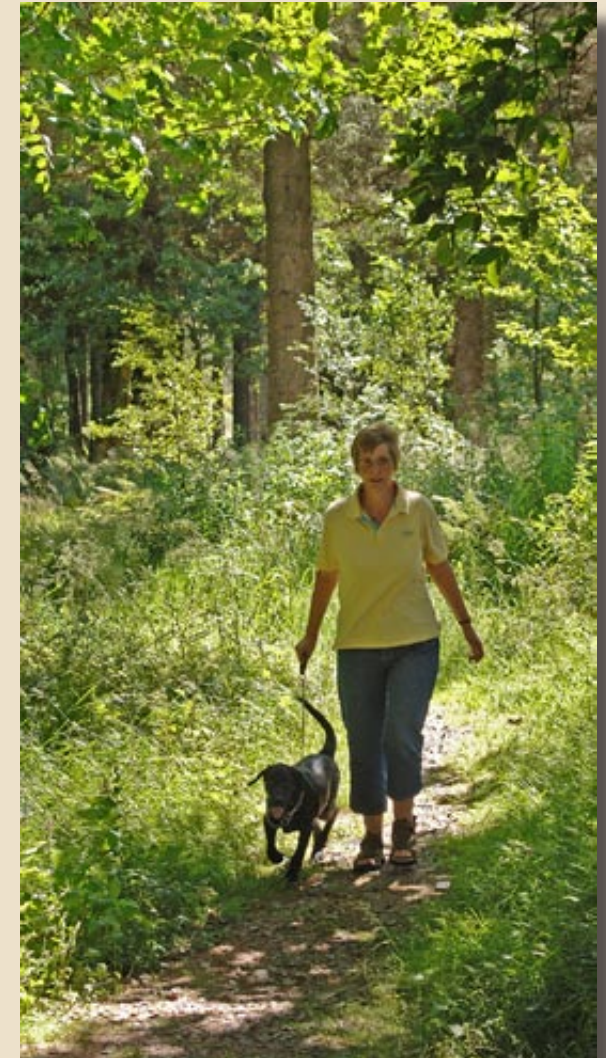
It can be argued that “*Forests are clearly a good thing*”, but just how the benefits they provide can be evaluated is something the researchers at FR have been exploring over the past year as part of a large European research project called EFORWOOD.

The four-year project, funded through the EU ‘Global change and ecosystems’ research activity of the Sixth Framework Programme, examines the long-term sustainability of the European forestry-wood chain in relation to economic, environmental and social factors.

FR’s social scientists have been assessing the social and cultural values of forests throughout Europe. Nine themes have been chosen to assess how these values are affected by different forest management techniques and forestry policies. The themes are: employment, harvesting (non-timber forest products), governance, community, recreation and tourism, education and learning, health and wellbeing, landscape and aesthetics, and culture and heritage.

Parallel research is also underway to investigate the economic and environmental values; this, together with the findings on social and cultural values, will help with the development of tools for a sustainability impact assessment of the forestry–wood chain. A case study of Craik Forest in the Scottish Borders is being used to develop the tools and over the next three years the approach will be extended to several additional case studies throughout Europe.

FR is one of 38 partners taking part in this project. For further details see [www.forestresearch.gov.uk/eforwood](http://www.forestresearch.gov.uk/eforwood)





# TOURISM AND FORESTRY IN SCOTLAND

On behalf of Forestry Commission Scotland, Forest Research is managing a contract with Cogent Strategies International to estimate the contribution of Scottish forestry to tourism in Scotland.

The project is taking a tourism satellite accounting (economic modelling) approach to assess the income and employment significance of forestry. Qualitative case study information on innovative examples of links between forestry and tourism is also being developed.

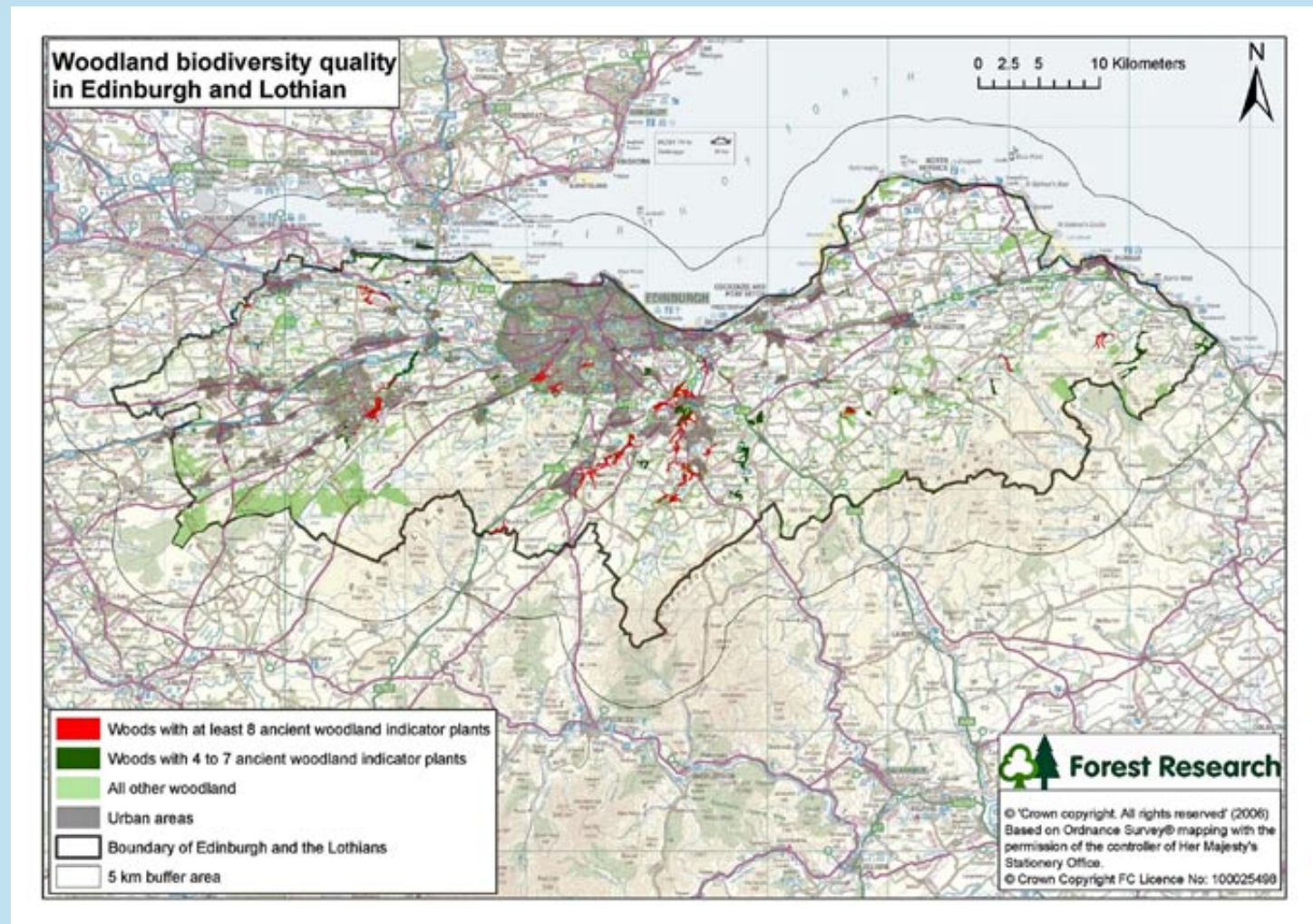
The work started in autumn 2006 and will be complete by summer 2007.  
For further information contact project leader **Suzanne Martin**.



# RECONCILING DEVELOPMENT AND WOODLAND BIODIVERSITY

Biodiversity is a very precious aspect of woodlands but can be badly affected by development. Last November, Forest Research participated at a seminar that aimed to help unitary authority planning departments recognise the potential effects of development on woodland biodiversity, and give them the knowledge to find ways to reduce this impact.

The seminar was run by David Rae of Forestry Commission Scotland and formed part of the Scottish Executive's Planning Development Programme. David provided a guide to recognising the biodiversity value of woodlands, while Forest Research's Darren Moseley explained how woodland data can be used to protect and enhance biodiversity using a range of methods to identify which woodlands are likely to have high biodiversity. This approach has been used in the national Forest Habitat Network project for Scotland (see [www.forestresearch.gov.uk/habitatnetworks](http://www.forestresearch.gov.uk/habitatnetworks)) to assess the functional connectivity of woodlands and determine how challenges, such as those presented by development, can be addressed by working with unitary authorities.



# WHAT'S NEW ON THE FR WEBSITE



## Research

### ***Continuous cover silviculture*** - [www.forestresearch.gov.uk/ccf](http://www.forestresearch.gov.uk/ccf)

This research programme aims to increase understanding and improve practice of transformation and continuous cover silviculture in British forests.

### ***Developing lowland habitat networks in Scotland*** - [www.forestresearch.gov.uk/fr/INFD-6W7EVK](http://www.forestresearch.gov.uk/fr/INFD-6W7EVK)

Part of the Habitat Networks programme, this project aims to develop a more integrated approach to planning land-use change, which takes account of conservation objectives for the full suite of habitats and species.

### ***Impact of pests and pathogens under changing management*** - [www.forestresearch.gov.uk/fr/INFD-6XAFDT](http://www.forestresearch.gov.uk/fr/INFD-6XAFDT)

This research programme tests the hypothesis that increasing the structural complexity of forest stands will lead to greater biological diversity, and that this greater diversity will lead to fewer pest problems.

## Events

National School of Forestry Seminar Series 2006/7 - [www.forestresearch.gov.uk/fr/INFD-64EAUS](http://www.forestresearch.gov.uk/fr/INFD-64EAUS)

## Useful website links

[www.forestresearch.gov.uk/leafminer](http://www.forestresearch.gov.uk/leafminer) - Information about horse chestnut leaf miner (*Cameraria ohridella*).

[www.forestresearch.gov.uk/oakprocessionarymoth](http://www.forestresearch.gov.uk/oakprocessionarymoth) - Information about the oak processionary moth (*Thaumetopoea processionea*).

[www.forestresearch.gov.uk/woodfuelinformationpack](http://www.forestresearch.gov.uk/woodfuelinformationpack) - Key basic information about many aspects of using woodfuel.

## Studentships

[www.forestresearch.gov.uk/fr/INFD-6WAJNV](http://www.forestresearch.gov.uk/fr/INFD-6WAJNV) - The biology of heartwood formation and the influence on conifer timber quality. Applications are invited for a Forestry Commission PhD Studentship at the University of Edinburgh to provisionally start in February 2007.

## NEW RESEARCH LINKS

A 'Memorandum of understanding' has recently been signed between Forest Research and C-QUESTOR Ltd, a newly-formed environmental company dedicated to addressing the issues of global warming by developing a new generation of carbon sequestration products, by-products and services.

"Forest Research has significant ongoing research interests in climate change and carbon modelling, so our organisations share many common interests," commented FR's Chief Executive, Jim Lynch. "We hope to develop mutually beneficial collaborative projects. It's still early days, but we are discussing ways in which we can share knowledge and C-Questor may be able to establish research experiments at FR's Alice Holt site."

## NEW PUBLICATIONS

### ***Technical Notes***

*Nozzle guide for hand-held applicators*, by Bill J Jones (TD, Ae). January 2007. FCTN015

***Forestry Statistics 2006*** - Available from website only.

[www.forestry.gov.uk/website/ForestStats2006.nsf/byunique/index\\_main.html](http://www.forestry.gov.uk/website/ForestStats2006.nsf/byunique/index_main.html)

As a National Statistics output, this publication concentrates on topics for which the data meet National Statistics quality standards.

# EVENTS

National School of Forestry Seminar Series 2006/7 featuring Forest Research speakers.  
Further details available from the FR website [www.forestresearch.gov.uk/fr/INFD-6WAD5X](http://www.forestresearch.gov.uk/fr/INFD-6WAD5X)

## **08 February**

*Habitat networks: principles, modelling process and applications –*

Darren Moseley (Ecology, NRS)

National School of Forestry Seminar, Penrith, 16.00–17.00

## **22 February**

*The role of plantations in contributing to biodiversity –*

Chris Quine (Ecology, NRS)

National School of Forestry Seminar, Penrith, 16.00–17.00

## **15 March**

*Establishment Management Information System (EMIS); decision support for forest restocking –*

Mike Perks (FMD, NRS)

National School of Forestry Seminar, Penrith, 16.00–17.00

## **26 April**

*Remote sensing applications in forestry –*

Juan Suarez (BSSD, NRS)

National School of Forestry Seminar, Penrith, 16.00–17.00