

Science and Business News October 2005

Forest Research tests new monitoring system for spruce bark beetle

Rhizophagus grandis, the specific predator of the spruce bark beetle *Dendroctonus micans*, locates its host by detecting a mixture of chemicals (mainly monoterpenes) produced in the faeces or “frass” of the host larvae. Forest Research’s collaborative research work with Professor J-C Grégoire at Brussels Free University has led to the production of a synthetic artificial lure, which has proved highly attractive to adult *R. grandis* in both field and laboratory experiments.

Forest Research has now begun to evaluate a monitoring system for the spruce bark beetle, using the predator to detect the bark beetle at the edge of its expanding range. Nick Fielding, manager of Forest Research’s Shobdon field station, explained, “The idea of this work is that predators are released in vulnerable forests that are thought to be still free of the bark beetle. In the following year, traps are deployed, baited with the artificial lure. As illustrated, the traps, which were designed by our collaborator Professor Grégoire, are made from plastic drink bottles! Only predators that find and breed in spruce bark beetle galleries will still be present after a year; the predator is totally specific to *Dendroctonus micans* and the released predators will die if they do not find their prey. So, finding the predator means that bark beetle-infested trees are certain to be nearby.” Work on testing the lure and trapping methodology started this summer in Kershope Forest and, if successful, will provide a novel and accurate way of using the predator to monitor our forests for the forest industry.



Strategic Timber Research

Around sixty people attended the workshop, ‘Making Best Use of the Home-Grown Resource’, at the Forest Research Northern Research Station in September, as part of the Strategic Integrated Research into Timber (SIRT) and WoodWisdom-net projects. It was aimed at all those involved or with an interest in the forestry and wood processing industries and was particularly focused on informing the industrial sector of the latest research on wood and timber.

The workshop consisted of six invited oral presentations and a poster session. These included details of new ideas on the structure of the wood cell wall, and the presentation of new measurements on the microfibril angle and wood density of Sitka spruce, as presented by Mike Jarvis and Sven-Olof Lundqvist respectively. At a much larger scale, Ed Suttie discussed the benefits of the use of timber in construction. Robert Matthews presented new dynamic models for predicting the growth of forest trees and the product assortment they produce; work that underpins any research on timber. Finally, Ute Seeling outlined the background to, and the objectives of, the SIRT project and Roger Coppock placed the research in the context of the needs of the industry and the direction the international wood processing industries are taking.

During the lunchtime poster session the attendees were able to discover in detail some of the large range of work into wood and timber going on in universities and research organisations in Britain.

Cumbrian Woodfuel Workshop

In October, Forest Research's Technical Development group organised a workshop to promote the use of woodfuel in Northwest England. The event was part of a series, aimed at woodland owners, managers, local authority staff and planners, organised in collaboration with Forestry Commission England and local woodfuel organisations.

The event comprised discussions, seminars and practical demonstrations and included speakers from the National School of Forestry, Forestry Commission, local authorities, woodfuel consultants and the National Trust, as well as woodfuel equipment and boiler suppliers. Hosted on National Trust land, the event allowed participants to discuss issues relating to woodfuel chip and log production and see a variety of boiler demonstrations.



Demonstration of small-scale firewood production

Similar events will be held later this year and in 2006, as detailed on Forest Research's website.

Survey techniques 'Czeched out' in Prague

Forest Research's Nick Evans and Ben Griffin recently traveled to Kostelec nad Cerymi lesy, near Prague, to attend a course on current and future best practice for survey methodology in National Forest Inventories. Nick and Ben are part of Forest Research's Technical Services Unit team working on the NIWT2 [National Inventory of Woodlands and Trees (2)] project, headed by Biometrics Division.

The course was run by the Institute of Forest Ecosystem Research Ltd and attracted twenty three surveyors, from sixteen EU Member States. It comprised two days of classroom lectures, followed by a one-day demonstration of field survey equipment. The Czech National Forest inventory system was used as the course example. Our Czech colleagues make extensive field use of GIS, GPS, lasers, electro magnetic compasses and angle encoders. All data is input directly to a tablet field computer.

In the UK, our approach is similar, in that we use field tablet PCs running GIS with input from a GPS receiver.

However, our use of ortho-rectified imaging as our main survey tool allows our sample areas to be assessed by a single surveyor, rather than the larger teams required for laser work.



European colleagues review laser technology in the field

Most countries appear to be collecting largely the same type of information, although from those countries represented, the UK is alone in restricting collection of soil data to measurement of the organic layer. There is significant variation in the technological capabilities of Member States, reflecting differences in the level of resources available to individual countries. The UK participants came away reassured that we are following a good route within Forest Research's 'NIWT2', making good use of the latest technology to support our traditional inventory techniques.

Forthcoming Events

Full details of FR's events are available on FR's internet site:

www.forestresearch.gov.uk/events

03-05 November, Cell wall macromolecules and reaction wood workshop, Montpellier, France

First workshop of COST Action E50. <http://www.forestresearch.gov.uk/fr/INFD-6GDB4K>

18 November, 13.30 NRS Research Update Seminar

Quantifying forest carbon stocks in UK forests to meet Kyoto targets and the role of remote sensing in forestry by Genevieve Patenaude, School of Geosciences, University of Edinburgh.

25 November, Black Poplar Conservation Group Conference, Bucks

Reviewing progress in black poplar conservation and look at recent threats and management methods.

www.forestresearch.gov.uk/fr/INFD-6FRJCZ

09 December, 13.30 NRS Research Update Seminar

Respecting the past: woodland as cultural heritage by Chris Smout, University of St. Andrews.

New Publications

FCIN74 *Woodland Owners' Attitudes to Public Access Provision in South-East England*. September 2005. Andrew Church, Neil Ravenscroft and Gill Rogers.

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