

Forestry and Wood Update

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COFORD

Agriculture Building

Belfield

Dublin 4

Ireland

Tel: +353 - 1 - 7167700

Fax: +353 - 1 - 7161180

Email: info@coford.ie

Web: [www.coford.ie](http://www.coford.ie)

COFORD’s activities are funded by the Irish Government under the National Development Plan, 2000-2006.

# COFORD supports new projects

COFORD has recently finalised negotiations with a number of research teams on some exciting new projects, details of which are given below:

## Integrated Reduced-Chemical Control of *Hylobius abietis* in Sitka spruce (ABATE)

This project involves NUI, Maynooth and Galway-Mayo Institute of Technology and is led by Dr Christine Griffin.

*Hylobius abietis* is the most serious, yet poorly controlled, pest of conifer forestry in Europe. Recent work in Ireland has shown that some biological agents are very promising as possible means of control. This new project will build on this earlier work and will focus on the control of weevils by means of insect-killing nematodes, insect food-base (tree stump) decomposing fungi, and parasitoids. The potential of insect-killing fungi will also be assessed. The decomposition of stump tissue by select fungi is intended to also control the most serious forestry pathogen, the butt rot fungus *Heterobasidion anosum*.

The project will run for 2.5 years and will involve extensive field-testing. This will take place with the help of Coillte.

An Evaluation and Development of the Potential of Forest Residue as a Bedding Material for Dairy Cattle on Out Wintering Pad

This project is led by Dr Padraig French at the Teagasc Research Centre in Moorepark, Fermoy, Co Cork.

The technology used to over winter animals outdoors on beds of timber residues is termed ‘Out wintering pads’ (OWP). This facility is a potentially low cost accommodation system designed by placing a layer of timber residue (woodchip) over an artificially drained surface to allow easy control of solid and liquid wastes during confinement. Substantial savings in overhead costs may be achieved by the adoption of OWPs as an alternative system of winter housing for cattle.

This project will complement ongoing work on the subject at Teagasc’s Grange Research Centre. It will run for 2.5 years. Two post-graduates will be recruited to the project.

## Reinforced Polymer Timbers

This project is led by Dr Annette Harte, National University of Ireland, Galway.

Timber is a very attractive construction material for many reasons. It is a renewable resource, recyclable, relatively inexpensive and has an excellent strength to weight ratio. It is also architecturally attractive, possesses excellent thermal properties and is resistant to many of the chemicals destructive to steel and concrete. However, wood also possesses weaknesses as a construction material, such as anisotropy, inhomogeneity and wide variations in mechanical properties. The use of Irish grown Sitka spruce in the construction industry is limited mainly to low load applications due to its strength and stiffness values.

In order for this species to be used more widely, its structural properties must be enhanced. This may be achieved by reinforcing with a stiffer material. Steel reinforcement has been in use for a considerable period of time but this technology has limitations including the resulting increase in weight of the structure and the susceptibility to corrosion. In recent times, there has been considerable interest in the use of fibre-reinforced plastics (FRPs) for the enhancement of the structural performance of timbers. Advantages of FRPs include their low-weight, ease of handling and corrosion resistance. The application of this innovative technology to local wood species has been the subject of much research, particularly in the US and to a lesser extent in Europe.

The application of FRP technology to the enhancement of the structural performance of Sitka spruce opens up considerable opportunities for the more widespread use of this material. The primary objective of this project is to examine the feasibility of a number of different reinforcement materials and geometric configurations for increasing the structural performance of Irish grown Sitka spruce wooden beams. As a result of experimental and numerical studies, recommendations will be produced on the most appropriate FRPs and adhesive products for use with this timber. Recommendations on the optimum procedures for producing FRP reinforced beams will also be included.

This project will run for three years and is largely being funded through an Irish Research Council grant, with additional support from COFORD, Coillte and an NUIG Millennium Research grant.

*Four further projects are being negotiated – details will follow as soon as contracts are finalised.*

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# Working Party on Common Alder (*Alnus glutinosa*)

Recently a small working group was established to examine a number of issues around the large areas of common alder currently being planted in the country.

Common alder, one of our native broadleaf species, is easy to establish and not as vulnerable to deer and grey squirrel damage as other broadleaf species. Over the past six years, demand for trans plants, has risen at an exponential rate from 870,000 in 1998 to almost 3.5 million in 2003. Similar increases have been recorded in demand for seed from just over 62 kg in 1998 to almost 260 kg in 2003.

The group is made up of various interest groups including the Forest Service, the nursery sector and the private forestry sector, and is co-ordinated by COFORD. The group was established to address the increased demand for common alder seed and plants with a clear objective to ‘examine the current supply and demand for seed and plants of the species and to develop suitable seed sources to meet a projected increase in future demand on a sustainable basis’. The group is currently planning a survey of alder stands throughout the country.

If you know of a stand/s of alder or individual trees of reasonable quality, please contact John Fennessy (email: john.fennessy@coford.ie).

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# CARBON CORNER

## The missing sink – and distinguishing direct from indirect changes in carbon stocks

The Intergovernmental Panel on Climate Change (IPCC) in its Special Report on Land Use, Land Use Change and Forestry (LULUCF)[[1]](#footnote-1) estimates that the global carbon budget over the period 1989 to 1998 was:

Emissions from fossil fuel combustion and cement production
 6.3 + 0.6 Gt C/yrStorage in the atmosphere 3.3 + 0.2 Gt C/yrOcean uptake 2.3 + 0.8 Gt C/yrNet terrestrial uptake= (1)-((2)+(3)) 0.7 + 1.0 Gt C/yrEmissions from land-use change 1.6 + 0.8 Gt C/yrResidual terrestrial uptake=(4)+(5) 2.3+ 1.3 Gt C/yr

The annual increase of CO2 in the atmosphere (3.3 Gt C/yr), plus uptake by the oceans (2.3 Gt C/yr), accounts for all but about 0.7 Gt C/yr of the emissions from fossil fuel burning and cement production (6.3 Gt C/yr). This additional 0.7 Gt C/yr must go somewhere; current scientific opinion is that it is taken up in terrestrial (land based) ecosystems (see Figure 1). However, emissions into the atmosphere from land-use change, primarily tropical deforestation, are about 1.6 Gt C annually. Other terrestrial ecosystems must therefore be taking up about 0.7 + 1.6 = 2.3 Gt C/yr. This 2.3 Gt C/yr is often referred to as the *missing sink*. It is probably occurring mostly in temperate and boreal forest ecosystems.

Emissions and removals from LULUCF are therefore an important part of the atmospheric carbon balance and have significant potential to mitigate the level of carbon dioxide, the principal greenhouse gas, in the atmosphere. However, distinguishing between the residual uptake and direct management effect remains challenging scientifically. Conservation of existing carbon stocks by reducing deforestation emissions could make an important contribution, although the challenge of addressing the socio-economic conditions involved is likely to be considerable.

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# Sixth Framework Programme: Global Change & Ecosystems – Pre-call briefing

It is anticipated that the 3rd Call for Proposals for FP6 Priority 6.3: Global Change and Ecosystems will be published in the EU Official Journal on 16 June 2004, with a submission deadline of 26 October 2004. The Call, worth €205 million, will cover 28 specific topics supported by a range of New (Integrated Projects – IPs, and Networks of Excellence – NOEs) and Traditional (Specific Targeted Research Projects – STREPs, Co-ordinated Actions – CAs, and Specific Support Actions – SSAs) Instruments.

Topics to be covered will include:

* The nitrogen cycle
* Past climates
* Ocean-atmosphere chemistry
* Terrestrial biodiversity
* Sustainable forestry
* Landslide hazards
* Coastal zone management
* Monitoring emerging pollutants
* Water management and supply

Efforts will be made to increase the number of small and medium-sized enterprises (SMEs) participating in this Priority Area with a special emphasis on Water and Environmental Technologies.

A briefing session will be held at 14:00 on Thursday, 24 June in Theatre FS01, Food Science Building, UCD, Belfield, Dublin 4. All are welcome.

The briefing is aimed at researchers/SMEs interested in participating as Principal Investigators (PIs) or partners in co-operative research projects.

Information will be provided on:

* The topics covered in the 3rd Call for Proposals under Priority 6.3, proposal preparation, partner search and evaluation procedures.
* The Enterprise Ireland Proposal Preparation (for PIs only) and Travel Support Schemes.
* The Environmental Technologies Action Plan (ETAP).
* Priority 8: Research for Policy Support – Sustainable management of Europe’s natural resources (<http://fp6.cordis.lu/fp6/home.cfm>).

For further information contact one of the National Delegates: Gosullivan@marine.ie; l.fegan@epa.ie; joe.ocarroll@coford.ie; tony.smith@agriculture.gov.ie

Pre-registration to attend this event is essential – please email your details to Harcourt-reception@marine.ie.

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# Wood Energy 2004

COFORD and the Renewable Energy Information Office of Sustainable Energy Ireland will once again host a Wood Energy seminar this year. This will be the third annual conference in this series and will take place at the Rochestown Park Hotel, Cork, on 7 and 8 October.

Biomass energy is now mainstream within energy policy across the enlarged European Union. Rising gas and oil prices, concerns over depleting reserves of fossil fuels and greater awareness of the reality of global warming have all heightened awareness of the potential of wood biomass as a renewable, zero carbon emission source of both electrical and heat energy.

The Government’s interdepartmental Bioenergy Strategy Group is well on its way to formalising recommendations on the future supporting environment for biomass energy. This will see the final few barriers removed to the greater exploitation of our natural advantage in growing biomass for energy generation.

Wood Energy 2004 will build on the successes of previous events. Topics to be covered include:

* Production, distribution and storage of wood pellets;
* Biomass drying technology;
* Heat contracting models;
* Energy service companies;
* Fuel standardisation;
* Combined heat and power;
* Wood chip production and supply chain.

The programme will include field visits to wood energy sites and a forest residue chipping demonstration.

Booking forms and the finalised agenda will be circulated shortly. For further information please register your interest with the organisers:

* REIO, Shinagh House, Bandon, Co Cork; tel: (023) 29145 or email: renewables@reio.ie
* COFORD, Agriculture Building, Belfield, Dublin 4; tel: (01) 7167700 or email: info@coford.ie

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# Managing our broadleaf resource to produce quality broadleaf timber

In October 2002 the first in a series of two-day events on growing and managing broadleaved trees and utilising hardwood timber was organised by COFORD and held in Carrick-on-Shannon. Since then the event has been repeated in several places throughout the country. The most recent and sixth in this series was recently held in the Duhallow Park Hotel in the Mallow/Kanturk area, Cork. These events include indoor morning sessions, followed by afternoon outdoor hands-on sessions in the field. They have been very successful and continue to be part of COFORD’s ongoing commitment to the development of all aspects of the forest industry in Ireland. The overall objectives of these events are to:

* bring growers and potential growers of broadleaves and processors/users of hardwoods together to increase the level of understanding of each others enterprises, practices, procedures and problems,
* demonstrate effective management techniques to ensure the production of best quality logs from our newly established broadleaved forests,
* showcase the range of products that can be made from home-grown hardwoods,
* build momentum towards the re-establishment of a wood culture in Ireland.

David Nevins, Chairman of COFORD, formally opened the latest meeting and launched three new COFORD publications:

* The improvement of Irish birch. Phase 1: Selection of individuals and populations.
* Opportunities for biodiversity enhancement in plantation forestry
* Managing our broadleaf resource to produce quality hardwood timber – Proceedings of the COFORD seminar 10-11 October 2002, Carrick-on –Shannon.

On the first day, the chairman for the morning session was Sir Charles Colthurst, Chairman ITGA, and Prof. John J Gardiner for the afternoon session. Brian O’Mahony of the Forest Service gave a presentation entitled *Establishing broadleaves – problems and possibilities*. Ted Horgan, Research Forester, Coillte, spoke about *The importance of shelter in the establishment of broadleaf woodland and its significance in general broadleaf silviculture*. The Irish situation on establishing and managing broadleaves was compared with the situation in the UK by Dr Peter Savill of the Oxford Forestry Institute in his paper on *Producing quality broadleaves – the UK experience*. Mike Bulfin, Teagasc, concluded the indoor morning session when he spoke on *Management of broadleaves: shaping, tending and thinning*. The first field visit was to an ash stand at Kilcaskan South, owned by Frank Hudner and managed by John Roche of South Western Forestry Services Ltd. The 46 ha plantation was established in 1992 and is predominantly ash, pure and in mixtures with conifers such as Norway spruce and larch. The second stop was at a mixed oak/Scots pine stand at Ballymaquirk and owned by Peter McCabe and again managed by South Western Forestry Services Ltd and John Roche.

The programme of the second day was chaired by Prof. John J Gardiner, and concentrated mainly on hardwood timber sales. Mr Gavin Munro gave a talk on the preparation and presentation of woodlots, and valuing and grading of hardwoods. Jim Kinsella of Tipperary Forestry Services spoke on the problems of over maturity and the negative effects on hardwoods. Joe O’Carroll, COFORD, presented a proposal for the development of a hardwood sales system, which will be developed and facilitated by COFORD. The afternoon session was to Coillte’s Ballygiblin Property close to Cecilstown where Michael Doyle, Coillte, gave a talk on the history of the property. Gavin Munro discussed the practical aspects of measuring, grading and valuing logs at roadside. This site also contained an area dedicated to hurley ash production and Pat Buckley, Coillte, explained the process.

The group made a final stop at a mature broadleaf woodland property at Longueville House where Gavin Munro led a discussion on valuing standing hardwoods and identification of defects.

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# Future issues for forest industries in Europe

A key forestry and wood products conference was held in Dublin from 28 April to 1 May 2004. Organised by COFORD ([www.coford.ie](http://www.coford.ie)) and InnovaWood ([www.innovawood.com](http://www.innovawood.com)), the conference focused on important issues facing the European forest industry. The event was attended by one hundred and fifty delegates from twenty four countries.

Expert speakers from across Europe presented papers at this key conference. Among the areas discussed were forest certification, the conflict between wood fibre for energy and for traditional wood products, training and innovation in wood products. Presentations will be available on the COFORD website in the near future.

The conference included a visit to a Coillte harvesting site at Slievenamon forest, a plant tour of the Weyerhaeuser Europe MDF facility (in Clonmel) and a guided tour of the Rock of Cashel.

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# EUFORGEN Noble Hardwoods Network

The European Forest Genetic Resources (EUFORGEN) Seventh Noble Hardwoods Network Meeting was held at the Forest Research Institute (CRSA, Consiglio per la Ricerca e Sperimentazione in Agricoltura, Instituto Sperimentale per la Selvicoltura) in Arezzo in Tuscany, Italy, from 22 to 24 April 2004. It was attended by representatives from the twenty seven participating countries.

J Koskela, EUFORGEN Co-ordinator, provided an update on recent developments in EUFORGEN and other related happenings since the last meeting. This was followed by an introductory country report from Iceland, participating for the first time as a new member of EUFORGEN.

Representatives from all the participating countries gave a short introduction after which they converged into four regional groups and discussed their countries forest genetic resources activities. The four regional group were as follows:

1. Northern Europe, comprising seven countries including Ireland.
2. Western Europe.
3. Central and Eastern Europe.
4. The Mediterranean region.

A number of issues were raised on public awareness. One item discussed was the completion of a photo CD which is prepared by members and is freely available to all participating countries, and which can be used for public awareness purposes. A Noble Hardwoods poster presently being developed was also agreed.

Members made presentations on a number of different projects including a CASCADE update and a new proposal under the EU 6th Framework Programme in 2003, entitled EVOLTREE (Evolution and Management of Diversity in European Forest Trees).

Michele Bozzano, EUFORGEN Secretariat, gave an overview of the new EUFORGEN website which is accessible directly through a new address ([www.euforgen.org](http://www.euforgen.org/)). He then gave an update on Technical Guidelines of which the first set was published in April 2003 and the second more recently in April 2004. This set includes: European white elm (*Ulmus laevis),* wild apple (*Malus sylvestris*), wild pear (*Pyrus pyraster*) oriental sweetgum (*Liquidamber orientalis*)*,* sweet chestnut(*Castanea sativa*)and lime (*Tilis* spp), which were presented during the meeting. A third set is due for publication during the later part of 2004.

As EUFORGEN phase II comes to a close in December 2004, a debate has begun on the next phase. The Network feels that as well as the continuation of species-orientated groups there is also a need to explore the opportunity of developing a working-group approach within the Noble Hardwoods Network in order to focus on specific issues.

At the seminar on genetic conservation, tree breeding and utilisation of noble hardwoods, Mario Vannuccini presented a paper on the establishment of provenances regions for flowering ash and Spanish chestnut in Tuscany. This was followed by a paper by Fulvio Ducci on clonal selection for wild cherry with special reference to selection traits. A paper on experiences on wild cherry tissue culture was presented by Anna De Rogatas, while Serena Ravagni presented a paper on noble hardwood cultivation techniques. M.E. Malvolti presented a concluding paper on genetic variation of walnuts in Europe.

For information on EUFORGEN and its work visit the new EUFORGEN website [www.euforgen.org](http://www.euforgen.org/).

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# Nordic co-operation on forest tree gene conservation

The Nordic Network for Forest Tree Gene Conservation was established in 2003 as a co-operative body between the Nordic countries. The Network aims at informing and raising awareness among Nordic politicians, foresters and the general public about forest genetic resources and their conservation. Although the member countries have much in common, differences in the historical development and the importance of forestry to national economies have created different approaches to forest gene resource issues. Rather than harmonizing national gene resource programmes and methodologies, the Network serves as a forum for the exchange of ideas relating to forest gene conservation. The synergy developed from the Network will benefit operational gene conservation and increase public awareness.

The Nordic countries – Denmark, Finland, Norway Iceland and Sweden - have co-operated on various fields of common interest for decades. Joint efforts to maintain gene resources have been ongoing since 1979 when the Nordic Gene Bank was established to manage the gene resources of agricultural and horticultural plants. The Nordic Council of Ministers has delegated the administration of the Network to the Nordic Council for Forest Reproductive Material. This body has supported research and development about forest tree seed and the nursery sector since 1970. Their mandate covers the entire forest regeneration cycle and includes seed procurement; transplant production and regeneration methods, genetics and gene conservation.

For more information visit the web site at [www.nsfp.net](http://www.nsfp.net)

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This newsletter was compiled and edited by
Lauren MacLennan,
Technology Transfer Co-ordinator, COFORD
Email: lauren.maclennan@coford.ie

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1. http://www.ipcc.ch/pub/srlulucf-e.pdf [↑](#footnote-ref-1)