

COFORD Forestry and Wood Update

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## Overview of COFORD Activities

Since the May issue of Forestry and Wood Update was issued, the closing date for our most recent Call for Proposals has passed. Once again we have had a strong response from a range of organisations. Panels of independent experts will now evaluate the proposals received. The COFORD Council will then consider the proposals and the evaluators’ comments before deciding on which projects to approve.

Details of successful projects will be included in future issues of *Forestry and Wood Update*, as soon as contracts are signed.

We continue to get excellent feedback with regard to this newsletter and once again ask anybody with interesting topics/projects/articles to drop us an email and we will consider it for inclusion in future issues. Also, if you have recommendations or comments on how the newsletter can be improved please let us know by emailing info@coford.ie.

## Coillte Certification

Our sincerest congratulations go to the management and staff at Coillte. At the company’s recent AGM, their chairman, Mr Ray McSharry, announced that the company had completed the FSC process, so that Coillte's forests were now independently certified as being managed on an environmentally, socially and economically sustainable basis. The FSC certification process is recognised as the most stringent process in existence and credit is due to all of the Coillte personnel involved.

## InnovaWood

A new umbrella organisation, InnovaWood, has been created to encompass the functions currently under the remit of Eurfortech, Eurifi, Euroligna and Eurowood. This initiative was launched to create a co-ordinated infrastructure for innovation in the forest, wood-based and furniture industries. InnovaWood will combine the strengths of the existing four networks to achieve more effective co-operation and greater efficiencies.

It is proposed to locate the headquarters of the organisation at the Eurofortech office in Dublin from September 2001. Dr Jos Evertsen of Enterprise Ireland will become the first president of the initiative and we wish him every success with InnovaWood.

## International Co-operative Programme, Forests 17th Task Force Meeting Ennis.

Ireland hosted this year’s ICP Forests 17th Task Force Meeting in the West County Inn Hotel, Ennis from Saturday 19th May to Wednesday 23rd May. This meeting was funded by the Forest Service of the Department of the Marine and Natural Resources, and co-organised by the Forest Service, Coillte and UCD. Approximately 90 participants from over 35 different countries attended the meeting, with representatives from all the EU member states and other central and eastern European nations as well as delegates from as far away as Morocco, Canada and Japan.

 This group has a political mandate under the Convention of Long-Range Transboundary Air Pollution and the European Union Scheme on the Protection of Forests against Atmospheric Pollution (Council Regulation EEC No. 3528/86) to monitor forest health across the continent of Europe with particular emphasis on the effects of air pollution on forests. This work is carried out at over 6,000 monitoring plots across Europe, over 40 of which are located here in Ireland. Results of this programme have demonstrated that Irish forests are among the healthiest in Europe.

 Although the main focus of this programme is the protection of forests against atmospheric pollution the monitoring activities also fulfil objectives of the Strasbourg (S1), Helsinki (H1) and Lisbon (L2) Resolutions of the Ministerial Conference on the Protection of Forests in Europe. To this end the monitoring programme has expanded its objectives to include other aspects of relevance to forest policy such as issues of sustainability, climate change and biodiversity. During the meeting Pat Neville of Coillte was appointed Chairman of the ICP Forests working group on biodiversity assessment in forests.

On Sunday 20th May, an excursion was organised for the participants to visit a monitoring plot in Brackloon Wood, County Mayo. COFORD’s latest publication *Intensive Monitoring of an Oak Woodland in Western Ireland*, reports on a project which expanded on the original ICP monitoring programme to include a multidisciplinary assessment of both biotic and abiotic factors.

## New Publications

Mr Hugh Byrne, TD, Minister of State at the Department of the Marine and Natural Resources launched three new COFORD publications in Wexford on June 1st. Details of the three publications follow, all of which can be purchased from COFORD, either through our website at [www.coford.ie](http://www.coford.ie) or by contacting our office.

**Forest Residues: Harvesting, storage and fuel values**

This publication, written by Seamus Hoyne of Tipperary Energy Agency and Adrian Thomas of University of Limerick, reports the findings of a COFORD funded project. The objectives of the project were to:

* develop and test a mobile residue bundling machine;
* analyse the effect of bundle size and density;
* study the behaviour of forest residues when bundled and dried;
* identify optimum drying period and position;
* analyse variation in moisture content, calorific value and dry matter losses in bundles;
* utilise the results in the design of a mobile forest residue bundling machine.

The publication gives detailed results from the research and adds significantly to the body of knowledge on this subject. It provides a blueprint for bundling machines which can be streamlined and improved to create a viable energy market for forest residues.

**Intensive Monitoring of an oak woodland in western Ireland – Development of an Irish Ecological Monitoring Network**

This publication reports on the long-term monitoring of a semi-natural woodland at Brackloon, Co Mayo. It has been the centre for monitoring activity since 1991. This publication reports the results from a COFORD funded research project. The project augmented EU-funded monitoring activity with a range of ecological monitoring embracing vegetation, birds, mammals and soil fauna.

The Forest Ecosystem Research Group conducted the research. The authors are: Dr Declan Little (now manager of Millenium Woodlands of Ireland), Gillian Boyle, Dermot Ryan and Professor Ted Farrell.

Long-term monitoring and biodiversity research carried out at Brackloon will be relevant to the management of similar oak woodland ecosystems. The site has been nominated as a template for the new Native Woodlands Scheme administered by the Forest Service.

**Carbon sequestration: Policy, science and economics**

In June 2000 COFORD hosted a very successful seminar in Dublin on Carbon Sequestration and Irish Forests. This seminar featured speakers from Ireland, UK and the Netherlands. It was the first major seminar that examined the implications for the forest industry and forest owners of the Kyoto protocol and the associated move towards greenhouse gas abatement. This publication comprises the proceedings of this seminar and includes papers from each of the speakers. In addition, Dr Eugene Hendrick includes an update on the topic since the seminar was hosted. The publication is edited by Dr Hendrick and Dr Miriam Ryan of COFORD.

## New Vacancies

The Forest Ecosystem Research Group, based at the Department of Environmental Resource Management in University College Dublin, is leading a major collaborative forest research project funded by COFORD, Bord na Móna and Coillte Teoranta. The main objective of the BOGFOR project is to develop a forest resource on the industrial cutaway peatlands located in the midlands. 18 main tasks have been identified in the project. The project currently has two vacancies that it is seeking to fill:

1. RESEARCH ASSISTANT

REF: BOGFOR 01/1

A research assistant is required to assist the project manager in planning and carrying out a number of these tasks. The job will be mainly office-based but will also involve some fieldwork.

Essential requirements

* An honours university degree in forestry or related discipline.
* A postgraduate qualification or a minimum of two years experience in meteorological and/or environmental research or relevant activity.
* Experience of statistical analysis of experimental data.
* Experience in computer modelling (meteorological in particular)
* Good planning and scientific/technical report writing skills.
* Computer literacy: use of a range of computer software such as word processing, spreadsheets and statistical packages.
* The candidate must be a self-starter and possess good organisational and interpersonal skills.
* He/she will be based in UCD Belfield but will be required to make some visits to the sites, making a full driving licence a pre-requisite.
* The successful candidate will be appointed for an initial period of one year.

This project is part-funded by the Irish Government under the National Development Plan, 2000-2006.

2) Ph.D. POSITION

REF: BOGFOR 01/2

There is an opportunity to work for a Ph.D., intended to commence no later than September 2001, investigating the ecology of birch (*Betula* spp.) and *Juncus* spp*.* on cutaway bog.

The successful candidate will undertake an investigation into the establishment behaviour and silvicultural characteristics of birch growing naturally on cutaway midland bogs. The study will examine the factors that influence and promote the establishment of birch.

In addition, a specific study of the ecology of *Juncus* spp. on cutaway peatlands will be carried out. *Juncus* vegetation is a significant competitor to newly planted trees and is difficult to control.

The student will be based at UCD, Belfield within the Forest Ecosystem Research Group but will also be required to undertake a range of fieldwork. A full driving licence is a prerequisite. The successful candidate will work in liaison with Coillte and the BOGFOR project manager, as the study is linked to other tasks within the project.

Candidates should have a good forestry/ecological background.

Closing date for receipt of applications is: 15 June 2001

Applicants are invited to submit three copies of their curriculum vitae to:

Professor E.P. Farrell,

Forest Ecosystem ResearchGroup, Agriculture Faculty, UCD, Belfield, Dublin 4.
e-mail: ted.farrell@ucd.ie

Further information about the project can be found on the web site of the Forest Ecosystem Research Group at: <http://www.ucd.ie/~ferg> or alternatively by contacting the Project Manager, Florence Renou at 01 7167673 or florence.renou@ucd.ie

This project is part-funded by the Irish Government under the National Development Plan, 2000-2006.

## Carbon Corner

How much carbon does a hectare of forest contain? What is the annual accumulation of carbon in forests? How is it measured? These are some of the frequently asked questions from growers wanting to know how much carbon their forests contain, so that they may, at some stage, be able to sell carbon credits.

Carbon is of course the most important biological element and its cycling in terrestrial and marine environments is fundamental to life on the planet. We should not loose sight of this in the rush to estimate stocks and to place values on them. In forests carbon appears mainly in the above and below ground tree biomass and in soil organic matter. The latter is the most important and largest reservoir of carbon in the forest, particularly in temperate and boreal (northern) regions. However, as far as carbon estimating carbon stocks goes most accounting procedures deal with the woody biomass changes over time, though soil carbon changes also feature.

Returning to the questions. There are a number of approaches to estimating carbon stocks and changes therein over time. The rest of this article will deal with what is usually called the inventory approach. Using this approach one first needs to estimate the volume of standing wood and its rate of change over time. Standing volume can be estimated directly or from yield models. In national carbon accounting the approach is to use yield models. Wood volume tabulated in most yield models is above-ground stemwood (usually to a specified top diameter which corresponds to the utilisable part of the tree stem). There is a considerable volume of branch and root wood that is not included in the yield model estimate. This proportion varies with the age and species. Estimates for Sitka spruce, for example, vary from 30% to 280%. It is prudent to adopt a conservative approach in calculations of carbon stock changes, especially in the early years of afforestation (say up to year 4-5) when there may be a net release of soil carbon. Therefore until further research, that will shortly get underway, gives better estimates a ‘biomass expansion factor’ of 1.3 for Sitka spruce is appropriate. This simply relates the volume of stemwood in the forest to the total woody biomass. For example a forest with a standing volume of 200 cubic metres (of stemwood) per ha represents a total woody biomass of 260 cubic metres of wood if the biomass expansion factor is 1.3. Likewise a Sitka spruce forest that is growing at a rate of 15 cubic metres of stemwood per ha per year is likely to be putting on at least 20 cubic metres of wood overall. Biomass expansion factors can be obtained for other species such as oak and ash and applied just as readily to data from yield models or field plots.

 Once the wood biomass has been estimated it is relatively straightforward to convert to carbon. First wood volume is converted to dry matter equivalent. This is done using average dry density values, which are well established for most forest species. Broadleaves (hardwoods) tend to have higher a density than conifers (softwoods). For example oak has a dry density of 0.56 tonnes of dry matter per cubic metre of wood, whereas Sitka spruce has a dry density of 0.35 tonnes of dry matter per cubic metre of wood. Returning to our example the 260 cubic metres of Sitka spruce wood represent 91 tonnes of dry matter and likewise the annual increment of 20 cubic metres of wood per ha represent 7 tonnes of dry matter per ha per year.

Wood dry matter has a carbon content of between 40 and 50%. Again using the conservative approach the lower bound is used – this has been approach used in reporting national carbon stocks. If once again we go back to our examples. The 91 tonnes of dry matter per ha convert to 36 tonnes of carbon per ha and the increment figure of 7 tonnes of dry matter per ha per year to 2.8 tonnes of carbon per ha per year.

Finally, carbon stocks are sometimes reported as carbon dioxide. Each carbon dioxide molecule contains one carbon atom and two oxygen atoms. The atomic weight of carbon is 12 and oxygen is 16 giving a molecular weight of 44 {(12+ (16x2)}. One tonne of carbon is therefore equivalent to 44/12 (3.67) tonnes of carbon dioxide. So the examples convert to 132 tonnes of carbon dioxide per ha and 10 tonnes of carbon dioxide per ha per year. Clearly it is important to distinguish between carbon and carbon dioxide in reporting stocks.

## Irish sawmills process record volumes of timber

Irish sawmills processed 1.8million cubic metres of timber in 2000 an increase of 14% over 1999 and a record for the industry. This is one of the highlights of the Irish Timber Council (ITC) annual review, launched by Mr Frank Fahey, TD, Minister for the Marine and Natural Resources in Galway on Friday 18tth.  The review states that the increase in production was achieved as a result of improved competitiveness and large-scale investment. ITC represents all the major sawmills in Ireland – north and south – and these process 90% of all sawlog timber produced in Ireland’s forests. “By the end of this year, the mills will have completed a three-year investment programme amounting to IR£68.5 m (EUR 87.0 m) in new and replacement processing technology” said Michael Lynn, Chairman, ITC.

The total turnover for the mills was IR£154 m (EUR196 m) in 2000 compared to IR£137 m (EUR174 m) in 1999. Mills manufactured a range of products from the traditional construction material to pallet, stake, fencing, flooring and specialist material. Residue included chips and sawdust, which was mainly sold to panel board mills along with bark which is mainly purchased by garden centres.

Michael Lynn said at the launch “Irish sawmills have proved that they now have the capacity to process the increased volumes of timber that will come on the market in the next five to ten years”. He told guests in Galway “ITC mills are more competitive now than at any period in their history. He added however that there were major challenges facing the industry. Mr Lynn said that the first quarter of 2001 had seen marked reductions in selling prices. He argued however that mills have long experience of the cyclical nature of the industry. “The slowdown in the growth of our economy and intense international competition will continue to put pressure on the industry to be even more cost effective and competitive in the future but mills are now prepared for this” he said.

Donal Magner, Director, ITC said that the high level of performance by the mills in 2000 illustrate that forestry is now a major wealth creating industry. “Our 13 mills provide employment for 2,300 people in rural Ireland” he said. He added that sawmills not only make vital contributions to the rural communities where they are based, but also contribute enormously to the success of their suppliers, Coillte, the Northern Ireland Forest Service and the expanding private sector.

“The positive role the mills play in wood processing and related industries ensures that forestry maximises its added value which is now estimated at IR350 million (EUR440 m) annually”, Mr Magner said.

 “Our members are strongly committed to building successful businesses but they have also shown during the year that they have the confidence and vision to examine key strategic marketing and competitive issues facing the sector, both at Council level and as members of the Timber Industry Development Group”, Mr Magner said. The Group, established by the Tanaiste, Ms Mary Harney, Minister for Enterprise, Trade and the Environment in 1999, has identified many of the important economic, marketing, technical and infrastructure issues which will impact on the timber industry’s ability to improve its international competitiveness. ITC members are contributing positively to the Group along with industry partners.

Mr. Lynn also commented on the Merrill Lynch AIB report on options for the corporate development of Coillte, which was published in April 2001. “The Council made a detailed submission on the report last June acknowledging that it represented a fair assessment of the industry and we supported the recommendations that impact on the sawmilling sector” he said. He recommended that the Minister should adopt the report. “We believe that it is now time for a Government response and the Council wishes to be actively involved in the consultative process on the Report. The industry deserves this in light of the major investment and commitment by our mills particularly in recent years” he added.

For further information, contact Donal Magner at donalmagner@eircom.net

## Forestry Ireland Database

A bibliography of Irish Forestry is now available online. It covers a great deal of the forestry and forest products literature published in Ireland in the 20th Century.

The bibliography dates back to March 1997, when COFORD co-funded a project with Coillte to complete a bibliography of Irish forestry and forest products literature. This was published in the form of a CD-ROM under the title FIR CD in 1998. Further funding was provided by COFORD in 1998 to enable the updating of the original database to include material written on Irish Forestry between 1996 and 1999. This is now available online as a searchable database.

Material selection for inclusion in the database was obtained from technical reports, theses, conference proceedings and other published and unpublished information contained in libraries and research centres throughout the country. In order to be as comprehensive as possible in our coverage and include new material, a call for papers was placed in Irish Timber & Forestry and sources identified during the compilation of the first database were contacted. The number of records held in the database now stands at 1800, an increase of 300 records from the first edition. The format of the records remained the same, each containing an abstract, publishing details on the item referred to, the location of the document and, where possible, the address of the principal author. Users can search the database by entering data into the following fields – author, title, year keyword and abstract. The database is hosted on the Coillte site and can be accessed through the [www.coford.ie](http://www.coford.ie) homepage, or directly at [www.coillte.ie/products\_and\_services/database.htm](http://www.coillte.ie/products_and_services/database.htm).

## Irish Joinery Awards

Every year the Irish Timber Trade Awards (ITTA) organises the Irish Joinery Awards. Entries are now open for the 2001 Awards. The closing date for submissions is July 27 and winners will be announced in November.

There are five award categories:

* a building accessible to the public;
* a commercial project;
* a private/residential project;
* a conservation/restoration project; and
* furniture commissioned, designed and manufactured in the Republic of Ireland.

The last two categories are new to this year’s awards.

This is the third year of these awards which are sponsored by the American Hardwood Export Council.

## Harvester Head Measurement

The potential for harvester head measurement systems to produce reliable volume results has been the subject of a series of research projects carried out by Purser Tarleton Russell Ltd. (PTR Ltd.) over the last number of years. Recent research commissioned by Coillte has indicated that these systems are capable of producing highly accurate results and that their accuracy is more a function of correct calibration and maintenance than the quality of timber being harvested. This concurs with previous research carried out by PTR Ltd. as part of a broader Timber Measurement Study commissioned by the Forest Service. It also concurs with work done independently by PTR Ltd. in association with the main harvesting machinery manufacturers and their agents in Ireland. The research has shown that a dedicated training programme is required for foresters, millers and contractors involved in timber measurement and harvesting if the benefits of accurate harvester head measurement are to be realised. This research has huge potential implications for the quantification of timber for sale purposes. The further use of optimal bucking and data transfer facilities on harvester head measurement systems has yet to be realised in Ireland and is an area for further research. For more information contact Paddy Purser of PTR Ltd at ptr@eircom.net.

## Short Rotation Coppice

Following positive findings in a feasibility study funded by Barrow Nore Suir Rural Development Ltd. (A LEADER Company), the Forest Service have agreed to assist in the establishment of a pilot area of 50 ha of Short Rotation Coppice (SRC) in the Carlow, West Wicklow, East Kildare region. The 50 hectares will be established over a number of different farms and the first six ha of this has already been established. A clonal demonstration area has been incorporated into this initial area and includes the following clones L78183, Tora, SW Sherwood, Sven, Torhild, Loden, Olof and Gudrun. It is planned to host a field demonstration on this site later this year. Notice will be provided to readers in due course. Further information from Paddy Purser of PTR Ltd at ptr@eircom.net.

## Fourth Framework Programme

As promised in our last issue, we will bring you updates on EU Framework projects with Irish involvement. The first of these projects involves Dr Conor O’Reilly of UCD’s Department of Crop Science, Horticulture and Forestry.

**Project title:** A European approach for assessing re-growth potential of woody plants: parameters for plant vitality and dormancy of planting stock

### 1. Description of project

About 15 – 25 % of newly planted seedlings die or grow very poorly after planting in European forests, although the proportion varies greatly among and within countries. The quality of the planting stock used, especially their physiological attributes, may be contributing to this outcome. However, currently there are no standardised criteria for describing the physiological status of seedlings at lifting/ prior to planting. Technical progress in this area would facilitate and simplify trade in planting stock, especially between countries. This research project involved 16 participants from 10 countries, including institutions in The Netherlands (4), Sweden, Denmark (2), Britain, Ireland, Germany, France (2), Portugal, Italy (2) and Greece.

###  2. Objectives/scope

The main aim of the project was to develop criteria that might be used to evaluate the dormancy status and vitality of planting stock. The main objective was to develop physiological tests for evaluating dormancy and vitality. The use of molecular tests to evaluate vitality/ dormancy was also investigated and a prototype model to predict post-planting plant performance was evaluated.

### 3. Current status

The project was completed 31 August 1999. In general, there were large differences among countries in the results obtained in this research, although some common themes emerged. Differences among countries in species, provenance, and nursery production systems used and climate probably accounted for most of these differences. Nevertheless, several participants (mostly from northern Europe) concluded that tests (e.g. cold hardiness) could be used successfully to identify the onset of dormancy in seedlings. This is useful information for nursery managers since they can determine when they can safely commence lifting for field planting or cold storage. Molecular methods for determining dormancy status were investigated, but further research is required.

The development of tests to detect vitality was somewhat less successful. The type of stress experienced by the plants and/or dormancy status sometimes influenced the results. Nevertheless root growth potential (RGP) and root electrolyte leakage tests can be used to evaluate vitality, provided the user is aware of their limitations. The RGP test is a good indicator of vitality, but the values are heavily influenced by dormancy status. The duration of this test is a disadvantage (one to six weeks) from an operational perspective, although it could be used for cold stored plants (tested prior to scheduled date of removal from store). Molecular tests to evaluate vitality were not developed; further research is needed. A prototype model was developed to predict field performance of seedlings, but further research is needed before it can be used operationally. Foresters should be aware that while the vitality tests may give a indication of the performance potential of stock at the time of planting, actual performance may vary depending on post-planting conditions. For example, if good quality Douglas fir (*Pseudotsuga menziesii* (Mirb.) Franco) may not perform well if planted into a cold soil; this species requires a warm soil to allow new root growth otherwise it will deteriorate quickly.

The second project we wish to describe involved several Irish partners from both Coillte and NUIG.

**Project title:** Impacts of Forestry on Extreme Flows

Research Project Leader in Ireland:

Coillte:

 McCarthy, R. & O’Dea, P.

Associate research partner: N.U.I., Galway: McDonnell, M.J., Rodgers, M., Mulqueen, J.

### 1. Description of project

While international research conclusively shows that many types of forests are likely to reduce catchment water yield, the question of how this affects the within-year distribution of stream flow is much less well understood. Most catchment studies have found forests to reduce flood flows, resulting from higher interception losses, slower rates of snowmelt, higher soil infiltration rates and greater soil water storage capacities. However, other studies suggest that these factors may have little influence on the generation of very large flood events. The situation is even less clear concerning drought flows. Traditionally, forests were believed to enhance low flows as a result of the higher infiltration and water storage capacities of forest soils. While this view still holds in some parts of the world, it has been increasingly challenged in recent years by catchment studies in North America and Australia. The latter have recorded marked increases in dry season low flows following the clearfelling of native forests, although in some instances the increases have lasted for only a few years due to rapid re-vegetation. Conflicting evidence of the effects of conifer forests on low flows is also available from studies in upland Britain.

These contradictory findings indicate that other processes, as yet poorly understood, related to soil type, tree species, forest practices and climate may play an important role in influencing low flows. For example most forest and woodlands are managed for timber production. Local forest practices may disturb the soil and alter water flow pathways, with variable effects on extreme flows.

Since the land area under forest in the European Union is currently expanding, the results of this project will be important for the sustainable planning and management of forestry operations within water catchments so there is no detrimental effect on the freshwater environment or on other water users.

### 2. Objectives/scope

The aims of this project was to determine the impact of forestry upon extreme river flows, both baseflow and peakflows:

* at different stages of forest growth (planting growth and harvesting)
* for different forest types (conifers, broadleaves, eucalyptus)
* for different climate regions in Europe (oceanic, continental, Mediterranean)
* for different soil types

To conduct process studies to aid interpretation of the observed results:

* forest interception and transpiration
* soil and groundwater dynamics

To develop descriptive models, so that the results may be extrapolated to other areas.

This study was conducted in Glenturk, Co. Mayo. Ireland, Woodburn, Northern Ireland, Coalburn, northern England, Plynlimon, Wales, Llanbrymair, Wales, Krofdorf, central Germany, Chiemsee, southern Germany, Mt Lozère, southern France and Qta St Antonio. These study locations ranged in climate from oceanic to continental, and from the cold temperature of central Europe to the warmer temperatures of the Mediterranean.

 In Ireland, research groups from Coillte and N.U.I. Galway carried out work on this project.

### 3. Current status

The key result of this project is an improved understanding of the impact of forests and silvicultural practices on the generation of extreme flows.

The project has shown clearly the need to disaggregate the forest cover by type and location since these reflect the different conditions of tree species, climate regime and management practices.

The key result of this project is that forests and silvicultural practices can exert a significant impact on the extreme flows of rivers, under specific sets of circumstances. In particular, cultivation and drainage of wet organic soils resulted in a long-term enhancement of low flows and a shorter-term increase in flood flows; forest growth/development was associated with a reduction in peak flows but that the highest peak flows may be little altered by a forest cover; and clearfelling/forest removal resulted in a local increase in peak flows, as well as in dry weather flows, but that depending upon the location and the extent these changes would not necessarily be detectable at a larger scale.

### 4. Conclusions

The project findings highlight how judicious forest design planning can be used to “even out” and thus control the contrasting effects of different forest practices and growth stages on extreme flows. Such action is especially warranted within sensitive water catchments where low or flood flows are a cause for concern to other water users. Forest managers and forest and water regulators can now be more confident about the likely effects of forest expansion and management operations and thus plan accordingly to protect the freshwater environment and downstream receptors. The results also demonstrate that forestry as a land use could be used to increase water retention and decrease surface flows within catchments and therefore assist flood control. This aspect could become increasingly important in the future with climate change predictions of increased winter rainfall and storm frequency across large parts of Europe.

Details of other framework projects involving Irish partners will follow next month.

## Fifth Framework Programme

**Project Title:** Development of a protocol for eco-efficient wood harvesting on sensitive sites – ECOWOOD

In December 1999, the Forest Engineering Unit at University College Dublin, acting as co-ordinator, was successful in securing fundingunder the Quality of Life and Management of Living Resources programme. The project involves partners in a number of European countries and will run for three years. It will develop protocols for harvesting on sensitive sites as well as cost effective, eco-friendly harvesting operations that are ergonomically and socially sound. This project builds on work that was funded by COFORD under the 1994-1999 programme.

## BIHIP – The British and Irish Hardwood Improvement Programme

BIHIP is an informal association of landowners, research institutions, universities and professional foresters who are co-operating together since 1991, to improve the quality and productivity of the main broadleaved species in Britain and Ireland through the implementation of active tree improvement programmes.

Originally, four species were targeted in the programme: ash, wild cherry, oak and walnut. More recently, birch, sycamore and sweet chestnut have been added. Each species grouping has a separate autonomous management board drawn from among those who are working actively with the species. Each group is normally made up of a landowner as chairman, a researcher as secretary and members with best expertise that can be brought together for the development and execution of the programme.

The project is co-ordinated by a management committee comprising a representative from each of the species groups, with Mr John Davis of Woodland Improvement and Conservation Ltd, as chairman and Dr Peter Savill of Oxford Forestry Institute as secretary of the group. Mr John Fennessy is the Irish representative on the management committee.

To date substantial progress has been achieved in all species but especially those of a particular interest to Irish forestry, namely oak, ash and birch. Best stands have been identified and plus trees selected. When available, seed has been collected from the plus trees and soon progeny tests will be established in field trials.

## EUFORGEN

The European Forest Genetic Resources (EUFORGEN) programme was established following the second Ministerial Conference on the Protection of Forests in Europe, in 1994. Its main role is the development of a functional but voluntary instrument of co-operation among European countries in order to promote:

* conservation of genetic material
* exchange of reproductive material
* monitoring of progress in these areas.

Ireland joined phase 2 of the programme in 1999. This second phase includes five species based networks:

* 1. Conifers
	2. Poplars
	3. Mediterranean oaks
	4. Noble Hardwoods
	5. Social Broadleaves

Network activity will concentrate on inventories to identify the status of resources, development of long-term strategies/technical guidelines and participating in European databases and descriptor lists. In addition the networks will identify common research needs and seek funding on a collective basis. The promotion of public awareness will also be pursued.

Ireland has been an active participant in two of the networks – the Noble hardwoods network and the social broadleaves network.

The fifth EURFORGEN Noble hardwoods network meeting was hosted by Ireland. The meeting took place in Blessington, Co Wicklow from May 16th to May 20th. Representatives from 24 countries attended this meeting. Incidentally, the tree species understood as Noble hardwoods include elm, maple, ash, lime, alder, birch and the family *Rosaceae*.

Further information on both BIHIP and EURFORGEN is available from John Fennessy at [fennessy\_j@coillte.ie.](fennessy_j%40coillte.ie.)

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