

COFORD Forestry and Wood Update

September, 2001 Volume 1 Issue 6

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## Overview of COFORD Activities

During the month of August COFORD’s activities largely revolved around the study tour to Denmark and the completion of negotiations on a number of new projects. More information on both these items is given below.

Throughout September we will be finalising our renewed seminar and workshop series for the remainder of 2001 and the first half of 2002. Seminars to be held before the end of the year include an important conference on the creation of new market opportunities for early thinnings from the private sector. This will be jointly organised by the ITGA and will be held on November 8th. Other seminars/workshops in 2001 will be:

* woodspec regional workshops
* workshop on nursery research results
* workshop on roundwood optimisation through stand assessment

We welcome suggestions for other seminars from anyone involved in the forest industry.

Finally, decisions on all proposals received under our May 2001 call will be made by the COFORD Council during September. All remaining research contracts will be finalised before the end of the year and details of this finalised research programme will be posted on our website.

Once this programme is up and running a further consultative process and gap analysis will be undertaken to allocate remaining research funding.

We would like to continue to receive feedback on the contents and layout of this newsletter. Please drop a note to info@coford.ie with your comments. Anyone wishing to be added to the circulation list should visit <http://www.coford.ie/frames/newsletter.html> and enter their details. Back issues of the newsletter are available to download at: <http://www.coford.ie/newsletter/issues.html>

## COFORD Vacancies

COFORD is currently seeking applications from suitable candidates to fill the following positions within the organisation.

1) Technology Transfer Co-ordinator

**The role:**

The work of the Technology Transfer Co-ordinator will be varied and challenging. It will involve the following:

* Assist with the transfer of research results into practice,
* updating the COFORD website,
* work with our website hosting company to develop the site to its fullest potential,
* assist in the preparation of publications,
* liase with publishers/printers to ensure cost effective and on-time delivery of publications,
* organise workshops, seminars, research user groups and other methods of technology transfer,
* other tasks as instructed by the Director/Research Manager.

**The person:**

Applicants should have previous experience of working to tight deadlines in a busy office environment. The following qualities are essential:

* excellent interpersonal and communication skills,
* excellent telephone manner,
* excellent organisation skills,
* working knowledge of the MS Office suite (Access, Word, Excel),
* ability to maintain a website.

In addition, the successful candidate will be a dedicated, self-starter and also willing to work as part of a team. Ideally, applicants should be educated to degree level. Previous knowledge of the forest industry is not a prerequisite.

These appointments are being dealt with jointly by COFORD and the Department of the Marine and Natural Resources and will be on a contract basis.

2) **Co-ordinator for national broadleaf tree improvement, gene conservation and non-wood forest products**

**The role:**

The work of the co-ordinator will involve the following:

* Compilation and updating of the national register of seed stands (in association with the Forest Service),
* Coordinating national broadleaf tree improvement research,
* Liaison with the British and Irish Hardwoods Improvement Programme and with EUFORGEN (in association with the Forest Service),
* Coordination of research and development on non-wood forest products, including foliage and Christmas trees.
* Assist in the preparation of publications,
* Other tasks as instructed by the Director/Research Manager.

**The person:**

Applicants should have previous experience of working to tight deadlines in a busy office environment. The following qualities are essential:

* skills and knowledge of issues in broadleaf tree improvement and gene conservation in Ireland,
* knowledge of the Christmas tree sector in Ireland and its development needs,
* knowledge of the competitive and environmental issues facing the forestry sector in Ireland,
* excellent interpersonal and communication skills,
* excellent organisation skills,
* working knowledge of the MS Office suite (Access, Word, Excel).

 In addition, the successful candidate will be a dedicated, self-starter and also willing to work as part of a team. Ideally, applicants should be educated to degree level. A full clean driving licence is required.

For further information telephone 01 6199513.

These appointments are being dealt with jointly by COFORD and the Department of the Marine and Natural Resources and will be on a contract basis.

Applications, in writing and enclosing full CVs should be made to:

**Personnel Officer**

**Department of the Marine and Natural Resources**

**Leeson Lane**

**Dublin 2**

**by 5.00 pm Friday 28 September, 2001.**

## Research Vacancies

The Department of Crop Science, Horticulture and Forestry, University College Dublin requires postgraduate students/research assistants for the following COFORD-funded research projects (further details of which are given below in the [New Projects](#_New_Projects) section of this newsletter):

[**OptiVal**](#_OptiVal_-_Value) - Value maximisation through the integration of the stand valuation, cross-cutting and sawing pattern selection procedures

**Opportunity for:** Post-graduate student

**Proposed Scholarship:** approx. £12,000 per year (tax free, including fees)

 **Duration:** 3 years, October 2001 - September 2004

**Requirements:**

* An honours university degree in Forestry, Information Technology or related discipline.
* The successful candidate will be based in UCD Belfield but will be required to visit sawmill and forest sites, therefore a full driving licence would be an advantage.
* **Closing Date for Receipt of Applications:** 21st Sept 2001.

For further information, contact Dr Maarten Nieuwenhuis, Dept. of Crop Science, Horticulture and Forestry, Faculty of Agriculture, University College Dublin, Belfield, Dublin 4, Ireland. (Email: maarten.nieuwenhuis@ucd.ie)

[**ContinuCover**](#_ContinuCover_-_)- An Evaluation of continuous cover forestry in Ireland

**Opportunities for:** Post-graduate students

**Proposed Scholarship:** approx. £12,000 per year (tax free, including fees)

**Duration:** 2 years, October 2001 - September 2003

**Requirements:**

* An honours university degree in Forestry or related discipline.
* Computer literate in word processing, spreadsheets and statistical packages.
* The successful candidate will be based in UCD Belfield but will be required to visit forest sites therefore a full driving licence would be an advantage.
* **Closing Date for Receipt of Applications:** 21st Sept 2001.

For further information, contact Dr Áine Ní Dhubháin, Dept. of Crop Science, Horticulture and Forestry, Faculty of Agriculture, University College Dublin, Belfield, Dublin 4, Ireland. (Email: aine.nidhubhain@ucd.ie)

[**PractiSFM**](#_PractiSFM_-_Operational) **-** Operational multiple resource inventory and decision-support tools for sustainable forest management

**Opportunity for:** Post-graduate students or Research Assistant.

**Proposed Scholarships:** approx. £12,000 per year (tax free, including fees). Research Assistant’s salary approx. £20,000 per year

**Duration:** 2/3 years, October 2001 - September 2003/4

**Requirements:**

* Post-graduate students require an honours degree in Forestry or related discipline. Research Assistants require a relevant post graduate qualification.
* Computer literate in word processing, spreadsheets and statistical packages
* The successful candidate will be based in UCD Belfield but will be required to visit forest sites therefore a full driving licence would be an advantage.
* **Closing Date for Receipt of Applications:** 21st Sept 2001.

For further information, contact Dr Maarten Nieuwenhuis, Dept. of Crop Science, Horticulture and Forestry, Faculty of Agriculture, University College Dublin, Belfield, Dublin 4, Ireland. (Email: maarten.nieuwenhuis@ucd.ie)

**All of the research projects detailed above are funded by COFORD under the NDP 2000 - 2006.**

## US/Ireland Co-operative Research

Funding is available on a competitive basis for a small number of joint US/Ireland agricultural and forestry research projects. Project proposals seeking funding of up to £30,000 per year for a maximum period of 3 years will be considered, although projects funded are, generally, likely to be a good deal less costly than this maximum amount. Typically, a 3-year project might be granted about £45,000 from Department funds. For further details contact Dr. Eugene Hendrick (eugene.hendrick@coford.ie). The closing date for receipt of applications is Thursday 1st of November 2001. Interested parties should contact COFORD by the end of September at the latest.

## BIOFOREST – Update

The BIOFOREST project is a large-scale five-year project with the aim of addressing some of the gaps that exist in the current information on biodiversity in Irish plantation forests. This Large Scale Project is structured as three smaller projects, each addressing a separate aspect of forest biodiversity. These are:

* **Project 3.1.1. Biodiversity assessment of afforestation sites**
* **Project 3.1.2 Assessment of biodiversity at different stages of the forest cycle**
* **Project 3.1.3 Investigation of experimental methods to enhance biodiversity in plantation forests.**

The project started in December 2000, with work on literature reviews and investigating best practice overseas with regard to biodiversity assessment methods. Fieldwork planned for Project 1 for 2001 had to be postponed until 2002 due to Foot and Mouth restrictions, but fieldwork for Project 2 proceeded. All Project 2 sites were on Coillte land, and did not involve agricultural sites. In agreement with decisions taken at a Steering Committee meeting in April, the forest types chosen for study were as follows:

* Pure Sitka spruce
* Pure ash
* Sitka/ash mix, non-intimate

Sites were at a number of different locations around the country, giving a good geographical spread. The counties involved were Clare, Cork, Carlow, Galway, Kerry, Kildare, Laois, Limerick, Offaly, Sligo, Tipperary, Wicklow and Wexford. Flora surveyed were higher and lower plants including mosses and liverworts, and fauna were birds, hoverflies and spiders. The vegetation was surveyed using plot methods, the birds by point counts, the hoverflies using malaise traps and the spiders using pitfall traps. A huge amount of data was gathered during the fieldwork, and a great many specimens were taken for identification in laboratory work. This laboratory work shall occupy much of the team’s time for the coming months.

Sites are now being sought for the Project 1 fieldwork, which will start in April of 2002. The project team hopes to keep to the tree species identified above, and the fieldwork will take place over two years. In 2002 the pre-planting sites will be surveyed and in 2003 the same sites will be surveyed after planting with the trees. Potential participants in the project (landowners willing to have their afforestation sites surveyed for two years) are asked to contact the project manager, Dr Sue Iremonger at 01 608 3745. The project is endorsed by the Forest Service, and involvement in the project will not in any way hinder or impact on the grant application procedure, or the receipt of grants and premia.

## BOGFOR – Update

You will recall from previous newsletters that BOGFOR is the acronym for a project aimed at developing a forest resource on industrial cutaway bog in the midlands.

 Florence Renou, Project Manager of BOGFOR, reports that members from Coillte, Bord na Móna and the Forest Ecosystem Research Group have been able to exchange ideas and discuss issues during the second BOGFOR field day which took place on the 26th of July 2001. The aerial fertilisation monitoring of BOGFOR plantations was successfully completed. A report is due in September.

Soil solution monitoring of re-fertilised sites is due to continue until 2004. Permanent quadrats, laid out across BOGFOR experimental trials and demonstration areas, are currently being surveyed to assess the level of spring-frost damage and vegetation competition. New potential afforestation sites have been visited and results of peat surveys will help in drawing up work plans for new cultivation trials. Further crop assessments due this winter will help in choosing species for new trials to be planted in 2002/2003. A series of pilot trials will be set up this autumn in exposed sites in order to monitor the impact of wind exposure on newly established forest stands. A PhD student has joined the BOGFOR team to study the ecology and silviculture of feral and planted birch (*Betula* spp.) and ecological characteristics of *Juncus* spp. They will be working in collaboration with other research projects carried out by Coillte and Teagasc in this area.

## Study Tour to Denmark

A COFORD study tour to Denmark to view existing and emerging markets for sawmill residues and small diameter roundwood logs took place during August. The main emphasis of the tour was on fuel markets for sawmill and forest residues. Among the sites visited were a district heating plant, a CHP plant, whole-tree harvesting operations, sawdust drying and wood pellet production.

 Of significant interest was the difference between thinning operations in Ireland and Denmark. As no panelboard producers are currently operating in Denmark, and the fencing market is not well developed, the primary market for thinnings is the fuel market. A typical first thinning operation will involve felling every seventh line of trees one year in advance of the chipping operation. The trees are simple felled – no delimbing or cross-cutting occurs. Then, one year later, the trees are chipped using a machine such as the Silvatec 878CH. The advantages of felling the trees twelve months in advance are that the nutrients are returned to the soil in the needles, while the overall moisture content of the tree reduces dramatically. This is obviously important when the material is being used as a fuel source. A tractor and customised trailer collects each load of chips from the chipping machine and transports it to roadside for collection by trucks. The material normally goes to CHP plants or district heating plants. The prices quoted in Denmark were IR£30 per tonne delivered to the plant. However, this price is based on Danish transportation and labour costs which are higher than in Ireland. It must also be pointed out that the creation of a fuel market for wood biomass has been subsidised by the Danish Government. As wood biomass from sustainably managed forests is a carbon neutral source of energy, the Danish Government use several fiscal mechanisms to make it more competitive with fossil fuels.

 The operation certainly has merits for being used in Ireland, notwithstanding the more demanding site types on which our forests are located. However, with some modifications such as wider tyres or the use of tracks, the system could work in Ireland. To examine this further we hope to organise a demonstration week somewhere in Ireland, probably next summer, to assess the suitability of whole-tree harvesting to Irish thinning operations. One of the key advantages of the system is that it would allow first thinning operations to be carried out earlier – at the silviculturally optimum time – hence allowing earlier access for pruning which would lead to higher quality crops. The main challenge is to create a market for woodchips from the forest. They are not suitable for panelboard production because of the presence of bark and some needles.

COFORD will continue to assess this method of thinning and will pursue the creation of a fuel market for the resulting woodchip. A short video is available for loan from COFORD for interested individuals. We hope to have this downloadable from our website shortly.

A report on the study tour is currently being prepared. Anyone interested in obtaining a copy of this report should contact the COFORD office. It is envisaged that COFORD will organise further study tours in the years ahead, targeted at address specific problems being encountered in the Irish forest industry. We welcome suggestions for possible tours from all those involved in the forest industry.

## New Projects

Since our last newsletter we have prepared contracts for two new projects. Many more will follow in the coming months, as we finalise negotiations with project leaders.

OptiVal - Value maximisation through the integration of the stand valuation, cross-cutting and sawing pattern selection procedures

The objective of this research project is the development of an integrated decision support system for the maximisation of product value recovery in the sawmilling production chain. This will be accomplished by the integration of the existing optimal stand inventory, valuation and cross-cutting procedures with in-mill inventory control, saw pattern selection, and value optimisation procedures, made possible through the development of an optimal information chain. The project partners are UCD and Palfab Ltd., Macroom, Co Cork.

The following research targets have been identified:

* Investigate access to scanner data and software and familiarise with computer system and construction procedures for the cutting pattern tables.
* Detailed analysis of log type/cutting pattern combinations in terms of volume/value recovery, product out-turns and computer report capabilities.
* Examine the impact of end product demand specifications on volume/value recovery for different log sizes and the change in optimal cutting patterns resulting from these restrictions.
* Develop a computerised system for the optimisation of log pattern selection under product demand restrictions.
* Combine the mill optimisation system with the stand evaluation and cross-cutting systems to produce an integrated value maximisation system.
* Investigate the potential of developing an optimal information chain, consisting of efficient communication links between marketing, procurement, harvesting and sawmilling personnel with the objective to allow for the exchange of data/information and for the use of this information in the optimal decision-making at every stage of the production chain.

# ContinuCover - An Evaluation of continuous cover forestry in Ireland

The objective of this research project is to demonstrate the implementation of the following silvicultural systems: group shelterwood; strip/group shelterwood and group/single tree selection within a number of forest stands. The survival and growth of a number of tree species under various levels of canopy cover will be assessed. In addition, the effects of altered canopy cover on throughfall, temperatures and rate of nutrient turnover (C and N) in a selection of forest stands under various levels of canopy cover will be assessed. This information will contribute to our understanding of the factors determining the growth and survival of tree species studied. The project partners are UCD, Coillte and Robert Tottenham, Mount Callan, Co Clare.

PractiSFM - Operational multiple resource inventory and decision-support tools for sustainable forest management

The objectives of this research project are to produce effective and efficient operational multiple resource survey and decision-support tools that produce realistic and acceptable solutions (i.e. sustainable and operational forest management plans) for private (commercial) landowners and managers of private (commercial) forest estates. The project partners are UCD, Purser Tarleton Russell Ltd and Ballycurry Estate, Ashford, Co Wicklow.

The following research targets have been identified:

* Assessment of existing operational DSS for sustainable forest management.
* Evaluation and adoption of existing operational methods for monitoring sustainability indicators.
* Translation of criteria and indicators into quantifiable and operational parameters.
* Development of operational multiple resource inventory methodologies.
* Continuation of the development of operational multiple resource inventory and assessment methodologies and procedures. Field testing of these.
* Development of operational management decision-making methodology using the data from the developed operational inventory procedures.
* Software design and specification.
* Decision to develop operational software package based on developed designs.
* Prototype testing and modifications based on testing results.
* Finalising of the software development, customising.

## Carbon Corner

COFORD is just about to issue the new publication mentioned in Carbon Corner 2. Carbon Credits in Ireland: Issues and Potentials is written by Conor Barry, Dr Peter Clinch and Professor Frank Convery of the Environmental Institute at UCD. It is the first work of its kind in Ireland and sets out the background to emissions trading, gives examples of some existing schemes, such as The Acid Rain Trading Programme in the US, and lists current developments at EU Member State level in trading. It also deals with the rules and definitions in emissions trading and the Single Market. Copies of the new carbon report can ordered directly from COFORD. It will also be available on the publications section of our web site.

The most interesting part of the report as far as the grower is concerned is the section dealing with potential value of carbon. As Carbon Corner has previously reported Barry and his coauthors give a range of €1 to over €80/tonne of CO2. This equates with a figure of €4 to €294/tonne of carbon (since each tonne of carbon is equivalent to 3.67 tonnes of CO2).

 Coming into the recent COP6 Bonn conference the talk was that carbon would have a value of $20/tonne (€22/tonne). During the conference a number of figures were discussed at the margins among potential trading groups, a common figure was about €5/tonne of carbon. The reason for the reduction in the forecasted price was that the United States was not a party to the agreement; it would potentially have been the biggest buyer of credits - with reduced demand the price will be considerably less.

 If we take the €5/tonne figure as a guide we can estimate the potential carbon value of a hectare of forest (planted since 1990) during the first commitment period of the Kyoto Protocol, that is over the period 2008-2012. Say the forest was planted in 1990 and will have a standing volume of 150 cubic metres/ha when is assessed in 2010. Applying the factors discussed in Carbon Corner 3, a biomass expansion factor (BEF) of 1.3, a carbon content of 40% and a dry density of 0.35 tonnes/m3, the wood volume converts to 27 tonnes of carbon/ha. This gives a carbon value of €136/ha. Our view is that this is at the lower bound of what the market may determine. Furthermore the biomass expansion factor (BEF) for crops of this age may be considerably higher than 1.3. There are suggestions that it could be as high as 2.0 or more. These factors are now being firmed-up in the new COFORD–funded CARBIFOR project, just recently agreed with UCD. CARBIFOR will determine the range in BEF across a range of age classes.

 As well as the national work on carbon stocks the International Panel on Climate Change (IPCC) is revising its 1996 guidelines for reporting forest carbon stocks. One of the members of the CARBIFOR team, Dr Ken Byrne is a member of the IPCC group which is revising the guidelines. Dr Byrne’s involvement is the process is funded by the Forest Service. Both sets of work will be completed in advance of 2005 which is the date that has been set for the completion of national carbon accounting systems.

## Pending Publications

In last month’s newsletter we informed readers of eight pending publications to be launched before the end of 2001. The launch date for the first of these has now been confirmed. On September 12th Mr Hugh Byrne, TD, Minister of State at the Dept. of the Marine and Natural Resources, will launch *A review of relevant studies concerning farm forestry trends and farmers’ attitudes to forestry* which was written by Mr Brendan Kearney. The event will take place at the beginning of the IFA’s Farm Forestry Seminar in Mullingar. Further launch dates will be listed in the October newsletter.

Details of all COFORD publications are available at the COFORD website [www.coford.ie](http://www.coford.ie)

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