Forestry and Wood Update

January/February 2010 Volume 10 Numbers 1&2

## CONTENTS

Research Programme 2

Project update: FARMFUNGI and FORESTFUNGI 2

COFORD-funded forest research team at UCD joins new European research consortium 2

Irish participation in European project on greenhouse gas balances in agriculture and forestry

Information and support services 3

COFORD Connects survey 3

Air your views about this series of notes in online survey

National forestry conference: Generating revenue from our woodlands 4

26 March – Lyrath Estate Hotel, Kilkenny

Adding value to forest monitoring networks: A review of the Irish national forest monitoring network 4

4-5 March – Glenview Hotel, Co Wicklow

Carbon Corner 5

Paths from Copenhagen

National and international news 6

Wicklow’s deer population 6

Managing deer populations is critical

Irish Squirrel and Pine Marten Project 6

Record your sightings of squirrels and pine martens

Wood Collective – Meitheal Adhmaid 7

Innovation forum and collaborative projects in wood

National Bioenergy Conference 2010: Developing and Financing Bioenergy 7

18 February – Thurles, Co Tipperary

Bioenergy events in Amsterdam 7

15-16 March - Amsterdam

Forest Research Conference 8

13-15 April - Edinburgh

European Plant Science Organisation (EPSO) Conference 8

18-22 April - Olos, Lapland (Finland)

18th European Biomass Conference and Exhibition - Lyon, France 9

3-7 May – Lyon, France

Windmills turn back to wood - Schweighofer Prize Winners announced 9

Innovations recognised by prestigious prize

Will northern forests be able to stand the heat? 9

Boreal forests are especially sensitive to global warming and are likely to be severely affected by climate change

COFORD

Department of Agriculture, Fisheries and Food

Agriculture House

Kildare Street

Dublin 2

Ireland

Tel: +353 - 1 - 6072000

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.

PLEASE CIRCULATE THIS NEWSLETTER TO YOUR COLLEAGUES AND OTHER INTERESTED PARTIES

[TO SUBSCRIBE TO THE NEWSLETTER, CLICK HERE](http://www.coford.ie/iopen24/defaultarticle.php?cArticlePath=510)

This newsletter was compiled and edited by Lauren MacLennan

Email: lauren.maclennan@agriculture.gov.ie

# Research Programme

# Project update

*Each issue of the newsletter carries a short article on new and ongoing COFORD-funded projects. Feedback on the articles is welcome and should be addressed to the project leaders (contact details at the end of the article).*

## Farm Fungi and Forest Fungi updates

**Farm Fungi** is a project to examine the feasibility of growing oyster mushrooms (*Pleurotus ostreatus*) and shiitake mushrooms (*Lentinula edodes*) on forest thinnings. In 2009, 1 m logs of a range of tree species (ash, sycamore, oak, Scot’s pine and Sitka spruce) were inoculated at two locations in Co Limerick - Blossomhill and Springfield, primarily with oyster mushroom plugs, as this mushroom requires significantly less time to fruit than shiitake (6 months vs 16 months). Watering of inoculated log piles commenced in spring 2009. A small number of shiitake logs produced fruit in 2009. The major success, however, was the inoculated stumps of sycamore left standing in the ground to 1m high. The majority of oyster mushrooms were produced from this source material. In contrast, log piles need weekly management and gentle watering to keep moisture levels of timber high. Non-edible competitor species of fungi on logs were common at all three original locations and these are also being studied as part of the Farm Fungi project. Regarding the truffiere at Blossomhill, truffle (*Tuber uncinatum*) mycorrhizae were found on oak roots in November but more extensive work will be conducted in 2010.

Developments in the **Forest Fungi** project: In 2009 the minor spring flush of mushrooms was studied. Two of three sites for St George’s mushroom proved fruitful. A potential site for morels (*Morchella* spp.) in Co Wexford was not productive when surveyed, yet reports from several counties were recorded. The autumn season in 2009 was a strange one indeed, reflecting the unusual weather patterns! The season began very early with a flush of fungi in late August and early September. Many fungi were almost a month early. Large clusters of honey fungus (*Armillaria* spp.) and localised concentrations of girolle (*Cantharellus cibarius*) were notable. Drought in September led to cessation of fruiting for most fungal species. Foray tables in October had some unusual species on display but abundances were lower than many mycologists had seen and the season finished very early, not because of cold but due to saturation of the soil by high levels of rainfall. Historical sites for native truffles, particularly *Tuber aestivum* were visited in counties Limerick, Wicklow and Kildare to no avail. A paper was delivered in November on our most widespread truffle, *Tuber aestivum*, at a conference held in Vienna on ‘*Tuber aestivum/uncinatum* in Europe’.

*For more information about the ForestFungi and FarmFungi projects, contact Thomas Harrington (**Thomas.harrington@ul.ie**) or Maria Cullen (**maria.cullen@ul.ie**). An association for Irish mycologists and lichenologists is to be launched next month. For more information, contact Maria Cullen: maria.cullen@ul.ie*

[Back to List of Contents](#_CONTENTS)

# COFORD-funded forest research team at UCD joins new European research consortium

## Irish participation in European project on greenhouse gas balances in agriculture and forestry

The COFORD-funded CARBiFOR project, based at the UCD School of Biology & Environmental Science, and led by Professor Bruce Osborne, is one of over 40 partners in a new Europe-wide project on greenhouse gas balances in agriculture and forestry. Professor Osborne said "This new project will address areas at the forefront of current scientific understanding of how forests and other land uses interact with the global climate system. We are looking forward to contributing to this exciting work and are pleased that the forestry climate change team at UCD and national level is now a recognised international player in land-use climate change research."

Much of the European land cover is used to produce crops and wood. In view of the changing climate it is especially important to know how much of the greenhouse gases are released into the atmosphere or fixed in biomass and soil by forest, farming, and meat production. These would be either so-called sources or sinks of greenhouse gases. One of the largest European research efforts for elucidating these mechanisms, the GHG Europe Project, was launched. The project, involving more than 40 institutes from all over Europe, will be co-ordinated by the Johann Heinrich von Thuenen Institute (vTI) in Braunschweig, Germany.

The ambitious aim of the project is to establish a greenhouse gas budget for Europe, including the order of magnitudes of various greenhouse gas sources and sinks, their regional distribution, and their temporal dynamics. To this end, the European Union provides almost 7 million euro for the next three and a half years. National and university funds contribute about 12 million euro. “We will try to separate human-related factors like land use from natural factors like weather and climatic variability”, says project co-ordinator Dr Annette Freibauer of the Institute for Agricultural Climate Research at von Thuenen Institute. “When we understand the processes better, we can make better suggestions as to what we need to do in agriculture and forestry to keep their effect on the climate balance positive.”

The project will integrate results from various national and international climate research projects for a comprehensive assessment. Measurements from more than one hundred continental stations distributed across all European climatic regions and ecosystems will be used to assess the contribution of different land uses to the emissions and sinks of the three most important greenhouse gases: carbon dioxide (CO2), nitrous oxide (N2O), and methane (CH4). The scientists will combine long-term measurements from all over Europe and initiate greenhouse gas measurements in regions that have been researched little so far. This includes east European forests and Mediterranean shrubland. The measurements of this network of stations will be used in computer models to project future greenhouse gas budgets under a changing climate. The models also include socio-economic effects to address interactions between economic development, land use, and greenhouse gas emissions. “For the first time in Europe, we will look at all three major greenhouse gases in a joint, comprehensive approach. This is especially important for understanding the role of agriculture and forestry for climate protection”, says Annette Freibauer. Forests, for example, fix one third of the global carbon dioxide emissions produced by human activities. This sink, however, varies strongly among years. For example, the CO2 fixation of European forests decreased to almost nil in the very hot summer of 2003. On the other hand, farming, meat production, and draining of wetlands release large amounts of nitrous oxide and methane, which reduces the positive effect of forests.

The project has a background in the United Nations Framework Convention on Climate Change and ongoing negotiations for a post-Kyoto agreement for a commitment to significant reduction of greenhouse gas emissions. GHG Europe will allow the production of a total climate budget that includes not only the positive sinks of the biosphere but also the greenhouse gas emissions produced by land use. Thus, the project ensures Europe’s leading position in climate research.

[Back to List of Contents](#_CONTENTS)

# Information and support services

# COFORD Connects survey

## Air your views about this series of notes in online survey

The COFORD Connects series of practical information notes started in 2003. They cover all aspects of forestry practice, wood use and products as well as socio-economic and environmental aspects of forestry. To date, 86 notes have been issued and are collated in a purpose-made folder. An updated table of contents is issued with each new set of notes. The notes cover six areas: Reproductive Material; Silviculture and Forest Management; Harvesting, Transport and Forest Machinery; Wood Processing and Product Development; Socio-Economic Aspects of Forestry; Forestry and the Environment.

COFORD is currently assessing the function and future of the 'Connects' series of notes, and welcomes your views to facilitate decision-making in this regard. You are invited to participate in the online survey at [www.coford.ie](http://www.coford.ie/iopen24/forms.php?fID=23) (survey ends on Friday 12 February 2010).

[Back to List of Contents](#_CONTENTS)

# National forestry conference: Generating revenue from our woodlands

## 26 March – Lyrath Estate Hotel, Kilkenny

The National Forestry Conference will take place on Friday 26 March 2010 at the Lyrath Estate Hotel, Kilkenny. The theme this year is *Generating Revenue from Our Woodlands*, and the presentations will outline developments in the UK forest industry, assess timber supply and demand in our own forest sector, and look at options available to make the best use of our indigenous forest resource. Ireland is beginning to show small signs of recovery from one of the worst economic downturns in living memory. As forest owners and managers, we have an important role to play in using our forests and woodlands to aid this recovery - to enhance our own economic situation, and also to contribute to the national effort. The impressive line-up of eminent speakers at this conference is well qualified to guide us in this process.

The annual conference is organised by the Society of Irish Foresters (SIF), the Irish Timber Growers Association (ITGA) and the National Council for Forest Research and Development (COFORD). To register, email: sif@eircom.net.

[Back to List of Contents](#_CONTENTS)

# Adding value to forest monitoring networks:

##  A review of the Irish national forest monitoring network

### 4-5 March – Glenview Hotel, Co Wicklow

Long term forest monitoring is essential to ensure the sustainable management of forestry resources. Monitoring activities generally cover four main themes; landscape and land use monitoring, wood and non-wood resources, monitoring environmental quality and anthropogenic impacts and forest biodiversity. In Ireland there are many research projects dealing with forest health/biodiversity (FutMon), climate change mitigation (CARBiFOR), land use change (CARBWARE), biodiversity (PLANFORBIO, FUCTIONALBIO, RHODO), water quality (FORFLUX) and phenological observations. Many of these are also linked to larger European projects such as CarboEurope-IP, GHG Europe, ICOS and ICP Forests. However, many new and established monitoring networks are often subject to discontinued funding due to a lack of stakeholder focus, co-ordination within other research networks, integration of long-term data and appropriate dissemination of information. The aims of this workshop are: to integrate current long term monitoring research and infrastructure, to demonstrate the value of monitoring networks to forest stakeholders and to create a national working group to integrate data collection and research activities.

The meeting will take place on 4 and 5 March 2010 at the Glenview Hotel, Delgany, Co Wicklow. Presentations will be given by invited speakers from the European Commission, University College Dublin, University College Cork, Trinity College Dublin, Coillte, the National Forest Service and the UK Forestry Commission.

For further information on this meeting and registration details please contact Dr M. Saunders (email: matthew.saunders@ucd.ie).

[Back to List of Contents](#_CONTENTS)

# Carbon Corner

## Paths from Copenhagen

### Forestry text close to agreement

Much has been written in the media over the past month about the failure to reach a legally binding agreement on climate change at the Copenhagen talks in December. But there was progress made at Copenhagen, and the lengthy process of elaborating rules for the inclusion of forests in developed and developing countries post 2012 seems to be nearing completion.

 Readers of ***Carbon Corner*** will be aware that the rules for forests and land use in the developed countries (LULUCF) post 2012 have been under negotiation for close on two years. After six separate international meetings in 2010, and a series of detailed data submissions to the UN Framework Convention on Climate Change[[1]](#footnote-1), many forestry negotiators felt that Copenhagen would clinch the deal. An agreement was in fact close, and a new, narrowed-down text was tabled during the second week[[2]](#footnote-2). It could have been agreed, if there was more time available, but the high level segment intervened, with the well reported stand-offs and disagreements.

So what is the essence of the likely rules for forests in developed countries post 2012? Inclusion of afforestation and deforestation since 1990 (laid out in Article 3.3 of the Kyoto Protocol) should remain as before. This will enable past and new afforestation to continue to be used as a climate change mitigation tool. Emissions from deforestation will continue to be accounted for in full, emphasising the need to conserve existing carbon stocks. Rules for pre-1990 forests (which come under Article 3.4) are likely to change, with the use of a reference level becoming the basis for estimating changes in pre-1990 forest carbon stocks. What this would mean in practice is that Ireland would set a reference level for business-as-usual emissions and uptake of carbon dioxide in pre-1990 forests, over the period 2013-2020. Levels of harvest and carbon uptake above or below the chosen level, over the same 2013-2020 time period, would be added or subtracted from the national greenhouse gas basket. The main attraction of the reference level concept (if it is based on a projected, business-as-usual scenario) is that it would provide an incentive structure for additional forest-based activities in the context of climate change. A number of other changes are proposed to the rules, such as how to better deal with wood products originating from forests that come under the Kyoto rules, and the impact of large scale fires and other such events. (If you need further clarification on the proposed rules please send an email to info@coford.ie.)

***Carbon Corner*** will return to the issue of forests in developing countries. Suffice to say for the present that emissions from deforestation account for 15-18% of the annual global greenhouse gas input to the atmosphere, so measures to reduce and halt conversion of forests in developing countries are urgently needed to tackle climate change. Not that developing countries need take any lessons from the so-called developed world, where deforestation is still an issue in several countries, and where many, if not most, forests were over-exploited or simply extirpated over the course of many centuries. Relevant Copenhagen texts[[3]](#footnote-3), [[4]](#footnote-4) are available at the UNFCCC website.

[Back to List of Contents](#_CONTENTS)

# National and international news

# Wicklow’s deer population

## Managing deer populations is critical

All three species of deer in Ireland (fallow, red and sika) are increasing in numbers and extending their ranges across the country, while a fourth species (muntjac) has recently been introduced. Deer populations are managed through harvesting by professional and recreational hunters. The number of deer reported shot to NPWS annually is increasing exponentially and is currently close to 25,000. However, deer reproduction is fast outpacing reduction through harvesting and the negative impacts of high deer densities on forest economics and biodiversity, as well as on farming and road safety are only intensifying and set to reach crisis levels. Increased harvesting of female deer is vital to avert this. A COFORD-funded study published in the current Irish Naturalist’s Journal points to a behavioural difference between the sexes that will aid hunters in increasing the numbers of female sika deer harvested. When hunters shoot a sika female they can often also harvest her calf if it remains nearby. Female calves are more likely than males to stay beside the dam, probably because of a stronger bond between the two. Harvesting of hind-calf pairs, therefore, will likely mean two females are removed from the population.

For further information, contact Dr David J. O'Brien: email: davidjmobrien@yahoo.com

[Back to List of Contents](#_CONTENTS)

# Irish Squirrel and Pine Marten Project

## Record your sightings of squirrels and pine martens

Recent anecdotal reports have linked a revival of red squirrel populations and a reduction in the range of grey squirrels, in certain midland counties of Ireland, with the resurgence of the pine marten.  It has been suggested that the pine marten is preying on the introduced grey squirrel to a greater extent than the more nimble red squirrel.  A project based at NUI Galway aims to investigate the relationship between the three species, and identify the impact that the pine marten is having on squirrel dynamics in Ireland, if any.  The work will feed into existing squirrel research in the Mammal Ecology Group at NUIG and inform conservation and management policies in Ireland and other parts of Europe.

Although increased predation may be the most obvious way in which grey squirrels could be influenced by pine martens, the effect of the pine marten may be more subtle, from avoidance of areas where pine marten are present, to stress-induced reductions in grey squirrel reproductive success.  A detailed examination of squirrel populations in selected sites where pine marten are present and absent, along with a pine marten dietary analysis, will provide essential information about the population dynamics of the two squirrel species, and the role, if any, that the pine marten is playing in the distribution of Irish squirrel species.  Further details can be found at the project website www.woodlandmammals.com

The initial stage of the project involves a survey of the three species in the counties in question. If you have observed any of these animals in recent years, particularly in the midland regions of Laois/Offaly and Cavan/Monaghan, whether it be direct observation in woodlands or even dead animals at roadsides, the project team would like to hear from you. Any information on the presence/absence of any or all of these species will be of help, particularly in the initial phase of the project. To report a sighting, please fill in the online survey form at www.woodlandmammals.com or if you have several sightings to report, email emmasheehy@gmail.com, or phone 091 492903 or 087 1498859.

[Back to List of Contents](#_CONTENTS)

# Wood Collective – Meitheal Adhmaid

## Innovation forum and collaborative projects in wood

Woodcollective is a forum for innovation in wood use and sustainable design. 2009 saw the launch of a web-based communications matrix: [www.woodcollective.ie](http://www.woodcollective.ie), the implementation of a pilot project at the Electric Picnic Arts Festival and an exhibition of interpretative material at Woodspace at Plan Expo. Featuring contributors from many fields including design and construction, craft, education, sciences and the arts, it has established a resourceful active network and has had support and encouragement from COFORD and Wood Marketing Federation.

Projects drawing further on a ‘whole systems approach’ are planned this year which will develop inter-agency synergies and collaborations between industry, education and R&D bodies. The activities and deliverables of the project have been based on and rely upon co-operation, creative input and appropriate support from different disciplines and agencies at different scales and contexts.

Collectively, the goal is to ‘design with nature’. Through ongoing research and collaborative projects, the forum seeks to enhance awareness, inspire innovation, encourage usage and increase visibility of timber and other sustainable materials and practices in design and construction of the built environment.

A recent article on Woodcollective at Plan Expo-Eco Build ‘Woodspace’ in ESB Electric Mail can be found at <http://www.esbelectricmail.com/gtia/december09-gtia19.htm>

[Back to List of Contents](#_CONTENTS)

# National Bioenergy Conference 2010: Developing and Financing Bioenergy

## 18 February – Thurles, Co Tipperary

The IrBEA Annual Conference 2010 will be held in conjunction with Teagasc to address the areas of bioenergy project implementation and financing. The conference will be held on Thursday 18 February at Tipperary Institute, Thurles. The event will afford the opportunity to network with the key players, technology providers, contractors and growers in the various stages of the supply chain. For more information phone: 052 6126574 or email membership@irbea.org

[Back to List of Contents](#_CONTENTS)

# Bioenergy events in Amsterdam

## 15-16 March - Amsterdam

The Biorefineries and Bio-based Products Congress takes place on 15-16 March 2010 in Amsterdam. It brings together the whole spectrum of industries working within the handling and processing of biomass, and will provide an opportunity to help attendees uncover the true potential of this burgeoning industry. In response to the growing demand and trend for “greener” products from consumers, the chemicals sector is under pressure to develop bio-based alternatives and to identify new opportunities in the processing, conversion and commercialisation of biomass. Meanwhile, due to increasing economic pressure and competition, sectors experienced in the handling of biomass are being forced to examine their practices and look at how value can be added through the more efficient use of all fractions.

Also taking place in Amsterdam in March are the 6th international Biopower Generation Congress, and Green Power's flagship bioenergy event - the World Biofuels Markets Congress and Exhibition. For more information, see www2.greenpowerconferences.co.uk

[Back to List of Contents](#_CONTENTS)

# Forest Research Conference

## 13-15 April - Edinburgh

Over the last decade the Forestry Commission has funded a wide range of social research both through the Social and Economic Research Group (SERG) in Forest Research, and through academic and private research partners. This conference draws on that body of research, but also invites contributions from beyond, to explore and consolidate the state of current knowledge.

From relying on forests to provide timber and other products, our increasingly diverse society has moved to a ‘post-production’ relationship with natural resources that leads to much broader demands.  In the new millennium, trees, woods and forests are expected to contribute to improving health, building resilient communities and provide options which help adaptation to climate change. At the same time the physical and social distinctions between rural and urban spaces are becoming much more diffuse, with important implications for how trees, woods and forests are perceived and integrated into policy.

These changing perceptions and societal relationships with woods and trees are marked by an array of responses which include:

* The evolution of policy and governance systems which cross traditional divisions between rural-urban, central-decentralised, professional-community;
* New forms of engagement between communities or ‘the public’ and other government or third sector organisations;
* A range of practical mitigation actions in both urban and rural areas.

The objectives of the conference are to:

* Discuss societal and economic trends shaping the management of British trees and forests in both urban and rural contexts;
* Share experiences of responses to these trends and how society can successfully engage with its woodland resource;
* Identify future research and policy directions needed to meet emerging challenges.

This conference takes place at the Edinburgh Conference Centre, Heriot-Watt University, Riccarton in Edinburgh from 13 to 15 April 2010. For more information: <http://www.forestresearch.gov.uk/fr/INFD-7RXCB4>

[Back to List of Contents](#_CONTENTS)

# European Plant Science Organisation (EPSO) Conference

## 18-22 April - Olos, Lapland (Finland)

EPSO, the European Plant Science Organisation, is hosting the Plant Science Conference in Europe: 5th EPSO Conference: “Plants for Life” at Olos (Lapland), Finland, 18-22 April, 2010. Topics include:

* Science Policy: Plant Science in Europe and beyond
* Science and Society: Food security and safety – challenges ahead
* Achieving sustainability: Crop genomes for sustainable agriculture; Breeding tools and strategies
* Achieving quality: From plant architecture to traits; From photosynthesis to solar fuels; Tree biology for multiple uses; From metabolites and recombinant proteins to plant-made-pharmaceuticals; Plants with improved nutritional quality and value
* Strengthening the functioning of ecosystems: Improvements in plant health; Climate change impact on plant production; Climate, ecosystems and genomics; Biodiversity

For more information see <http://www.epsoweb.org/event/conference/finland-2010>

[Back to List of Contents](#_CONTENTS)

# 18th European Biomass Conference and Exhibition - Lyon, France

## 3-7 May – Lyon, France

The 18th European Biomass Conference and Exhibition will be held from 3 to 7 May 2010 at the Lyon Convention Centre - Cité Internationale – France, and will focus on the topics:

* biomass resources
* biomass conversion to heat, electricity, and bio-products
* fuels from biomass
* industrial demonstration and market implementation
* policies and ensuring sustainability

For further information, email: biomass.conference@etaflorence.it, http://www.conference-biomass.com/

[Back to List of Contents](#_CONTENTS)

# Windmills turn back to wood - Schweighofer Prize Winners announced

## Innovations recognised by prestigious prize

The  Schweighofer Prize is awarded every two years for innovation in the area of wood products and forestry. TreeMetrics, the Irish-owned company specialising in laser scanning, is a previous winner. Among the 2009 winners is a highly innovative approach to the construction of wind towers using modular wood sections ([http://www.schweighofer-prize.org/winners2009.en.htmlSchweighofer)](http://www.schweighofer-prize.org/winners2009.en.htmlSchweighofer%29).

[Back to List of Contents](#_CONTENTS)

# Will northern forests be able to stand the heat?

## Boreal forests are especially sensitive to global warming and are likely to be severely affected by climate change

In international climate change negotiations, forest-related deliberations have so far mainly focused on mitigation, rather than adaptation. However, in the particularly vulnerable boreal regions, climate change is progressing too quickly to postpone adaptation action. Flexible approaches tailored to local situations must go hand in hand with substantial reductions in carbon emissions from fossil fuel and deforestation, otherwise forests are at high risk of entirely losing their carbon-regulating services. This would, in turn, seriously accelerate climate change, a fact that has not yet been fully considered in current model generation.

In total, around 210% of the carbon in the atmosphere is stored in forest ecosystems and the boreal biome, which is the second largest terrestrial biome with one third of the Earth's forested area, has been estimated to contain up to 30% of all carbon stored in the terrestrial biomes. It mainly includes forests in North America, the Nordic countries and Russia. This region is expected to experience more warming than equatorial zones and its temperature-limited forests will therefore particularly suffer. Higher temperatures along with prolonged droughts, will lead to more intense pest infestations, fires and other environmental stresses that consequently will cause considerable forest degradation and destruction.

Today, research points us to the fact that there are options to reduce the vulnerability of forest ecosystems and to help forests adapt to climate change. Coinciding with the UNFCCC Climate Summit, the Forest Day 3 Learning Event on 13 December 2009 co-hosted by the International Union of Forest Research Organizations (IUFRO) and the European Forest Institute (EFI), looked at these options and informed participants about key impacts and vulnerabilities as well as priorities for adaptation and implications for forest management. This learning event confirmed the key findings of the Global Assessment Report on Adaptation of Forests and People to Climate Change that was published in April 2009 by IUFRO and which presented the state of scientific knowledge of current and projected impacts of climate change on forests and people along with options for adaptation.

According to the report, climate change is expected to affect the distribution of forest types and tree species. Evidence from past climate changes shows that tree species respond individually, but for the boreal domain a shift of the entire biome to the north is expected although the time frame for this shift is uncertain. At first, higher temperatures and precipitation could lead to increased growth and substantial gains in the supply of timber, as a study on the impacts of climate change on the growth of managed boreal forests in Finland (Kellomäki et al. 2008) shows, but in the end the positive effects of such growth will most likely be outweighed by the increased prevalence of fire, storms, pests and diseases.

Therefore, forest managers need to support the adaptive potential of forests. "Taking into account local circumstances, fine scale local adaptation in itself is a challenge in the face of rapid climate change – but also reveals a unique property of tree species to adapt to environment", said Professor Erik Dahl Kjær, Head of Research of the School for Forest, Landscape and Planning at the University of Copenhagen, at the Learning Event. In his presentation he borrowed a metaphor from Lewis Carroll's 'Through the looking-glass'. There the Red Queen tells Alice that in Wonderland she needs to run as fast as she can just to keep staying under the same tree. Now, due to human induced climate changes, it is the trees that will have 'to run as fast as they can' to stay adapted.

To help them win the race, there is a need to reduce the vulnerability of forest ecosystems by reducing their exposure to climate change, decreasing their sensitivity and maintaining or increasing their resilience. Following the observations and thoughts of Charles Darwin 150 years ago, one way of achieving this goal is supporting natural selection by ensuring that forests rest on a highly diverse genetic foundation suitable for this natural selection to work. In addition, measures such as cutting forest fuel loads, planting hardier species, increasing reservoir storage capacity to help avoid water stress in drought conditions, or thinning overstocked stands need to be implemented as part of sustainable forest management.

"Policy makers should focus greater attention on helping forests and the people who live around them to adapt to anticipated problems," confirmed Professor Risto Seppälä from the Finnish Forest Research Institute (Metla) and Immediate Past President of IUFRO, who chaired the expert panel that produced the Global Assessment Report. And he emphasized, "Wider application of well-understood sustainable forestry practices, which offer a range of benefits, could help forests avoid some of the damage induced by climate change."

So, planning how to manage forests in order to make them fit for climate change is a first step towards adapting. In this planning process, however, it is imperative to integrate the people who live in or from the forest. Their livelihoods will be severely threatened by the expected increases in extreme weather events such as heat stress, drought, storms, and flooding and their related impacts. Many forest-dependent indigenous peoples and local communities hold traditional knowledge about the sustainable forest and water management that can help them respond to climate change stress, and such local knowledge can complement formal science.

At the Learning Event, Ms. Rose Kushniruk, a representative of the Champagne-Aishihik First Nation in Yukon, Canada, presented an example of such a successful participatory approach. "It was the severe spruce bark beetle infestation in the Yukon region that made the community people realize how their values were being impacted", said Ms. Kushniruk. As a response, the Champagne-Aishihik First Nation Traditional Territory's Forest Management Plan was set up. The plan emphasizes the local situation and its purpose is to provide direction for sustainable forest management in the area.

Ms Kushniruk explained, "From a global perspective, the change we need is overwhelming and people at times in the north don't know how to react to that, it makes you feel hopeless in your little corner of the world. But we need to do small things at the community level and to meaningfully incorporate and truly listen to all levels of knowledge, pool that knowledge. The knowledge we get from western science, local people and aboriginal people, when combined, is very powerful and respected. We need to start small at the community, find local community champions to move this forward. Once local people see something they love or value is being taken away or changed you'll have their attention, then anything can happen."

To meet the challenges of adaptation, reduce the vulnerability of forests and people to climate change and achieve successful mitigation, a series of measures need to be combined. Besides a reduction of emissions from fossil fuels and deforestation, these range from new modes of governance that enable meaningful stakeholder participation, to strengthening sustainable management and broadening the genetic diversity of species. However, there is still poor understanding of how adaptation really works; the challenge is left for those dedicated to find out. As Professor Kjær put it, "At this stage it seems smart to invest a bit in both getting smarter – and in keeping options open."

For more information, please contact: Gerda Wolfrum: +43 1 877 01 51 17 or wolfrum@iufro.org

Source: <http://www.iufro.org/science/gfep/media-information/forest-day3-learning-event/>

[Back to List of Contents](#_CONTENTS)

1. See for example <http://unfccc.int/files/kyoto_protocol/application/pdf/awgkplulucfeu061209.pdf> - the EU forestry data submission at Copenhagen. [↑](#footnote-ref-1)
2. <http://unfccc.int/resource/docs/2009/awg10/eng/l15.pdf> [↑](#footnote-ref-2)
3. <http://unfccc.int/resource/docs/2009/awglca8/eng/l07a06.pdf> - REDD+ text [↑](#footnote-ref-3)
4. <http://unfccc.int/files/na/application/pdf/cop15_ddc_auv.pdf> - SBSTA REDD+ methodological guidance conclusions. [↑](#footnote-ref-4)