



# **FESPB***Alert*

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## **Research news**

### **Fires unleash huge amounts of CO<sub>2</sub> greenhouse gas**

Writing in *Nature* magazine, a team of European and Indonesian scientists used satellite imagery from ESA's ERS and NASA's Landsat satellites to help measure the huge amounts of carbon dioxide gas released into the atmosphere by 1997-98 fires in the tropical bush of Indonesia.

A series of peatland and forest fires blamed on the El Niño climate phenomena devastated huge tracts of rainforest in Southeast Asia, hitting Indonesia particularly hard, in the most widespread fires in the region. The El Niño reduced precipitation and extended drought conditions throughout Southeast Asia and the Pacific region. The resulting fires produced a noxious yellow haze that covered an area 3000 by 5000 kilometres for months. Estimates of the economic damage to Indonesia, and neighbouring countries of Singapore, Malaysia, Brunei and Thailand, totalled more than \$2 billion (€2.006 billion).

For the study, the researchers focused on tropical peat swamp forests, a largely overlooked ecosystem with peat deposits up to 20 metres deep. Because of the high carbon content of this organic soil, surface fires spread underground into the peat layer, not burning completely and producing huge amounts of smoke and fine

particles. The peat swamp forests represent approximately 40 percent of the total area burned in Indonesia during the 1997-98 El Niño.

### **Slowing insect resistance to genetically modified crops**

Genetically modified Bt crops are now widely used in the USA. These crops contain genes from bacteria that make them toxic to some insect pests. A central concern in regulating these genetically modified crops is the risk of insects evolving resistance to the Bt toxins. To reduce this risk, the "high dose/refuge" strategy is now being used, in which non-Bt fields (refuges for insect pests) are planted near Bt fields (where there is high dose of toxin).

In the November issue of Ecology Letters, Ives and Andow (Ecology letters 5, 792-801) use mathematical theory to explain how the high dose/refuge strategy works. This analysis leads to several unexpected results. For example, for some Bt crops and some pests, spraying insecticides in refuges should not severely compromise the value of refuges. This makes the high dose/refuge strategy more practical by allowing farmers to protect their crops in refuges. The new theory could lead to new resistance management strategies.

### **How to target species for conservation?**

New research from scientists at the University of Sheffield published in the November issue of Ecology Letters has cast doubts on the widely held `rule of thumb` that the conservation of a country`s biodiversity can be guaranteed by focusing on protecting its threatened and endemic species.

In a report published this week, Aletta Bonn, Ana Rodrigues and Kevin Gaston explain, "Nationally threatened and endemic species are important conservation targets in their own right. But focussing conservation efforts solely on these species does not automatically ensure compliance with the provisions of the Rio Convention on Biological Diversity for a country. A common assumption is that the protection of the threatened and endemic species would help preserve all species, by maintaining good quality habitats for the latter. However, our modelling results using Southern African birds show that this conservation strategy falls short, especially for representing other bird species in their centres of distribution."

The study also stresses the need for larger conservation networks in conservation planning directed at species persistence.

## Other news

### European Science Foundation (ESF)

The European Science Foundation (ESF) aims to promote high quality science at European level. It is the European association of national organisations responsible for the support of scientific research. Established in 1974, the Foundation currently has 70 Member Organisations (MOs) including Research Councils, academies and other scientific institutions from 27 countries.

#### Scientific Activities

The principle function of the ESF is to co-ordinate co-operative research in Europe which it achieves through the following activities:

#### EUROCORES

This is a new ESF instrument. The aim of EUROCORES is to provide a collaboration mechanism at a multinational level within Europe which can be responsive to new and changing demands in science and the emerging priorities of national funding agencies. Following the identification of topics, ESF Member Organisations (MOs) are invited to ring fence national budgets for funding collaborative activities. For details about EUROCORES visit <http://www.esf>.

#### ESF FORWARD LOOKS

The ESF Forward Look is a new instrument, to develop medium to long term views and analyses of future research developments in multidisciplinary topics, and interact with the policy makers from ESF Member Organisations. Amongst the first Forward Look topic chosen by ESF are Global Change Research and Urban Science. For details about Forward Looks visit <http://www.esf.org>

#### NETWORKING INSTRUMENTS

The Foundation also employs four principal networking instruments:

##### ESF Exploratory Workshops

These enable scientists to come together and to examine topical scientific issues. They frequently lead to further collaborative action on a longer-term basis. A single unified call for proposals is normally issued each spring for events to be held the following year.

##### ESF Scientific Networks

ESF Scientific Networks discuss, plan, innovate, analyse or co-ordinate research. They bring together scientists to explore the potential of developing and carrying out research at a European level. Very often, they give rise to other ESF activities such as scientific programmes or European conferences. There are usually two deadlines (31 May and 30 November) each year.

**ESF Scientific Programmes**

Scientific Programmes are medium- to long-term activities focused on specific themes. They bring together on-going substantive research projects carried out by multinational teams of researchers, and may include limited fellowship schemes. They concentrate on how expertise can be co-ordinated and developed effectively at a European level. Programmes last an average of three to five years, with funding provided by the Foundation's Member Organisations.

**Eureseco Conferences (European Research Conferences)**

Eureseco Conferences are a programme of the European Science Foundation, with funding from the High Level Scientific Conferences Activity of the European Commission.

Each conference consists of a series of meetings, held typically every other year. There are neither written contributions nor proceedings. Unconventional ideas and new approaches, not yet fully explored, are encouraged. The conferences are open to all scientists, whether from academia or industry

Further information on the ESF and its activities including detail of calls can be found at <http://www.esf.org/>

**Co-operation in Science and Technology (COST)**

COST is a European wide support scheme set up by a ministerial conference in 1971 to encourage co-operation in science and technology. There are now 28 participating countries including the 15 member states of the EU. COST currently supports over 200 individual Actions. Participation is on an à la carte basis, subject to national approval and evidence of existing activity. COST only assists with the costs of co-ordination, and does not fund research activities. The mechanism is administered by 28 national representatives on a Committee of Senior Officials, helped by a technical secretariat in the European Commission.

Four basic principles underpin COST mechanisms:

1. All COST member countries, as well as the European Commission, can propose COST Actions.
2. Participation in these Actions is voluntary associating only interested countries.
3. The research to be co-ordinated is funded nationally. The co-ordination costs are funded both by the participating countries and the European Commission.
4. A COST Action aims to co-ordinate national research at a European level. The work undertaken by each Action is administered by a Management Committee.

In contrast to Community research programmes, this form of collaboration does not require an agreed overall research policy. It focuses on specific themes for which there is particular interest in the COST countries. From an initial 7 actions in 1971, COST grew to 140 Actions in 1997.

COST funding covers the co-ordination expenses of each Action (scientific secretariat, contribution to workshops and conferences, publications, short term scientific missions etc).

More information about COST can be found at <http://cost.cordis.lu>

## **THE EC SIXTH FRAMEWORK PROGRAMME (FP6) 2002 - 2006**

As the final calls for proposals to the Fifth Framework Programme have been made we are now looking ahead to the introduction of the new Framework Programme the first calls to which will be made later this year (November/December).

FP6 has an agreed budget of €17.5 billion to fund collaborative research, co-ordination and mobility activities in focused areas. As with FP5, participation will be open to all kinds of organisations including universities, research establishments (public or private) and companies of all sizes. Small and Medium sized Enterprises (SMEs) are particularly encouraged to participate.

The changes between FP5 and FP6 are far more apparent than was the case in the transition between FP4 and FP5. The 6th Framework Programme will be divided into three main parts:

**Integrating European Research**, this sub-programme will have a budget of €13.285M and will fund research projects and networks focused in 7 thematic areas and an additional (8th) area covering research underpinning EU policies such as the CAP. The 7 thematic areas with budgets in €M are:

1. Genomics & Biotechnology for Health - 2,255
2. Information Society Technologies - 3,625
3. Nanotechnologies etc - 1,300
4. Aeronautics and Space - 1,075
5. Food Quality and Safety - 685
6. Sustainable Development, Global Change and Ecosystems - 2,120
7. Citizens and Governments in a Knowledge-Based Society - 225

### **New Funding Instruments**

FP5 funding instruments such as shared cost projects and concerted actions (networks) will give way to larger scale activities - Integrated Projects and Networks of Excellence - with greater flexibility and autonomy to the participants.

Each instrument has its own distinct character and its own role to play in implementing the priority themes.

Networks of Excellence aim at European capacity building through a lasting integration of (nationally funded) activities and resources. The management costs will be met with greater flexibility and autonomy.

The Commission's website has further information at

<http://europa.eu.int/comm/research/nfp.html>

The invitation for expressions of interest was issued on 20 March with a closing date of 7 June. The first calls for proposals of FP6 are expected in November/December.

## Disseminating plant biology: how and what for?

In the last few decades, giant steps have been made in our understanding of plant biology. Unfortunately, in some cases the importance of new discoveries has not been fully perceived outside our labs. This led to many misunderstandings and reinforced in some part of the public opinion the stereotype of the mad plant scientist who, locked in his ivory tower, does weird experiments trying to get the Nobel prize.

What can we do against prejudice? How can we put the discussion on biotechnology, biodiversity and, in general, the complex relationship between plants and humans on a fair and reasonable basis? Of course, there is no immediate solution to the problem. In the past, we (plant scientists) did not care too much about the dissemination of scientific knowledge. More recently, some initiatives were started (e.g. by the Education Foundation of the American Society of Plant Biologists) with the aim of giving some guidelines to science teachers.

Teacher education has a key role in communication. Discussing controversial themes in plant biology with in service- and perspective teachers can really help in disseminating scientifically based information. The other way around, school teachers, by living in close contact with the issues and concerns of kids and their families, can bring to the attention of plant scientists first hand information on the public perception of their work.

It is quite difficult to think of a “European Initiative for Teacher Education in Plant Biology” (EITEPB???) due to differences in languages and educational systems between different European countries. On the other hand, gathering our experiences on teacher education is definitely possible. We could also think about preparing a website collecting opinions, information and whatever. Shall this have future developments? We’ll see...

Maybe this is enough as a starter. I hope this message will entice some discussion within the FESPB. Any suggestion, comment or heavy criticism is welcome!!!

Mario De Tullio

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## Positions available

Full details of these positions are posted on the FESPP website on the Jobs and Studentships pages (<http://www.fespp.org/jobs.asp>)

### Shoot Architecture & Flowering In Perennial Plants, Massey, NZ

#### Two PhD Scholarships

Two postgraduate research scholarships for work to be undertaken towards PhD degrees are available within the Institute of Molecular BioSciences, Massey University. These will be for research to be undertaken on Architecture and Flowering, led by Dr John Clemens, and are worth \$20,000 (plus \$2,000 towards fees) per annum. A commencement date early in 2003 at the latest is anticipated.

#### The project:

We have a good understanding of phase change and flowering in the woody perennial plant *Metrosideros excelsa*, and of gene expression during floral development in this species. We now wish to test the hypothesis that the rate of phase change is controlled primarily by the complexity of shoot architecture. While continuing with *Metrosideros*, we want to introduce additional perennials that will be more amenable to study in the future. An important aspect of the work will be to establish links between inflorescence and floral meristem identity gene expression, and plant function. Two doctoral scholars are needed to join a multicultural team working on a variety of plant biological questions within the Architecture & Flowering project. This work is subcontracted to Massey University by Crop & Food Research within the PGSF Native Ornamental Plants programme.

For information about the progress of our work, including recent publications and abstracts, please refer to the website for the Project Leader, Dr John Clemens <http://imbs.massey.ac.nz//HTML/clemens.html> and to that for Professor Jameson <http://imbs.massey.ac.nz//HTML/jameson.html>, along with other Institute information at <http://www.massey.ac.nz/~imbs/>.

#### The people:

The postgraduate scholarships are for highly motivated people with good interpersonal skills, who are recent Honours or MSc graduates in plant physiology and/or plant molecular biology. Excellent laboratory and experimental skills, and a familiarity with mathematical approaches to describing plant growth would be advantageous. Expressions of interest are welcome.

#### For further information:

Contact: Dr John Clemens                      Professor Paula Jameson  
E-mail: J.Clemens@massey.ac.nz   P.E.Jameson@massey.ac.nz  
Telephone: (06) 350 5515 extension 2570   (06) 350 5518  
Fax: (06) 350 5688

Applications including a curriculum vitae, certified academic transcripts and names and addresses (telephone, fax and e-mail) of two referees should be posted (not emailed) to:

Dr J. Clemens  
 Institute of Molecular BioSciences  
 Massey University  
 Private Bag 11 222  
 Palmerston North

## **Carbon Metabolism And Carboxylate Exudation In Cluster Roots Of Hakea Prostrata, Western Australia**

**Postdoctoral position in the School of plant biology, Faculty of natural and agricultural sciences for 3 years**

An ARC-funded 3-year Postdoctoral position is offered at the University of Western Australia. The successful applicant for the position has a PhD in a relevant field of molecular plant physiology or plant biochemistry.

Nonmycorrhizal Proteaceae are very successful in acquiring phosphate from nutrient-impooverished soils; their cluster roots account for this. We will elucidate aspects of production and release of carboxylates that are associated with the functioning of cluster roots, using *Hakea prostrata* (Proteaceae) as a model. Types and rates of exudates produced by cluster roots, as influenced by development and environmental signals, will be assessed. Regulation of exudate production and release will be elucidated by investigating pathways and organelles involved in their production. The findings will provide key information on adaptive mechanisms associated with phosphate acquisition from nutrient-poor soils.

Supervisor:

Professor Hans Lambers

Salary to be paid:

Postdoc Level A (\$ 47,545-\$ 51,035) depending on experience.

Applications should be addressed to:

School of Plant Biology,

Faculty of Natural and Agricultural Sciences,

The University of Western Australia, Crawley, WA 6009

Email: Professor Hans Lambers ([hlambers@cyllene.uwa.edu.au](mailto:hlambers@cyllene.uwa.edu.au))

<<http://www.plants.uwa.edu.au/>> <http://www.plants.uwa.edu.au/>

Closing date:

Friday January 10, 2003. Late applications will be considered.

**Selection Criteria For ARC-Funded Postdoctoral Fellowship (Level A)**

School of Plant Biology, Faculty of Natural and Agricultural Sciences, The University of Western Australia, Perth, WA, Australia

The appointee is expected to conduct research on respiration and carbon metabolism of *Hakea prostrata*. Appointment at this level requires a PhD and an interest and willingness to collaborate with other researchers.

#### QUALIFICATIONS AND KNOWLEDGE

- |    |  |           |
|----|--|-----------|
| 1. | PhD or equivalent in a field relevant to molecular plant physiology or plant biochemistry. | essential |
| 2. | Strong skills in molecular techniques in plant physiology                                  | essential |
| 3. | Strong background in plant physiology or electron microscopy                               | essential |
| 4. | Experience with in situ hybridisation techniques in plant research.                        | desirable |
| 5. | Strong skills in plant respiration and carbon metabolism.                                  | desirable |

#### RESEARCH AND SCHOLARSHIP

- |    |   |           |
|----|---|-----------|
| 1. | A demonstrable capacity for research on plant respiration or carbon metabolism. | essential |
| 2. | Capacity to work collaboratively within the University.                         | essential |
| 3. | Skills in experimental design and statistical analysis of data.                 | essential |
| 4. | Demonstrable ability to achieve excellence in research.                         | desirable |

#### INDUSTRY LIASION

- |    |                                       |           |
|----|---------------------------------------|-----------|
| 1. | Strong communication skills.          | essential |
| 2. | Experience in collaborative research. | desirable |

### **Plant Science Research Positions in Maynooth, Ireland**

*Applications are invited for the following posts*

**Two postdoctoral and one postgraduate (Ph.D) positions** are available as part of a project, supported by Science Foundation Ireland, aimed at metabolic engineering through chloroplast transformation. Postdoctoral applicants must be experienced in plant cell and molecular biology, while previous experience in plastid transformation would be an advantage.

Applications including a full CV, together with the names and e-mail addresses of two referees should be forwarded to **Professor Philip J. Dix, Biology Department, National University of Ireland, Maynooth, Maynooth, Co. Kildare**, or submitted by e-mail to: [phil.dix@may.ie](mailto:phil.dix@may.ie).

## **Forthcoming meetings**

### **Genotype-phenotype: bridging the gap.**

Cirencester, U.K. 16-18 December this year.

Posters are still being accepted. Information at <http://www.aab.org.uk/meetings/mtgs2002/Geono-pheno.htm>

### **Optimisation of water use in the Mediterranean region.**

Palma, Mallorca, 24-28 March 2003.

Information at <http://www.aab.org.uk/meetings/mtgs2003/optimize.htm>

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UK phone 0131 535 4063 Fax 0131 667 2601  
<http://www.ierm.ed.ac.uk/people/academic/russell.htm>

### **APOPTOSIS 2003 : From signaling pathways to therapeutic tools**

**January 29 - February 1st, 2003**

European Parliament Conference Center (Luxembourg)  
<http://www.transduction-meeting.lu>

We are encouraging potential participants to submit papers for oral and poster presentations at this the fifth molecular and cellular biology meeting. More than 40 additional talks will be added chosen from registered participants.

Selected speakers will receive a notification early January 2003.

All abstracts will be available online prior to the meeting at <http://www.pharma-transfer.com>

Our website contains additional information about Luxembourg, selected hotels, our expo and includes now a link to a secure credit card payment site.

**Fifth International Workshop on Field Techniques for Environmental Physiology.** The workshop will be held in Tenerife, Canary Islands, Spain, 16–22 March 2003. The principal organizer is Dr Johanna Pulli, Edinburgh University, UK. Postgraduate students are especially welcome and will be introduced to the practicalities and pitfalls of a wide array of techniques. There are grants available for postgraduate students to attend either from the British Ecological Society or from the Society for Experimental Biology (an FESPP constituent society). Early applications are encouraged. Full details are available on:

<http://www.ierm.ed.ac.uk/instrument.workshop/>

### Useful web sites

#### **Bio-Web: Resources for Molecular and Cell Biologists**

<http://cellbiol.com/>

The Bio-Web is a scientific news/resource site for molecular and cellular biology. With a newspaper-like appearance, the left column leads to major sections, cool sites (including powerhouse sites like Science, Nature, PubMed and others), followed by more news sources.

#### **US National Arboretum**

<http://www.usna.usda.gov/>

There is a remarkable depth in coverage and content in this site, which is a virtual arboretum, presenting many educational opportunities. Operated by the USDA, this operation provides some routine "county agent"-like services to farmers, hobbyists, and those trying to grow plants. The menu of options provides a plethora of pull-down menus, where services like the zone hardiness map is displayed, sheets on disease characterization and prevention, and planned plant introductions into the U.S.

#### **Where Food Crops Originated**

<http://horizon.nmsu.edu/garden/history/>

This web site discusses Old and New World crops and their origins. It reflects on the botanical diversity that we gained through sharing crops. This is part of the Seeds of Change Garden site.

### **EPA Global Warming Site: Climate Change Education Resource Database**

<http://yosemite.epa.gov/oar/resources.nsf/websearch?openform>

The EPA Global Warming Site presents information at educational levels beginning in elementary school, but the bulk of the links include numerous formal government research reports. The following topics are available: waste management reports, sea level rise reports, reference material (from UNFCCC, IPCC and others), position papers, outreach material, international material, greenhouse gas emissions reports, EPA conference reports and additional documents. Although there is general agreement that the earth is becoming warmer, there is no clear sense of what will happen. One idea in fact proposes that the warming may trigger a new ice age. Lots of activities and discussion topics.

### **FESPB News**

#### **Change of name**

As you will probably have noticed, the abbreviation is now **FESPB**; at the recent congress, the executive committee agreed to a change in the name of the federation to the **Federation of European Societies of Plant Biology**, thus reflecting the wider activities of society members, and also bringing us in line with the American Society for Plant Biology.

### **Items for FESPAlert**

If you have items, job opportunities or information you think FESPP members would like to see in *FESPAlert* or have any comments on content please e-mail me [pjlumsden@uclan.ac.uk](mailto:pjlumsden@uclan.ac.uk)

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