



British Ecological Society  
Forest Ecology Group



Silvopastoral agroforestry at Rothamsted, UK

## INTRO

As if we needed a reminder of how important forests are, this year's World Environment Day on 5<sup>th</sup> June was dedicated to the theme 'Forests: Nature At Your Service'. There's lots of information on the website: <http://www.unep.org/wed/theme/>, and more to come in the UN International Year of Forests. If you're organising a related event then please let us know about it.

In this edition our Forest of the Month this issue comes from Rothamsted Research in the UK, and PhD student Alexa Varah tells us about her research on silvopastoral agroforestry. If mixed systems of agriculture are of interest, then you might also like to attend the Annual Meeting of the UK Farm Woodland Forum from 30<sup>th</sup> June-1<sup>st</sup> July; a booking form accompanies this bulletin. Elsewhere, Jan-Olov Weslian provides a lay summary of his recent paper on priority effects among insects and fungi colonising decaying wood in *Journal of Animal Ecology*. The Forest Ecology Group Bulletin welcomes any contributions – why not write a short article about your own forest and promote your research?

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## NEW BOOK PUBLICATIONS

### **Temperate and Boreal Rainforests of the World**

Ed: Dominick A. DellaSalla  
Island Press  
<http://islandpress.org/dellasala/>

### **Seasonally Dry Tropical Forests: Ecology and Conservation**

Eds: Rodolfo Dirzo, Hilary S Young, Harold A Mooney & Gerardo Ceballos  
Island Press  
<http://www.islandpress.org/bookstore/detailsyy22.html>

### **Tropical Montane Cloud Forests**

Eds: L.A. Bruijnzeel, F.N. Scatena & L.S. Hamilton  
Cambridge University Press  
[http://www.cambridge.org/gb/knowledge/isbn/item/2713605/?site\\_locale=en\\_GB](http://www.cambridge.org/gb/knowledge/isbn/item/2713605/?site_locale=en_GB)

### **World Atlas of Mangroves**

Mark Spalding, Mami Kainuma & Lorna Collins  
Earthscan  
<http://www.earthscan.co.uk/?tabid=34104>

### **Monitoring Forest Biodiversity: Improving Conservation Through Ecologically Responsible Management**

Toby Gardner  
Earthscan  
<http://www.earthscan.co.uk/?tabid=102271>

## OPPORTUNITIES

### **Postdoctoral Position in Functional Ecology (Plant Functional Traits)**

#### **USDA Forest Service, Hilo, Hawaii**

“Developing Novel Ecosystems that Enhance Carbon Storage, Native Biodiversity, and Human Mobility in Lowland Hawaiian Forests”

A postdoctoral research position is available for an individual interested in melding plant functional trait theory with restoration planning. The objectives of the study are to determine appropriate candidate species for tropical lowland wet forest restoration based on their functional traits. We propose to develop and evaluate a set of what we call “hybrid ecosystems,” in which a mix of native and non-native species maintains valuable forest structure and ecosystem services. Utilizing functional trait level information and ecological assembly rules, we propose to design combinations of species that will serve as self-sustaining hybrid ecosystems, balancing tradeoffs between supporting sustainable native biodiversity and human needs for C storage.

The position will be based at the USDA Forest Service in Hilo Hawaii. The candidate will work with project investigators Dr. Rebecca Ostertag, University of Hawaii at Hilo, Dr. Susan Cordell, USDAFS, and Dr. Peter Vitousek, Stanford University.

A Ph.D. in Ecology, Plant Biology or equivalent is required. Technical skills desired include: Strong quantitative skills and in particular experience with multivariate statistical models and analysis including indices related to functional diversity; expertise in data management and databases; and an understanding of the theory and measurement of plant functional traits. A publishing record in peer-reviewed journals is also required.

This is a two-year appointment with competitive benefits. Applicants should send a letter of interest, curriculum vitae and the names and full contact information (email and phone numbers) of three potential references to Susan Cordell (808-854-2628), [scordell01@fs.fed.us](mailto:scordell01@fs.fed.us) no later than June 15, 2011. Additional information will be forwarded upon request.

### **Faculty Position – Forest Biology Mississippi State University Department of Forestry**

*Position:* Assistant Professor, Department of Forestry, Forest and Wildlife Research Center, Mississippi State University

*Qualifications:* Ph.D. degree in Forestry is required. Experience in applied southern forestry is highly desirable.

*Responsibilities:* Responsibilities will include participation in the department’s teaching program, research and service activities. The successful candidate will teach an undergraduate course in dendrology and ecology. The successful applicant may also be requested to develop a graduate course in their area of expertise. The successful candidate will be expected to secure extramural funding to support their research program.

Opportunities exist to collaborate with the USDA Forest Service and with southern landowners and managers in research efforts.

*Rank and Salary:* Tenure-track, full-time, 9-month or 12-month appointment. Salary is negotiable and commensurate with qualifications and experience.

*The Department of Forestry:* The Department of Forestry is one of three departments in the College of Forest Resources and the Mississippi Forest and Wildlife Research Center which is a separately funded state agency. Departmental activities include undergraduate and graduate instruction, research, and extension programs in forestry and natural resources. The Department has excellent facilities in Thompson Hall on the campus of Mississippi State University. In addition, the Department’s activities are supplemented by the John W. Starr Memorial Forest, an 8,200-acre research and teaching forest.

*Application Deadline and Availability:* Screening of applicants will begin on July 15, 2011 and continue until a suitable applicant is found.

*Application Procedure:* Applications must be made on the Mississippi State University Employment opportunities website via the link: [www.jobs.msstate.edu](http://www.jobs.msstate.edu) (PARF Number 5966). Applicants should also send a letter of application, curriculum vita, official transcripts, a brief statement of research and teaching interests and career goals, and the names, addresses, telephone numbers and e-mail addresses of three professional references to:

Dr. Jeff Hatten  
Chair, Forest Biology Search Committee  
Department of Forestry,  
Mississippi State University,  
Mississippi State, MS 39762-9681

For additional information, contact Dr. Hatten at: 662-325-7481 [jhatten@cfr.msstate.edu](mailto:jhatten@cfr.msstate.edu)

Mississippi State University does not discriminate on the basis of race, colour, religion, national origin, gender, age, disability or veteran status.

## CONTRIBUTE TO UK FOREST POLICY REVIEW

As part of their policy work, the British Ecological Society responds to consultations and inquiries which are relevant to our members, and where we think we can make an impact.

The House of Commons Science and Technology Committee have recently announced a new inquiry into the effects of the 2010 Spending Review on Forest Research. The BES wishes to formulate an evidence-based response, and are inviting members to comment on four main themes:

- 1) The effect of the Spending Review on forest research.
- 2) How priorities in forest research are set and resources allocated?
- 3) How the UK's capability in forest research compares with other countries?
- 4) Are there threats to forest research in the UK?

If you would like to contribute to the BES response to this consultation, please send your responses via email to [policy@britishecologicalsociety.org](mailto:policy@britishecologicalsociety.org) by 6th June, along with a brief statement of your research interests. We would also be pleased to hear from any non-member colleagues with an interest in the inquiry.

Best wishes,  
Harriet Dalrymple  
Policy Intern, British Ecological Society

## LIFE IN DEAD WOOD

By Jan-Olov Weslien ([jan-olov.weslien@skogforsk.se](mailto:jan-olov.weslien@skogforsk.se))

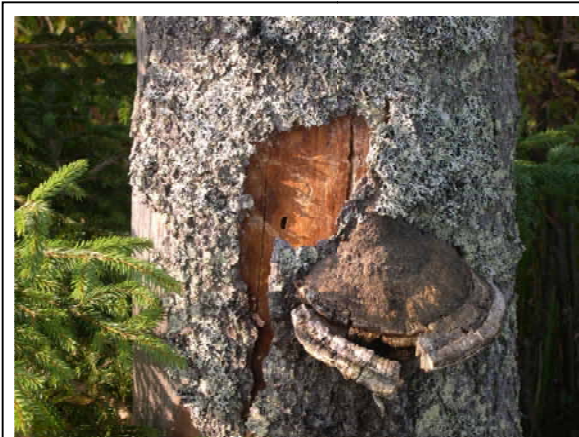
Have you ever thought of what would have happened if...? If I hadn't gone to that dinner party 10 years ago... or if I had gone to the post-office before I went to the supermarket that day...? Life is full of incidences that may have long-lasting impact on our future. So it is even for insects.

For the rare wood beetle *Peltis grossa*, chance events that happened 10-15 years ago are important. But it is not pure chance - there is also an amount of fate.

The community of wood-living beetles and fungi was surveyed during 15 years in several hundreds of dead spruce trees in a boreal forest in Sweden. Ten years after tree death, *Peltis grossa* started to hatch from the rotting trees – but not just any tree. Which tree depended on which other beetle species that by chance was first to arrive at the tree 10 years before.

One of the big ecological questions, dating back at least 100 years, is whether plant and animal communities are formed in a deterministic way by the environment, we could call it fate, or if they are more or less assembled by chance events. This study had ingredients of both. Which beetle species first colonised the newly dead tree was chance but thereafter the succession of fungi and insects was more deterministic.

The study gives new insight in why insect and fungus communities in dead trees develop in different ways during wood decay. Many threatened species live in dead trees and the results can be used in species conservation.



*Peltis grossa* means “large crescent shaped shield”. The name comes from the size and shape of the beetle – after larval development in the wood it hatches through a very characteristic oval hole that it makes in the wood. The fungus in the picture (the red-banded polypore, *Fomitopsis pinicola*) caused brown rotted wood which was needed for the beetle. The probability of a tree being colonised by this fungus depends on other beetle species that developed in the stump ten years before. The bark beetle *Hylugops palliatus* facilitates colonisation by the fungus, whereas the wood borer *Monochamus sutor* inhibits its colonisation.

Jan Weslien, Line B. Djupström, L. Martin Schroeder, Olof Widenfalk (2011). Long-term priority effects among insects and fungi colonizing decaying wood. *Journal of Animal Ecology* DOI:10.1111/j.1365-2656.2011.01860.x

## FOREST OF THE MONTH



Silvopastoral agroforestry at Rothamsted, UK

### Temperate Agroforestry – a step towards food production with a smaller environmental footprint?

A Reading University PhD student, Alexa Varah, is carrying out research into agroforestry systems in the UK<sup>1</sup>. The aim is to establish scientifically whether agroforestry could be part of the solution to increasing concerns about food security and the impact that conventional monoculture systems have on our environment.

#### What is agroforestry?

The basic premise of agroforestry is that it combines trees and/or shrubs with crops and/or livestock. It is an intensive land management system which optimises the benefits created from the interactions between the trees and the crops/livestock. It is not widely practiced in the UK – yet! Forest gardens and systems such as shade coffee have been widely used for years in the tropics. In the UK, agroforestry systems include silvopasture, alley-cropping, riparian buffers, shelterbelts and windbreaks.

#### Why are we concerned about food security and the environment?

Food security is currently a headline issue as the world's population will reach 7 billion this year and is

projected to reach 9 billion by 2045; food production will need to increase by up to 100% as a result. At the same time, global environmental problems need urgent solutions: the rate of species extinction is estimated to be between 100 – 1000 times the natural extinction rate, greenhouse gas emissions remain sky high, water quality and supply is a continuing and growing problem, and the resilience of major components of the Earth's system is being eroded. These issues are expected to be further exacerbated by climate change.

The immediate challenge for agriculture is therefore to deliver increased yields without taking up any more space, whilst at the same time supporting higher levels of biodiversity and other ecosystem goods and services than it does currently.

#### How does agroforestry fit in?

Agroforestry has shown potential in being able to provide increased yields, support increased biodiversity and deliver many more ecosystem services such as pollination, pest control and water purification. The new research project aims to investigate some of this potential.

#### What will the PhD look at?

Alexa is using organic silvoarable and silvopasture systems across the south of the UK, and comparing them to organic monoculture systems. She will measure yields, assess biodiversity and pollination services, calculate carbon stocks, and measure other factors such as microclimate and soil organic matter content. She and her supervisors hope that the outcomes of the study will give an indication of the potential for agroforestry systems to contribute to meeting future demands on UK agriculture.

To find out more, visit The Organic Research Centre <http://www.efrc.com/> or the CAER homepage at Reading University

<http://www.reading.ac.uk/caer/index.html>

<sup>1</sup>Research funded by Reading University Endowment Trust Fund and The Organic Research Centre.

## FORTHCOMING MEETINGS

30<sup>th</sup> June – 1<sup>st</sup> July

### Organic Agroforestry: Eco-functional Intensification

Annual Meeting of the Farm Woodland Forum

East Anglia, UK

Organiser: Dr Jo Smith ([jo.s@organicresearchcentre.com](mailto:jo.s@organicresearchcentre.com))

A provisional programme and booking form are attached

14-16<sup>th</sup> September

### Animals, Man and Treescapes

Sheffield Hallam University

Organiser: Prof. Ian Rotherham ([I.D.Rotherham@shu.ac.uk](mailto:I.D.Rotherham@shu.ac.uk))

See website for more information ([link](#)).

**Royal Forestry Society activities** For details of Royal Forestry Society activities throughout the UK this summer see [www.rfs.org.uk/involved/event](http://www.rfs.org.uk/involved/event) or contact John Jackson ([john@rfs.org.uk](mailto:john@rfs.org.uk)).