



BES Tropical Ecology Group

Upcoming Events!

- [GTÖ 2012](#)
- [ATBC 2012: Brasil](#)

Contact:

- [website](#)
- [email](#)
- [twitter](#)

In this issue:

- [BESTEG News](#)
- [ATBC 2012](#)
- [GTÖ 2012](#)
- [Post-doc: Leeds](#)
- [PhD: Open Uni 1](#)
- [PhD: Open Uni 2](#)
- [PhD: Gottingen 1](#)
- [PhD: Gottingen 2](#)
- [Tropical Papers](#)

BESTEG News

TEG update

TEG Early Career Researcher Meeting 28-30 March 2012

The 6th ECRM will take place at Imperial College, Silwood Park, from the 28 to 30th March 2012.

Registration opens 1 Jan 2012

Key-note speakers: [Julia Jones](#), [Andrew Balmford](#).

This is an exciting meeting for early-career post-graduate students, post-docs and academics who work in diverse areas of tropical ecology. The conference is two days, preceded by a one-day workshop. There will be guest speakers, oral and poster presentations by early-career researchers, workshops and a photography competition

Presentations Please send a 250-word abstract, with title and preference for a poster or oral presentation to tropicalecologybes@gmail.com by 5pm GMT on the 20th February 2012. Each oral presentation should not exceed 15 minutes (this includes 3 minutes for questions).

Workshops *Ecological data analysis in R* An in-depth workshop on a popular or topical suite of analyses (e.g. mixed models, multivariate stats), led by the [Computational Ecology SIG](#).

Zen and the Art of Communicating Science This workshop gives you all the tips you need to engage others in your research. Sessions will include 'getting published', 'what makes a really good talk?', 'combating nerves', 'networking' and 'science for the public'.

Please send suggestions for topics for either workshop to: tropicalecologybes@gmail.com

Photo Competition This year's ECRM is hosting a tropical-themed photography competition, with three broad categories: Flora, Fauna, and Aquatic Life.

Enter a maximum of one photograph per category. No photo can be entered into more than one category. Supply your name, a title, the competition category and a maximum 100 word blurb describing the subject/system, location, equipment and settings (if known) and any digital enhancements. Photos should be supplied as a zipped file and saved as either a TIFF or JPEG file. If digital enhancements have been used, both the original and enhanced photo should be submitted. Send the photograph(s) and blurb to tropicalecologybes@gmail.com by Monday 20th February 2012.

Photographer and explorer [Andrew Scriven](#) will be judging the competition. Winners will be announced at the meeting, with prizes kindly donated by Oxford University Press and Wiley Blackwell. Although copyright remains with the photographer, by entering the competition applicants agree to give the BES the right to freely use their image(s).

More details on the TEG website soon!

MEETINGS

ATBC 2012: Bonito, Brazil

19-22 June 2012, Bonito, Brazil

This year's [ATBC](#) conference is taking place in Bonito-MS, Brazil, 19-22 June. The ATBC2012 meeting's theme is "Ecology, Evolution and Sustainable use of Tropical Biodiversity". The meeting will focus on the interface between ecology and evolution, stimulating discussion on ecological questions from an evolutionary standpoint, as well as potential applications of individual studies for the Sustainable use of Tropical biodiversity. Symposia will cover a large range of topics, including pollination biology, animal-plant interactions, dispersal ecology, community ecology, biogeography, macroevolution, macroecology, forest fragmentation, and conservation, among others.

Abstract submission opens 20 January and closes 20 March.

GTÖ 2012

22-25 Feb 2012, Erlangen, Germany.

In 2012, Friedrich-Alexander-University Erlangen-Nürnberg will host the Annual Conference of the Society for Tropical Ecology (Gesellschaft für Tropenökologie, gtö), focusing on the Islands in land- and seascape. The conference (www.gtoe-conference.de) will run from February 22 to 25, 2012 in Erlangen, Germany. The conference aims to maximize interactions among scientists of all disciplines and backgrounds who are interested in tropical biogeography and biodiversity.

OPPORTUNITIES

Post-doc: Leeds

A 20 month PDRA position is available at the School of Geography, University of Leeds to work on improving the representation of tropical forest dynamics in global vegetation models. We are looking for enthusiastic researchers who have completed, or are currently completing, their PhD.

This post is part of the AMAZALERT (Raising the alert about critical feedbacks between climate and land use change in Amazonia) project that aims to improve our understanding of the sensitivity of Amazonian forests to climate and land-use change and the potential impact of different policy interventions. Using models of different levels of complexity in conjunction with data on forest structure and dynamics from the RAINFOR (Amazon Forest Inventory Network) long-term plot network, you will assess the mechanisms driving vegetation change and explore potential future trajectories of the biome. The work will include the use of Dynamic Global Vegetation Models (DGVMs), focussing on the JULES (Joint UK Land Environment Simulator) DGVM.

See [here](#) for more information.

PhD: Open University

Work on a climate relevant area of ecosystem science. Field work in the UK and South America (Peru). Training in latest biogeochemistry analytical techniques and in ecosystem science. Join internationally leading groups in ecosystem science and trace gas biogeochemistry.

See last pages of this Bulletin for more details.

PhD: Open University

Work on a climate relevant area of ecosystem science with field work in Borneo. Study at first hand the

unique peat swamp forest environment and contribute to an understanding of the human-induced changes that threaten its long-term sustainability. Carry out cutting-edge research which could have important implications for global climate change. Training in the latest biogeochemistry analytical techniques and in ecosystem science.

See last pages of this Bulletin for more details.

PhD: Gottingen, Germany

N cycling in soils under rainforest transformation systems. The project will assess the impacts of rainforest transformation to jungle rubber, rubber plantation, and oil palm plantation on: 1) soil chemical and physical properties, and 2) soil nitrogen (N)-cycling rates.

See last pages of this Bulletin for more information.

PhD: Gottingen, Germany

Trace gas fluxes from soils under rainforest transformation systems. The project will assess the impacts of rainforest transformation to jungle rubber, rubber plantation, and oil palm plantation on: 1) soil-atmosphere exchange of trace gases (NO, N₂O, CO₂, CH₄), and 2) determine the regulatory factors and quantify their relationships with trace gas fluxes.

See last pages of this Bulletin for more information.

PUBLICATIONS



Random Tropical Photo: Chestnet-eared Aracari, Colombia. ©mongabay.com

BES Journals

[Grant et al. \(2012\) Body size and the division of niche space: food and predation differentially shape the distribution of Serengeti grazers. Journal of Animal Ecology 81:201-213.](#)

Turner et al. (2012) [Synergistic effects of seasonal rainfall, parasites and demography on fluctuations in springbok body condition.](#) Journal of Animal Ecology 81:58-69

Malhi (2012) [The productivity, metabolism and carbon cycle of tropical forest vegetation.](#) Journal of Ecology 100:65-75.

Okullo and Moe (2012) [Termite activity, not grazing, is the main determinant of spatial variation in savanna herbaceous vegetation.](#) Journal of Ecology 100:232-241.

Baker-Méio and Marquis (2012) [Context-dependent benefits from ant-plant mutualism in three sympatric varieties of *Chamaecrista desvauxii*.](#) Journal of Ecology 100:242-252.

[Toledo et al. \(2012\) Distribution patterns of tropical woody species in response to climatic and edaphic gradients.](#) Journal of Ecology 100:253-263.

[Cazetta et al. \(2012\) On the reliability of visual communication in vertebrate-dispersed fruits.](#) Journal of Ecology 100:277-286.

Lesser Journals

Crofoot and Gilby (2012) Cheating monkeys undermine group strength in enemy territory. PNAS 109:501-505.

Anderson-Teixeira et al. (2012) Climate-regulation services of natural and agricultural ecoregions of the Americas. Nature Climate Change 2: doi:10.1038/nclimate1346.

Department of Environment, Earth and Ecosystems 2012 PhD studentships

Crypto-ephemeral methane emissions in temperate and tropical forests

Vincent Gauci, David Gowing, Yadvinder Malhi (Oxford)

- Work on a climate relevant area of ecosystem science.
- Field work in the UK and South America (Peru)
- Training in latest biogeochemistry analytical techniques and in ecosystem science.
- Join internationally leading groups in ecosystem science and trace gas biogeochemistry

Methane (CH₄) is an important greenhouse gas that is ~25 times more powerful than CO₂ at trapping the Sun's energy. There is therefore considerable interest in the processes involved in CH₄ production, principally in waterlogged soils in wetlands, and the processes that lead to its emission to the atmosphere. It is generally thought that CH₄ produced in waterlogged soils is emitted by a combination of three processes: 1) by diffusion through water-filled pores, 2) by abrupt release of bubbles, and 3) through internal spaces in the stems of grass-like plants which are adapted to live in waterlogged soils. On-going work by this group has identified a further novel yet important mechanism for transferring CH₄ from soil to the atmosphere: via the stems of wetland adapted trees (Gauci *et al.*, 2010). This important emission pathway remains almost entirely neglected yet recent results in a Bornean peat swamp forest (figure 1) show that tree stems can contribute the majority of ecosystem CH₄ emissions.



Figure 1. Methods used to sample methane flux at multiple heights above the forest floor in Kalimantan, Borneo, April 2011. (c) S. Pangala.

Wetland forests only comprise a relatively small proportion of global forest area yet even free draining forest soils contain small pockets of low oxygen soil where CH₄ may be generated (Teh *et al.*, 2005). The aim of this project is to investigate methane emissions from soils and tree stems along spatial and temporal hydrological gradients in temperate UK and tropical forests to examine whether trees facilitate emission from these soils.

The student will: 1) work at the OU's tree mesocosm array for highly controlled hydrological experiments on tree saplings; 2) perform high temporal resolution CH₄ flux measurements before, during and after, intense rainfall events at Wytham Woods, Oxford; 3) make campaign measurements along spatio-hydrological gradients in forests in Peru; 4) use results to make the first global estimates of the contribution of crypto-ephemeral forest CH₄ fluxes to the atmospheric CH₄ budget.

The Department has a thriving postgraduate community and the postgraduate training programme provides a full range of courses covering: research techniques, scientific methods, information technology, communication and interpersonal skills, which are tailored to the needs of each student.

If you would like to apply or have any queries about this project please contact the first named supervisor either by email v.gauci@open.ac.uk or by writing to the address above enclosing a full academic CV and the names and addresses of three academic referees.

References:

- Gauci, V., Gowing, D.J., Hornibrook, E.R., Davis, J.M., Dise, N.B. (2010) Woody stem methane emission in mature wetland alder trees, *Atmospheric Environment*, doi: 10.1016/j.atmosenv.2010.02.034
- Teh, Y.A., Silver, W.L., Conrad, M.E. 2005. "Oxygen effects on methane production and oxidation in humid tropical forest soils." *Global Change Biology*, 11, 1283-1297, doi: 10.1111/j.1365-2486.2005.00983.



Department of Environment, Earth and Ecosystems 2012 PhD studentships

Greenhouse gas evasion from channels draining intact and deforested tropical peatlands

Vincent Gauci, Andrea Berardi, Chris Evans (CEH, CASE partner),
Sue Page (Leicester), Mark Garnett (SUERC)

- Work on a climate relevant area of ecosystem science with field work in Borneo
- Study at first hand the unique peat swamp forest environment and contribute to an understanding of the human-induced changes that threaten its long-term sustainability.
- Carry out cutting-edge research which could have important implications for global climate change.
- Training in the latest biogeochemistry analytical techniques and in ecosystem science.

Peatlands store a large fraction of the world's soil carbon and are vital components of global carbon soil-atmosphere exchange processes which includes the emission of the second most important greenhouse gas, methane (CH₄). Tropical peatlands are high carbon density ecosystems that are currently extremely vulnerable to destabilisation through human and climate induced changes. They contain 50-70 Gt carbon (3% global soil C) but rapid land use changes (deforestation, drainage) and fire are releasing this C (Page *et al.*, 2002). Damage to the regional environment and biodiversity is similar to the impact of deforestation and fire in non-peatland areas.



Figure 1: Boat access to a Sebangau Forest stream © S. Moore

On-going research by this group on forests in Central Kalimantan, Borneo, shows that current estimates of carbon loss from drained and deforested peatlands neglect fluvial carbon fluxes as a major loss pathway for carbon (Moore *et al.*, 2011). This additional carbon loss from the peat store is exacerbated following fire. In this project we aim to identify the ultimate fate of this fluvial carbon and quantify gaseous losses of the greenhouse gases carbon dioxide and methane. This will be achieved through: 1) Measurement of carbon dioxide and methane evasion and exports in streams/canals in the intact Sebangau forest and in degraded sites in Borneo (Fig. 1). 2) Trace gas exchange measurements using chamber methods. 3) Detailed measurements of stream hydrology to help quantify CO₂ and CH₄ loss rates from defined catchments. 4) Analysis of fluvial carbon quality to include radiocarbon ages of dissolved CO₂.

The project will provide the student with a wide range of biogeochemical, hydrological and GIS skills in a tropical ecosystem setting. The student will be based, for up-to 3 months on each visit, with partners at the University of Palangka Raya, Indonesia where they will have access to field labs, technical and field support as well as vehicles for site access (boats, speed-boats, cars and motorbikes). Due to the challenges of working in Kalimantan peat-swamp forests, a good level of fitness and self-motivation is required. The Department has a thriving postgraduate community and the postgraduate training programme provides a full range of courses covering: research techniques, scientific methods, information technology, communication and interpersonal skills, which are tailored to the needs of each student.

If you would like to apply or have any queries about this project please contact the first named supervisor either by email v.gauci@open.ac.uk or by writing to the address above enclosing a full academic CV and the names and addresses of three academic referees.

References:

- Moore, S., Gauci, V., Evans, C. D., and Page, S. E. (2011) Fluvial organic carbon losses from a Bornean blackwater river, *Biogeosciences*, 8, 901-909, doi:10.5194/bg-8-901-2011
- Page, S. E., Siegert, F., Rieley, J. O., Boehm, H.-D. V., Jaya, A., and Limin, S. (2002) The amount of carbon released from peat and forest fires in Indonesia during 1997, *Nature*, 420, 61-65



GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN

The Soil Science of Tropical and Subtropical Ecosystems at the Georg-August-Universität Göttingen is offering a **PhD** position in the Scientific Project of the CRC 990.

A05/ N cycling in soils under rainforest transformation systems

The position will be limited for 3 years and should be filled as soon as possible. Salary: Pay grade PhD 65 % TV-L 13 of German state regulated public service salary scale.

Your duties

The project will assess the impacts of rainforest transformation to jungle rubber, rubber plantation, and oil palm plantation on: 1) soil chemical and physical properties, and 2) soil nitrogen (N)-cycling rates. Specific responsibilities include: a) plot establishment for all the 32 core sites, b) soil & surface litter sampling and bulk density measurement, c) in-situ measurement of gross rates of soil N cycling, d) instruct, assess and coordinate with the field assistants, lab technicians and student assistants in field sampling and soil preparation for chemical and physical analyses and in laboratory analyses of N concentrations and ¹⁵N signatures of N pools, e) data analyses, writing publications, presentations in conferences, completion of PhD thesis and other requirements for a PhD degree.

Your profile

- hold a Masters degree in (geo)ecology, soil science, environmental sciences, geosciences, forestry, biology or related disciplines
- have a research focus on ecosystem nutrient fluxes and dynamics
- are willing to collaborate with other researchers of the CRC
- are proficient in English
- experience in working in the tropics is desired.
- able to work in the tropics and under field conditions for an intermittent period 18 months

The project will be based in Göttingen, but fieldwork is done in Indonesia.

The University of Göttingen is an equal opportunities employer and places particular emphasis on fostering career opportunities for women. Qualified women are therefore strongly encouraged to apply as they are underrepresented in this field. Disabled persons with equivalent aptitude will be favoured.

Please send your application with the usual documents (also in electronic form) by **January 06, 2012** to **Prof Dr. Edzo Veldkamp, Büsgen-Institute, Soil Science of Tropical and Subtropical Ecosystems, Georg-August-Universität Goettingen, Büsgenweg 2, 37077 Goettingen, Germany.**

If you have any questions, please contact Prof. Dr. Edzo Veldkamp (phone: 0551/39-7339, e-mail: eveldka@gwdg.de) or Dr. Marife D. Corre (phone: 0551/39-5765, e-mail: mcorre@gwdg.de). For more information about our team see: <http://www.uni-goettingen.de/en/67070.html>. For more information about the CRC 990 see: <http://www.uni-goettingen.de/en/310995.html>.

If you send you application by email, please copy all documents into one PDF file. We request that you send us copies of your application documents, as no returns will be made. We will destroy the documents after a holding period of five months. Application documents will only be returned to you if you provide a self-addressed adequately stamped envelope.



GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN

The Soil Science of Tropical and Subtropical Ecosystems at the Georg-August-Universität Göttingen is offering a **PhD** position in the Scientific Project of the CRC 990

A05/ Trace gas fluxes from soils under rainforest transformation systems

The position will be limited for 3 years and should be filled as soon as possible. Salary: Pay grade PhD 65 % TV-L 13 of German state regulated public service salary scale.

Your duties

The project will assess the impacts of rainforest transformation to jungle rubber, rubber plantation, and oil palm plantation on: 1) soil-atmosphere exchange of trace gases (NO, N₂O, CO₂, CH₄), and 2) determine the regulatory factors and quantify their relationships with trace gas fluxes. Specific responsibilities include: a) help in the design of plant chambers for trace gas flux measurement and field installations of measuring instruments and devices for trace gases, b) for all the 32 core sites: whole-year measurements of NO, N₂O, CH₄ and CO₂ fluxes and soil factors known to control soil-atmosphere trace gas exchange, using chamber methods, gas chromatography and chemiluminescence techniques, c) at one oil palm plantation, more intensive measurements to detect whether oil-palm epiphytes are aboveground sources of CO₂, N₂O and/or CH₄, d) instruct, assess and coordinate with the field assistants, lab technicians and student assistants in field measurements, in-situ extraction of mineral nitrogen and soil extract preparation for laboratory analyses of N concentrations, e) data analyses, writing publications, presentations in conferences, completion of PhD thesis and other requirements for a PhD degree.

Your profile

- hold a Masters degree in (geo)ecology, soil science, environmental sciences, geosciences, forestry, biology or related disciplines
- have a research focus on: quantification of trace gas fluxes; ecosystem nutrient fluxes and dynamics,
- are willing to collaborate with other researchers of the CRC
- are proficient in English
- experience in working in the tropics is desired.
- able to work in the tropics and under field conditions for an intermittent period 18 months

The project will be based in Göttingen, but fieldwork is done in Indonesia.

The University of Göttingen is an equal opportunities employer and places particular emphasis on fostering career opportunities for women. Qualified women are therefore strongly encouraged to apply as they are underrepresented in this field. Disabled persons with equivalent aptitude will be favoured.

Please send your application with the usual documents (also in electronic form) by **January 06, 2012** to **Prof. Dr. Edzo Veldkamp, Büsgen-Institute, Soil Science of Tropical and Subtropical Ecosystems, Georg-August-Universität Göttingen, Büsgenweg 2, 37077 Göttingen, Germany.**

If you have any questions, please contact Prof. Dr. Edzo Veldkamp (phone: 0551/39-7339, e-mail: eveldka@gwdg.de) or Dr. Marife D. Corre (phone: 0551/39-5765, e-mail: mcorre@gwdg.de). For more information about our team see: <http://www.uni-goettingen.de/en/67070.html>. For more information about the CRC 990 see: <http://www.uni-goettingen.de/en/310995.html>.

If you send you application by email, please copy all documents into one PDF file. We request that you send us copies of your application documents, as no returns will be made. We will destroy the documents after a holding period of five months. Application documents will only be returned to you if you provide a self-addressed adequately stamped envelope.