Ecology and Global Change Cluster News: 2009

02/03/09

News

Simon Lewis' paper 'Increasing carbon storage in African tropical forests' was published in Nature, and was featured as a 'News and Views' article in Nature, and included a feature on the author. The results were covered in the Guardian, Telegraph, Financial Times and elsewhere around the world.

New Papers

Baker, T.R., Phillips, O.L., W. F. Laurance, N. C. A. Pitman, S. Almeida, L. Arroyo, A. DiFiore, T. Erwin, N. Higuchi, T. J. Killeen, S. G. Laurance, H. Nascimento, A. Monteagudo, D. A. Neill, J. N. M. Silva, Y. Malhi, **G. López Gonzalez, J. Peacock, C. A. Quesada, S. L. Lewis**, and **J. Lloyd**. 2009. Do species traits determine patterns of wood production in Amazonian forests? *Biogeosciences* **6:** 297-307.

Anderson, L.O., Y. Malhi, R. J. Ladle, L. E. O. C. Aragão, Y. Shimabukuro, **O. L. Phillips**, **T. Baker**, A. C. L. Costa, J. S. Espejo, N. Higuchi, W. F. Laurance, **G. López-Gonzalez**, A. Monteagudo, P. Núñez-Vargas, **J. Peacock, C. A. Quesada**, S. Almeida, and R. Vásquez. 2009. Influence of landscape heterogeneity on spatial patterns of wood productivity, wood specific density and above ground biomass in Amazonia. *Biogeosciences Discussions* **6**: 2039-2083.

Malhado, A.C.M., R.J. Whittaker, Y. Malhi, R.J. Ladle, H. ter Steege, L.E.O.C. Aragão, **C.A. Quesada**, A.M. Araujo, **O.L. Phillips, J. Peacock, G. Lopez-Gonzalez, T.R. Baker**, N. Butt, L.O. Anderson, L. Arroyo, S. Almeida, N. Higuchi, T. Killeen, A. Monteagudo, D. Neill, N. Pitman, A. Prieto, R. Salomão, N. Silva, R. Vásquez Martínez, W.F. Laurance, M.N. Alexiades, H. Ramírez A. 2009. Spatial distribution and functional significance of leaf lamina shape in Amazonian forest trees. Biogeosciences Discussions **6**: 2125-2162.

Malhado, A.C.M., Y. Malhi, R.J. Whittaker, R.J. Ladle, H. ter Steege, L.E.O.C. Aragão, **C.A. Quesada**, A. M. Araujo, **O.L. Phillips**, **J. Peacock, G. Lopez-Gonzalez, T.R. Baker**, N. Butt, L.O. Anderson, L. Arroyo, S. Almeida, N. Higuchi, T. Killeen, A. Monteagudo, D. Neill, N. Pitman, A. Prieto, R. Salomão, N. Silva, R. Vásquez-Martínez, W. Laurance. 2009. Spatial trends in leaf size of Amazonian rainforest trees. *Biogeosciences Discussions* **6**: 1837-1876.

Simon L. Lewis, Gabriela Lopez-Gonzalez, Bonaventure Sonké, Kofi Affum-Baffoe, **Timothy R. Baker,** Lucas O. Ojo, Oliver L. Phillips, Jan M. Reitsma, Lee White, James A. Comiskey, Marie-Noël Djuikouo K, Corneille E. N. Ewango, **Ted R. Feldpausch,** Alan C. Hamilton, Manuel Gloor, Terese Hart, Annette Hladik, **Jon Lloyd**, Jon C. Lovett, Jean-Remy Makana, Yadvinder Malhi, Frank M. Mbago, Henry J. Ndangalasi, Julie Peacock, Kelvin S.-H. Peh, Douglas Sheil, Terry Sunderland, Michael D. Swaine, James Taplin, David Taylor, Sean C. Thomas, Raymond Votere & Hannsjörg Wöll. 2009. Increasing carbon storage in intact African tropical forests, Nature, 457, 1003-7.

09/03/09

New Grant proposal

D. Spracklen, E. Boyd, P. Forster, **T. Baker**, M. Termansen, Linking UK business and tropical forest environmental payment schemes (UK-FEPS), NERC Knowledge Exchange Call

16/03/09

News

In the second high-profile paper from the Ecology and Global Change cluster in as many months, the March 5th issue of Science carries a paper led by Oliver Phillips with 12 other Leeds Geography scientists on the effects of drought on the ability of the Amazon to store carbon. The 30-year study, involving 68 scientists from 13 countries, uses long-term censuses of tree populations (growth and death) in more than 100 plots across Amazonia to show that drought causes carbon loss in tropical forests, mainly through killing trees. In normal years the Amazon absorbs nearly 2 billion tonnes of carbon dioxide. The drought of 2005 reversed this process and caused an estimated loss of more than 3 billion tonnes of carbon, with tree deaths accelerated most in locations where drought was strongest, and locations subject even to mild drying affected.

Phillips, O.L., L.E.O.C. Aragão, **S.L. Lewis**, J.B. Fisher, **J. Lloyd, G. López-González**, Y. Malhi, A. Monteagudo, **J. Peacock, C.A. Quesada, G. van der Heijden**, S. Almeida, I. Amaral, L. Arroyo, G. Aymard, **T.R. Baker**, O. Bánki, L. Blanc, D. Bonal, P. Brando, J. Chave, Á.C. Alves de Oliveira, N. Dávila Cardozo, C.I. Czimczik, **T.R. Feldpausch**, M.A. Freitas, **E. Gloor**, N. Higuchi, E. Jiménez, G. Lloyd, P. Meir, C. Mendoza B., A. Morel, D.A. Neill, D. Nepstad, **S. Patiño**, M.C. Peñuela, A. Prieto, F. Ramírez, M. Schwarz, J. Silva, M. Silveira, A. Sota Thomas, H. ter Steege, J. Stropp, R. Vásquez, P. Zelazowski, E. Alvarez Dávila, S. Andelman, A. Andrade, **K.-J. Chao**, T. Erwin, A. Di Fiore, E. Honorio C., **H. Keeling**, T.J. Killeen, W.F. Laurance, A. Peña Cruz, N.C.A. Pitman, P. Núñez Vargas, H. Ramírez-Angulo, A. Rudas, R. Salamão, N. Silva, J. Terborgh, A. Torres-Lezama. 2009. Drought sensitivity of the Amazon rainforest. *Science* 323: 1344-1347.
The two papers are downloadable at:
http://www.geog.leeds.ac.uk/projects/rainfor/pages/publications_eng.html
http://www.geog.leeds.ac.uk/projects/afritron/pages/publications.html

23/03/09

News

Simon Lewis presented two talks at the International Climate Change Conference, Copenhage, March 10-12, on the role of tropical forests in the global carbon cycle, with the talks covered by the Guardian and Sunday Times.

Reuters TV are making a 10-minute program on African forests and the climate change talks in Copenhagen in December based on Simon Lewis' recent paper in Nature. Simon gave an interview for the program last week, to be shown across Africa later this year.

New Paper

Branch xylem density variations across Amazonia,(2009) S. Patiño, J. Lloyd, R. Paiva, C. A. Quesada, T. R. Baker, A. J. B. Santos, L. M. Mercado, Y. Malhi, O. L. Phillips, A. Aguilar, E. Alvarez, L. Arroyo, D. Bonal, A. C. L. Costa, C. I. Czimczik, J. Gallo, R. Herrera, N. Higuchi, V. Horna, E. J. Hoyos, E. M. Jimenez, T. Killeen, E. Leal, F. Luizão, P. Meir, A. Monteagudo, D. Neill, P. Núñez-Vargas, W. Palomino, J. Peacock, A. Peña-Cruz, M. C. Peñuela, N. Pitman, N. Priante Filho, A. Prieto, S. N. Panfil, A. Rudas, R. Salomão, N. Silva, M. Silveira, S. Soares de Almeida, A. Torres-Lezama, J. D. Turriago, R. Vásquez-Martínez, M. Schwarz, A. Sota, J. Schmerler, I. Vieira, B. Villanueva, and P. Vitzthum. . *Biogeosciences*.

30/03/09

New Paper

Lloyd, J., Gloor, E. and Lewis, S.L.: Are the dynamics of tropical forests dominated by large and rare disturbance events? Accepted for publication in Ecology Letters.

Chao, K.-J., **Phillips, O.L.,** Monteagudo, A., Torres-Lezama, A., & Vasquez Martınez, R. 2009. How do trees die? Mode of death in northern Amazonia. Journal of Vegetation Science 20: 260–268.

06/04/09

News

Oliver Phillips joined the Scientific Steerring Committee of the LBA project (Large-Scale Biosphere-Atmosphere Experiment in Amazonia), and participated in the LBA-SSC meeting in Santarem, Para, Brazil, 24-26th March. He gave an invited talk on Amazon forest dynamics and carbon fluxes at the Jardin Botanico Urribe, in Medellin, Colombia, 3rd April.

20/04/09

News

Yadvinder Malhi and **Oliver Phillips** response to a misleading front-page Guardian report claiming that Amazon forests are doomed to destruction by climate change (and therefore, by implication, that there is little point to conservation efforts) was published recently
http://www.guardian.co.uk/commentisfree/2009/apr/07/amazon-rainforest-global-warming

The debate was picked up by the New York Times too
http://dotearth.blogs.nytimes.com/2009/04/07/amazon-experts-cautious-on-climate-threat/

On the 2nd and 3rd of April **Alan Grainger** attended the first meeting of the core drafting team of Working Group 1 of the Dryland Science for Development consortium at the EC Joint Research Centre in Ispra Italy. The consortium, which consists of a small number of leading research institutes but has grown in size to encompass leading dryland scientists from all over the world, has been commissioned by the UN Convention to Combat Desertification (UNCCD) to share with it the state-of-the-art of scientific understanding in this field. Three working groups will deal with (1) monitoring and assessment; (2) land management and rehabilitation; and (3) knowledge management. Each working group will prepare a report which will be presented to a special joint conference with the Committee of Science and Technology of the UNCCD in Buenos Aires in September. The exercise is part of an attempt by the UNCCD to improve channels of communication with the scientific community. The consortium is serving a similar function to that provided by the Intergovernmental Panel on Climate Change to the Framework Convention on Climate Change. Alan is also contributing to Working Group 3.

27/04/09

News

On April 21 **Alan Grainger** visited the University of Swansea to participate as an external subject specialist in a validation meeting for a new undergraduate programme proposed by the School of Environment and Society.

The two recent papers in Nature and Science led by **Simon Lewis** and by **Oliver Phillips** have been selected by NERC as UK environmental science research highlights in the 2008-2009 NERC annual report.

New Publication

Lloyd, J.,M. L. Goulden, J. P. Ometto, S. Patiño, N. M. Fyllas and C. A. Quesada, Ecophysiology of forest and savanna Vegetation, accepted for publication in "Amazonia and Global Change" (edited by M. Keller, J. Gash and P. Silva-Dias). American Geophysical Union, Washington DC.

05/05/09

News

Research led by **Simon Lewis** and **Oliver Phillips** on the tropical forest carbon sinks and their vulnerability was the highlight this month in a briefing for international Forestry Policy Experts by the Center for International Forestry Research (CIFOR), to cover recent policy-relevant research
http://www.cifor.cgiar.org/Publications/Polex/index.htm?lang=English&year=2009 ... and the policy context of our Amazon science is discussed in this week's
BBC News "Green Room" <http://news.bbc.co.uk/go/em/fr/-/1/hi/sci/tech/8020573.stm>

Our work has been evaluated and selected for the Faculty of 1000 Biology (**Phillips, O.L., Lewis, S.L., Baker, T.R**., Chao, K.-J., & Higuchi, N. 2008. The changing Amazon forest. Philosophical Transactions of the Royal Society, Ser.B. 363: 1819-1828.)

A new BBC Mundo Latin American Service report on RAINFOR's work across Amazonia:
- para los que hablen o solo quieren aprender espanol, este nuevo reportaje del trabajo de RAINFOR en la Amazonia:
http://www.bbc.co.uk/mundo/participe/2009/05/090501_participe_amazonas_am.shtml-

and with photos from the field: http://www.bbc.co.uk/mundo/participe/2009/05/090501_amazonia_gal_am.shtml

Jon Lloyd attended the European Geophysical Union Congress in Vienna (19-24 April) where he presented the main results from **Carlos Quesada's** recent Ph.D study in collaboration with the RAINFOR consortium "Regional and large-scale patterns in Amazon forest structure and function are mediated by variations in soil physical and chemical properties".

Tim Baker has been invited to be a (half) member of the NERC Peer Review College, 2009-12.

New Book Chapter

Houghton, R.A. , **M. Gloor, J. Lloyd** and C. Potter, The regional carbon budget, accepted for publication in "Amazonia and Global Change" (edited by M. Keller, J. Gash and P. Silva-Dias). American Geophysical Union, Washington DC.

12/05/09

New Publication

J. Lloyd, S. Patiño, R. Q. Paiva, G. B. Nardoto, **C. A. Quesada**, A. J. B. Santos, T. R. Baker, W. A. Brand, I. Hilke, H. Gielmann, M. Raessler, F. J. Luizão, L. A. Martinelli, and L. M. Mercado; Variations in leaf physiological properties within Amazon forest canopies, Biogeosciences Discuss., 6, 4639-4692, 2009.

19/05/09

News

Alan Grainger was one of two keynote speakers at the Land Use Change and Bioenergy Workshop held at Oak Ridge National Laboratory in Tennessee on May 12 to 14. His paper provided an overview of the uncertainties associated with global land use and land cover data. The aim of the workshop was to identify the state of the art in modelling and monitoring land use and land cover change at national and global scales, and the key research priorities needed to enable the full global impacts of a major rise in US biofuel consumption to be determined beforehand. The workshop was sponsored by the US Department of Energy, but also involved other major agencies such as the US Department of Agriculture and the US Environmental Protection Agency.

Tim Baker and **Olivia Rendon** working on the ESPA project, recently attended the Seminar-Workshop *"REDD: an economic, social and environmental alternative for Madre de Dios"* organized by the regional government and the NGO ACCA in the south of the Peruvian Amazon. This pioneering event included the participation of national and regional governments, national and international NGOs, the local university UNAMaD, indigenous federations, Bolivian and Brazilian representatives, among many others.

27/05/09

News

A grant to Sao Paulo State, Brasil to complement regular measurements of troposphere greenhouse gases over the Amazon basin over the next five years has been granted to an international consortium including **Emanuel Gloor**. The data are used in conjunction with 3d atmospheric transport and land vegetation models to estimate net carbon balances of the basin and thus to obtain a hard constraint on changes of the Amazon rainforests. The project complements the recently funded Leeds AMAZONICA NERC consortium grant.

On 19 and 20 May, **Alan Grainger** attended the second workshop of his World Forest Observatory project, funded by the Sloan Foundation. The workshop was held in Washington DC at Resources for the Future, who are the coordinating partner. As well as discussions between themselves on plans for the next stage of the project, the project partners benefited from feedback from end-users of forest data, and from peer review of progress so far from a range of US academics and forest sector representatives.

Tim Baker co-organised a workshop entitled 'Statistical analysis for the design of carbon inventories' at the Instituto de Investigaciones de la Amazonia Peruana (IIAP), Iquitos, Peru , 15-17 May, as part of his ESPA project. Participants included the government organisations responsible for regional and national protected areas in Peru, WWF, IIAP, and other regional NGOs and universities.

08/06/09

News

Our Amazon research was the subject of a recent Op-Ed piece in the newspaper "A Gazeta", in Rio Branco, Brasil, p. 2, 28mai09. The demonstrated sensitivity of the forest to drought in south-western Amazonia poses a challenge for policymakers involved in current global negotiations on "REDD" (Reducing Emissions from Deforestation and Degradation), which is expected to form part of the post-Kyoto world climate deal. How secure will REDD carbon credits be if climate change itself poses a danger to the forests? more at: ***http://www.agazeta-acre.com.br/Web/Noticias.do?ID_Not=19166***

REDD, clima e as floresta vulneráveis da Amazônia Sul-Oriental Publicado no jornal A Gazeta, p. 2, 28mai09, Rio Branco.
Foster Brown, Marcos Silveira e Elsa Mendoza

15/06/09

News

Tim Baker and **Olivia Rendon** organised a workshop, 2-4 June, entitled 'Strengthening research and training capacities to support ecosystem service projects in the Peruvian Amazon' at the Instituto de Investigaciones de la Amazonia Peruana, Iquitos, Peru. Attended by NGOs involved in project development, and regional and national government organisations, the meeting focussed on discussing the advances of the current ESPA project and jointly identifying future research and training needs.

22/06/09

New Grant

Simon Lewis is part of a consortium of Leeds, Oxford, University of California Los Angeles and the Government of Gabon who won $551,019 from the Moore and Packard foundations ($73,343 to Leeds) to map carbon storage across the Congo Basin in time for the UN climate changes summit in Copenhagen in December. Geerje van der Heijden is returning to Leeds for 6 months as the post-doc on the project.

Simon Lewis' Royal Society fellowship extension approval has been confirmed as £273,183 to the department (80% FEC).

New Paper Accepted

Lewis, S.L., Lloyd, J., Sitch, S., Mitchard, E.T.A., Laurance W.F. Changing ecology of tropical forest: Evidence and drivers. Annual Reviews in Ecology, Evolution and Systematics. Publication date Sept 2009.

Simon Lewis was recently interviewed by Nature Magazine (http://blogs.nature.com/news/thegreatbeyond/2009/05/ seeing_redd_over_forest_manage.html) and Wired Magazine (unfortunately not online).

29/06/09

News

On 15 and 16 April, **Alan Grainger** visited the EC Joint Research Centre at Ispra, Italy, to attend the second meeting of the core drafting team of Working Group 1 of the Dryland Science for Development Consortium. It is one of three international working groups charged with preparing a synopsis of the state-of-the-art of scientific knowledge for a special meeting of the UN Convention to Combat Desertification in September. Working Group 1 focuses on monitoring and assessment.

Oliver Phillips gave an interview on Amazon forests and the dangers they face, for the Spanish consumer magazine “Consumer Eroski”, June 2009 Por Alex Fernández Muerza
http://www.consumer.es/web/es/medio_ambiente/ naturaleza/2009/06/20/186019.php

In Leticia, Colombia, **Oliver Phillips** completed a long-term agreement with the Universidad Nacional de Colombia in which the RAINFOR project will support their work monitoring forest dynamics and training young investigators in field techniques and data analysis. The Colombia permanent plots contribute to RAINFOR’s aim of pan-Amazon forest research and monitoring in the Anthropocene. We are also supporting UNC professor and Leeds visiting fellow **Sandra Patiño** in her pan-Amazon ecophysiology research programme

06/07/09

News

Oliver Phillips gave an interview to Discovery Channel News on recent research by the UK Met Office suggesting that Amazon rainforests may become "committed" to climate change-induced losses by mid-century.

14/07/09

News

Feldpausch, Ted R., Eduardo G. Couto, Luiz Carlos Rodrigues, Daniela Pauletto, Mark S. Johnson, Timothy J. Fahey, Johannes Lehmann, Susan J. Riha. In press. Nitrogen aboveground turnover and soil stocks to 8 m depth in primary and disturbed forest following selective logging in southern Amazonia. Global Change Biology.

20/07/09

News

Franziska Schrodt has been awarded the Johnstone & Florence Stoney Studentship from the British Federation of Women Graduates.

27/07/09

No News

03/08/09

News

van der Heijden, G., and Phillips, O.L. 2009. Environmental effects on Neotropical liana species richness. J. Biogeography, 36: 1561-1572.

ter Steege, H., ATDN (collective author) and **RAINFOR** (collective author) (2009) Contribution of current and historical processes to patterns of tree diversity and composition of the Amazon. In "Amazonia, Landscape and Species Evolution: a look into the past". Eds, Carina Hoorn, Frank Wesselingh. Wiley-Blackwell.

Oliver Phillips and **Manuel Gloor** participated in the Amazon Climate Change Workshop hosted by the Hadley Centre at the Met Office, Exeter (July 2009).

Oliver Phillips is an invited expert reviewer for the United Nations Convention on Biological Diversity report on the links between "Forest Biodiversity, Ecosystem Resilience, and Climate Change".

10/08/09

No News

17/08/09

News

Chao, K.-J., Phillips, O.L., Monteagudo Mendoza, A., Torres Lezama, A., Vásquez Martínez, R. 2009. How do trees die? Mode of death in two Amazon regions. *Journal of Vegetation Science* 20:260-268.

Chao, K.-J., Phillips, O.L., Baker, T.R., Peacock, J., Lopez-Gonzalez, G., Vásquez Martínez, R., Monteagudo, A., Torres-Lezama, A. (2009) After trees die: quantities and determinants of necromass across Amazonia. *Biogeosciences* 6: 1615-1626.

"The paper provides a new insight into the processes controlling natural dead wood production in Amazonia. We found that there is 10 billion tonnes of carbon lying in branches and logs on the floor of Amazon old-growth forests, more than the world emits each year from fossil fuel combustion."

Katy Roucoux, **Ian Lawson** and Will Gosling (Open University) will be convening a thematic session at the British Ecological Society Annual Meeting (8th - 10th September 2009, University of Hertfordshire) entitled: The Long View - Palaeoecology and Current Environmental Change. The keynote speaker will be Prof John Birks (University of Bergen) on "How the secrets of the past can help future ecological predictions."

24/08/09

No News

07/09/09

News

On 24 June a team of 13 people led by **Roel Brienen** (University of Leeds), Abel Monteagudo (Jardin de Botanica de Missouri, Peru) and Alejandro Murakami (Museo de Historia Natural de Parque Noel Kempff, Bolivia) set off on their adventurous trip to the Parque Noel Kempff Mercado to recensus 10 permanent sample plots. After three days of travelling over dusty roads, the team arrived at the abandoned tourist station "Los Fierros", where two permanent sample plots of tierra firme forest were remeasured. The team then proceeded to the Huanchaca plateau, a large pre-cambrian rock formation in the park consisting of savannas and small forest islands. The 500 meter climb up to the plateau with food, camping gear and equipment was a real test of endurance, but with rewarding views over the forest below. Work on the plateau included remeasurements of four plots within two different forest islands, including new locations for RAINFOR. After a short rest in a local community the team moved on to plots at Las Londras (2) and Cerro Pelao (2), and finally back to Santa Cruz.

From there Roel, Abel and Alejandro travelled to Riberalta (northern Bolivia) to remeasure a 4-ha plot of the Universidad Autonoma de Beni, which was installed in 1994 and will become part of the RAINFOR-network. Meanwhile, Alexander Germaine (Museo de Historia Natural de Parque Noel Kempff, Bolivia) led a small team to recensus plots in the department of Cochabamba.

14/09/09

No News

21/09/09

News

Leeds Geography co-ordinates four major international projects in tropical forest ecology - RAINFOR, AFRITRON, AMAZONICA, and TROBIT - with more than 200 collaborators in all inhabited continents.

Now, thanks to work by **Gaby Lopez-Gonzalez**, we are making publicly available a new, multilingual version of our SQL-enabled forest database, including 'touch of a button' functions to derive biomass, carbon, growth, turnover, and other key ecological properties from our growing database of nearly 500 permanent plots worldwide.

For more information please see:
http://www.forestplots.net/Default.aspx
http://www.geog.leeds.ac.uk/projects/rainfor/

Ted Feldpausch and **Beto Quesada** led a two month field expedition together with RAINFOR-Moore collaborators and students to recensus forest plots established in 1995 in the Alto Jurua region in the remote Acre, Brazilian-Peruvian frontier and in the Chico Mendes Extractive Reserve on the border with Bolivia. The trip included the first intensive soil sampling under the RAINFOR-Moore project by Beto to establish baseline soil carbon stocks for the Amazon Basin. Soil sampling included 50 2-m deep soil profiles per plot; this work will be replicated across the basin. These plots represent a unique forest type - bamboo-dominated forest - for the RAINFOR network.

28/09/09

News

Welcome to visiting scholar **Mireia Torello** from Wageningen University, Netherlands. In collaboration with **Jon Lloyd** and TROBIT collaborators, Mireia will be using the recently completed pan-tropical TROBIT dataset to classify understory savanna-forest vegetation and examine patterns in biodiversity and vegetation cover across the tropics.

Please welcome Dr. Ernest Foli (***efoli@hotmail.com***), head of the Ecosystem Services & Climate Change Division at the Forestry Research Institute of Ghana (FORIG), who will be visiting Geography until 10 October under a Royal Society International Joint Grant (**Ted Feldpausch**) to work with Leeds collaborators and PhD student **Sophie Fauset** on topics in liana distribution and effects on the dynamics of Ghanaian forests.

Gloor M, Phillips OL, Lloyd JJ, Lewis SL, Malhi Y, **Baker TR, Lopez-Gonzalez G, Peacock J, Almeida S**, de Oliveira ACA et al. (2009) Does the disturbance hypothesis explain the biomass increase in basin-wide Amazon forest plot data? Global Change Biology 15: 2418-2430.

Through the RAINFOR project funded by the Moore Foundation and led by **Oliver Phillips**, the University of Leeds has completed the signing of a research agreement with the Universidad Nacional de Colombia (sede Amazonia, Leticia). The agreement allows for joint monitoring forest plots in south-east Colombia, some training activities, and future publications on the allometry, biomass, and dynamics of the forests of the region, and will run until at least 2012. Colombia holds about 6% of the remaining Amazon forests, including some of the wettest, remotest, and most biodiverse ecosystems on the planet.

05/10/09

News

Simon Lewis has returned (hobbling) from fieldwork in Cameroon, Gabon and Tanzania, and a conference in Germany. Simon trained University of Yaounde students in the Cameroon leg of fieldwork. In Gabon, accompanied by Geerje van der Heijden, trained more people, and were accompanied by the Government of Gabon's chief climate change negotiator, Director-General of Environment Dr Etienne Masard, who is co-PI on our Africa Carbon balance project. Simon gave an invited lecture to Gabon's Institute for Tropical Ecology. In Tanzania, Simon L visited his Leeds PhD student Simon Willcock, and attended the launch of the REDD in Tanzania (Reduced Emissions from deforestation and Degradation), which includes US$100 million in available research funds, and had meetings with current and potential future collaborators. Simon gave a talk 'Carbon storage in tropical forests, 1980-2005' at the World CO2 conference in Jena, Germany.

New Paper

Mitchard, E. T. A., Saatchi, S. S., Gerard, F. F., **Lewis, S. L.,** Meir, P. 2009.
Measuring Woody Encroachment along a Forest–Savanna Boundary in Central Africa (2009)
Earth Interactions Volume 13, Paper No. 8.

Malhado ACM., Whittaker RJ., Malhi Y., Ladle RJ., ter Steege H., Aragão LEOC., **Quesada CA**., Araujo AM., **Phillips OL., Peacock J., Lopez-Gonzalez G., Baker TR**., Butt N., Anderson LO., Arroyo L., Almeida S., Higuchi N., Killeen T., Monteagudo A., Neill D., Pitman N., Prieto A., Salomão R., Silva N., Vásquez Martínez R., Laurance WF, Alexiades MN., Ramírez A. H.(2009) Spatial distribution and functional significance of leaf lamina shape in Amazonian forest trees. *Biogeosciences* 6: 1577-1590.

Malhado ACM., Malhi Y., Whittaker RJ., Ladle RJ., ter Steege H., Aragão LEOC., **Quesada CA**., Araujo AM., **Phillips OL., Peacock J., Lopez-Gonzalez G., Baker TR**., Butt N., Anderson LO., Arroyo L., Almeida S., Higuchi N., Killeen T., Monteagudo A., Neill D., Pitman N., Prieto A., Salomão R., Silva N., Vásquez-Martínez R., Laurance WF. (2009) Spatial trends.

13/10/09

No News

19/10/09

News

New PhD students in EGC Cluster

The School of Geography would like to welcome all the new PhD students in the EGC Cluster. These are:

Rosa Goodman - Supervisors: Tim Baker/Oliver Phillips
Project title: "Developing directly measure biomass models for western Amazonian forests".

Nikée Groot - Supervisors: Oliver Phillips/Emanuel Gloor/Simon Lewis
Project title: "The other half of the equation: global variation in tree mortality".

Euridice Honorio - Supervisors: Oliver Phillips/Simon Lewis
Project title: "Integrating ecological and molecular information of widespread tree species in Western Amazonia".

Joey Talbot - Supervisors: Oliver Phillips/Simon Lewis
Project title: "Relationships among biodiversity, carbon storage and productivity across the world's tropical forests".

New Paper
Anderson LO, Malhi Y, Ladle RJ, Aragao LEOC, Shimabukuro Y, **Phillips OL, Baker T**, et al. (2009) Influence of landscape heterogeneity on spatial patterns of wood productivity, wood specific density and above ground biomass in Amazonia. BIOGEOSCIENCES **6** (9): 1883-1902.

26/10/09

News
Congratulations to **Kelvin Peh**, who has been recommended for a pass (subject to minor editorial corrections) for his impressive Ph.D. thesis investigating biodiversity and ecosystem function in the Congo basin forests of Cameroon. **Simon Lewis** and **Jon Lloyd** supervised.

Peh K.S.-H. (2009) The environment and corruption in developing countries. Royal United Services Institute Newsbrief 29, 24-26.

Oliver Phillips and **Stephen Sitch** participated in the Coordination Action Carbon Observation System ("COCOS") FP7 project workshop on understanding the impact of drought on regional and global carbon cycle processes, at the Royal Netherlands Academy of Science, Amsterdam, 19-20 October.

Accepted Paper
Mitchard, E.T.A., S.S. Saatchi, I.H. Woodhouse, G. Nangendo, N.S. Ribeiro, M. Williams, C.M. Ryan, **S.L. Lewis, T.R. Feldpausch**, & P. Meir A consistent relationship between satellite radar backscatter and above-ground woody biomass in four African forest/woodland/savanna landscapes. Geophysical Research Letters.

02/11/09

News
Peh K.S.-H. & Drori O. Fighting corruption to save the environment: Cameroon's experience. Ambio (In press).

09/11/09

No News

16/11/09

News
Through the RAINFOR project funded by the Moore Foundation and led by **Oliver Phillips**, the University of Leeds has signed a research agreement with the Jardin Botanico de Medellin 'Joaquin Antonio Uribe', in Antioquia, Colombia. The agreement means that RAINFOR will contribute towards the monitoring of a network of forest plots across Colombia since the 1990's, developed by Esteban Alvarez and colleagues. There will also be some training and student support for carbon and biodiversity studies. The accord runs until at least 2012.

Colombia is a global 'mega-diversity' country – for example it has 40 times as many plant species as the United Kingdom! Part of the reason for this is its geographical ruggedness and complexity - there are three major mountain chains, and distinct blocks of rainforest and cloud forests originally covered Amazonia, the Pacific Choco coast, and the watersheds draining into the Caribbean. The country's complex dry forests and montane forests have been especially fragmented, so ground-based monitoring of the areas that remain of these is also critical.

Dr Nikos Fyllas has been awarded a Marie Curie Intra European Research Fellowship. Nikos will be working with Dr. Emanuel Gloor to develop a new Tropical forest dynamics model, strongly constrained with data from the RAINFOR network inventory.

New Paper
N. M. Fyllas, S. Patiño, **T. R. Baker**, G. Bielefeld Nardoto, L. A. Martinelli, C. A. Quesada, R. Paiva, M. Schwarz, V. Horna, L. M. Mercado, A. Santos, L. Arroyo, E. M. Jiménez, F. J. Luizão, D. A. Neill, N. Silva, A. Prieto, A. Rudas, M. Silviera, I. C. G. Vieira, **G. Lopez-Gonzalez, Y. Malhi, O. L. Phillips, and J. Lloyd:** Basin-wide variations in foliar properties of Amazonian forest: phylogeny, soils and climate, Biogeosciences

van der Heijden, GMF; Phillips, OL. (2009) Liana infestation impacts tree growth in a lowland tropical moist forest. BIOGEOSCIENCES 6 (10): 2217-2226

23/11/09

News

Last week **Alan Grainger** was the lead author of a paper published in Current Biology. It called on world leaders meeting at the Copenhagen climate conference next month to add safeguards to the Reduced Emissions from Deforestation and Degradation (REDD) scheme to avoid detrimental effects on biodiversity. The other ten co-authors included some of the leading names in tropical biology. The paper was featured prominently on the Current Biology web page and made open access for the first few months so policy makers can download it easily. By coincidence, in the previous week Times Higher Education had included a debate on open access journals. So Alan has a letter published in this week's Times Higher Education, which mentions his Current Biology paper as an example of how the current system is not as inaccessible as its critics claim.

EGC and RB staff have been invited to contribute to a research programme on global forest carbon, stocks and fluxes, funded by the US Forest Service and Peking University. **Oliver Phillips** attended the first workshop in Beijing 08-13 November, and **Simon Lewis** and **Stephen Sitch** contributed remotely. The Leeds team provides expertise on the carbon cycle role of tropical forests, and particularly their recent large contribution to the terrestrial carbon sink.

New Paper

Peh K.S.-H. Invasive species in Southeast Asia: the knowledge so far. Biodiversity and Conservation (In press).

30/11/09

News

Simon Lewis gave a talk at University of Bradford on November 18 to over 200, with Prof Paul Rogers on 'Climate Change, more than just the weather', an even in the lead-up to the Copenhagen climate change talks. Simon also assisted the School Climate Summit at Leeds Civic hall, on November 20, as featured in the Yorkshire Evening Post (***http://www.yorkshireeveningpost.co.uk/news/Leeds-pupils39-climate-call-to.5831974.jp***).

New Paper

Fyllas, N., S. Patiño, T. R. Baker, G.B. Nardoto, L.A. Martinelli, **C. A. Quesada**, R. Paiva, M. Schwarz, V. Horna, L. M. Mercado, A. Santos, L. Arroyo, E.M. Jiménez, F.J. Luizão, D. A. Neill, N. Silva, A. Prieto, A. Rudas, M. Silviera, I. Viera, **G. López-Gonzalez**, Y. Malhi, **O. L. Phillips and J. Lloyd**. 2009. Basin-wide variations in foliar properties of Amazon forest: phylogeny, soils and climate. *Biogeosciences* **6**: 2677-2708.

Honorio Coronado, E., T.R. Baker, **O.L. Phillips**, N.C.A. Pitman, R.T. Pennington, R. Vásquez Martínez, A. Monteagudo, H. Mogollón, N. Dávila Cardozo, M. Ríos, R. García-Villacorta, E. Valderrama, M. Ahuite, I. Huamantupa, D.A. Neill, W.F. Laurance, H.E.M. Nascimento, S. Almeida, T.J. Killeen, L. Arroyo, P. Núñez Vargas, L. Freitas Alvarado. 2009. Multi-scale comparisons of tree composition in Amazonian terra firme forests. *Biogeosciences* **6**: 2719-2731.

08/12/09

News

Alan Grainger has a paper published in the Proceedings of the US National Academy of Sciences this week - his second in two years. It extends the existing conceptualization of how agricultural intensification can spare land from deforestation, identifies some of the many gaps in terrestrial data which handicap research in global environmental change, and proposes a new network of satellite-based global environmental observatories to fill them. One of these organizations, the World Forest Observatory, is highly relevant to implementation of the Reduced Emissions from Deforestation and Degradation (REDD) scheme to be discussed at the Copenhagen climate conference over the next two weeks. On Friday, Alan was interviewed for ten minutes about the World Forest Observatory on the breakfast news programme of Colombian National Radio.

A new international report updates the Physical Science basis of the IPCC Fourth Assessment Report. This is “The Copenhagen Diagnosis: updating the world on the latest climate science”. This is downloadable at:***www.copenhagendiagnonis.com***

The report discusses the results of the latest most policy-relevant climate change science literature for a target global readership of policy-makers and the wider public. Several papers in which Leeds geographers played leading roles are discussed, including those by **Stephen Sitch**, and by much of the **EGC cluster**. This probably has nothing to do with the fact that two other Leeds scientists are co-authors of the report.

On behalf of its 10,000 conservation professionals the ***Society for Conservation Biol***ogy wrote to Lars Løkke Rasmussen last week, Prime Minister of Denmark and host of the UN's Climate Summit in Copenhagen, about the dangers of climate change for tropical forests, citing the EGC-led RAINFOR research findings of how the Amazon forest responded to the drought of 2005. The Society also produced "***Eleven Conservation Principles For Decision-makers***", which recognises the large carbon sink that tropical forests currently offer (Lewis et al. 2009 *Nature*) and the risk that this could swiftly reverse given the demonstrated sensitivity of forests to climate (Phillips et al. 2009 *Science*).

New Paper

Aragão, L.E.O.C., Y. Malhi, D.B. Metcalfe, J.E. Silva-Espejo, E. Jiménez, D. Navarrete, S. Almeida, A. C.L. Costa, N. Salinas, **O.L. Phillips,** L.O. Anderson, E. Alvarez, **T.R. Baker**, P.H. Goncalvez, J. Huamán-Ovalle, M. Mamani-Solórzano, P. Meir, A. Monteagudo, **S. Patiño**, M.C. Peñuela, A. Prieto, **C.A. Quesada**, A. Rozas-Dávila, A. Rudas, J.A. Silva Jr., and R. Vásquez. 2009. Above- and below-ground net primary productivity across ten Amazonian forests on contrasting soils. *Biogeosciences* **6**: 2759-2778.

Grainger A., 2009. Measuring the planet to fill terrestrial data gaps. Proceedings of the National Academy of Sciences USA 106: 20557-20558

Honorio Coronado, E., T.R. Baker, **O.L. Phillips**, N.C.A. Pitman, R.T. Pennington, R. Vásquez Martínez, A. Monteagudo, H. Mogollón, N. Dávila Cardozo, M. Ríos, R. García-Villacorta, E. Valderrama, M. Ahuite, I. Huamantupa, D.A. Neill, W.F. Laurance, H.E.M. Nascimento, S. Almeida, T.J. Killeen, L. Arroyo, P. Núñez Vargas, L. Freitas Alvarado. 2009. Multi-scale comparisons of tree composition in Amazonian terra firme forests. *Biogeosciences* **6**: 2719-2731.

Fyllas, N., S. Patiño, T. R. Baker, G.B. Nardoto, L.A. Martinelli, **C. A. Quesada**, R. Paiva, M. Schwarz, V. Horna, L. M. Mercado, A. Santos, L. Arroyo, E.M. Jiménez, F.J. Luizão, D. A. Neill, N. Silva, A. Prieto, A. Rudas, M. Silviera, I. Viera, **G. López-Gonzalez**, Y. Malhi, **O. L. Phillips and J. Lloyd**. 2009. Basin-wide variations in foliar properties of Amazon forest: phylogeny, soils and climate. *Biogeosciences* **6**: 2677-2708.

14/12/09

News

Simon Lewis had a letter to the editor published in Nature, 'Carbon emissions: the poorest forest dwellers could suffer' p567.

Simon Lewis is in Copenhagen at the climate change talks as part of the delegation of the Government of Gabon in an advisory capacity.

New Papers

Mitchard, E. T. A., S. S. Saatchi, I. H. Woodhouse, G. Nangendo, N. S. Ribeiro, M. Williams, C. M. Ryan, **S. L. Lewis**,
T. R. Feldpausch, and P. Meir. 2009. Using satellite radar backscatter to predict above-ground woody biomass: A consistent relationship across four different African landscapes. Geophysical Research Letters, 36.
http://www.agu.org/pubs/crossref/2009/2009GL040692.shtml

Roozendaal D.M.A., **Brienen R.J.W**., Soliz-Gamboa, and P.A. Zuidema. (2010) Tropical tree rings reveal increased juvenile growth rates over the last century and preferential survival of fast growing juveniles. *New Phytologist,* doi: 10.1111/j.14698137.2009.03109.x

Brienen, R.J.W., E. Lebrija-Trejos, M. Martínez-Ramos, PA Zuidema (2010) Climate growth analysis for a Mexican dry forest tree shows strong impact of sea surface temperatures and predict future growth declines. *Global Change Biology* doi: 10.1111/j.1365-2486.2009.02059.x