



Network News

Center for Tropical Forest Science / Smithsonian Institution Global Earth Observatory
A Global Network for Forest Research and Training

Newsletter, Jan-Apr 2010

Publications

To obtain a PDF of an article, please email Melissa van Ee at mvanee@oeb.harvard.edu.

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Connecting Partners and Promoting Forest Science

CTFS-SIGEO is growing at an extraordinary rate. With 40 plots in 21 tropical and temperate countries and ongoing research in numerous areas—from community ecology and forest carbon to DNA barcoding, arthropod monitoring, and plant functional traits—the CTFS-SIGEO network is as robust and dynamic as ever.

The articles contained here in the first newsletter issued in several years highlight our activities and accomplishments over the last nine months. They come from the newsblog at [http://](http://ctfsnews.blogspot.com)

ctfsnews.blogspot.com, which we intend to reformat and circulate each quarter as a standard newsletter to supplement the blog. Both the newsletter and blog are meant to highlight activities at individual plots, report on workshops, publicize upcoming events, catalogue recent CTFS-SIGEO publications, and note whatever else might be newsworthy to our colleagues and supporters.

We welcome your non-scholarly contributions. If you have a piece of news you would like to share with

partners and the broader ecological community, please send it to William Tootle, CTFS Program Manager (william_tootle@harvard.edu). My hope is that the newsletter and blog will better enable all of us to communicate network activities and achievements and further promote the collaborative spirit that is a hallmark of our unique enterprise.

Stuart J. Davies,
CTFS-SIGEO Director

CTFS at the 2009 Ecological Society of America Annual Meeting

By Beth King

For the first time, researchers from tropical forests in the Americas, Asia, and Africa and those from temperate forests in China, Canada, and the US met to map the future for CTFS. Network researchers presented more than 60 talks and posters at the 2009 annual meeting of the Ecological Society of America, held in Albuquerque, NM, August 2-7.

The best way to perceive the effects of climate change, test ecological theory, and train internationally savvy forest biologists is to form a network of researchers who compile an enormous actuarial table—birth, growth, and death data from millions of trees around the globe.

A 30-year study of tropical tree diversity has evolved into 40 longterm forest monitoring sites in 21

countries—a truly international collaboration involving hundreds of scientists from dozens of institutions.

A major grant from the HSBC Climate Partnership funded some of the new temperate sites, a major land-use study in the Panama Canal watershed, and a citizen-science program led by Earthwatch Institute. Bank employees, a.k.a. “HSBC Climate Champions,” now participate under the guidance of Earthwatch and Smithsonian researchers in experiments to understand how trees mitigate the effects of global warming. “It is extremely rewarding to direct this high-powered group that shares a common passion for forests, though they speak different languages and respond to different

continued, page 2



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continued from page 1 institutions,” said Stuart Davies, head of CTFS since 2005. “This truly global network finally gives us the ability to rapidly advance ecology as a science and to answer pressing questions about climate change.”

The strength of the network lies in the use of a single method to track forest dynamics. Stephen P. Hubbell, who co-founded the first large-scale long-term forest dynamics monitoring plot on Barro Colorado Island in 1979, was presented with the ESA’s Eminent Ecologist Award. Hubbell is best known for developing the Neutral Theory of Biodiversity and Biogeography, the first testable explanation for the diversity of tropical forests.

Hubbell described the Neutral Theory as “not dead yet, but definitely moribund,” and proposed a new idea—the Enemy Susceptibility Hypothesis—to explain commonness and rarity in tropical tree species.

Scott Mangan, working on Barro Colorado Island in Panama, presented information at this meeting that something in soils—perhaps fungal pathogens—mediate the distribution of forest trees.

Richard Condit, staff scientist at STRI, can accurately predict the spatial distribution of trees in the plots based on colonization

and extinction information. He thinks that the high diversity of individual forests results from ongoing species arrival from a much larger community, not from local niche differences. Local patterns of diversity may be driven by niche differences across continents and long time scales.

Network researchers are focusing outward, looking for processes on large, landscape scales, something that is only possible because the plots in the network are big and comparisons between them are possible. Forest experts at each site have intimate knowledge of local on-the-ground processes and can quickly say whether global models make sense.

Long-term studies show that forests change extremely rapidly in response to factors as diverse as rainfall and wind patterns, elephant damage, and leaf-eating mites. Data from Wisconsin and Ontario show that temperate forests exhibit many of the same biological properties as tropical forests.

Forests are responsible for about half of the carbon absorbed by all land plants. It is therefore vital to know what trees do when atmospheric carbon skyrockets past levels that forests have experienced over the past 400,000 years.

STRI’s Helene Muller-Landau leads the CTFS Global Carbon Research

Initiative. The project will monitor the yearly growth of more than 10,000 trees around the world. So far, it appears that measuring the size of trees is the best way to predict how much carbon is being taken up by a forest.

Gutianshan, China—one of a unique set of sites coordinated by Ma Keping and colleagues at the Institute of Botany, Chinese Academy of Sciences, that span a latitudinal gradient including temperate, subtropical, and tropical forests—is a focus of the HSBC Climate Partnership. HSBC bank believes that hands-on participation will help employees connect the dots between their own lifestyles, global change, and sustainable forest management.

Looking forward, network researchers plan to survey the functional traits of all 8,000 species under the direction of S. Joseph Wright, staff scientist at STRI. They hope to barcode all of the species and create a phylogeny for species that have been barcoded. They plan to continue to census the existing plots and establish new temperate plots and will begin to more systematically quantify other organisms in the plots. The insect group is led by Yves Basset at STRI.

Jerry Franklin, forest ecologist from the University of Washington who has

continued, page 3



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studied forests of the Pacific Northwest since the late 1950s, talked about what it takes to create such a global network. Leaders mentor students from many different cultures and transfer the essential concepts to professionals who carry on when they are ready to hand off the baton. Institutions provide stability and continuity.

Stuart Davies, STRI director Eldredge Bermingham, and their staffs have taken the lead in finding long-term financial support for the network. Financial support, especially in the form of long-term endowments or government funding, is essential to CTFS efforts to monitor the health of the world's forests and their response to climate change. As Jerry Franklin said at the meeting: "If ecologists had as much money as the people who predict the weather, think of what we could do!"



Data-Analysis Workshop in Albuquerque

Immediately following the ESA annual meeting, over thirty CTFS scientists gathered to work on research projects using more than a dozen plot data sets. The workshop focused on data analysis and manuscript preparation and was held at the LTER facilities at the University of New Mexico in Albuquerque from 9-18 August 2009. The collaborative work of this diverse group was very productive, and we anticipate several significant publications to result from the meeting.

Despite the grueling schedule of back-to-back long days in the lab working on data sets, participants did find time to explore the striking New Mexico landscape.



Extending Partnerships for Tropical Forest Science in Taiwan

During a recent visit to Taiwan, Stuart Davies, CTFS Director; Dr. I-Fang Sun, Tunghai University (left, seated); Dr. Yue-hsing Huang, Director of the Taiwan Forestry Research Institute (center, seated); Mr. Jen-teh Yen, Director of the Taiwan Forestry Bureau (seated second from right); and Dr. Hen-Biau King (TFRI) agreed to extend the successful partnership for forest research and training in Taiwan. CTFS signed an MOU with the Forestry Research Institute and Forestry Bureau on September 29 to formalize the three groups' cooperative commitment to recensusing and managing the 25-ha

Fushan and Lienhuachih plots. A new MOU between Tunghai University and CTFS was signed on October 2 by President Hyden Chen and CTFS reaffirming the long-standing partnership to advance tropical forest ecology, forestry science, and

natural resource management in Taiwan and Southeast Asia. The four Taiwanese plots managed by Tunghai, CTFS and partners are located in Fushan, Lienhuachih, Kenting, and Nanjenshan Nature Reserves.



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Third Bornean Forest Dynamics Plot Launched

A new 50-ha forest dynamics plot is being established in lowland dipterocarp forest at Danum Valley in Sabah, Malaysia. The plot adds a third site to the existing Bornean forest dynamics plots at Lambir (Sarawak) and Belalong (Brunei). It is designed to sample the rich flora of central Borneo on relatively nutrient rich soils.

The project represents a collaboration between David Burslem (Aberdeen University, UK), Glen Reynolds (Royal Society SEARRP), Andy Hector (University of Zurich, Switzerland), Waidi Sinun (Sabah Foundation) and CTFS and is funded by HSBC Malaysia for a period



of five years. The plot is part of the Royal Society's South East Asia Rain Forest Research Programme, which has operated the Danum Valley Field Centre with local partners since 1985 (see www.searrp.org). The plot will be located in undulating landscape of the Danum Valley Conservation Area and will provide a baseline for on-going studies of forest regeneration, carbon dynamics and biodiversity in adjacent logged forest and forest fragmented by oil palm

plantations. Establishment began in January. For further details contact David Burslem (d.burslem@abdn.ac.uk) or Glen Reynolds (glen.searrp@me.com).



Ilha do Cardoso 10-ha Plot Established in Brazil

By Julia Stuart and Alberto Vicentini

Under the guidance of Alexandre de Oliveira, students from the Universidade de São Paulo (USP) and technicians from Cananéia, Brazil, recently completed the first CTFS census of the 10-ha Ilha do Cardoso plot in Brazil. The plot was originally established in 2000/2004-05, with a DBH minimum of 4.78 cm, as one of four 10-ha plots in the project Parcelas Permanente São Paulo (PPSP, BIOTA-FAPESP) to study the Atlantic, restinga, semideciduous, and cerradão forest types that occur in São Paulo State.

In 2008, Ilha do Cardoso joined the CTFS network with the inauguration of a census to include all trees ≥ 1 cm. The census catalogued four new species (Rubiaceae) not enumerated in 2000/2004-05, bringing the plot total to 106 species and approximately 40,000 trees.

The plot is located in restinga forest in Ilha do Cardoso State Park on the extreme south coast of São Paulo State near the city of Cananéia. The mountainous island is approximately 22,500 ha and was made a state park in 1962. Despite nutrient-poor and water-stressed sandy soils, the forest

shows high diversity. At 22°S latitude, Ilha do Cardoso is the southernmost plot in the CTFS network.

Funding from the HSBC Climate Partnership supported the census, and many research projects at Ilha do Cardoso are being coordinated by the Laboratório de Ecologia de Florestas Tropicais at USP: http://ecologia.ib.usp.br/labtrop/doku.php?id=labtrop:01_projetos:02_pp:pp_peic:pp_peic.



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Announcements

Thanks to Adriana Sautu for her contributions to CTFS over many years

As many of you may already know, Adriana Sautu has left CTFS to pursue her passion for children's science education as the Director of Education at the Museum of Biodiversity in Panama. We wish her all the best and will miss her enthusiasm and cheer.



CTFS-Arnold Arboretum Co-Hosted 6th Annual Harvard Plant Biology Symposium on 29-30 April
Talks available online soon.



Seacology Prize Awarded to Filip Damen, CTFS Partner in Papua New Guinea

With the new CTFS plot in Wanang, Papua New Guinea, well underway, Filip Damen was recognized for his heroic efforts to conserve the forest of his community, thereby making the plot and other ecological research in PNG possible.

On 8 October, Filip was awarded the Seacology Prize for 2009 for his remarkable courage in protecting his community's ancestral lands from destructive logging, and helping develop educational and economic opportunities for the eleven clans that occupy the Wanang area in Madang Province, PNG. Seacology awards its prestigious international prize annually to indigenous island leaders who endanger their lives to protect their island's environment and culture.

Recognizing the threat of logging to biodiversity and the Wanang way of life, Filip led a group of Wanang clans to sign a historic conservation deed in 2000. This agreement united the Wanang clans in their resolve to limit exploitation of the lowland rainforest of their region. Since then, Filip and his community have successfully resisted the relentless pressure from logging interests to sell their land for short-term profit.

Their unique conservation strategy has been to encourage and assist with biological research in their forests. Since 2002, Filip and villagers have been working with Drs. Vojtech Novotny and George Weiblen of the New Guinea Binatang Research Center to conduct ecological research in the Wanang Conservation



Area. And just last year, Filip led his community to partner with CTFS to set up the first long-term, large-scale forest dynamics plot in Oceania. This is a great achievement for Filip, for the 50-ha plot in Wanang now gives New Guinea the capacity to monitor its forests and will enable researchers to assess the response of Pacific forests to global change and understand the ecological processes that sustain healthy forest ecosystems in the Pacific region. Funding for



the project is provided by John Swire & Sons (PNG) Ltd. and Steamships Trading Co.

See <http://www.seacology.org/prize/index.htm> for a video clip of Filip's acceptance speech and the full press release.



China Climate Center Welcomes Citizen Scientists

The opening of China's Regional Climate Centre, the newest of five international sites where HSBC bank volunteers (called "climate champions") work alongside scientists to study the effects of climate change on forests, was celebrated at Gutianshan Nature Reserve, China, on 22 September 2009. The HSBC Climate Partnership—a collaboration between HSBC, the Smithsonian Tropical Research Institute, Earthwatch Institute, WWF, and The Climate Group—has Regional Climate Centers in India, Brazil, the US, and the UK.

Earthwatch and the Institute of Botany at the Chinese Academy of Sciences (IBCAS) host HSBC Climate Champions at Gutianshan Nature Reserve in eastern China, where they measure tree growth and litter production using techniques developed by CTFS.

In 2005, Dr. Ma Keping and colleagues established a long-term 24-ha forest-monitoring site in warm-temperate evergreen forest at Gutianshan as part of the Chinese Forest Biodiversity Monitoring Network (CForBio), a partner network of the Center for Tropical Forest Science.



Data-Analysis Workshop in Beijing

By Dr. Mi Xiangcheng

To better understand the mechanisms of biodiversity maintenance in forests of the Chinese Forest Biodiversity Monitoring Network (CForBio), the Biodiversity Committee of the Chinese Academy of Sciences and CTFS hosted a workshop on data analysis and management in Beijing on 14-24 October 2009. The workshop was led by Drs. Richard Condit, Shameema Esufali, and Yu-Yun Chen. Twenty-eight people from seven CForBio plots participated in the workshop.

Condit and Esufali used BCI plot data to demonstrate a variety of data-analysis methods, including maximum likelihood and MCMC. These demonstrations illustrated in detail the advantages and disadvantages of each method. Participants also received instruction in R and completed a series of computations.

The course on data management used the Gutianshan plot's database for instruction in the establishment, management, and maintenance of plot data, all of which are essential to CTFS research. The intensive two-week workshop greatly enhanced participants' ability to analyze and manage data, further strengthening by extension the entire network's ability to investigate forest dynamics.



Arnold Arboretum's Robert Cook Retires After 21 Years

In December 2009, Robert E. Cook retired as director of the Arnold Arboretum of Harvard University after having led the institution for over two decades. The Arnold Arboretum's involvement with CTFS goes back to the early 1980s when Stephen Hubbell and Peter Ashton (then director of the Arboretum) agreed to replicate the BCI plot in Malaysia. Today the CTFS network comprises 40 plots around the world and represents a rich, exemplary tradition of collaborative science.



Bob Cook has played a significant role in sustaining and advancing CTFS research and training, particularly in tropical Asia. Under his directorship in 2003, the Arboretum joined the Smithsonian Tropical Research Institute in supporting CTFS's core Asian research. That agreement was renewed in 2007 with the Arboretum furthering its commitment to CTFS research in Asia.

Bob has also been instrumental in involving CTFS in undergraduate and graduate education at Harvard and abroad. Through its annual Biodiversity of Borneo summer course and International Field Biology Course, CTFS exposes students to the remarkable biodiversity of the Asian tropics and introduces them to the complexities of conservation and forest management.

Plant science has benefited greatly from Bob's long career in research and academic administration. In 1989, he came to the Arnold Arboretum from Cornell University, where he had been the director of Cornell Plantations and an associate professor of ecology and systematics. Prior to that he was an associate professor at Harvard. We appreciate his support and leadership over many years and wish him the very best in retirement.

Coordinator of Africa Program Appointed: Dr. David Kenfack

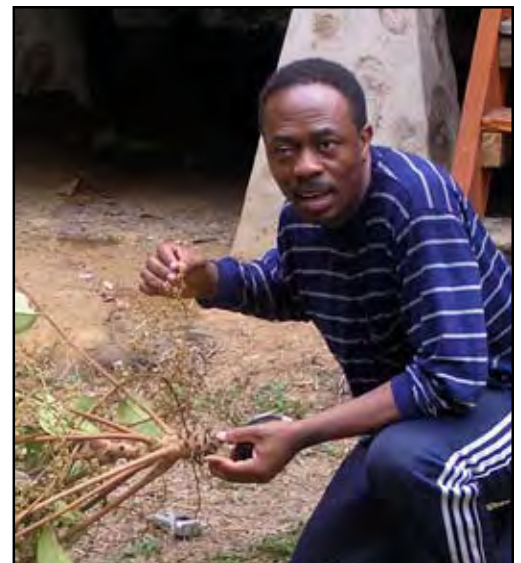
We are pleased to announce that Dr. David Kenfack has recently joined the Center for Tropical Forest Science-Smithsonian Institution Global Earth Observatory (CTFS-SIGEO) to coordinate research and training activities for the Africa program.

David is no stranger to CTFS. In 1996, he led the establishment of the Korup 50-hectare plot in Cameroon. He then went on to PhD studies at the University of Missouri, St. Louis, where he worked on the systematics and ecology of *Carapa* (Meliaceae), describing a series of species new to science. Following the completion of his PhD in 2008, he spent a year as a postdoctoral fellow at the University of Michigan, Ann Arbor.

In addition to taxonomic expertise on the flora of Central and West Africa, David has extensive experience in tropical

forest ecology and data management. During his career, he has assembled botanical collections and carried out forest inventories in more than 10 tropical countries.

David will be based at the CTFS office at the Arnold Arboretum of Harvard University.



CTFS-SIGEO Database Workshop in Peoria, Illinois

Members of the North America and Africa Programs of the Center for Tropical Forest Science (CTFS) - Smithsonian Institution Global Earth Observatory (SIGEO) met at Bradley University in Peoria, Illinois, on 15-18 February 2010 for a workshop on database management. The workshop was hosted by Dr. Steven Dolins, Professor of Computer Science at Bradley. In partnership with Rick Condit and Suzanne Lao, Steven and his students have taken a lead role in developing the CTFS-SIGEO database system. Rick and Suzanne (STRI) designed and led the training activities. They were ably assisted by Mark Overholt, a computer science graduate from Bradley who has recently joined CTFS-SIGEO to help develop the database programs for the network.

This workshop was the 5th in a series of CTFS-



Above: Back Row (L-R): Rick Condit, Steven Dolins, Jim Lutz (Yosemite, Wind River). Middle: Duncan Thomas (Korup), Sean McMahon (Maryland), Sean Thomas (Ontario), Daniel Johnson (Indiana), Mark Overholt. Front: David Kenfack (Korup), Stuart Davies, Juniper Sundance (Wisconsin), Norm Bourg (Virginia), Suzanne Lao.

SIGEO database workshops designed to train network members in the use of a global standardized database for all 3.5 million trees, 11 million records, and 8,000 species in the 40 plots of the network. By the end of the week, all participants were feeling very 'normalized'.



Third African Forest Dynamics Plot Underway

A new 25-ha forest dynamics plot is being established in mature forest in the Rabi Protected Area in the Gamba Complex of protected areas in southwestern Gabon. The plot follows CTFS protocols and adds a third site to the existing African plots at Ituri (Congo) and Korup (Cameroon). Studies by the Smithsonian over the last decade have shown the Gamba Complex area, which encompasses the Rabi plot, to

be extremely biodiverse. The plot is representative of the Guineo-Congolian rainforest that abounds in the Rabi landscape.

The project is part of the Gabon Biodiversity Program (<http://nationalzoo.si.edu/ConservationAndScience/MAB/conservation/centralafrica/gabon/default.cfm>) and represents a collaboration between the Smithsonian Institution Global Earth Observatory

(SIGEO); Smithsonian National Zoological Park's Conservation Biology Institute and Center for Conservation, Education and Sustainability; Shell Gabon; the Government of Gabon; CTFS; and other stakeholders. The plot will provide baseline data for studies of forest regeneration, carbon dynamics, and biodiversity. In addition, the plot affords the opportunity to help build scientific and resource-management

capacity in the region. Late in 2009, researchers completed surveying 25 ha of the plot. Tree tagging, mapping, and identification will begin this year. For more information, please contact Alfonso Alonso (alonsoa@si.edu) or Francisco Dallmeier (dallmeierf@si.edu).

Harvard University & CTFS-AA Offer a 2010 Field Biology Course to Students from Tropical East Asia: The Biodiversity of Borneo

In association with the Harvard University Summer School, the Arnold Arboretum and the Center for Tropical Forest Science (CTFS-AA) will offer a field biology course to be held in Sarawak and Sabah (East Malaysia) from 1 June to 11 July 2010. Students from Harvard University and universities in Asia will come together to study terrestrial and marine biodiversity, ecology and conservation, with instructors from Harvard University and other institutions (including Sabah Parks, Sabah Forest Dept., Sarawak Forestry Corporation, Univ. Malaysia Sabah, Yayasan Sabah).

The forests and reefs of northwest and north Borneo have some of the highest levels of alpha-diversity in the world. The forests are home to orang-utans, hornbills, rhinos, and as many as 5,000 tree species, and the reefs offer some of the best diving in the world. Students will visit world-class parks and reserves (e.g., Lambir, Kinabalu, and the Maliau Basin) to gain a thorough understanding of abiotic controls on species composition and will contrast processes that maintain biodiversity in forests with those operating on coral reefs.

Throughout Borneo, intensive logging and marine harvesting have occurred for many years. Our course will explore the complexities of conservation today, including trips to sustainably managed, carbon-traded, and restored forests. We will also provide opportunities for the students to meet people living in and



off the forest, to understand their motivations for forest conversion and conservation, and to consider the human health dimensions of forest change.

A key feature will be the development of skills in research-project design, execution, and analysis based around the statistical platform R. Students will complete three independent projects, from conception to presentation. The students will gain database and web-publishing skills by developing a community

digital record of the trip

Lead by Cam Webb, research scientist at the Arnold Arboretum, the course is aimed at advanced undergraduates, recent graduates currently active in biological research, and postgraduate entry-level students.

For more information, visit <http://phylodiversity.net/borneo-course/> or email Cam Webb (bb10app@phylodiversity.net).

Researchers from around the world met 1-5 March at the Smithsonian Tropical Research Institute (STRI) in Panama to present mid-term research results from the HSBC Climate Partnership, a five-year initiative to identify and respond to the impacts of climate change. The program is supported financially by HSBC and involves a global team of bank employees—“climate champions”—in vital forest research.

The first-ever research program of its kind has so far:

- Found rapid increases in tree growth in the forest around the Smithsonian’s Environmental Research Center (SERC) in Maryland, USA, a finding that corresponds to increased atmospheric carbon dioxide and longer growing seasons, published in PNAS: <http://www.pnas.org/content/early/2010/02/02/0912376107.abstract>.
- Proposed a novel biodiversity theory relating stress and seed-size published in PNAS.
- Examined the effects a changing climate in forests is having on white-tailed deer, mice, and even mosquitoes.
- Addressed the lack of a reliable method for estimating the carbon storage capability of secondary forests on a landscape scale by assessing how measurements from airborne LiDAR and other remote-sensing technologies relate to ground-based measurements.
- Reviewed how human disturbance changes the way forests take up carbon in diverse environments.

Researchers working in broadleaf-forest plots near Oxford, England, Atlantic rainforests in Southern Brazil, and subtropical forests near Gutianshan Nature Reserve in China, as well as the SERC site in Maryland, have been putting HSBC employees to work. At Oxford, for example, data collected indicates that changes in forest structure have impacted moth populations.

Stuart Davies, director of the Smithsonian and Harvard’s Center for Tropical Forest Science, says, “We know that

carbon dioxide in the atmosphere has shot up from 280 to 385 parts per million since the 1850s as a result of human activities like the burning of fossil fuels and deforestation. The degree to which atmospheric carbon dioxide levels continue to increase depends, in part, on how trees respond to climate and atmospheric change—whether forests end up storing more or less carbon. This is what the HSBC Climate Partnership research is trying to establish.”

Dan Bebber, head of climate change research at Earthwatch Institute, says, “Human activities are undeniably changing the world’s climate, but the effects of that change on forest ecosystems and the role that forests play in providing ecosystem services such as carbon storage are poorly understood. The research being supported by funding and climate champions from HSBC will help to increase our knowledge of forests and how they can be wisely managed for the future. This unique NGO-corporate partnership is an exemplary model of how individuals and businesses can make a difference.”

STRI staff scientist Helene Muller-Landau said: “The HSBC Climate Champions working with us to measure trees understand how to take stock of carbon balances. Trees take up carbon as they grow. As trees die and decompose, they release carbon. The balance of carbon flows in and out of the forest determines whether the total forest carbon stock increases or decreases over time.”

“Dangerous and irreversible changes that threaten life-support systems are likely when atmospheric carbon levels reach 550 ppm, if not sooner,” stressed Yavinder Malhi, research scientist from Oxford University. “It’s our job to engage people in science in a way that balances keeping things simple while showing that forests, as living systems, may be really complicated, taking up carbon under some conditions and giving off carbon under other conditions.”

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Research in Peru reveals how forest carbon budgets change with temperature from cooler mountainous sites to warmer lowland sites. Muller-Landau and Malhi agree that because different tree species respond differently to changing temperatures and rainfall regimes, some species will thrive while others will decline, resulting in changes in forest tree-species composition and probably in carbon stocks.

Another important topic of discussion at the conference was the HSBC-sponsored Panama Canal Watershed Experiment, nicknamed the Agua Salud Project. This huge experiment aims to determine how different land uses—pasture, plantations of native trees and teak, and mature forest—affect carbon storage, water flow, and biodiversity on the narrow Isthmus of Panama, where two great biodiversity hotspots meet. STRI Director Eldredge Bermingham noted “that locating this experiment on the banks of the Panama Canal aims to focus global attention on the ecosystem services that forests provide this critical commercial waterway.”

View HCP video:
<http://www.ctfs.si.edu/group/HSBC+Climate+Partnership/Videos#>

View videos of presentations:
http://biogeodb.stri.si.edu/bioinformatics/dfm/metas/search/stxt:SIGEO_TAKING%20STOCK/type:Video

Coordinator of CTFS/SIGEO-TEAM Initiative Appointed: Dr. Patrick Jansen

We are pleased to announce that Dr. Patrick Jansen has recently joined the Center for Tropical Forest Science-Smithsonian Institution Global Earth Observatory (CTFS-SIGEO) to coordinate research activities for the CTFS-SIGEO collaboration with Conservation International’s Tropical Ecology Assessment and Monitoring Network (TEAM). The partnership between CTFS-SIGEO and TEAM will expand the long-term monitoring of biodiverse tropical forests by implementing a program of vertebrate and climate monitoring.

Patrick comes to CTFS-SIGEO from a postdoctoral fellowship at the University of Groningen in the Netherlands.



He received his BSc and MSc from Wageningen Agricultural University and his PhD from Wageningen University. His expertise in the study of plant-animal interactions, particularly seed

dispersal and seed predation, and his experience with camera trapping of terrestrial vertebrates will complement and enhance the growing CTFS-SIGEO research program.

Coordinator of Neotropical Program Appointed: Dr. Tania Brenes Arguedas

We are pleased to announce that Dr. Tania Brenes Arguedas has joined the Center for Tropical Forest Science-Smithsonian

Institution Global Earth Observatory (CTFS-SIGEO) to coordinate research and training activities for the Neotropical program.

PhD at the University of Utah, where she focused on the role of biotic and abiotic factors in shaping the defensive adaptations of the genus *Inga*.

Tania joins CTFS-SIGEO following a post-doctoral fellowship at STRI, where she investigated the effects of herbivores, pathogens, drought, and light on tree distributions across the Isthmus of Panama. Tania is originally from Costa Rica. She did her BSc degree at the University of Costa Rica and her

Tania’s experience working in Latin America and studying Neotropical forests will help enhance the expanding CTFS-SIGEO program in the region. She is based at the CTFS-SIGEO office in Panama.



HIPPNET: CTFS Partner in Hawai'i

In a recent article for UCLA's Center for Tropical Research, Lawren Sack describes the establishment of the Hawai'i Permanent Plot Network and discusses the kinds of critical forest research the project facilitates. To learn about the important work that CTFS partners are doing in Hawai'i, visit: <http://www.ioe.ucla.edu/ctr/news/article.asp?parentID=6406>



Photo by Susan Cordell: *Metrosideros polymorpha*, Laupahoehoe.



Photo by Susan Cordell: *Diospyros sandwicensis*, Palamanui.

Harvard Symposium Focuses on Trees and the Global Environment

On 29 & 30 April, the 6th Annual Harvard Plant Biology Symposium drew a crowd of several hundred people to hear (at Harvard and via the Web) a multidisciplinary group of researchers present some of today's most advanced science and social science related to trees and the global environment. The symposium was co-organized and hosted by the Harvard University Department of Organismic and Evolutionary Biology and CTFS-Arnold Arboretum with support from the HSBC Climate Partnership.

See Alvin Powell's article in the *Harvard Gazette* for a summary of the symposium: <http://news.harvard.edu/gazette/story/2010/04/trees-tell-of-shifting-world/>. Videos of the talks will soon be available online for viewing. When they are, we will circulate the URL on the listserv.



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