

Society of American Foresters



International Forestry Working Group
Newsletter

Working Group B3

September 2013

This issue is our pre-convention issue. If you will be at the SAF Convention in South Carolina (and it is not too late to register) the International Forestry Working Group is a sponsor for eight of the technical sessions. Our annual working group meeting is at 5:00 on Friday. The International Forestry Reception is Thursday, October 24 from 7:30 to 10:00 at the Bonefish Grill, very close to hotels and the convention center. There will be light refreshments and a cash bar. The event is traditionally low key and anybody who is even remotely interested in international forestry is welcome to attend.

- Blair Orr, IFWG Chair
(bdorr@mtu.edu)

Contributed Articles

TANZANIA FORESTRY RESEARCH INSTITUTE: AN OVERVIEW

Contributed by Lawrence Mbwambo (PhD)

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Background

Forestry Research in the Tanzania dates back to 1902 when a Research Station was established by the Germans at Amani in the East Usambara Mountains. In 1928, the British renamed the Amani Research Station, the East African Agricultural Research Station. In 1948 the Amani Station was moved to Muguga – Kenya, to form the East African Agricultural and Forestry Research Organization (EAAFRO), which catered for research activities common to the three partner states of Kenya, Tanzania and Uganda. Research problems unique to Tanzania that time were attended by the Silvicultural Research Station at Lushoto, Tanga and the Timber Utilization Research Station at Moshi, Kilimanjaro established in 1951. Tanzania Forestry Research Institute (TAFORI) was established by Act No. 5 of 1980 following the collapse of the East African Community in 1977. TAFORI is mandated to conduct and coordinate forestry research in the country. The institute has seven research centres distributed across different climatic conditions in Tanzania.

Forestry research programmes

Forestry Research in Tanzania is guided by the National Forestry Research Master Plan (NAFORM II) covering the period 2011-2020 and TAFORI Strategic Plan (2012-2016). NAFORM II has five Research Programmes namely: Natural Forests Management; Community and Farm Forestry; Plantation Forestry and Tree Improvement; Forest Resource Assessment; Social-economics, Policy and Forestry Extension; and Forest Operations and Utilisation.

Natural Forests Management

This programme focuses on developing sustainable management and conservation systems for Tanzania natural forests distributed as montane forests, miombo woodlands, mangroves and riverine forests. Tanzania is advocating community empowerment in management of natural forests through Participatory Forest Management and TAFORI over the past five years has been studying the impact of this decentralised management on forest condition, livelihoods and forest governance (Plate 1).



Plate 1: Participatory Forest Management Research

Community and Farm Forestry

This programme aims at conserving the country's natural resources, ameliorating the environment and contributing to sustainable production of food, fodder, and fuelwood by the economically disadvantaged rural and peri-urban communities. The programme also aims at surveying different ecological zones to identify biologically and economically viable farm forestry practices based on sustainability of food and wood production; and on farm research emphasising on the use of indigenous and fast growing exotic species (Plate 2).



Plate 2: On farm woodlots research in semi-arid areas

Plantation Forestry and Tree Improvement

The programme aims at generating technologies to secure sustained production of major plantation indigenous and exotic tree species for given end uses. The strategy underlying this programme is to support forest industries by large scale planting using genetically improved planting material (Plate 3).



Plate 3: Field Eucalyptus clonal tests

Forest Resource Assessment

This programme aim at enhancing national capacity to collect, compile and disseminate reliable and accurate information and statistics on tree and forest resources for both local and international needs (Plate 4)



Plate 4: Forest Inventory in a miombo woodland

Forest Operations and Utilisation

The programme aims at promoting harvesting practices that will improve standards of utilisation and reduce adverse environmental impacts. Besides, it strives to develop technologies for improved utilisation of trees and forest resources (Plate 5).



Plate 5: Harvested wood for laboratory tests from 9 years old clonal Eucalyptus trial plot

Socio-economics, Policy and Forestry Extension

This programme aims at improving forest policy and decision-making for establishment, management and conservation of forest resources for social and economic development of Tanzania.

Consultancies

TAFORI offers consultancy services in natural forests management, community and farm forestry, plantation forestry and tree improvement and forest utilisation.

For further information please contact:

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Agroforestry in El Cercado, San Juan, Dominican Republic

The Federación San Pedro y Pablo is a non-government organization of 21 farmers' associations of about 500 farm families living in communities near El Cercado, San Juan, Dominican Republic. Participating families work in sustainable agriculture projects that include agroforestry, soil conservation methods, and vegetable production using greenhouses and open fields. Organic production and use of natural pesticides is encouraged. Many families also raise bees (for honey production), goats, and pigs. Most farmers in this area who are not involved in this project usually use slash and burn methods, with no soil conservation methods, to clear away large plots of land to plant their *habichuelas* (beans), *guandules* (pigeon pea), yucca, and corn. Approximately 85% of the fires that occur in the Dominican Republic are caused by the use of slash and burn agriculture methods.

Currently the farmers see little value in planting pine, mahogany, cedar and other valuable forest tree species since it is illegal to harvest trees through commercial timber sales, even on your own property. However, the farmers do value and would never burn their own fruit, nut, or coffee trees that provide food and income for their families. Eventually the farmers' associations do want to plant fast growing trees along stream channels, rivers, and degraded areas to provide lumber for building construction and for firewood.



A degraded and burned hillside.

At the present time the farmers' associations near El Cercado want to design and implement 20 demonstration agroforestry projects that would show the importance of planting a diversity of

trees and crops for economic and environmental reasons. Families are interested in growing a variety of basic grains with associated crops (such as squash, sweet potatoes, yucca, beans, corn, vegetables) and the planting of trees (avocado, orange, mango, macadamia, coffee, cacao, etc.).

Each project would be approximately 20 *tareas* (about 3 acres) involving 20 farmers for a total of about 60 acres for this project. Participating farmers provide 10 *tareas* (1 *tarea* equals 629 square meters) for growing their crops, preferably on fairly level or gently sloping land plus an additional 10 *tareas* on steeper land higher on the hillside for watershed protection/reforestation. The objective of the demonstration projects is to show participating farmers the real cash value of planting fruit and nut trees associated with other crops. The long term goal is for the neighbors of the participating farmers to see the value of agroforestry for providing income and food for their families so that they too will want to utilize agroforestry with organic agriculture technology and abandon the slash and burn method.

Working with families in rural communities where there are high levels of environmental degradation due to slash and burn subsistence agriculture, will promote the ecological, economic, agricultural, and social sustainability of the community and the environment through the use of available, appropriate technologies and best management practices. Successful implementation of these agroforestry projects should result in fewer fires and reduced use of slash and burn agriculture techniques in the mountains, while improving the living conditions, nutrition, food security, and economic growth of the families and affiliated communities. Once the basic needs of families are met, environmental education, reforestation, and watershed protection projects have a better chance of succeeding.



A spring box (left) and a clean stream protected by the forested watershed (right).

The Federation of Farmers in El Cercado has 18 small tree nurseries in different locations that are owned by 18 farmer associations. There is potential to make a portion of each nursery available for the farmers who are going to participate in the agroforestry demonstration projects to plant tree seeds in plastic bags that are available at each nursery. The seedlings will then be transplanted to the site of each project. Organic potting soil, from worm composting sites, is also available at each nursery. There are opportunities to obtain seeds and seedlings for fruit and nut trees from Fundación Sur Futuro, a non-government organization with an office located in Padre Las Casas, and from the National Seed Bank of Endemic and Native Trees, administered by the Dominican Republic Ministry of Environment and Natural Resources, located in Boca de Nigua.

Workshops for the farmer's association technicians and participants in the agroforestry demonstration projects would be beneficial for learning about the different crops that could be planted under the shade of trees. Agroforestry could also be used to help communities with reforestation efforts for their water sources.

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OKLAHOMA STATE UNIVERSITY STUDY-TRIP IN ECUADOR

For the past 15 years, we have offered our students a study-trip opportunity in Honduras, and now Ecuador. Our principal objective is to provide students with a memorable opportunity to gain knowledge and an appreciation of the diverse ecosystems, natural resources, and culture of another country, and more specifically, to examine, experience, and understand the unique linkages between them. Though forestry and natural resource students are targeted, we extend this opportunity to all students on our campus with the ambition of nudging them to become more astute, open-minded and broad-thinking global citizens.

During our recent 17-day learning adventure in Ecuador, in March, 19 students and I experienced the unique natural and cultural diversity of the country straddling the equator. We sweat a bit in the humid rainforest of upper Amazonia, add layers to stay warm in the high sierra of the Andes Mountains, and relish the mild spring-like days of the Galápagos Islands. We arrive in Quito, the capitol city, and rely on it as our home base and hub.

We started out in the remote rainforest of eastern Ecuador by flying into the jungle community of Coca and then cruising by motor-canoe three hours up the Napo River to our accommodations at a remote technical school run by the Yachana Foundation. We interacted with the students there and learned about what it means to get a jungle education. We experienced rainforest ecology with its stunning diversity of birds, monkeys, tamarinds, giant ceiba trees, and lush plant growth at multiple canopy levels, interspersed with rustic (by our standards) jungle villages and slash-and-burn farm plots. We had a memorable day with the family of a jungle shaman where we learned about native plants for foods and medicines, went through a purification ritual, learned how to throw a spear and use a blowgun, and indulged in a delicious jungle lunch complete with fresh heart of palm, grilled plantains, fish steamed in banana leaves, and roasted grub worms. Everything was foraged and prepared that day by the shaman's family and my students, as there are no grocery stores or refrigeration anywhere in the bush.



Jess Mata prepares grub worms for lunch.

Relocating to the high Andes, we visited an equator monument at Cayambe and had some great photo-ops at latitude 0°, 0', 0". Nearby, we visited an expansive rose production facility. With a year-around growing season that is moist and mild at about 9000 feet, with steady sunshine directly overhead, the Ecuadorians produce amazing large-flowered, tall, and straight-stemmed roses. Most of the roses in the global marketplace likely got their start in either Ecuador or Columbia to the north (check the sticker the next time you buy a rose for someone special). At nearby Otavalo, we ascended the extinct Fuya Fuya volcano, and experienced how local products of nature are used in the artisan marketplace. We had an engaging program with an indigenous Quechuan family of weavers, and another who crafted musical instruments, including pan pipes and a unique guitar-like instrument called a charango, using an armadillo shell as the body. We were invited into houses and gardens, and were always curious about the guinea pigs that ran about the kitchens---future dinner!



Oklahoma State group on Volcan Cotopaxi

Elsewhere in the Andes, we lodged at a rustic hacienda south of Quito, situated at 12,000 feet. It was quite cold at night, despite being on the equator, so the wool blankets and fireplaces were well appreciated at night (no central heat). We trekked part-way up the snowy and glacier-clad Cotopaxi volcano, up to a mountaineer's refuge situated at 16,000 feet. Amazingly, the trailhead where we stepped off the bus was at an elevation of 14,600 feet, higher than the highest "14-er" in Colorado! In the very thin air, our group followed a slow but steady pace through the snowy landscape amidst volcanic rock and lichens. We had to pinch ourselves to recall that we still were on the equator! The next morning after planting some trees behind the hacienda, we donned wool ponchos and alpaca chaps, and rode horses with Ecuadorian chagras (cowboys) across the high elevation páramo ecosystem at 12,000-13,000 feet. It is a lush and stunningly beautiful grassland ecosystem that is quite cool and moist --- with no equivalent in North America. We learned about traditional and modern-day ranching in the alpine landscape, and also examined land-use issues in the páramo ecosystem primarily centered around watershed integrity and management.

Next, we flew from the mainland out across the Pacific Ocean to the Galápagos Islands situated about 600 miles off-shore, still straddling the equator. At sea level, it was warm and balmy, and the cool Pacific currents nicely contributed to a pleasant evening chill. The landscape, vegetation and wildlife there are uniquely diverse, with many endemic species. The wildlife in particular are amazing approachable, as there are no large land-based mammalian predators on the islands. So one can get right up close to a sea lion or giant tortoise for a memorable photo. The animals are still wild---they just don't seem to care that you are there! We had some great field-based programs with our guides and national park rangers, including snorkeling in the cove where Charles Darwin and the HMS Beagle first made landfall there; climbing to the summit of the largest volcanic caldera in the archipelago; participating in a service project with community members; and experiencing multiple elevation life zones. Of the many highlights, we snorkeled in one cove with sea lions and manta rays, and then off-shore at an extinct volcanic neck, we snorkeled amidst the Galápagos shark. At the Galápagos, we based our program on three different islands, including San Cristobal, Santa Cruz and Isabella, traveling between them by speedboat. It was a splendid opportunity to gain a first-hand understanding of the principles of sustainable ecotourism in practice and in day-to-day living. We investigated the history of resource use, island settlement, and policy development that have led to the current careful management and administration of the islands by the Galapagos National Park Service in consort with several provincial agencies and NGOs.

Do students gain from such experiences! Most definitely! Here are a few statements from my students expressing the importance and value of their study abroad experience in Ecuador:

JESS MATA, *Natural History & Conservation Senior*: "Any time you leave the country, or even just go someplace out of your immediate comfort zone, you learn so much more than you bargain for. This trip was no exception. I learned about the obvious things, like biodiversity, different ecosystems, and cultural history, but these were to be expected. What is truly amazing is how much you learn about yourself and your home community by learning about those who lead lives very different from your own. It never ceases to amaze me how people can be so different while being exactly the same."

ALEX STEWART, *Forest Resource Conservation Junior*: "Ecuador is the most diverse and beautiful place I have ever traveled to. I experienced three totally different ecosystems in an area

that seemed too small to hold such diversity. While in Ecuador, I learned something about myself. I love getting out of my comfort zone. I loved visiting local peoples' homes. Getting a first-hand view of how people live in another country was amazing. In many ways their lives seem more simple, but they have to live differently and work harder to have a decent living. The sense of family was much stronger there than compared to the United States. Being in Ecuador made me aware of all the things about the US that I take for granted. Everyone should travel outside of their country. It gives you a great perspective on how other people live, and how you live. It can be an eye opener to see the rich and poor side of other societies, and when you come back home you feel like you have grown."

JENNIFER CARTER, *International Agriculture Master's Candidate*: "I no longer view Ecuador, or other countries, as merely a place on the map with different people and language. These countries are more than that. They are our partners, our family members. Other countries are real, relevant, and important to us. I realized that having one's own culture is something to be cherished and celebrated....I can change the world by starting with myself."

TYLER SMITH, *Animal Science Junior*: "There were so many life lessons that I learned from going to Ecuador. The one that sticks out the most is how people in the USA do not need to get caught up in all of the materialistic things we see every day. People in Ecuador really seem to enjoy life by not always being in a hurry and living simply. This was the most eye opening experience that I have had in my life so far."

ALLISON TAYLOR, *International Agriculture Master's Candidate*: "The trip made me realize how alike we all are. People who lived in the jungle communities went about their daily lives making meals, raising children, laughing, and spending time with family. Although they live such very different lives than we do in the United States, we are all humans and are just trying to find a place in the world."

SARIAH TOLSMA, *Wildlife Ecology & Management Senior*: "I never could have imagined the experiences and memories I made while I was abroad. This certainly was an experience of a lifetime that I hope to always remember. The food, smells, and just sure wonder of the Ecuadorian culture are almost indescribable. This trip experience has inspired me to learn Spanish fluently, visit other South American countries in the future, appreciate my life even more than I already do, and to live more simply and fully."



Austin Werts with Galapagos tortoise.

AUSTIN WERTS, Botany Senior: "The culture of Ecuador was something I really enjoyed. Things typically move much slower there, particularly around meal time. It made me think of the state of our culture, how we are always in a hurry to do something. Taking it slow once in a while is a great way to see things differently, get a chance to breathe, and think about what we are doing. This trip was a huge success, and leaves me craving for more. From these short eighteen days I learned many valuable lessons about people, culture, geography, and the natural world. The lessons one learns from traveling to new places are invaluable and will be lifelong lasting. I now know that I want to explore the world and see what vast amounts of things I can see and learn."

Contributed by: Tom Kuzmic
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Agroforestry in West Africa – A Peace Corps Perspective



Direct seeding moringa in Nyong-Gumah. Two-month old saplings can be seen in the background

When Zuriah, my 5-year old neighbor in the village of Nyong-Gumah, Ghana, punctured her foot on a sharp stump at a farm, her mother, Fihata, harvested some moringa leaves and made a topical poultice for her daughter's wound. It healed perfectly. The following week Fihata and two of our other female neighbors began brewing moringa tea each morning for themselves and their children. This story came about as a result of what has become my biggest agroforestry project as an Agriculture Volunteer with the Peace Corps in northern Ghana.

The moringa tree (*Moringa oleifera*) has been promoted in West Africa and other equatorial developing regions as "The Miracle Tree". Nearly every part of the moringa tree

is beneficial in some way. The leaves alone are reported to be abundant in vitamins A and C, calcium, iron, magnesium, potassium, and protein. While food is not necessarily scarce in northern Ghana, the diet is heavy on yams, maize, and millet – starches that lack adequate protein and vitamins for children and pregnant or nursing mothers. Conveniently, moringa can be consumed exactly the same way as other greens that are routinely cooked and eaten – in teas, soups, and stews, making it an ideal household nutritional supplement.



I created a game that uses carrots, oranges, milk, meat, bananas, and eggs to demonstrate the nutritional abundance of moringa. Winners of each round received the food items. Standing in front of our intensive moringa beds, Arishatu and Tangarma wave proudly with their prizes

The environmental problems in northern Ghana's Guinea-Savannah, where the majority of the population has a direct dependence on trees, crops and livestock for their livelihoods, are plentiful. In addition to low water availability, agricultural norms such as monocropping, annual burning, and improper application of chemical pesticides and fertilizers compromise soil fertility and crop yields. Moringa certainly cannot solve all of these problems. The integration of moringa into local farming practices has the potential to improve food security due to its year-round productive potential, rapid growth rate, and drought tolerance.

Moringa also has the potential to influence societal norms. Northern Ghana is a place where tradition often hinders progress. For instance, women typically gather on Mondays because it's taboo for them to leave the village to farm or collect firewood on Mondays. Why they have this custom is not known. This is what their mothers taught them and what their grandmothers taught their mothers. Had I served as a Peace Corps Volunteer one generation ago, my neighbors would not have seen value in afforestation, as their parents

believed that planting trees resulted in one's early death!

Gender roles also manifest themselves in other ways in my daily work. In an Islamic community like Nyong-Gumah, financial limitations and lack of access to land force women into small cooperatives that bring minimal profitability to each individual. Such cultural norms often make it difficult to initiate behavior change.

In February 2012, I led the formation of the Suolo Kongbon ("Strength in Unity") women's group whose purpose was to establish a one-acre moringa farm. With the support of a Ghanaian NGO, I introduced intercropping of moringa with maize, which provide an organic, low-cost solution to the inaccessibility of fertilizers to female farmers, as well as intensive cultivation of moringa in beds to produce leaf powder. The formation this group would allow 40 women the opportunity to improve their household nutrition and overcome the societal constraints they face in generating income.

Aside from double digging beds up to 50 cm, moringa cultivation is a very simple practice. Seed is gathered and soaked in water overnight. Intensive seeds are hand planted 10 cm apart. Once breast height, about two months later, the first crop can be harvested via topping. With sufficient water it can be harvested at two-month intervals all year.

Once harvested, the leaves must be shade dried for 3 or 4 days. Suolo Kongbon women wrap the stalks in bundles and hang them inside thatched roofs. Once dry the leaves are separated from the stem and pounded into a fine powder using wooden mortar and pestle. After a few thorough sifts the powder is ready to be added to soups or stews, or stored for future use.



Alima and Azara pose with freshly harvested moringa ready for shade drying.

So, how can women reap economic gains from cultivation of moringa trees? The story of Zuriah's cured foot had permeated the group quickly. Such herbal remedies are extremely important in this society that still largely relies on traditional medicine. After our first moringa harvest, I led our group in a moringa and shea butter soap making demonstration. Having cooked since they were young girls, the group picked it up with ease. Products such as soap and tea can be easily sold in local markets.



Fihata (left) and Ma Miriama (right) mixing palm oil, shea butter, moringa, and lye to make soap.

Additionally, it seems that the developed world is suddenly waking up to the health benefits of moringa. This has opened up an opportunity to grow moringa as a cash crop and not just as a household nutritional supplement and remedy. Along with several other Peace Corps Volunteers in Ghana, I have recently begun working with importers from the United States to open this market to Suolo Kongbon.



Fihata with the finished product! One large block makes roughly 30 pieces of soap.

To help spread knowledge of the healing power of moringa, a neighboring Peace Corps Volunteer and I planned a series of cooking demonstrations for new mothers at the local health clinic to accompany the monthly baby weighing sessions. Since then, the local clinic manager took it upon himself to nurse sixty moringa trees. Additionally, Suolo Kongbon has spread knowledge of the healing power of moringa through their soap sales, but our outreach has not yet spread beyond Nyong Gumah.

While my academic background in forestry gave me some of the technical know-how to promote moringa cultivation in Nyong Gumah, it could never have prepared me for the social and cultural traditions that challenge agriculture in the developing world. My experience living in a small village in northern Ghana the past two years has equipped me with lessons that will serve me as I pursue a career in addressing our own food security and food nutrition issues in my home community in the United States.

Submitted by Mary Liz Watson, Peace Corps Volunteer, Ghana,
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Forestry and Natural Resources Management Opportunities in the Peace Corps

Since 1961, the Peace Corps has been sending volunteers overseas to more than 130 countries worldwide, providing technical project assistance and promoting world peace and friendship. Peace Corps Volunteers work in a variety of program sectors including: Agriculture, Environment, Education, Health, Community Economic Development, and Youth Development. Peace Corps' environmental and agro-forestry opportunities range in a diversity of projects such as: tree nursery cultivation in Malawi, developing food preservation/ organic crop production methods in Guatemala, conducting environmental education in Armenia, and directing fisheries/coastal resources management programs in the Philippines. For those looking to begin a career in these sectors, the Peace Corps provides an unparalleled opportunity to gain valuable leadership, problem-solving, and hands-on field experience. Peace Corps Volunteers receive a variety of benefits such as payment of travel and living expenses, student loan deferment, graduate school scholarship and fellowship opportunities, and hiring preference for federal jobs. To learn more, you can watch a short webinar on agriculture and environmental opportunities in the Peace Corps here:

<https://peacecorps.webex.com/peacecorps/ldr.php?AT=pb&SP=MC&rID=22850282&rKey=afd16976c3b74276>

Aside from leading successful careers with government agencies such as the EPA, USDA, and National Parks Service, many Returned Peace Corps Volunteers have gone on to successful careers in the agriculture and environmental industries, and academia.

If you are looking to pursue a graduate degree in Forestry, Natural Resources Management, and other majors, Peace Corps has partnered with over 100 graduate schools across the country to provide scholarships, tuition credit, and unique fellowships to its volunteers. Learn more by

visiting: www.peacecorps.gov/gradschool. You can combine Peace Corps and your master's degree in one experience.



Bananas in the campo.

Peace Corps will have a booth at the SAF convention and a table at the International Forestry Reception on Thursday evening. To learn more and start your application, visit www.peacecorps.gov.

Contributed by Ally Snell- Peace Corps National Outreach Specialist

Join an SAF Working Group

As a member of the Society of American Foresters you can join SAF working groups by going to the website:

<http://www.safnet.org/workinggroups/join.cfm>

If you want to join this working group, we are B3, the International Forestry Working Group. Pass this information along to SAF members who might be interested in joining a working group.

SAF World Forestry Committee News

The World Forestry Committee is actively looking for way to strengthen SAF role of global forests, and is keen for IFWG members' contribution and ideas. The committee writes commentaries for the Journal of Forestry on timely international issues, and provides the SAF Council with input of relevant policy issues. Since the demise of the International Society of Tropical Foresters (ISTF), the WFC is working to integrate ISFTF membership and activities into SAF. On behalf of SAF, WFC solicits nominations for the Gregory Award. This year the Gregory Award Recipient is Ani Haykuni from Armenia. She will attend the national convention

in Charleston. The WFC will host a reception after the alumni meetings on Thursday, October 24 from 7:30 to 10:00 at the Bonefish Grill. Since SAF is co-hosting next year's convention with IUFRO in Utah, it will certainly have an international flavor and the WFC will be actively involved.

Submitted by Michael Jacobson (Chair) and John Barnwell
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Announcements, Meetings and Events

The SAF 2013 National Convention – October 23-27. North Charleston, South Carolina



Home page for the convention:

<http://www.xcdsystem.com/saf/site13/>

International Meetings at the SAF National Convention

The World Forestry Committee will meet from 1:00 to 5:00 on **Wednesday**, October 23, in Room 14 of the Convention Center.

The International Reception sponsored by ArborGen will be on **Thursday**, October 24 from 7:30 p.m. to 10:00 p.m. (or beyond if it is like Spokane) at the Bonefish Grill, 5041 Independence, about one block from the Convention Center. This is an informal event with light food provided and a cash bar. We encourage people with an interest in international forestry to talk with others who have the same interest. Peace Corps will have a table at the reception.

The International Forestry Working Group will meet on **Friday**, October 25, at 5 p.m. in Room 6 at the Convention Center.

IFWG and World Forestry Committee Technical Sessions at the SAF National Convention

The following are the technical sessions sponsored by either the World Forestry Committee or the International Forestry Working Group.

Date:	Friday, October 25, 2013
Time:	8:00 AM - 10:00 AM
Location:	Meeting Room 6
Moderator:	
Sponsored by:	SAF B3 International Forestry Working Group
Sponsored by:	SAF World Forestry Committee
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8:00 AM -	Silviculture in Europe Making the Transition to Managing Ecosystems (269)
8:30 AM	Philippe Morgan , Association Futaie Irrégulière Edward Wilson, Silviculture Research International
8:30 AM -	Transforming the Culture of Silviculture in British Forestry (318)
9:00 AM	Edward Wilson , Silviculture Research International Philippe Morgan, Association Futaie Irrégulière
9:00 AM -	Estimating Biomass and Carbon Stock In Malaysia For REDD+ (47)
9:30 AM	Ainuddin Nuruddin , Institute of Tropical Forestry and Forest Products Syafinie Abdul Majid, INTROP
9:30 AM -	Synchronizing the Global REDD Framework within Existing Community Forestry
10:00 AM	System (210) Jagdish Poudel, Mississippi State University Seema Karki , International Center for Integrated Mountain Development (ICIMOD) Donald Grebner, Department of Forestry, Mississippi State University, Bhaskar Singh Karky, International Center for Integrated Mountain Development (ICIMOD)

12-2 International Forestry - International Forest Carbon Projects: Assessing Forestry, Ecological, and Financial Impacts

Implementing REDD+ mechanisms requires understanding broader forest carbon sector commercial experience. Specific case studies from Peru, Ecuador, Brazil, Belize, Indonesia, and Australia will demonstrate key learnings regarding the sector's commercial experience, ecological and forestry impacts, and its potential.

Date:	Friday, October 25, 2013
Time:	10:30 AM - 12:00 PM
Location:	Meeting Room 6
Moderator:	Gabriel Thoumi, Integra LLC
Sponsored by:	SAF B3 International Forestry Working Group
Sponsored by:	SAF E6 Sustainability & Forest Certification Working Group
Sponsored by:	SAF World Forestry Committee

- [International Forest Carbon Projects: Assessing Forestry, Ecological, and Financial Impacts](#) (151)
Gabriel Thoumi, Integra LLC
Verl Emrick, Conservation Management Institute, Virginia Tech
Rebecca Murray Schneider, Conservation Management Institute, Virginia Tech
Brian McFarland, Carbonfund.org Foundation

12-3 International Forestry - Global Forest, Park, and Protected Area Capacity Development

Panelists will provide an overview of the capacity development life cycle, with examples from programs in several different international geographies. The session will invite active engagement and dialog from participants.

Date: Friday, October 25, 2013
Time: 1:00 PM - 2:30 PM
Location: Meeting Room 6
Moderator: Thomas Fish, US Department of the Interior/CESU Network
Sponsored by: SAF B3 International Forestry Working Group
Sponsored by: SAF World Forestry Committee

1:00 PM - [Capacity Building for Coastal Protected Area Forest Conservation and Restoration](#)
1:30 PM (344)
Thomas Fish, U.S. Department of the Interior/CESU Network
Anne Walton, NOAA National Marine Sanctuary Program

1:30 PM - [Building Natural Resource Capacity through Benchmarking: A Brazil Case Study](#)
2:00 PM (294)
Robert Burns, West Virginia University
Jasmine Moreira, Ponta Grossa State University
Jasmine Moreira, Ponta Grossa State University

2:00 PM - [Beyond Ecology: Human Dimensions Management in Germany's National Parks](#)
2:30 PM (309)
Eick von Ruschkowski, LUH Institute of Environmental Planning

12-4 International Forestry -

Date: Friday, October 25, 2013
Time: 3:00 PM - 5:00 PM
Location: Meeting Room 6
Moderator:
Sponsored by: SAF B3 International Forestry Working Group
Sponsored by: SAF World Forestry Committee

3:00 PM - [Identifying Levers for Change in Tropical Forestry](#) (11)
3:30 PM **Patricia Elias**
Douglas Boucher

3:30 PM - [Indicators of Successful Tropical Forest Restoration Projects](#) (101)

4:00 PM **Matthew Bare**, Yale School of Forestry
 4:00 PM - [Fixing a Broken Land: Efforts to Rehabilitate Afghanistan’s Pastoral Landscape](#)
 4:30 PM (112)
Charles Ruffner, Southern Illinois University
 4:30 PM - [Farmer Views about Community Forestry in Kuje Area Council, Federal Capital Territory, Abuja Nigeria](#) (370)
 5:00 PM **Michael Adedotun Oke** , Michael Adedotun Oke Foundation

06-1 Eucalyptus Management - Trends and Opportunities

This is the first of four sessions that will focus on both broad trends in the development of Eucalyptus spp. plantations, including the use of improved cultivars in the United States, and applied science, including topics such as water use by Eucalyptus plantations and marketing and end use.

Date: Saturday, October 26, 2013
 Time: 8:30 AM - 10:00 AM
 Location: Meeting Room 7
 Moderator: Blair Orr, Michigan Technological University
 Sponsored by: SAF B3 International Forestry Working Group
 Sponsored by: SAF D2 Silviculture Working Group
 Sponsored by: SAF World Forestry Committee

8:30 AM - [Eucalyptus in the US South: Something Old, Something New](#) (223)
 9:00 AM **Robert Kellison**
 John Johnson, MWV
 Alan Lucier, NCASI
 9:00 AM - [Eucalyptus Plantations in Southeastern USA: Economic Analysis of Silviculture, Growth, Utilization](#) (97)
 9:30 AM **Jeff Wright**, Arborgen
 9:30 AM - [Portugal and Spain Are Slowly “Domesticating” Eucalyptus Cultivation](#) (374)
 10:00 AM **Fortunato Pacios-Rivera**, USDA/Natural Resources Conservation Service

06-2 Eucalyptus Management - Trends and Opportunities

This is the second of four sessions focusing on both broad trends in the development of Eucalyptus spp. plantations, including the use of improved cultivars in the United States, and applied science, including topics such as water use by Eucalyptus plantations and marketing and end use.

Date: Saturday, October 26, 2013
 Time: 10:30 AM - 12:00 PM
 Location: Meeting Room 7
 Moderator: Blair Orr, Michigan Technological University
 Sponsored by: SAF B3 International Forestry Working Group
 Sponsored by: SAF D2 Silviculture Working Group
 Sponsored by: SAF World Forestry Committee

- 10:30 AM - [Camcore, NC State: Developing Productive Cold and/or Drought Hardy Eucalypts](#)
 11:00 AM (367)
 Bill Dvorak, Camcore, NC State University
John Johnson, MWV
- 11:00 AM - [Use of Cold Tolerant Eucalyptus Species as a Partial Replacement for Southern](#)
 11:30 AM [Mixed Hardwoods](#) (195)
Ricardo Santos, MWV Corp
 Peter Hart, MWV Corp
- 11:30 AM - [Potential Biodiversity Response to Eucalyptus Plantings in the Southeast](#) (200)
 12:00 PM **Thomas Wigley**, National Council for Air & Stream Improvement, Inc.
 Samuel Riffell, Mississippi State University
 Jacob Verschuyl, National Council for Air & Stream Improvement, Inc.
 Darren Miller, Weyerhaeuser Company
 Christopher Comer, Stephen F. Austin State University
 Michael Blazier, LSU AgCenter

06-3 Eucalyptus Management - Trends and Opportunities

This is the third of four sessions focusing on both broad trends in the development of Eucalyptus spp. plantations, including the use of improved cultivars in the United States, and applied science, including topics such as water use by Eucalyptus plantations and marketing and end use.

Date: Saturday, October 26, 2013
 Time: 1:00 PM - 2:30 PM
 Location: Meeting Room 7
 Moderator: Ken McNabb, Auburn University
 Sponsored by: SAF B3 International Forestry Working Group
 Sponsored by: SAF D2 Silviculture Working Group
 Sponsored by: SAF World Forestry Committee

- 1:00 PM - [Zoning Eucalyptus Adaptation-Yields in the Southeast US – 3 Year Results](#) (311)
 1:30 PM **Jose Stape**
 Thomas Fox, Virginia Tech
 Clayton Alvares, IPEF
 Jose Alvarez, NCSU
 Tim Albaugh, North Carolina State University
 Rafael Rubilar, Departamento de Silvicultura, Universidad de Concepcion - Forest Productivity Cooperative
- 1:30 PM - [Cultural Guidelines for Eucalyptus Establishment in Louisiana and Texas](#) (134)
 2:00 PM **Michael Blazier**, LSU AgCenter
- 2:00 PM - [Multiple Uses for Eucalyptus grandis Cultivars in Florida](#) (265)
 2:30 PM **Donald Rockwood**, University of Florida
 Les Groom, US Forest Service
 Tom Elder, US Forest Service
 LO Ingram, University of Florida

Anthony Witcher, USDA-ARS
JY Zhu, US Forest Service

06-4 Eucalyptus Management - Trends and Opportunities

This is the last of four sessions focusing on both broad trends in the development of Eucalyptus spp. plantations, including the use of improved cultivars in the United States, and applied science, including topics such as water use by Eucalyptus plantations and marketing and end use.

Date: Saturday, October 26, 2013
Time: 3:00 PM - 4:30 PM
Location: Meeting Room 7
Moderator: Blair Orr, Michigan Technological University
Sponsored by: SAF B3 International Forestry Working Group
Sponsored by: SAF D2 Silviculture Working Group
Sponsored by: SAF World Forestry Committee

3:00 PM - [Cold-Resistant Eucalyptus: Characteristics and Suitability for Solid Fuels](#)

3:30 PM [Production](#) (53)

Daniel Saloni, NCSU

3:30 PM - [Cold Tolerance and Water Use in Short-rotation Eucalyptus benthamii Plantations](#)

4:00 PM (185)

Chris Maier, US Forest Service, Southern Research Station

Kurt Johnsen, US Forest Service

Jose Stape

Pete Anderson

Tim Albaugh, North Carolina State University

John Butnor, US Forest Service

John Butnor, US Forest Service

Steve Patterson, MeadWestvaco Corporation

James Vose, USDA Forest Service

4:00 PM - [Developing Eucalyptus benthamii Growth and Yield Model for the SE US](#) (366)

4:30 PM **Kevin Hall**, NCSU - Forest Productivity Cooperative

Jose Stape, North Carolina State University

Bronson Bullock, NCSU

Thomas Fox, Virginia Tech

Jeff Wright, Arborgen



XXIV IUFRO World Congress

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The Congress Scientific Committee (CSC) welcomes **submission of abstracts** for presentations in sub-plenary, technical and poster sessions for the 2014 IUFRO Congress.

Please note that all submissions must be made electronically via the Congress abstract submission system at <https://www.xcdsystem.com/iufro2014/abstract/index.cfm?ID=Hb21CPb> by 15 October 2013. Abstracts submitted in French or Spanish must be submitted by 15 September in order to allow sufficient time for translation prior to review by session coordinators and the Congress Scientific Committee.

Before submitting your abstract please review the "Call for Abstracts" and "Congress theme and session descriptions" documents, link to documents to be indicated.

We look forward to hearing from you and for your active participation in the design of the scientific program for the 2014 IUFRO Congress in Salt Lake City.

John Parrotta on behalf of the CSC

Recent Publications

TROPICAL NOTES

Frank H. Wadsworth

International Institute of Tropical Forestry

USDA Forest Service

San Juan, Puerto Rico

Eucalyptus progress in Brazil.

Currently about 4.9 million hectares are planted with Eucalyptus in Brazil, about a quarter of the world total. Large and small enterprises establish plantations. Most plantations are managed on rotations of 6 to 8 years. The annual increment ranges from 25 to 60 m³/ha per year. Brazilian Eucalyptus roundwood consumption in 2011 was 137 million m³. Given the rapid advances in Eucalyptus breeding and the adoption of clonal

propagation, genotypes are rapidly becoming obsolete and are being replaced by more productive ones after harvesting.

José Leonardo de Moraes Gonçalves and others, 2013. Integrating generic and silvicultural strategies to minimize abiotic and biotic constraints in Brazilian Eucalyptus plantations. *Forest Ecology and Management* 301:6-27.

Forest evaluation in India

The total economic value of goods and services provided by the forests of India came to 6.86 % of the GDP. This is a bare minimum of the value because waste treatment, biodiversity, and cultural values of trees and forests could not be assessed. The total value is higher than indicated.

B. K. Bahuguna and N. S. Bisht, 2013. "Valuation of ecosystem goods and services from forests in India" *Indian Forester* 139(1):1-13

Australian contributions to Asia

Global demand for wood continues to increase and fuelwood still constitutes over half of the harvest, supply of which remains essential for many communities. The main wood genera that Australia shares with Asian neighbors are Casuarinas, Eucalypts, and Acacias. There are now over a million hectares of Casuarina plantations, primarily in India, Vietnam, and China, where they provide stability to sandy coastal ecosystems and contribute organic matter and protection, enabling agriculture. Casuarina also offers an excellent furnish for chemical pulp. In China plantations of Eucalypts increased from 400,000 ha in 1981 to 3,500,000 ha in 2012. There are now over 2,000,000 ha of Acacias in Indonesia, Malaysia, and Vietnam. Vietnam is now the world's largest exporter of hardwood chips. Of the 5.4 million bone dry metric tonnes exported in 2012, some 90% was Acacia. The article makes a strong case for support from Australian foresters and Forestry Organizations to these spectacular advances; raw materials, genetic stock, and technology.

Stephen Midgley, 2013. Guest Editorial: Making a difference: celebrating success in Asia. *Australian Forestry* 76(2):73-75

Teak variation in Indonesia

Teak trees were compared as to diameter, height, bole volume, stress-wave velocity and pilodyn penetration. Significant interaction between genotype and environment was found for all measured characteristics, suggesting properties of teak that can be improved by breeding.

F. Hidayati and others, 2013. Growth characteristics, stress-wave velocity, and pilodyn penetration of 15 clones of 12-year-old *Tectona grandis* trees planted at two different sites in Indonesia. *Journal of Wood Science* 59(3):249-254.

Sugi/Loblolly growth comparison in Brazil

Sugi, *Cryptomeria japonica*, makes up 45% of Japan's plantations and is widely planted in the southern highlands of Brazil, but seldom rated for growth. A plantation culminated in diameter growth at age 9 with rings 2.7 cm in width. At 25 years it had a MAI of 43m³/ha, comparing favorably with loblolly pine, the most important cultivated species in southern Brazil.

Mario Dobner Junior and others, 2013. Growth of a *Cryptomeria japonica* stand in Southern Brazil. *Scientia Forestalis* 41(97):39-46

Elephants human related

Human factors, rather than food availability, are indicative of African elephant population densities. Densities strongly correlate with conservation policy, literacy rate, corruption, and economic welfare. Conservation of large animal species could depend more on good human education, greater literacy, good governance, and less corruption than merely setting aside areas.

Willem F. de Boer and others, 2013. "Understanding spatial differences in African elephant densities and occurrence, a continent-wide analysis" *Biological Conservation* 159:468-476

Mammal seed cleaning important

A study in the Amazon showed that gastro-intestinal cleaning of the large seeds of *Manilkara bidentata* was critical to recruitment. Woolly monkeys were estimated to clean and disperse nearly a million seeds per km² per 24-day *Manilkara* fruiting season. Gut passage greatly increases survival of such tree species. Where dispersers are gone, neither dissemination nor cleaning remains and recruiting suffers.

Taal Levi and Carlos A. Peres, 2013. Dispersal vacuum in the seedling recruitment of a primate-dispersed Amazonian tree. *Biological Conservation* 163:99-106

Elephant seed dispersal

Studies of dung of the Asian elephant in India showed that fruits and seeds of 27 woody species were included. Their germination time was significantly less than that of control seeds.

F.S. Jothish, 2013. "Frugivory and seed dispersal of woody species by the Asian elephant (*Elephas maximus*) in a mid-elevation tropical evergreen forest in India." *Journal of Tropical Ecology* 29:181-185

A well-structured Brazilian forest

What is described as a dense mature forest in Roraima was inventoried by nine 1-ha plots. Of trees above 10 cm DBH there were 525 per ha, from 42 families, 111 genera, and 165 species. More than half of the trees were in three families. Three species accounted for 28% of the importance value. Of the trees 22 % were of “climax” species, 38 % “secondary”, and 42 % “pioneers”.

Tiago Monteiro Conde and Helio Tonini, 2013. Phytosociology of a dense omrophilous forest in the northern Amazon, Roraima, Brazil. *Acta Amazonica* 43(3):247-259.

Defaunation effects on forests

Plant communities that have lost fauna show consistent shifts toward higher species dominance, and lower diversity. The dissemination of heavy-seeded species is reduced and more regeneration is around parent trees. Modified seed predation and herbivory are also associated with defaunation. This may lead to either higher or lower recruitment, depending on the species.

E.L. Kurtin 2013. Cascading effects of contemporaneous defaunation on tropical forest communities. *Biological Conservation* 163:22-32

Riparian structure quality counts

Riparian vegetation (trees, grasses, vines, bamboo, canopy closure and width) was found to be a good predictor of the buffering role of riparian zones. Riparian forest structure (tree density and height, vertical canopy structure, mean basal area, and diameter at breast height) was found to influence stream water quality. Heterogeneity in riparian forest structure should be considered when evaluating buffering effects of riparian zones.

Andrea L.T.de Souza and others 2013. “Influence of riparian vegetation and forest structure on the water quality of rural low-order streams in SE Brazil.” *Forest Ecology and Management* 298:12-18

Multiple-use in Central Africa

Multiple-use forest management is documented in Cameroon, Gabon, and the Democratic Republic of Congo but is rarely implemented in either production or community forests. In practice sustainable forest management focuses almost exclusively on timber extraction, although hunting for game and harvesting non-timber forest products are always mentioned in forest management documents. Ecosystem services are almost never mentioned. Possibilities are foreseen for improving the content of management documents to include the value of all forest uses.

G. Lescuyer and J.N. Essoungou, 2013. Multiple-use forest management in Central Africa: perceptions, implementation, and evolving practice. *Bois et Forêts des Tropiques* 315(1):29-38.

Grouping Bangladesh timbers

To relate the utility of little-known timbers to those better known 79 timbers of Bangladesh, were grouped according to density, modulus of elasticity, and modulus of rupture. Four classes were created, from low to high. The intermediate classes were recommended for afforestation programs to meet future demand.

Md. Q. Chowdhury and others, 2013. Timber species grouping in Bangladesh: linking wood properties. *Wood Science Technology* 47:797-813.

Community management problems in Para

Community-based forest management faces a number of difficulties in the Brazilian Amazon despite significant public support. It takes at least two years to get a management plan approved. Moreover, plans are expensive, requiring external national and international financial support. Smallholder communities do not easily succeed in selling their timber at remunerative prices. Public price guarantees will be necessary to make timber an effective source of income.

Isabel Drigo and others, 2013. Cash income from community-based forest management: lessons from two case studies on the Brazilian Amazon. *Bois et Forêts des Tropiques* 315(1):39-49.

Superiority of plus trees

Thirty-three plus trees of *Pinus kesiya* were compared to average trees. The plus trees represented improvement of 14 to 16% in height and girth at breast height. Maximum improvement of straightness was 138%, and for roundness of bole 99%. The improvement achieved through selection may be an indicator for possible genetic gain through progeny trials.

Ombir Singh and N. Mahanta, 2013. "Improvement through selection of plus trees in Khasia pine (*Pinus kesiya*)." *Indian Forester* 139(1):24-28

Lichen diversity in Southern China

In eight forest types of Southern China 217 epiphytic species of lichens were recorded. Lichen richness was significantly higher in four of the forest types. Richness was affected by canopy openness and host diversity. Preserving primary forests was seen as important to conserve lichen diversity.

Su Li and others, 2013. "Epiphytic lichens in subtropical forest ecosystems in southwest China: species diversity and implications for conservation." *Biological Conservation* 159:88-95

Litter quality benefits

The study was of tropical trees in Panama that display overyielding, i.e. higher yields in mixtures compared with monocultures. Litter production by neighbors was a far better predictor of tree growth than traditional crowding indices. Litter production contributed to overyielding by producing pairwise interactions. Diversity effects extend beyond that of light, including the role of litter-mediated interactions among trees.

Jurgis Saphanskas and others, 2013. "Beyond shading: Litter production by neighbors contributes to overyielding in tropical trees." *Ecology* 94(4):941-952

Eucalyptus fertilization excessive

In southern Brazil, as elsewhere, large amounts of fertilizer increase Eucalyptus productivity. The application of 40 kg/ha of N, 16 kg/ha of P, and 53 kg/ha of K produced 48% more biomass after 2 years. However, in the first year after fertilization the trees passed through leaf litter 50 kg/ha of N and 20 kg/ha of K to the soil. The inference is that less fertilizer would be adequate.

Paulo Henrique Muller da Silva, 2013. Fertilizer management of eucalypt plantations on sandy soil in Brazil: initial growth and nutrient cycling. *Forest Ecology and Management* 301: 67-78

Ficus loss impacts

Trees of the genus *Ficus* provide food and other resources for forest animals, and as a species that forms free-standing stems they are commonly the target of logging in Bolivia, Peru, and Brazil. Between 2005 and 2007 a peak annual average of 34,000 m³ was harvested in the Bolivian Amazon. It is recommended that in sustainable selective logging that the security of the species be assured.

Annika M. Felton and others, 2013. "Commercial harvesting of *Ficus* timber – an emerging threat to frugivorous wildlife and sustainable forestry" *Biological Conservation* 59:96-100

Beached timber in Gabon

The article is particularly concerned for leatherback turtles on the world's largest nesting coast. Beached timber, including within a National Park, is a threat to nesting by the turtles. Of interest to forestry is the number of the logs apparently being exported. During three years the number of logs on the beaches varied between 13,528 and 17,262. Recent legislation prohibiting exportation of entire logs may increase the problem.

S. K. Pikesley and others, 2013. Here today, here tomorrow: Beached timber, a persistent threat to nesting sea turtles. *Biological Conservation* 162:127-132

The International Society of Tropical Foresters' web site is still up and running, at least for the time being, and twenty special reports can be found there:

http://www.istf-bethesda.org/specialreports/document_list.htm
