Society of American Foresters

International Forestry Working Group Newsletter

Working Group B3

December 2013

Thanks to everybody who sent in an article for this newsletter. The Field Notes section is new with this issue of the newsletter. It has a technology focus this time, but that is not a requirement for Field Notes. If you have come up with some field practice that makes work easier and you think could help others please send it along.

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

Contributed Articles

Forestry and Forest Health in South Africa

William M. Ciesla (wciesla@aol.com)
Forest Health Management International
Fort Collins, CO 89525

South Africa is a large country with a land area of 1.22 million km^2, almost two times that of Texas. Its plant ecosystems are extremely diverse but its area of closed natural forests is relatively small, only about 0.5 million ha (Republic of South Africa n.d.). These are concentrated along the coastal regions and are mostly in national parks and reserves. The country has a vast area (40 million ha) of open savanna woodlands, which, among other things, provide habitat for the country's abundant and varied wildlife.

Commercial forestry is almost entirely dependent on plantations of fast growing exotic trees, primarily pines and eucalypts. Among pines, *Pinus elliottii* and *P. radiata* from the U.S. and *P. patula* from Mexico are the most widely planted species. Eucalypts include *Eucalyptus grandis, E. camaldulensis, E. nitens* and several hybrids. Several forest companies and the South African Department of Agriculture, Forestry and Fisheries have established some 1.3 million ha of forest plantations, mostly in the eastern portions of the country. These produce a wide range of forest products on relatively short rotations (Republic of South Africa n.d.).

Figure 1 – A fire tower stands amid extensive pine plantations near Sabie, Mpumalanga Province, South Africa.

The plantations are subject to a number of forest insect and disease pests which threaten their productivity. They can be subdivided into two broad groups: 1 - species that have been introduced and become established and 2 – indigenous species that have adapted to the new host trees.

A number of introduced pests are damaging to pine plantations. Pitch canker, caused by the fungus *Fusarium circinatum*, first appeared in South Africa ca. 1991. It is primarily a pest of nurseries and young plantations. *P. patula* is the preferred host. The sirex woodwasp, *Sirex noctilio*, a Eurasian species that has been introduced into many countries in the Southern Hemisphere, first appeared in South Africa in 1994. Again, *P. patula* is the preferred host. The deodar weevil, *Pissodes nemorensis*, native to the southeastern U.S., is widely established in South African pine plantations but behaves much in the way it does in its native habitat. It is a secondary invader of weakened and dying trees and not damaging.

Figure 2 – Male pupa of the sirex woodwasp, Sirex noctilio*, in* Pinus patula*, Mpumalanga Province.*

A number of eucalyptus insects have been introduced into South Africa and are damaging. An insect pest of key concern is the eucalyptus gall wasp, *Leptocybe invasa*, which produces galls on leaf midribs and tender shoots. Infestations can also result in deformity of foliage. Several foliage feeding insects, including red gum lerp, *Gylcaspis brimbelcombii*, bronze bug, *Thaumastocoris perigrenis*, and a weevil, *Gonipterus* sp. are also damaging.

Figure 3 – Distorted foliage on Eucalyptus grandis *is one of several types of damage caused by eucalyptus gall wasp,* Leptocybe invasa*.*

Figure 4 – A weevil, Gonipterus sp.*, is one of several foliage feeding insect pests of eucalyptus plantations.*

At least two species of indigenous insects have adapted to the exotic plantations. A caterpillar, *Eupcrotis terminalis*, has adapted to pines and outbreaks can cause complete defoliation. This insect is a relative of the European brown tail moth, *E. chrysorrhoea*, an insect that has become established in portions of the New England states. *Coryphodema tristis*, a wood boring caterpillar of the family Cossidae, commonly known as a goat moth because of the unpleasant odor associated with infestations, has adapted to plantations of *E. nitens*. In some areas baboons, *Papio* sp., strip the bark from pines and can cause extensive tree mortality.

Figure 5 – Heavy defoliation of Pinus patula *by the caterpillar* Eupcrotis terminalis *near Carolina, Mpumalanga Province.*

Figure 6 – Damage to a pine plantation by baboons stripping bark from trees.

The Forest and Agricultural Biotechnology Institute (FABI), located on the campus of the University of Pretoria, conducts research on forest pests and provides technical assistance on forest insect and disease management. FABI receives its funding from a consortium of forest companies. Since many of the country's forest pests are introduced, emphasis is on classic biological control - introduction and establishment of natural enemies. FABI has several state-of-the-art laboratories for mass rearing of natural enemies. Classic biological control programs currently underway include use of the nematode *Deladenus siricidicola*, which parasitizes female sirex woodwasps and renders them sterile, and parasitoides of eucalyptus gall wasp.

Figure 7 – Deladenus siricidicola*, a parasitic nematode of the sirex woodwasp, is mass reared in FABI's laboratories in Pretoria as a biological control agent.*

South Africa's forest plantations are extremely productive. Forest products harvested from the plantations not only provide for domestic needs but are also exported. There is, however, a dark side to the plantations. Both pines and eucalypts can be invasive and displace areas of native vegetation. In some areas, it has been necessary to apply chemical and mechanical controls help restore native species (Nyoka 2003). Some environmental groups have even advocated the use of introduced insect and disease agents for biological control of pines and eucalypts.

# # # # #

References Cited

B.I. Nyoka, 2003. Biosecurity in forestry: A case study on the status of invasive forest tree species in southern Africa. Food and Agriculture Organization of the United Nations, Rome, Italy, Forest Biosecurity Working Paper FBS/1E.

Republic of South Africa n.d. An overview of forests. Department of Agriculture, Forestry and Fisheries. http://www2.dwaf.gov.za/webapp/ForestsOverview.aspx (Site visited 7 December 2013)

Adding Value to North American Forests: Activities of The North American Forest Commission Silviculture Working Group

Mary Ann Fajvan, USDA Forest Service Northern Research Station, Morgantown, WV
Chair, NAFC, Silviculture Working Group
(mfajvan@gmail.com)

Background:

The North American Forest Commission (NAFC) is one of six regional forestry commissions established by the Food and Agriculture Organization of the United Nations between 1947 and 1959. The NAFC member countries-Canada, Mexico and the United States of America-held their first meeting in 1961and twenty-five sessions have been held biennially since. The organization of NAFC consists of: 1) Commissioners: the heads of the national forestry agency in each member country, who guide the work of the Commission, 2) Bureau of Alternates (BOA): appointed by the Commissioners to facilitate the business aspects of NAFC, plan meeting agendas, and monitor and coordinate the activities of the Working Groups, 3) Working Groups: consist of subject area specialists who work on technical, policy, or research issues. Working Group members are representatives from all three member countries and can be recruited from government, universities, NGOs or the private sector. The Working Groups serve as a technical forum in their respective subject areas and do not formulate continental policies.

Currently, there are eight Working Groups who report annually to the BOA and present activity reports at the Commission meetings.

The Silviculture Working Group was established in 1978. The mission of this Working Group is the synthesis, development and dissemination of knowledge and technology on silvicultural strategies, systems and practices for North American forests to improve the quality of human life. The most critical function of the Group is maintaining cooperation among the three countries in promoting silvicultural practices to ensure that diverse, healthy forests continue to supply needed goods and services. The Group also collaborates with other NAFC Working Groups to adjust current silvicultural guidelines to address goals of: forest health, adding value, invasive species, fires resistance, maintaining genetic diversity, forest rehabilitation and climate change.

In 2008, the NAFC targeted some priority issues for the Working Groups to address. The Silviculture Working Group volunteered to take the lead in identifying problems and issues related to "Forest sector competitiveness." The SWG sponsored and facilitated a workshop in November 2010, to generate ideas regarding the development of an integrated forest management approach to foster the competitiveness of the NA forest sector. Workshop themes considered the influences of ecological, economic and climatic dynamics on the living forest. Presentations and discussions focused on including forests in the value chain to allow for consideration of optimizing fiber value from markets to products and back to raw material. Workshop format was interactive with five invited presenters and facilitated gap analysis by participants. The workshop was co-sponsored by SAF and held in Albuquerque NM in conjunction with the SAF 2010 National Convention.

What we learned:

One key to sustainable forest management is to maintain a high level of economic value for the products and services provided by forests. Wood is a global commodity and because forests are renewable, forest sustainability is not determined on the basis of simple short-term economics (Shifley, 2006). While North America contains about 17% of global forest area it accounts for about 39% of the value added to forest products (FAO 2005). Canada, USA and Mexico rank third, fourth and twelfth, respectively among the most forested countries in the world. However, landownership patterns vary significantly among the three countries. Canada is over 90% publicly owned and Mexico and the USA are primarily private ownerships. Community forest owners, or *ejidos*, control 80% of Mexico's native forest resource (Bray et. al 2006) and 39% of USA forests are privately owned (Birch, 1996). The United States and Mexico are net importers of wood and Canada is a net exporter of wood products with 71% of these to the USA (Haynes 2003).

About 20% (245,000 ha) of the forest area in NA is considered to be "primary forest" where there is minor influence from humans; over 60% of this acreage is in Canada. Alternatively, 67% of the 38 million ha of NA planted forest, occurs in the USA as plantations, with only 24% estimated in Canada. Although many trees are planted annually in Canada, there is no distinction between afforestation, reforestation or mandatory replanting as part of silvicultural practices. In Mexico, commercial forest plantations have traditionally been

confined to small scale operations, however, government subsidies introduced in 1997 proposed a major expansion of plantations in order to reduce wood imports. Current data indicate that approximately 156,000 ha of woody species have been established in Mexican plantations (Fierros González and Sosa Cedillo 2000).

Subsequent activities:

Subsequent annual meetings and field tours of the Silviculture Working Group have continued to address the theme of "Adding Value to Forests". In 2011, the Group visited several *ejidos* in the southern Yucatan peninsula of Mexico to learn about efforts to sustainably produce mahogany. Those communities that harvested multiple products, including timber, from production forests provided the most socioeconomic benefits. However, challenges were still being faced regarding marketing of higher-value lumber and logs on the international market.

Members of the silviculture working group inspecting tropical hardwood lumber at a sawmill on the Yucatan Peninsula, Mexico

In 2012, genetics and tree fiber research for adding value was addressed at a meeting in Quebec City, Canada. The Group also toured the headquarters and laboratories of FPInnovations, a forestry research center specializing in designing integrated value chain optimization solutions to approach questions of value added. These solutions are designed to allow companies to target certain tree features and growth parameters to target their customer's needs in the appropriate market (www.fpinnovations.ca).

Recently milled mahogany boards at a community-run (ejido) sawmill in Mexico

During July 2013, the Group joined the Walnut Council for their annual meeting in West Virginia and Pennsylvania, USA. Tours of private woodlots included discussions with landowners focusing on silvicultural efforts towards quality hardwood management. Challenges faced by owners in walnut plantation management and marketing of quality Appalachian hardwoods were also addressed.

Members of the silviculture working group team up with the Walnut Council to learn how to grade walnut logs at a sawmill in northern West Virginia, USA

Literature Cited

Birch, T.W. 1996. Private forest-land owners of the United Sates 1994. USDA Forest Service, Resource Bulletin NE-134, p. 183.

Bray, D.B., Antinori, C. and Torres-Rojo, J.M. 2006. The Mexican model of community forest management: The role of agrarian policy, forest policy and entrepreneurial organization, Forest Policy and Economics, Vol. 8(4), Pp. 470-484.

Fierros González, A.M. y Sosa Cedillo, V. 2000. Las plantaciones forestales comerciales en México: El programa para el desarrollo de plantaciones forestales comerciales (PRODEPLAN). En: Memoria del 1er Congreso Nacional de Reforestación. Montecillo, México. PRONARE/SEMARNAP, México, D. F. CD. 15 p.

Food and Agriculture Organization. 2005. The world's forests, 2000. Global Forest Resources Assessment 2000. www.fao.org./DOCREP/004/Y1997E/y1997e31.

Haynes, R.W. (Tech. Coord.) 2003. An analysis of the timber situation in the United States 1952-2050. USDA For. Serv. Gen. Tech. Rep. PNW-GTR-560.

Shifley, S.R. 2006. Sustainable forestry in the balance. J. For. June 2006. Pp. 187-195.

High School Student's Research Project Contributes to Ongoing Mangrove Restoration Work on the island of Tutu'ila, American Samoa

Submitted by Author: Jolie Goldenetz Dollar (Research Forester, American Samoa Community College; goldenetzdollar@gmail.com) and Ambika Murali (Leone High School Sophmore)

Mangrove forests are an important ecosystem, particularly in the Pacific Islands region. As an ecosystem, mangroves play important roles in shoreline protection, enhancing water quality, providing habitat for wildlife, and supporting marine food chains. The trees species which compose mangrove forests are also directly used by people in a number of ways, including timber, medicine, food, craft wood, canoe making, and body ornamentation. Unfortunately, a number of natural and anthropogenic pressures make mangrove forests one of the most threatened natural communities worldwide.

A mangrove area at low tide in the village of Nu'uuli in American Samoa which was cut-down thirty years ago and is beginning to re-vegetate.

There is little available quantitative information on trends in area or health of Pacific Islands mangroves due to limited monitoring. However, on the island of Tutu'ila (which is part of the unincorporated U.S. territory of American Samoa) a number of studies have been conducted in the last decade to gain information about the health of the islands' mangrove areas and to determine best management practices for mangrove restoration. The two main mangrove species of American Samoa are *Bruguiera gymnorrhiza* (large-leafed mangrove) and *Rhizophora samoensis* (red mangrove). These two species exhibit an interesting reproductive system in

which the seeds germinate while still attached to the tree. The seedlings, or propagules, eventually fall from the parent plant. If the propagules land in suitable substrata, they will develop roots and grow. Alternatively, they can float for extended periods in water without rooting.

A high school student chose to further our knowledge about American Samoa's mangrove species by conducting an experiment about mangrove propagation and growth. She partnered with the Forestry Extension and Research Program at American Samoa Community College. The aim of her project was to compare the propagation of large-leafed mangrove through the planting of stem cuttings and the planting of propagules in a greenhouse setting. The results of her project are import in case a mangrove area is not able to regenerate on its own because of a natural disaster, plant pathogen, or man-made destruction. In these cases, it will be important to have potted mangroves available for re-vegetating the site.

The project involved planting stem cuttings and propagules in planting tubes in the greenhouse. Bagged potting mix was used for the soil medium, and fresh water used to irrigate the cuttings and propagules. For seven weeks, plant growth was monitored. At the end of seven weeks, all but a few of the popagules showed vigorous growth. However, in the same amount of time, none of the stem cuttings showed new growth. In a follow-up study, the use of store-bought powdered rooting hormone on stem cuttings and propagules was tested. The student found that rooting hormone did not change the results from the first study. The stem cuttings did not show growth, even with rooting hormone, and the propagules had similar growth rates with or without rooting hormone. These results are consistent with other studies which tested stem-cutting rooting potential and the use of rooting hormone on mangrove stem cuttings. Future studies will test the use of different potting media, including sediment from mangrove areas, and irrigation with seawater.

Mangrove propagules after seven weeks of growth in the greenhouse.

Last month, the high school student showcased her study at the American Samoa Science Symposium, which is sponsored through the Junior Science and Humanities Symposia (JSHS) Program. The JSHS Program is designed to challenge and engage students (Grades 9-12) in science, technology, engineering, or mathematics (STEM). Individual students compete for scholarships and recognition by presenting the results of their original research efforts before a panel of judges and an audience of their peers. JSHS is a collaborate effort with the research arm of the Department of Defense and administered in cooperation with nationwide colleges and universities. Endorsed by the National Association of Secondary School Principals (NASSP), JSHS regional and national symposiums are held during the academic year and reach over 10,000 high school students and teachers throughout the United States, Puerto Rico, and the Department of Defense Schools of Europe and the Pacific Rim. Each of 48 university-held regional symposia invites the participation of secondary schools within their region. American Samoa participates in the Hawai'i Region.

American Samoa Community College is proud of the high school students who competed in this year's Science Symposium program. We wish them the best as they pursue careers in science, technology, engineering, and mathematics. With their help, we will gain a better understand of our natural systems and how best to protect them.

Deforestation of cloud forest in the Central Highlands of Guatemala

The cloud forest of the Central Highlands of Guatemala is a unique ecosystem that has provided important socio-ecological services for the indigenous Q'eqchi' Maya for centuries, though these forests have been disappearing at an increasing rate in recent decades. This research documents changing deforestation rates, investigates the proximate causes and underlying driving forces of deforestation, and considers forest preservation and food security implications for Q'eqchi' Maya communities living in the region. We employed a mixed-methods approach that synthesized remote sensing/GIS analysis of land cover change, focus group dialogues, and farmer surveys in three Q'eqchi' communities. In this article we take a look at the driving forces of deforestation and potential solutions to move towards sustainable use.

Dialogue from the focus group in Sebob provided insight into the perceptions and importance of the cloud forest for agriculture in Q'eqchi' communities. The Q'eqchi' are aware that the soils beneath the cloud forest are the most fertile and productive for milpa. Cloud forest on moderately steep slopes is often cleared for cultivation of maize, while slopes that are too steep for agriculture are left to serve as sources of fuelwood. The yield of milpa cultivated in proximity to the cloud forest is increased due to the input of leaf litter, and therefore crops benefit from the additional input of organic matter in close proximity to cloud forest. The cloud forest is clearly a valued resource for agricultural productivity for both the fertile soils and the contribution of organic matter. At the proximate level, deforestation of cloud forest is primarily driven by subsistence agricultural expansion, which subsequently diminishes the ability of the

forest to provide crucial ecosystem services such as soil fertility, and ultimately increases farmers' dependence on fertilizers and herbicides.

Several underlying driving forces such as population growth, land tenure, and pre-disposing environmental factors influence agricultural productivity and thus drive the expansion of subsistence agriculture. Survey and focus group data analysis revealed that a growing population in a finite area of land has led to subdivision of land parcels, and therefore, each household has less land to cultivate. Consequently, growing pressure on the land to produce food for a growing population had led to shorter fallow periods, exacerbating soil erosion and decreasing soil fertility. Reduced agricultural productivity is exacerbated by pre-disposing environmental factors such as steep slopes and severe soil erosion on areas of reduced land cover such as maize. Cultural factors such as the way in which maize is traditionally sown, lack of thinning, and loss of traditional knowledge of intercropping techniques contributes to low crop yields. Although decreasing fallow periods may initially increase production, production will decline in the long-term due to soil degradation, as the combination of population growth, increasing division of land, and agricultural practices threaten the existence of the cloud forest.

Our research reveals that the cloud forest provides important ecosystem services for the communities in the region, such as fuelwood, organic matter input for agricultural fields, and potable water. Non-governmental organizations (NGOs) such as Community Cloud Forest Conservation (CCFC) are addressing the driving forces of deforestation by working with Q'eqchi' communities to intensify agricultural production through training programs that focus on agroecological and agroforestry techniques, with the goal of ultimately reducing forest loss. Agroforestry projects based on fruit trees cultivation have been tremendously successful in communities in the wet, cool conditions in the cloud forest. In addition, several non-timber products can be produced from cloud forest tree species such as *naranjia* (orange) jam and candle wax. Initiatives that promote sustainable forest use add value to the forest without wholesale tree harvesting is critical to ensure the essential ecosystem services are available for future generations to come.


Ian Pope carrying out questionnaire survey with Q'eqchi' Farmer and **Cloud forest deforestation in Yalijux and Sacranix Mountains, Alta Verapaz, Guatemala**

Contributed by Gary R. Burniske, Center for Global Food Security, Purdue University, grburniske@purdue.edu

Global Forest Change Website

The Global Forest Change powered by Google Earth Engine shows forest cover change from 2000 to 2012 in two different sets of bands.
http://earthenginepartners.appspot.com/science-2013-global-forest

In addition to a 30-m global overview, the site also includes several example locations.

A 54 minute discussion of the site is on youtube at:
https://www.youtube.com/watch?v=NXHhsaU3o0Y

Contributed by Mark Books, CF
Remote Sensing/GIS Forester, Fort A.P. Hill, VA

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. Please pass this information along to SAF members who might be interested in joining a working group – especially B3, the International Forestry Working Group.

SAF World Forestry Committee News

The World Forestry Committee (WFC) recently met at the 2013 Society of American Foresters (SAF) Convention in Charleston, South Carolina. WFC members discussed new and ongoing projects and welcomed outstanding guest presentations from Ani Haykuni, the 2013 Gregory Award winner; Lilli Kaarakka , the International Forestry Students' Association representative; and Gary Burniske, the Managing Director of the Purdue Center for Global Food Security. The WFC is excited for the upcoming release of a commentary on invasive species and to begin work on a new commentary discussing REDD+ issues. Because SAF is co-locating its 2014 Convention in Salt Lake City, Utah with the IUFRO World Congress, the WFC is also working to increase the awareness of international forestry issues and recognize the work of the WFC and other SAF members on these important issues. If you have ideas for internationalizing the SAF Convention, please contact incoming WFC Chair Pipa Elias (pipa.elias@gmail.com). Finally,

SAF is now accepting applications for the 2014 Gregory Award, which offers assistance to outstanding international students or professionals to attend the annual SAF Convention. Please contact Danielle Watson (watsond@safnet.org) for more information. Also, information is provided on the last two pages of this newsletter.

IUFRO Scientific Achievement Award

Deadline: Dec. 31, 2013

Host Country Scientific Achievement Award

Purpose

The Congress Host Scientific Award honors a truly outstanding scientist from the host country (for 2014, this is the United States) who has elevated the profile of forest science and research accomplishments.

Criteria

The recipient of this prestigious award should be regarded as the preeminent forest scientist of contemporary times in the United States of America. She or he will have an unchallengeable international standing in the scientific community, evidenced by demonstrated impact of their scientific achievements in one or more sectors of forest or forest-related scientific disciplines, spanning social/cultural, economic, or ecological perspectives. Further, their work would have set new research directions for others; led to development of new methods, techniques, or tools used by other researchers; and/or driven resource management and policy outcomes of national or global importance, and would be either still professionally active or recently (within 5 years) retired.

Details on the procedure and required documents are at

http://iufro2014.com/wp-content/uploads/2013/09/CALL-FOR-NOMINATIONS-2014-IUFRO-Host-Country-Scientific-Achievement-Award.pdf.

Remember that nominations are **due by December 31, 2013 at the latest**, and should be submitted electronically to Dr. Richard Guldin, Chair of the Congress Organizing Committee (rguldin(at)fs.fed.us).

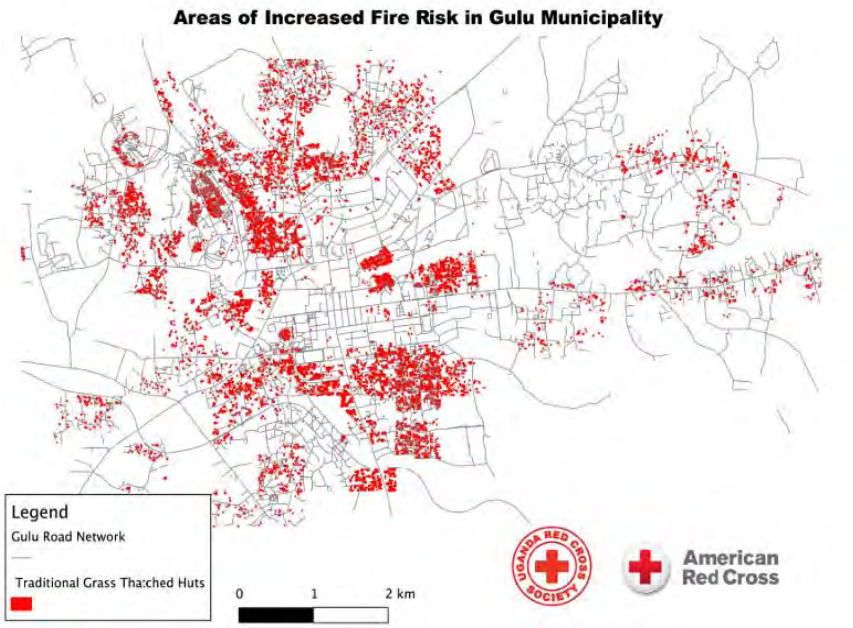
The Following two field notes are reprinted with permission. Community Mapping, by Brooke Marchewka was originally published in WorldView, the journal of the National Peace Corps Association (http://www.peacecorpsconnect.org). OpenCruise, by Steve Wilent, was originally published in The Forestry Source.

Community Mapping Just Got A Whole Lot Easier

OpenStreetMap Launches New Map Editor at Peace Corps Headquarters

By Brooke Marchewka

Open-source mapping is here, and now it is easier than ever to do. Imagine yourself in your host community with your counterpart: viewing your community from satellite imagery, outlining the local clinic, primary school, homes, rivers, roads, and more with the click of a mouse. Imagine labeling your community's features and saving the changes you made to a global map - one that anyone can see, edit, and use. Imagine how this kind of mapping will revolutionize accessibility to rural geographic information, facilitate the transfer of computer skills to counterparts, and inform project planning for any organization that wants to make a difference in that community.



A map created by the Uganda and American Red Cross using geo-locations of straw-roofed houses on OpenStreetMap.

Recently, The Peace Corps Office of Innovation invited developers from OpenStreetMap, the forefront collaborative project to create an open-source free map of the world, to Headquarters to launch their new mapping editor. This user-friendly tool, called iD editor, makes it easier than ever before for anyone to contribute their knowledge to open-source mapping. According to Josh Campbell, GIS Architect at the U.S. Department of State, "this combination of widespread technology access and ease-of-use is an incredible achievement in the history of mapping."

Since OpenStreetMap was created in 2004, thousands of contributors have collectively enriched the world map by mapping their own communities. Using low-cost GPS data and satellite imagery, "a base level map of a town, a village, a surprisingly fast among single individuals or a small group of volunteers," explains Alex Barth, data lead at MapBox. Perhaps OpenStreetMap's most appealing feature is also what sets it apart from any other mapping platform - its data is free and open-source, meaning that anyone can use data from the map to create web and mobile applications, customized maps, data visualizations for things like disaster risk simulations, and more. With OpenStreetMap, "all possibilities are open, the data is as good as yours," says Barth. Thanks to contributions from people around the world and a free, open-source platform, OpenStreetMap has become a rich source of vital geographic data for both private and governmental organizations such as Foursquare, Craigslist, Wikipedia, Apple, The U.S. Department of State, the Red Cross, and the World Bank.

But why should Peace Corps Volunteers care about using OpenStreetMap? Put simply, it magnifies the impact of what they are already doing. Community mapping has long been considered a valuable exercise for Volunteers in the sense that it encourages them to explore their host community and provokes critical project planning discussions. Traditionally, maps have been sketched on paper or murals. These maps are useful, but they are limited in terms of who sees them, who can update them, and who has access to the valuable cultural and geographic data they provide. Imagine if the community maps created by Peace Corps Volunteers were online and open-source.

That's right. We are talking about Volunteers contributing to a digital map that anyone around the world can access, edit, and use. Not only would opensource mapping liberate the valuable geo-cultural

knowledge that Peace Corps Volunteers accumulate during their service, but would also – quite literally – put rural communities on the map. According to Barth, maps depicting the most remote areas of the world are "often not available, inaccurate or jut plain out of date." Thus, Peace Corps Volunteers are in a unique position to proved detailed maps and to empower their communities to upkeep the map long after they have completed their service.

"Peace Corps Volunteers build deep relationships in the communities they serve, and that is in fact the key to see change through technology. It takes more than exposure and capacity, but time for a community to absorb, discuss and discover the right applications and approaches."

Mikel Maron, former Board Member at the OpenStreetMap Foundation and Director GroundTruth Initiative, emphasizes how the adoption of opensource mapping reverberates far beyond the individual Peace Corps Volunteer's service and how it can benefit the community itself. When a community takes ownership of their map, there is great potential for increasing community solidarity and making information available to everyone that can stimulate community economic development , support efforts to improve resource allocation, and support disaster relief, among other things.

GroundTruth Initiative, a new media and technology consulting company specializing in community-based participatory technologies, has demonstrated the profound community impact of OpenStreetMap through their project Map Kibera. The project started with the goal of making Kibera, Kenya – one of the largest slums in the world – more than just a "blank spot" on the map. Three years later, it has produced a number of positive outcomes for the community. Residents of Kibera gained confidence in their new computer skills, increased familiarity with GPS technology, groups solidarity, and pride.

On the community level, Kibera gained more legitimacy as a neighborhood and residents felt less marginalized. Furthermore, groups focused on issues in health, gender-based violence, sanitation, mobile phone services, farm-to-market supply chain, large-scale conflict mapping, peace promotion, and others expressed interest in using the data from Map Kibera for their own projects. Maron attributes the success of Map Kibera to the sense ownership that community members felt in mapping their community, but especially the "perseverance and growing trust over 3 years (and counting)." He says, "that potential in communities around the world is what so excites me about interest in OpenStreetMap at the Peace Corps."

The Red Cross' mapping initiative in Uganda is another example of how organizations are utilizing OpenStreetMap data in creative ways for their own projects. In 2012, the Uganda and American Red Cross partnered with the Humanitarian OpenStreetMap Team to create comprehensive maps of the cities of Gulu and Lira in northern Uganda. Using satellite images, volunteers and members of the Uganda Red Cross society traced the locations of straw-roofed houses in the Gulu and Lira municipalities on OpenStreetMap. Then, using the geographic density of these houses as an indicator of increased fire risk, the Red Cross gained a more comprehensive understanding of where to focus their efforts in fire risk reduction.

The U.S. Department of State's Humanitarian Information Unit supplied the satellite imagery for this project and continues to empower the OpenStreetMap community through their Imagery to the Crowd initiative, which shares commercial high resolution satellite imagery with the volunteer mapping community. Josh Campbell emphasizes how crucial maps are to implementing quick, effective emergency response programs. If a baseline map of an area already exists before a disaster occurs, the OpenStreetMap community "can focus on updating the map with areas affected by the disaster, and not on building the foundation of the map," says Campbell.

Applications of OpenStreetMap such as this would not be possible without the mapping done by people on the local level. This is where Peace Corps Volunteers can make a big difference. Campbell explains, "Peace Corps Volunteers can provide the descriptive, cultural details about the places where they live and work that only comes from being in the community. No satellite image can tell you the name of a road, a business, or a school. It is these details that transform a collection of geographic data about roads and buildings into a real 'place.'"

So why isn't this happening on a grand scale already? Since the dawn of open-source mapping, perceived barriers such as lack of coding skills, computer and Internet access have stood in the way of Peace Corps Volunteers using and teaching open-source mapping. But these barriers are breaking down. With OpenStreetMap's iD editor, Volunteers do not need to know how to code or even have any experience with open-source mapping; in fact, the tool was designed with first-time users in mind. In regards to computer availability, the 2012 Annual Volunteer Survey reports that 80 percent of Volunteers have or regularly use a laptop or desktop computer in their community. While 51 percent of Volunteers report that they usually or always have Internet access at their residence, those for whom access is particularly limited can edit the map offline and upload their changes when they do have access. They can also take advantage of projects such as Walking Papers, which integrate paper maps into the data-collection process for OpenStreetMap. Furthermore, lack of awareness of open-source mapping has been a barrier to Volunteer adoption. If you recall Oliver Cunningham's piece Map It! in WorldView's winter edition, he says "the reason it's not happening already is because people don't know- getting the word out is the first step."

Peace Corps Volunteers can truly contribute to tangible humanitarian applications of open-source mapping by making local knowledge universally accessible. More importantly, Peace Corps Volunteers can empower community members to maintain the map, thereby enriching a global reservoir of data that humanitarian organizations tap into to improve their understanding of local conditions, utilize their resources more efficiently, and ultimately magnify their impact.

If you are interested in OpenStreetMap, visit www.learnOSM.org and get started. To learn more about this initiative, the Peace Corps Office of Innovation at innovation@peacecorps.gov.

Brooke Marchewka is a member of the Peace Corps Office of Innovation and an International Development student at The George Washington University. Learn more about The Office of Innovation's work at http://innovationchallenge.peacecorps.gov/

OpenCruise:
A Free Inventory App for Mobile Phones, Tablets

By Steve Wilent

Over the last couple of years, several readers have responded to my reviews of rugged handheld field computers by saying that they couldn't or wouldn't shell out $1,500, $3,000, or more for such a device. Isn't there a forest-inventory app, some asked, that I can use on the cell phone or tablet that I already have? There are, I replied, and pointed them to my reviews of the two products I know about: Forest Metrix (September 2013) and Plot Hound (September 2011). Now there is a third: OpenCruise.

OpenCruise is a web-based service that acts like a traditional app: Instead of downloading an app from Google Play, the Apple App Store, or other source and installing it on your device, you use a phone's or tablet's Internet browser to access the OpenCruise web site. From that point on, OpenCruise resides on your phone or tablet and behaves like an app.

Jim Rivard, a forestry instructor at Michigan Technological University's School of Forest Resources and Environmental Science since 2005 and a consulting forester since 1998, built OpenCruise for his students.

"My primary motivation was to create a tool for the students here at the University," said Rivard. "For instance, this year we have 46 students in the capstone project class, working in pairs, and part of their project is to collect inventory data. I wanted to give them the option of collecting data on their iPhone or Android phone or whatever they already had, instead of using handheld computers."

Rivard is a busy man. In addition to teaching several classes and consulting for a few long-time clients, he's a PhD candidate at MTU, focusing on using new technologies for forest inventory. Part of that work has involved creating OpenCruise, mostly in his spare time.

OpenCruise is available not only to MTU students. Rivard had heard from fellow consulting foresters who expressed an interest in having a cell phone-based inventory app, so he made OpenCruise available to anyone, anywhere, at no charge.

Try it for yourself: https://opencruise.mtu.edu/

"It's geared toward small consulting shops that may not want to spend hundreds or thousands of dollars for rugged handheld devices," said Rivard. "Having worked as a private consultant for a lot of years, I could never justify the cost of one of those handhelds. I occasionally did inventory work, but that wasn't the focus of what I did."

Because it is a web-based app, OpenCruise will run on most Android and Apple iOS phones and tablets, rugged or otherwise, as well as on any desktop computer. Most browsers will work, including Firefox, Safari, and the standard browser that comes on Android phones. Google's Chrome browser is supported, but is available only on Android 4.0 and up. The app's help page has more information on browser support. See also https://github.com/jcrivard/opencruise.

I used OpenCruise without a hitch on my two-year-old Samsung Droid Charge phone (with Android 2.3.6), in both the default Android browser and in Firefox, and on two desktop PCs, one with Windows 8 and another with Windows XP, both with Firefox.

Inventory, Inventory, Inventory

OpenCruise is designed to collect forest inventory data, nothing more. It comes configured for the needs of Rivard's students (see Figure 1). However, the three fields on the standard data-entry form can be configured to suit your inventory (although you can't add additional fields). I reconfigured the form so I could collect DBH, height, and cull percent (Figure 2), and changed the species list to reflect the timber in my area of Oregon. In the optional Multi Product Mode, you can record a product type or grade for each log in a tree; you can configure the list of products and grades as you see fit.

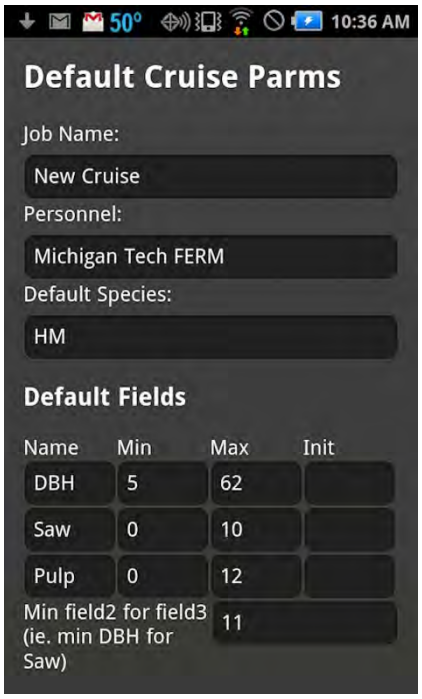


Figure 1. Standard Configuration

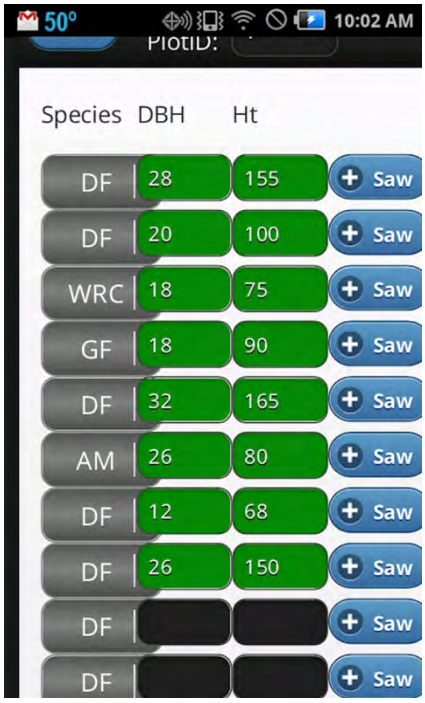


Figure 2. User controlled modification.

A key capability of OpenCruise is that it can be used with or without an Internet connection. Once you've opened the app in a browser, the app software is stored on your device and is available for use offline.

“What makes this possible is the local storage feature of HTML 5 [HyperText Markup Language version 5], which lets you run a web-based application off-line—such as when you are out of network range, in airplane mode, or whatever,” Rivard said. “A typical phone will have no problem storing the software and the data collected. I stress-tested it by pumping in data from 8,000 plots with 10 trees each, and that took up 8 megabytes of storage—a fraction of the gigabytes of storage on most phones. And that was using OpenCruise in multiproduct mode, which added 12 fields to each tree record.”

When you’ve finished collecting data, tapping the Download button gives you two options: Email and Save File. By tapping on the Email button when I was in range of my office wireless network, I was able to send data to myself as comma-separated values (.CSV) files—with one initial hitch: In using my private Gmail (Google e-mail) address, Gmail initially blocked the e-mails as a security precaution, because it “knew” my location was in Oregon and the e-mail was sent via the MTU server in Michigan. After I used a browser to access my Gmail account settings and authorize the “suspicious” e-mail, it was delivered to my inbox within seconds.

Figure 3. In the field.

OpenCruise’s Save File option works quickly and easily; the .CSV files from my test projects were saved on my phone’s SD card. If you’re out of wireless or cell range, you’ll have to use this option; later, once you’re in range, you can transfer the stored files using your phone’s file

manager. (I suggest starting with the Save File option, so you store a copy of your hard-won inventory data on your phone, and then using the Email option to send a copy of it to yourself or a co-worker. The file on your phone will serve as a backup copy, should it be needed.)

Although using OpenCruise via the MTU web site will be the best option for most foresters, OpenCruise can be downloaded and then installed and run on another server—the OpenCruise website includes instructions for doing so. With OpenCruise installed on your company's server, the Gmail security hitch I described wouldn't be a problem, because Gmail or another smart e-mail system would recognize that server as yours. Another reason to run the app from your own server is that you can be sure it will be available for as long as you need it. Rivard cautions that the MTU server may not be available indefinitely.

Because OpenCruise is "open source" software, meaning that the app's computer code is available to the public, it might even be modified to suit a consultant's needs.

"I wanted to put the software out there so that consultants could download it and perhaps hire a programmer to customize it for their needs—which is not necessarily going to be cheap, but not all that expensive, either. Or they can just download it and host it as-is on their own website," Rivard said.

Rivard said he would make improvements or add features to OpenCruise, time permitting, based on the feedback he gets from consultants as well as students. Contact him at jcrivard@mtu.edu—he will welcome your input.

If your inventory needs are relatively simple, OpenCruise is a viable option for collecting data. It runs on most consumer-grade cell phones and tablets, and if these devices aren't tough enough for you, even with an OtterBox (www.otterbox.com) or Gumdrop (www.gumdropcases.com) case, the app will run on rugged Android handhelds such as Trimble's Juno T41 (reviewed in June 2013). Not the least of its advantages is the unbeatable price: $0.

Three cheers for Rivard, who has put a great deal of his own time and effort into developing OpenCruise, and kudos to MTU's School of Forest Resources and Environmental Science for giving its blessing and providing a bit of space on a server. I'd nominate Rivard for a forestry technology innovation award, if there was such a thing. Yes, his primary purpose was to create a useful tool for his students, but making the app and the source code available for free is a commendable service to foresters and forestry.

I have to think that there are other forestry apps out there, just waiting to be discovered. Let me know if you've built one or used one. Wilents@safnet.org.

2014 SAF/CIF Call for Presentations

Remodeling the Forest Science-Management Partnership

In 2014, SAF will partner with the Canadian Institute of Forestry/l'Institut forestier du Canada (CIF/IFC) for our national convention. In addition, the convention will be co-located with the International Union of Forest Research Organizations (IUFRO) World Congress.

This exceptional convergence will bring several thousand forest scientists and managers from more than 100 countries together in Salt Lake City during the first full week in October. This will enhance knowledge exchange and networking among professionals who study and manage forest resources around the globe.

The convention theme reflects the need for an introspective look at the forest science-management partnership. We want to take a critical look at the roles of science and management in service to society and in sustaining and enhancing forested ecosystems, locally and globally.

Abstract submissions for individual presentations and panels in the scientific & technical concurrent sessions or poster symposium will be accepted for the following tracks:

- Forest Monitoring Science
- Embracing, and Learning from, Uncertainty
- An Engineering Take on Uncertainty: Lessons for the Forestry Profession
- Sustainability from a Forest Ecology and Silviculture Perspective: Supporting Effective Decisions at the Science-Policy Interface
- Reexamining the Forest Science-Policy Interface
- Challenges in Emerging Markets
- Reconciling Professional and Research Ethics in Forest Science-Management Partnerships
- Making and Interpreting Long-Term Forecasts
- Learning and Success in Partnerships
- Communicating Science

Share your expertise
Submit your presentation or poster abstract:
https://www.xcdsystem.com/saf2014/abstract/index.cfm?ID=3HKCAvm. .

TROPICAL NOTES
Frank H. Wadswsorth
International Institute of Tropical Forestry
USDA Forest Service
San Juan, Puerto Rico

World forests, 2313

Two courageous foresters, guided by 18 others and 31 published reports,have predicted what forests will be like 300 years hence. Fragments appear here. Since about 3,000 years ago the forest area has been declining due to human activities and is now about 1.2 billion hectares. Notwithstanding this, at present some 77 countries are net forest gainers. Coming impacts on forests include increased conversion of forestland to non-forest uses; increased harvest; initial increase in deforestation and forest degradation, biodiversity and habitat loss; increased GHG emissions; increased vulnerability of species and ecosystems; management intensification; increased planted forests, agroforests, and urban forests; increased trade; and increased economic activities.
The situation foreseen in 2313 includes landscape and watershed protection are priorities, most remaining natural forests are in reserves, intensive restoration programs are in place, continued threat to species and ecosystems but reduced by management systems, wood fiber and non-wood products of great importance, human-made forests of genetically improved trees managed sustainably becoming much more important, SFM assures carbon permanence and non-use values, an overall increase to about 5 billion hectares. In the tropical moist biome considerable parts of the Congo Basin, the Amazon basin, the Mekong and islands of Indonesia will experience considerable forest loss to meet demand for food, forage and biofuel. On the other hand most of the predicted reforestation in the tropics will take place with fast growing species. Tropical dry biomes in India, East Africa, Central America, and southern South America, may receive increased rainfall and humidity and should expand but tree cover probably will decline.

J. Blaser and H. Gregersen, 2013. Forests in the next 300 years. [Unasylva 240, Vol 64:61-73]

Teak at 20%

A study of Teak plantations in Costa Rico and Panama suggests a possible investment. Planting about 620 trees per hectare, thinning to 470 at age 3, to 310 at age 6, to 160 at age 9, produced 654 m^3/ha at age 10 on site 1. Carried to 18 years the final yield rose to 177 m^3/ha (+thinnings) , a net profit of 22%. On site 2, the same treatment produced a final yield of 123 m^3/ha (+thinnings) and a profit of 18%. Worldwide experience with teak over centuries, some of it cited, provides diverse guidance on many sites.

Gary S. Hartshorn and Rodolfo Peralta L. 2013. Teak – the most important tropical hardwood. Bangkok, Thailand, World Teak Conference. March 25-30.

Silviculture in Southeast Asia: a human problem

A review of silvicultural experience in Southwest Asia reveals less technical than social problems. The silvicultural systems tested, came from temperate zone forestry but were adapted 0many years ago to mixed tropical forest conditions. Possibly the most general system, Selection, counted on a symmetric abundance of trees of different sizes and assumed that natural regeneration would assure sustainability. Reportedly a shortcoming of the system, at least in some places, was excessive logging damage that precluded security of future crops. More attention to regeneration was applied in tropical Shelterwood, where heavy cuts were expected to release existing regeneration. The dislike of this system, despite better regeneration, was a 120-years cycle to the second cut. A Uniform system, applied in forests of high value species such as teak or sal, cut heavily the present crop with assurance of quality regeneration or enrichment planting, but again a temperate zone forest rotation of 120 to 180 years not in synchrony with tropical life. Despite any merits these systems may possess, they have been applied without social involvement and have led to conflicts with rural populations. Forests are now being decentralized in many countries and silviculture needs a revision in the interests of those living with and dependent on the forests. This raises the question of ultimate competitiveness of many of these species with others more rapid-growing on shorter rotations.

S. Appanah, 2013. The search for a viable silviculture in Asia's natural tropical forests.[Unasylva 240, Vol.64:35-40]

Forestry significance of traditional knowledge in Sabah.

The many rural people of Sabah depend on land, forests, and water. The land is for their food crops. The forests are a land bank and source of food, medicines, construction materials, handicrafts, utensils, and equipment. The clear water is an important source of fish. Indigenous communities have intimate knowledge of their forests, watersheds, springs, animal trails, community-owned sacred primary forests, ancestral areas, burial grounds, areas of high plant diversity, trees associated with certain animals, and trees, vines and other plants suited to their needs. Indigenous communities have their own policies of management. They believe that all living things are interconnected and must be preserved. The forests have been seen as common property from which extraction is to be considerate of all. Farming enters only secondary forest and leads to 5 to 7 years of fallow. Government administration of forests and reserves has produced conflicts, with many indigenous communities' dependent on or living within reserves. Steps are being taken to reduce the conflicts, depending on local circumstances. Included are community forest compartments set aside, long-term agreements for community use, community and youth organizations strengthened, biodegraded forest restored, forest water catchment enriched, indigenous tree nursery established, forest enrichments, medicinal gardens

established in community forests, and access roads. There is still a need for general benefit-sharing and co-management of the forests.

F. Tongkul and others, 2013. Traditional knowledge and SFM: experience from Malaysia. [Unasylva 240,Vol. 64:41-49]

Eucalyptus nutrient loss minor

In 7-year plantings on Congolese savannas losses of NO, N, Mg, Ca, and K at a depth of 6m averaged only 0.2 g m^{-1} yr^{-1}. The limited nutrient loss, despite fertilization, was due to fast new root growth in the deep soil layers after planting combined with intense uptake of nutrients for the development of tree crowns. Such low nutrient losses can be maintained only by prompt replanting after harvesting.

L. Mareschal and others, 2013. Nutrient leaching and deep drainage under Eucalyptus plantations managed in short rotations after afforestation of an African savanna: Two 7-year time series. Forest Ecology and management 307:242-254.

Sustainability in Guyana

Boris Matejcic of Croatia, one of those regretting the demise of the ISTF newsletter, sent the following item. The Iwokrama Centre for Rainforest Conservation and Development in Guyana has been supported repeatedly by the International Tropical Timber Organization. Following a forest inventory, studies of feasibility and marketing and a management plan the Centre undertook to maximize net revenue from sustainable production of forest products and ecosystem services and to monitor lasting ecological, economic, and social benefits. With Forest Stewardship Council certification timber harvesting was undertaken by a subsidiary corporation with 24% Amerindian shareholders. The maximum harvesting rate is 20 m^3/ha on a 60-year cycle with natural regeneration. During the first three years 2,000 ha of forest were harvested, producing about 30,000 m^3 of logs of 20 species, reduced to squares for export. Sustainability rests on continued ITTO support, Amerindian participation, and the market.

Rodney, Ken. 2012. Implementing a sustainable timber harvesting regime in Guyana's tropical rainforest. [ITTO Tropical Forest Update, 22(2):17-19],

China forest policy

Recent Chinese forest policies are apparent in the National Forest Protection Programme, the Slope Land Conversion Programme (Grain for Green) introduced in 1988. The NFPP is designed to reduce deforestation, increase protected forest land, making harvest sustainable, and improving finances. The SLCP compensated farmers for retiring mostly sloping land. These are the largest reforestation programs in the world, affecting 125 million people and over 150 million hectares. The budget between 1988 and 2020 is 800 billion yuan.

C. O. Delang and W. Wang, 2013. Chinese forest policy reforms after 1998: the case of the National Forest Pretection Programme and the Slope Land Conversion Programme. [International Forestry Review 15(3):____]

Amazon wood density and drying.

The purpose was to group woods of similar densities to permit mixed species in kiln drying. Woods of high densities, between 0.835 and 0.904 g/cm^{3,} are considered difficult or slow to dry. At the other extreme, low density woods between 0.561 and 0.588 g/cm^3 are considered fast drying.

Livia Helena Carrera Silveira and others 2013. [Acta Amazonica 43(2):179-184]

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

---

Sign up for the ITTO Tropical Timber Market Report

The International Tropical Timber Organization (ITTO) releases the Tropical Timber Market Report two times per month. You can receive a free email subscription by signing up at their website:

http://www.itto.int/market_information_service/

Minutes from the International Forestry Working Group Meeting

SAF Convention, N. Charleston SC
Friday, October 25, 2013

1. Seven people attended the IFWG meeting. The meeting opened with introductions. Attendance more than doubled at this meeting when compared to Spokane attendance.

2. There were no nominations or volunteers from the floor for the open positions of chair-elect and secretary. If you are interested in one of these positions contact Blair Orr, the current chair of IFWG, at bdorr@mtu.edu

3. There was a discussion of the relationship between the World Forestry Committee and IFWG. The Chair of IFWG is an ex-officio member of the World Forestry Committee of SAF and many of the activities of IFWG are co-sponsored by or tied into activities of the WFC.

4. There was a discussion of the recent dormancy of the International Society of Tropical Foresters and what role SAF might play in keeping ISTF's membership intact.

5. Activities for the coming year.

a. Continue work on corresponding membership category in SAF, a proposal of the WFC.

b. Work on themes for the SAF convention in Salt Lake City in 2014. Because the 2014 convention will be simultaneous with the IUFRO convention we need to be more timely about what themes we might develop. The Forest Science and Technology Board and the Program Committee presented some general themes and ideas. The World Forestry Committee is thinking of some track which shows the links between North American institutions (NGOs, government agencies, corporations, universities, ….) and countries around the world. This fits our emphasis on international while avoiding some conflict with the IUFRO program which tends to have a basic research focus for many of its technical sessions. SAF will be providing the general membership with information on how the SAF convention fits in with the IUFRO convention. I have attached the call for presentations as the last two pages of this pdf.

c. SAF presented the new ForestEd site (forested.org). There are opportunities to use this in the development of CFE modules online and working groups should be able to participate in the development of modules, in our case modules related to international forestry. The discussion at the IFWG meeting was (i) what would IFWG members like to learn and (ii) are there IFWG members who would like to develop a module? You can contact Blair Orr, bodrr@mtu.edu with your ideas. Just because we have an idea does not mean it would be approved, but the starting point is to have an idea.

Blair Orr
Chair and Acting Secretary

Other Notes from the Convention.

1. The International Reception was the most successful to date. We had over 100 people in attendance (out of 1,492 at the convention) and it lasted until past our official end time of 10:00 p.m. The food was provided by ArborGen; many thanks to them for their support.

2. The IFWG was recognized as the number two working group by the Forest Science and Technology Board. (Water Resources was number one.) Encourage your friends in SAF to join one or more of the working groups: http://www.safnet.org/workinggroups/index.cfm

3. The International Forestry Students Association was present and active at the convention.

4. Peace Corps had a recruiting booth in the exhibit hall. (www.peacecorps.gov)

5. IFWG and the World Forestry Committee sponsored two tracks of four sessions each, a total of 24 technical papers. The sessions were well-attended.

2014 Gregory Award

G. Robinson (Bob) Gregory was a pioneer in forest economics and resource development, but always thought of himself as a forester. Bob had a special interest in assisting low-income countries develop their forest resources in thoughtful ways for the good of society. With his wife, Ann, Bob traveled much of the world consulting for the Ford Foundation, the United Nations Food and Agriculture Organization, and host countries on matters related to forest development. Ann's intuition and social awareness of cultural attributes of each country were integral to Bob's success in partnering with individuals, governments and companies in various cultures and countries.

This award seeks to mark the achievements of the Gregorys' remarkable career and further their interest in international relations by providing economic assistance to outstanding students or professionals from outside of the US and Canada to attend the annual conference of the Society of American Foresters (SAF) and have meaningful engagement with foresters on this continent.

The 2014 Award is $1800 US and may be used toward:

- Travel
- Lodging
- Tickets to convention events or technical field tours.

SAF will work with the successful applicant to allocate the funds in the manner most useful to you.

Award Criteria:

1. Applicants should be graduate students or practicing professional foresters from a country other than Canada or the US, and working or planning to work in such a country.
2. Applicants shall have demonstrable past performance, desire and/or promise to contribute to their home or host country's forestry education, government or industry.
3. Applicants shall have demonstrated potential for future leadership in forestry.
4. Applications must be received electronically (preferred) or in hard copy on or before 23:59 EDT (US) **April 1, 2014**. [1]

Applications must include:

1. Information requested in Application Form (below).
2. A letter from the applicant describing:
   - how you meet the award criteria,
   - how attending the SAF convention will help you meet professional goals in your home or host country, and
   - the probability that you will be able to travel the United States.
3. A résumé or vita.

The successful applicant will be notified by June 1, 2014 and must accept the award by June 30, 2014.

[1] For more information about the conference, please visit the SAF website: www.eforester.org

2014 Gregory Award Application

Name:

Email:

Phone (including country code):

Mailing Address:

Academic Institution, if applicable:
Institution Name:

Academic Major or Department:

Employer, if applicable:

Organization Name:

Position:

Supervisor's Name:

Supervisor's email address:

Phone (including country code):

Mailing Address:

Submit application to:

World Forestry Committee Liaison
Society of American Foresters
5400 Grosvenor Lane
Bethesda, MD 20814 USA
Office: 301.897.8720
E-mail: watsond@safnet.org
mailto:barnwellj@safnet.org