

2014



SUSTAINING FORESTS, SUSTAINING PEOPLE  
THE ROLE OF RESEARCH



International Union of Forest Research Organizations

**XXIV WORLD CONGRESS** | **OCT 5-11 2014**   
Salt Lake City, USA

**PROGRAM**  
OUTLINE & SCHEDULE



[www.iufro2014.com](http://www.iufro2014.com)

## Patented Technology, Innovative Thinking & 70 years of Manufacturing know-how.

- Haglöf Sweden is the world's largest manufacturer of increment borers. We are proud of our big selection of borer lengths, models, core diameter sizes and brands, all with unique features.
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*The DP II Computer Caliper is developed for efficient timber cruising and log scaling. Ready-to-use software solutions allow for a quick start. You can also work with programs especially tailored for your organizations' data requirements. The DP II caliper allows you to collect, calculate and process all your field data in one place.*



*The VLS is an indispensable instrument for height and distance measuring in the forest. The instrument is fast, precise, extra rugged, easy to use and has processing & memory capacity.*



*Haglöf Sweden borers are available in the largest array of models, lengths and core sizes for all types of trees and wood.*



### IUFRO/SAF/CIF Exposition, October 8-11, stand 919 and 1016

- Haglöf Sweden & Haglof Inc hope to see you in Salt Lake City in October!
- Welcome - Bienvenue - Willkommen - Bien Venido - Välkommen!

Proud Sponsors of the 9th International Conference of Dendrochronology and the European Dendroecological Fieldweek 2014



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# TABLE OF CONTENTS

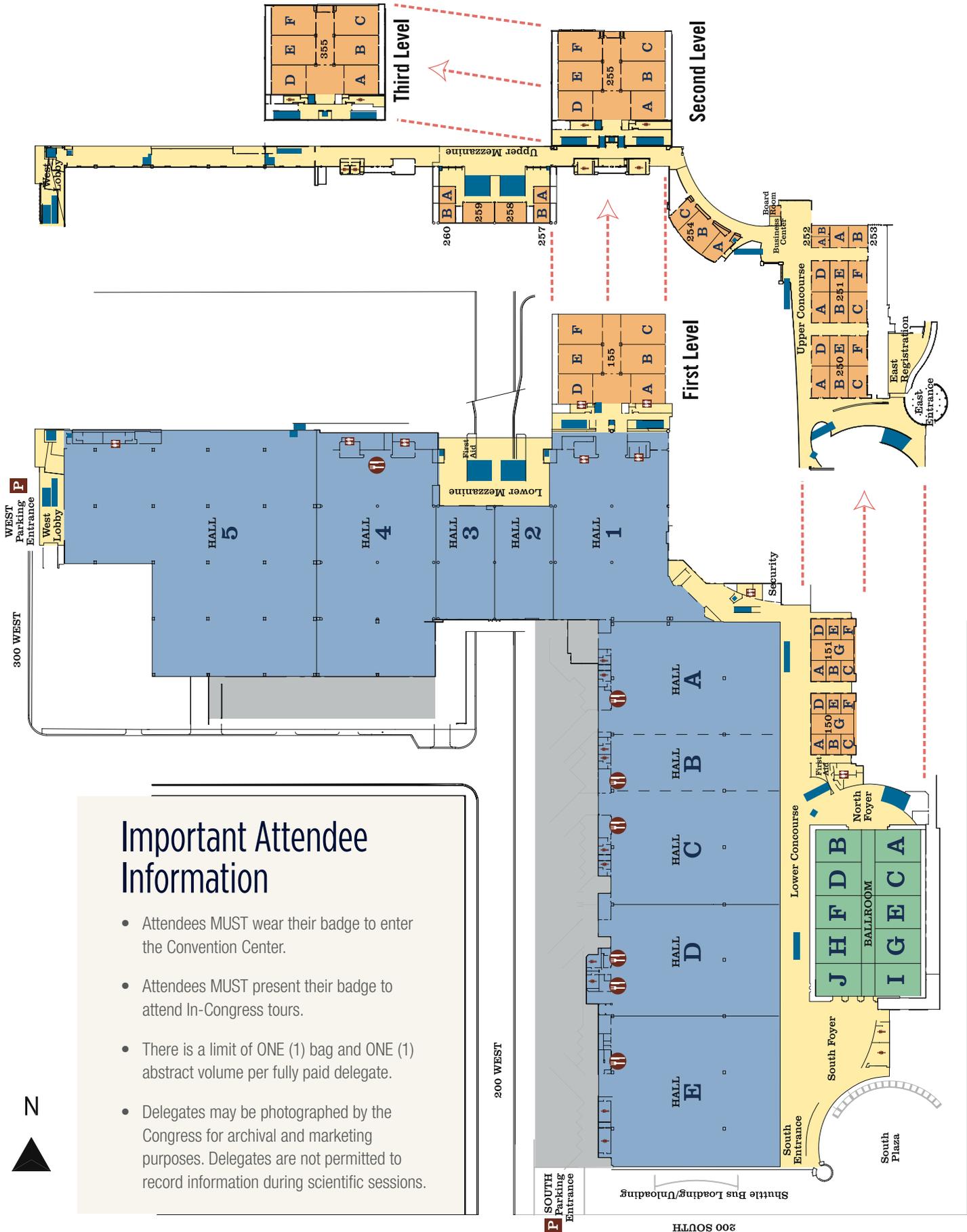
<b>PROGRAM SCHEDULE &amp; MAP</b>	<b>4-5</b>		
<b>SECTION 1 – WELCOME MESSAGES</b>	<b>7</b>		
United States Department of Agriculture Secretary	8		
United States Forest Service Chief	9		
IUFRO President	10		
NAUFRP President	11		
Salt Lake City Mayor	12		
Congress Scientific Committee Chair	13		
Congress Organizing Committee Chair	14		
<b>SECTION 2 – GENERAL INFORMATION</b>	<b>15</b>		
Travel Information	16		
Hotel Information	17		
Onsite Services	18		
<b>SECTION 3 – WHO'S WHO</b>	<b>20</b>		
IUFRO	21		
Congress Organizing Committee	22		
Congress Scientific Committee	22		
Key Partners	23		
Award Winners	24		
Congress Sponsors	28		
<b>SECTION 4 – GENERAL CONGRESS PROGRAM</b>	<b>30</b>		
Week at a Glance	31		
IUFRO Special Meetings and Business Sessions	32		
Official and Social Events	35		
Side Events Program	37		
		In-Congress Tours	42
		Post-Congress Tours	44
		Accompanying Persons Program and Daily Tours	44
		<b>SECTION 5 – SCIENTIFIC PROGRAM</b>	<b>46</b>
		Plenary Sessions	47
		Sub-plenary Sessions	47
		Technical Sessions	47
		Poster Sessions	47
		Responsibilities of Presenters	47
		Plenary Speaker Information	48
		Technical Sessions by Theme	53
		Week at a Glance	62
		<i>Monday 6 October</i>	65
		<i>Tuesday 7 October</i>	83
		<i>Thursday 9 October</i>	115
		<i>Friday 10 October</i>	139
		<i>Saturday 11 October</i>	169
		Poster Information	182
		<b>SECTION 6 – TRADE EXHIBITION</b>	<b>231</b>
		<b>SECTION 7 – CONNECT WITH US</b>	<b>248</b>
		<b>SECTION 8 – BLANK NOTES</b>	<b>250</b>
		<b>SECTION 9 – REFERENCE &amp; SAF/CIF SCHEDULE</b>	<b>256</b>



# Program Schedule

**Registration Hours**  
 Sun, 5 October: 11:00 – 19:00  
 Mon, 6 October: 07:00 – 18:00  
 Tue, 7 October: 07:00 – 19:00  
 Wed, 8 October: 08:00 – 18:00  
 Thu, 9 October: 08:00 – 17:00  
 Fri, 10 October: 08:00 – 17:00  
 Sat, 11 October: 08:00 – 12:00

TIME	SUNDAY OCT 5 <sup>th</sup>	MONDAY OCT 6 <sup>th</sup>	TUESDAY OCT 7 <sup>th</sup>	WEDNESDAY OCT 8 <sup>th</sup>	THURSDAY OCT 9 <sup>th</sup>	FRIDAY OCT 10 <sup>th</sup>	SATURDAY OCT 11 <sup>th</sup>	TIME			
8:00								8:00			
8:30								8:30			
9:00		Opening Ceremony	Concurrent Technical Sessions	In-Congress Tours (start and end times vary by tour)	Joint Plenary Keynote Speakers (IUFRO/SAF/CIF) & Concurrent Technical Sessions	Concurrent Technical Sessions	Concurrent Technical Sessions	9:00			
9:30	9:30										
10:00	10:00										
10:30	10:30										
11:00		Refreshment Break	Refreshment Break			Refreshment Break	Refreshment Break	Refreshment Break	11:00		
11:30		Keynote Plenary Session	Keynote Plenary Session			Joint Plenary Panel Session	Keynote Plenary Session	Keynote Plenary Session	11:30		
12:00	Registration Open (11:00-19:00)	Posters	Posters			Trade Exhibition & Posters	Trade Exhibition & Posters	Trade Exhibition & Posters	12:00		
12:30					Lunch Break, & IUFRO Business Sessions				Lunch Break, Poster Viewing & IUFRO Business Sessions	Lunch Break & Side Events	Lunch Break, Poster Viewing & Side Events
13:00											13:00
13:30											13:30
14:00	IUFRO Tree Planting Ceremony	Concurrent Sub-Plenary Sessions	Concurrent Sub-Plenary Sessions			Concurrent Sub-Plenary Sessions	Concurrent Sub-Plenary Sessions	Concurrent Sub-Plenary Sessions	14:00		
14:30									14:30		
15:00			Refreshment Break		Refreshment Break		Refreshment Break	Refreshment Break	Refreshment Break	15:00	
15:30									15:30		
16:00								16:00			
16:30		Concurrent Technical Sessions	Concurrent Technical Sessions		Concurrent Technical Sessions	Concurrent Technical Sessions	Closing Ceremony	16:30			
17:00								17:00			
17:30								17:30			
18:00	Making the Most of the Congress	Wangari Maathai Award Presentation		Trade Exhibition			Farewell Gala Dinner	18:00			
18:30					Exhibit Hall Grand Opening Reception			18:30			
19:00		IUFRO Welcome Reception	IUFRO Business Sessions					19:00			
19:30								19:30			
20:00				International Student Quiz Bowl	Side Events	Side Events & IUFRO Divisional Meetings		20:00			
20:30								20:30			
21:00								21:00			



## Important Attendee Information

- Attendees MUST wear their badge to enter the Convention Center.
- Attendees MUST present their badge to attend In-Congress tours.
- There is a limit of ONE (1) bag and ONE (1) abstract volume per fully paid delegate.
- Delegates may be photographed by the Congress for archival and marketing purposes. Delegates are not permitted to record information during scientific sessions.



# Global Landscapes Forum

Sustainable landscapes for a new climate and development agenda – A vision beyond 2015

6 - 7 December 2014  
Lima, Peru

# Forestry needs to look beyond forests.

Register now at [landscapes.org](http://landscapes.org)



GlobalLandscapesForum



@GlobalLF

Photo by Oliver Gossard/CIFOR

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# THANK YOU!

To the U.S. Forest Service and the International Union of Forest Research Organizations for selecting Hanlon Creative to be your Communications Support partner for the 2014 IUFRO World Congress.

We greatly appreciate what you do for us, and it has been our pleasure to work with you!



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*Section #1*  
**WELCOME MESSAGES**



# UNITED STATES DEPARTMENT OF AGRICULTURE SECRETARY

On behalf of the United States Department of Agriculture, I welcome you to the XXIV International Union of Forestry Research Organizations World Congress.

This is the first time in over 40 years that the IUFRO World Congress has been held in the United States. We are proud to host this event and showcase our nation's accomplishments in forest research and conservation. We continue to work to preserve our nation's natural resources through restored forests, improved watersheds, and healthy private working lands. Our commitment to keep land, water, and air clean is not only a commitment to the citizens of the United States, but also to all people around the world.

From our founding, our nation has recognized the value of our abundant forest lands. Life does not exist without forests. Forests produce the oxygen critical for plants and animals to survive. Forests clean our air and water, create habitats for fish and wildlife, provide stunning scenery and recreation opportunities, and are a foundation for tourism and wood products industries that provide jobs and support communities.

The Department of Agriculture is not only the center for forest research in the United States; it is a strong supporter of university programs educating the next generation of forestry professionals and scientists. These students are among the world's future land management leaders. The Department also plays a leading role in conveying research results to private landowners. These roles—research, education, and outreach—are all important, especially as climate change and deforestation continue to take their toll on our environment.

The Obama administration recognizes the importance of creating opportunities, such as this Congress, for scientists and students from around the world to share their research findings and accomplishments with the global community, to learn from one another and promote global cooperation aimed at solving difficult natural resource restoration and conservation problems.

I am honored to welcome you to the United States and wish you a successful Congress.

*Sincerely,*  
*Tom Vilsack*  
*Secretary, United States Department of Agriculture*



# UNITED STATES FOREST SERVICE CHIEF

On behalf of the U.S. Forest Service, I would like to welcome you to the XXIV International Union of Forestry Research Organizations (IUFRO) World Congress in Salt Lake City, Utah.

Forestry research has long been central to our work at the U.S. Forest Service. We have seven major research facilities and 500 scientists in 67 locations across the country. Our 81 experimental forests and ranges give us data on every major vegetation type in the United States, some of it going back more than a century. We work with partners for sustainable forest management across the nation.

One of our key partners is IUFRO; we have been a member for nearly a century. We rely on IUFRO's vast scientific network to learn about forestry research around the world, and to share our own findings. Through our partnership with IUFRO, we provide sound science to land managers and policymakers around the world.

The IUFRO Congress will address the role of research in sustaining forests and the people who depend on them. For our agency, this is a critical issue, and we know it is for many others around the world. You will have the opportunity to hear exceptional keynote speakers and attend nearly 200 sub-plenary and technical sessions and a trade exposition, with plenty of networking opportunities. You will also have the opportunity to see how land managers are using science in the field.

I was the forest supervisor for the Uinta-Wasatch-Cache National Forest when Salt Lake City hosted the 2002 Winter Olympic Games. The U.S. Forest Service worked closely with the local community to welcome the world, and it was a great success. I'm pleased that we have another opportunity to work with the world community, this time at the largest gathering of forest researchers and foresters ever held in the United States.

The U.S. Forest Service is delighted to host the IUFRO World Congress this year and to have so many of our employees share this experience with you. Welcome, and I know you will have a great time!

*Sincerely,*

*Tom Tidwell*

*Chief, United States Forest Service*



## IUFRO PRESIDENT

Let me extend a most sincere welcome to all of you to the 24th IUFRO World Congress here in Salt Lake City. This is in fact the second time in the 122-year-long history of IUFRO that a World Congress has been held in the United States, after the 15th IUFRO World Congress in Gainesville, Florida, in 1971.

It makes me particularly proud to note that the first U.S. forest research institution became a member of IUFRO as early as 1906. This was, incidentally, only one year after the farsighted American forester Gifford Pinchot became the first chief of the United States Forest Service, the U.S. host of this conference. With his view of forest management as "the art of producing from the forest whatever it can yield for the service of man," he is certainly well in line with the motto of this Congress: "Sustaining Forests, Sustaining People: The Role of Research."

I am sure that one thing you will experience at this event is that for IUFRO, the role of research is more than that of discovering new aspects about forests and trees, providing hard facts and figures for policy and management decisions, and addressing burning issues of our world. It is also a means of interconnecting people across scientific disciplines and national boundaries, across age and gender lines, and languages and cultures, in order to exchange knowledge, share experiences, and learn from each other. In sum, IUFRO aims to interconnect forests, science, and people, as is well reflected in the future IUFRO Strategy that shall lead the organization up to the 25th IUFRO World Congress in Brazil in 2019.

In this spirit, let me wish you very successful and memorable days in Salt Lake City, full of opportunities and inspiration!

*Sincerely,  
Niels Elers Koch  
President, IUFRO*



## NAUFRP PRESIDENT

On behalf of the National Association of University Forest Resources Programs (NAUFRP), I warmly welcome all those who have come from around the world to participate in the 2014 IUFRO World Congress at Salt Lake City, Utah.

NAUFRP is an association representing 80 of the United States' most prestigious universities that have programs devoted to forest resources at the undergraduate and graduate levels. Our shared purpose is to advance the health, productivity, and sustainability of our nation's forests through natural resource research, education, science, extension, and international activities.

Our member institutions have a unique responsibility for to develop programs that produce and foster future generations of forestry and natural resource professionals. These are researchers, teachers, land-management professionals, and leaders in the public and private sectors who will make decisions and shape policies that will determine the future of our world's forests. In this vein, our association is committed to cultural diversity and inclusion, to ensure that the future natural resource workforce and their perspectives reflect the diversity of peoples and values nationally and internationally.

Our faculty members and graduate students are vital components of the United States' forest research capacity. This IUFRO Congress is a once-in-a-lifetime opportunity for them to share their knowledge and experiences with their colleagues from around the world. And this is also a unique learning opportunity for our students – both from a scientific standpoint and a cultural one as they engage with fellow students from other institutions around the world.

The IUFRO Congress is an opportunity to build upon the “3 Rs” of higher education today – Rigor, Relevance, and Relationships. Rigor is a fundamental aspect of forest science, of course, and our work is highly relevant to sustaining forests and societies across the globe. One of the most valuable aspects of this international Congress, however, is relationships – we look forward to building them here in Salt Lake City, and to sustaining them through future engagement.

*Sincerely,*

*Steve Bullard  
President, NAUFRP*

## SALT LAKE CITY MAYOR

Greetings!

As mayor of Salt Lake City, I am honored to welcome you to the International Union of Forest Research Organizations (IUFRO) Convention in Salt Lake City from October 5-11, 2014.

IUFRO is an incredible asset to our nation as they focus on the conservation and sustainable management of one of our most valuable natural resources, our forests. IUFRO is a nonprofit, nongovernmental international network of forest scientists that promotes global cooperation in forest-related research and enhances the understanding of the ecological, economic, and social aspects of forests and trees.

I hope you enjoy your time in Salt Lake City and I encourage you to take advantage of the many attractions our city has to offer. The Wasatch Mountains surrounding the valley provide a beautiful backdrop and unmatched outdoor recreational opportunities, and our vibrant downtown offers a thriving art and music scene, superb dining, and eclectic local shopping.

I know you will enjoy the experiences that await you. It is an honor to welcome you to the 2014 IUFRO Convention.

*Sincerely,*

*Ralph Becker  
Mayor, Salt Lake City, Utah*





## CONGRESS SCIENTIFIC COMMITTEE CHAIR

Let me extend a most sincere welcome to all of you to the 24th IUFRO World Congress here in Salt Lake City.

On behalf of the Congress Scientific Committee (CSC), it is my pleasure to welcome you to the XXIV World Congress of the International Union of Forest Research Organizations: Sustaining Forests, Sustaining People: The Role of Research. The Congress scientific program – developed by the CSC in collaboration with over 200 session organizers – includes more than 1300 oral presentations and nearly as many poster presentations in five plenary, 19 sub-plenary, and over 170 technical and poster sessions. These sessions are organized within seven Congress themes that encompass the full range of IUFRO's traditional and emerging scientific priorities for the benefit of forests and people worldwide: Forests for People, Forest Biodiversity and Ecosystem Services, Forests and Climate Change, Forest and Water Interactions, Forest Biomass and Bioenergy, Forests and Forest Products for a Greener Future, and Forest Health in a Changing World.

Regardless of your particular areas of interest and scientific expertise, we hope that our Congress will encourage you to explore and expand your interests in a broad array of contemporary topics in forest science, strengthen ties with colleagues and friends, and develop new relationships and collaborative research endeavors.

*Sincerely,*

*John A. Parrotta  
Chair, Congress Scientific Committee*

# CONGRESS ORGANIZING COMMITTEE CHAIR



On behalf of the Congress Organizing Committee, we are delighted to welcome all those who have come to Salt Lake City, Utah, to participate in the XXIV IUFRO World Congress. IUFRO Congresses are the premier opportunity for forest-focused people from around the world to share research results, learn what others are doing, and network with colleagues of similar interests.

Salt Lake City, named for the large hyper-saline lake nearby, is located in the center of the American West. At 4,330 feet (1,320 m), the Salt Lake City metropolitan area, with over one million people, rests on the eastern edge of the arid Great Basin. The majestic Wasatch Mountains to the east of the city soar to 11,000 feet (3,350 m). The forests of the 160-mile (260-km) long Wasatch have been vital to human habitation—stretching back thousands of years. These forests have provided clean water, food, fuel, forage, clothing, and building materials for millennia. In more recent years, they have also become highly valued for their precious metals, scenic beauty, outdoor recreation, and tourism.

From ancient times, the forests of Utah supported communities of diverse and resourceful peoples. The arrival of Euro-Americans starting in the mid-1800s brought many changes to the valley and the forests. By the early 1900s, unsustainable practices—overcutting and overgrazing by livestock—had led to severe problems. Soon the ability of the forests to provide for the needs of a rapidly growing population became strained. Early in the 20th century, things began to change for the better. National forests and grasslands were set aside and managers began to learn how to restore the land and the goods and services they could provide. Since then, the land has been carefully managed to provide sustainable flows of water, wood and forage, and all the other goods and services that people depend on for healthy economies and desirable communities.

Research has been the foundation for developing sustainable management practices for the natural resources here in Utah and throughout the United States. A cornerstone to the Forest Service research program over the past century has been a system of experimental forests and ranges, with 80 in current operation. The first of these outdoor laboratories was established in the United States in 1908, the first one in Utah in 1912. For over a century, a robust program of research has been conducted by the United States Forest Service and our partners at universities throughout the country. Five generations of researchers have built the scientific foundation for protecting, conserving, managing, and restoring forests in this country, and in years gone by they have shared their findings with delegates at previous IUFRO World Congresses held around the globe.

This week, it is our turn to host colleagues and students from across the Americas and from around the world. “Sustaining Forests, Sustaining People: The Role of Research.” Those words and their meaning have been our inspiration as we have planned and organized to welcome you to the XXIV IUFRO World Congress. We’re glad you’re here! Enjoy the Congress and Utah’s natural resources!

*Sincerely,*

*Richard W. Guldin*

*Chair, on behalf of the Congress Organizing Committee*

*Section #2*  
**GENERAL INFORMATION**

Get around with ease!  
The TRAX line runs to  
and from the Salt Lake  
City International Airport.  
Board the Blue Line  
train. The fare is  
\$2.50 USD, one way.  
Visit [www.rideuta.com](http://www.rideuta.com)  
for schedules.

## Travel Information

### Getting around Salt Lake City

TRAX, the urban surface rail system, has a “fare free” zone in the downtown urban area. You can get on and get off the TRAX trolleys without buying a ticket within this zone. Beyond the “fare free” zone, tickets are needed. TRAX serves several downtown shopping areas.

The TRAX line also runs to and from the Salt Lake City International Airport. Board the Blue Line train. The fare is \$2.50 USD, one way.

Visit [www.rideuta.com](http://www.rideuta.com) for schedules.

You may request taxi service from your hotel. Costs vary depending on your destination. A trip to the airport costs around \$25 USD.

### Dining

There are over 150 restaurants within a 6-block walk of the convention center. In the U.S., it is customary to tip 18% of the total cost of food and beverages for good service in restaurants. State and local taxes are added to hotel, retail, and restaurant purchases (Retail - 6.85%, Restaurant - 7.85%, Lodging - 12.60%). Grocery items are not taxed.

The drinking (alcoholic beverages) age in the U.S. is 21. If you order an alcoholic beverage at a restaurant or bar, your server may ask for proof of age. In Salt Lake City, you may not use tobacco products (cigarettes, cigars, pipes) inside any building.

### Local Customs and Tips

Salt Lake City is in Mountain Daylight Time (MDT) or UTC/GMT -6 hours. The date system is written as month/day/year. Thus, 5 October 2014 becomes 10/5/14.

The U.S. currency is the U.S. dollar. Businesses will not accept foreign currencies, but they may accept foreign credit cards. Common credit cards such as Visa and MasterCard are widely accepted. You may exchange money at the airport or at a number of banks in the area. Some may charge a fee and others may not. You may also withdraw U.S. dollars at an ATM (automated teller machine). The machine may charge a transaction fee, and your home bank may charge an international transaction fee.

In the U.S., AC 110V is standard; adapters are usually required to run most non-U.S. electronics.

Visit [www.visitsaltlake.com/facts/](http://www.visitsaltlake.com/facts/) for more information.

### Hospitals

For emergencies, the nearest hospital to the Convention Center is:

University of Utah Hospital  
50 Medical Drive  
Salt Lake City, Utah 84132  
(801) 581-2292

If you experience a life-threatening emergency – please dial 9-1-1 from any phone to reach an emergency operator. If your condition is not life threatening, please seek medical attention at an urgent care center. The nearest is:

Salt Lake InstaCare  
389 South 900 East  
Salt Lake City, Utah 84102  
(385) 282-2400

# Hotel Information

**Crystal Inn Downtown**  
230 West 500 South  
(801) 328-4466

**Hilton Salt Lake City Center**  
255 South West Temple  
(801) 328-2000

**Hotel Monaco**  
15 West 200 South  
(801) 595-0000

**Little America Hotel**  
500 South Main Street  
(801) 596-5700

**Radisson Hotel Salt Lake City Downtown**  
215 West South Temple  
(801) 531-7500

**Red Lion Hotel Salt Lake Downtown**  
161 West 600 South  
(801) 521-7373

**Salt Lake City Marriott City Center**  
220 South State Street  
(801) 961-8700

**Salt Lake Marriott Downtown at City Creek**  
75 South West Temple  
(801) 531-0800

**Salt Lake Plaza Hotel at Temple Square**  
122 West South Temple  
(801) 521-0130

**Sheraton Salt Lake City**  
150 West 500 South  
(801) 401-2000

# Hotel Map & Quoted Rates



1. Salt Lake Marriott Downtown at City Creek..... \$172
2. Hilton Salt Lake City Center..... \$169
3. Radisson Hotel Salt Lake City Downtown ..... \$169
4. The Salt Lake Plaza Hotel at Temple Square..... \$145
5. Hotel Monaco ..... \$172
6. Marriott Salt Lake City Center ..... \$162
7. Sheraton Salt Lake City Centre Hotel .... \$172
8. Little America—Tower..... \$159
- Little America—Garden..... \$139
- Little America—Courtside..... \$119
9. Red Lion Hotel Salt Lake Downtown ..... \$149
10. Crystal Inn Downtown..... \$134

Discounted room rates are still being negotiated and are subject to change.

## Onsite Services

### Salt Palace Convention Center

The Salt Palace Convention Center has nearly 700,000 square feet of exhibit and meeting room space. The Salt Palace seeks to use the newest sustainability technology and environmental care practices and has one of the nation's largest rooftop solar array projects, featuring 6,006 panels. The building is Silver LEED certified by the US Green Building Council.

### Registration Desk

Staff will be available to address all registration-related questions and needs.

Location: South Foyer  
 Operational Hours: 11:00 – 19:00, 5 October  
 07:00 – 18:00, 6 October  
 07:00 – 19:00, 7 October  
 08:00 – 18:00, 8 October  
 08:00 – 17:00, 9 October  
 08:00 – 17:00, 10 October  
 08:00 – 12:00, 11 October

### Tour Desk

Inquire about local and post-congress tours for purchase. Ask about your In-Congress tour and more. This will be open during registration hours.

Location: South Foyer Registration Desk  
 Operational Hours: Daily, 08:00 – 16:00

### Local Information Desk

What is there to do in Salt Lake? Ask local experts about where to eat, what to see, and where to go.

Location: Visitor's Center (near the East Entrance)  
 Operational Hours: Daily, 08:00 – 16:00

### Business Center

The Salt Palace operates a fee-based Business Center with the following services: copy and print, office supplies, wheelchair rental, small package shipping and receiving, storage, shipping, sundries, and a coat and luggage check.

Location: Upper Concourse  
 Operational Hours: Daily, 08:00 – 17:00

### Internet Lounge

Free wireless internet is available in the lounge, along with a small bank of computers for your use.

Location: Hall 1 – near the Poster Displays  
 Operational Hours: Daily, 08:00 – 18:00

### Wireless Internet

Free wireless internet is available for thirty-minute login segments courtesy of the Convention Center in the following locations: North, South, East, and West Foyers; the café seating area just outside the business center; and in the mezzanine area just outside rooms 257-260. Daily connections to high-speed wireless are available for purchase.

### IUFRO Information Booth

Meet with IUFRO staff, browse and pick up publications, collect and purchase promotion products, get to know the Global Forest Information Service, and more.

Location: North Foyer  
 Operational Hours: 08:00 – 18:00, 6-7 & 9-10 October  
 Closed for field tours, 8 October  
 08:00 – 13:00, 11 October

### Speaker Ready Room

All speakers must pre-load their presentations into the content management system. Presenters can also use the speaker ready room to practice their presentations and seek advice on translations to English. Technical experts will be available to assist you with loading your presentation into the system.

Location: 254 B  
 Operational Hours: 08:00 – 20:00, 5 October  
 07:00 – 19:00, 6-7 October  
 10:00 – 18:00, 8 October  
 07:00 – 19:00, 9-10 October  
 07:00 – 13:00, 11 October

### Scientist Assistance Program Support Desk

Staff are available to help sponsored Scientist Assistance Program delegates with questions about debit cards, lodging, confirming return travel, and more.

Location: South Foyer Registration Area  
 Operational Hours: 11:00 – 19:00, 5 October  
 07:00 – 09:00 & 16:00-18:00, 6 October  
 09:00 – 11:00, 7 October  
 09:00 – 11:00, 10 October  
 09:00 – 17:00, 11 October

### Prayer Room

Available for use by people of all faiths.

Location: 260 A  
 Operational Hours: Daily, 08:00 – 17:00

### Wellness Room

Use for stretching, yoga, tai chi, meditation, resting, and more. Please do not use if feverish or ill.

Location: 260 B  
 Operational Hours: Daily, 08:00 – 17:00

## Volunteer Room

Staff will be available to respond to questions about volunteer assignments, sign student timesheets, discuss benefits, and more.

Location: 251 F

Operational Hours: Daily, core hours: 08:00 – 17:00  
(and other times as volunteer shifts require)

## Trade Exposition

Vendors from across the globe will showcase their products, services, education programs, and latest technologies. Stop by the trade exposition to learn more about these organizations, hear interesting presentations on the exhibit hall stage, visit the silent auctions, and more.

Location: Halls A & B

Operational Hours: 17:30 – 20:00, 8 October  
10:00 – 17:30, 9-10 October  
10:00 – 14:00, 11 October

## Dining

Within the Convention Center, various food stand vendors will provide lunches for sale. Delegates are encouraged to also enjoy Salt Lake City's diverse restaurant selections. Please refer to your Visit Salt Lake Guide provided as part of your registration packet for dining options.

## Congress Newsletter

A daily newsletter will be produced featuring Congress activities, local attractions, and more. The newsletter will be distributed each morning (except Wednesday) at 10:30. Limited hard copies will be available in the refreshment break areas, and the newsletter will be available for download via QR codes, the Congress app, and the Congress website.

## Connecting with the Congress and Delegates

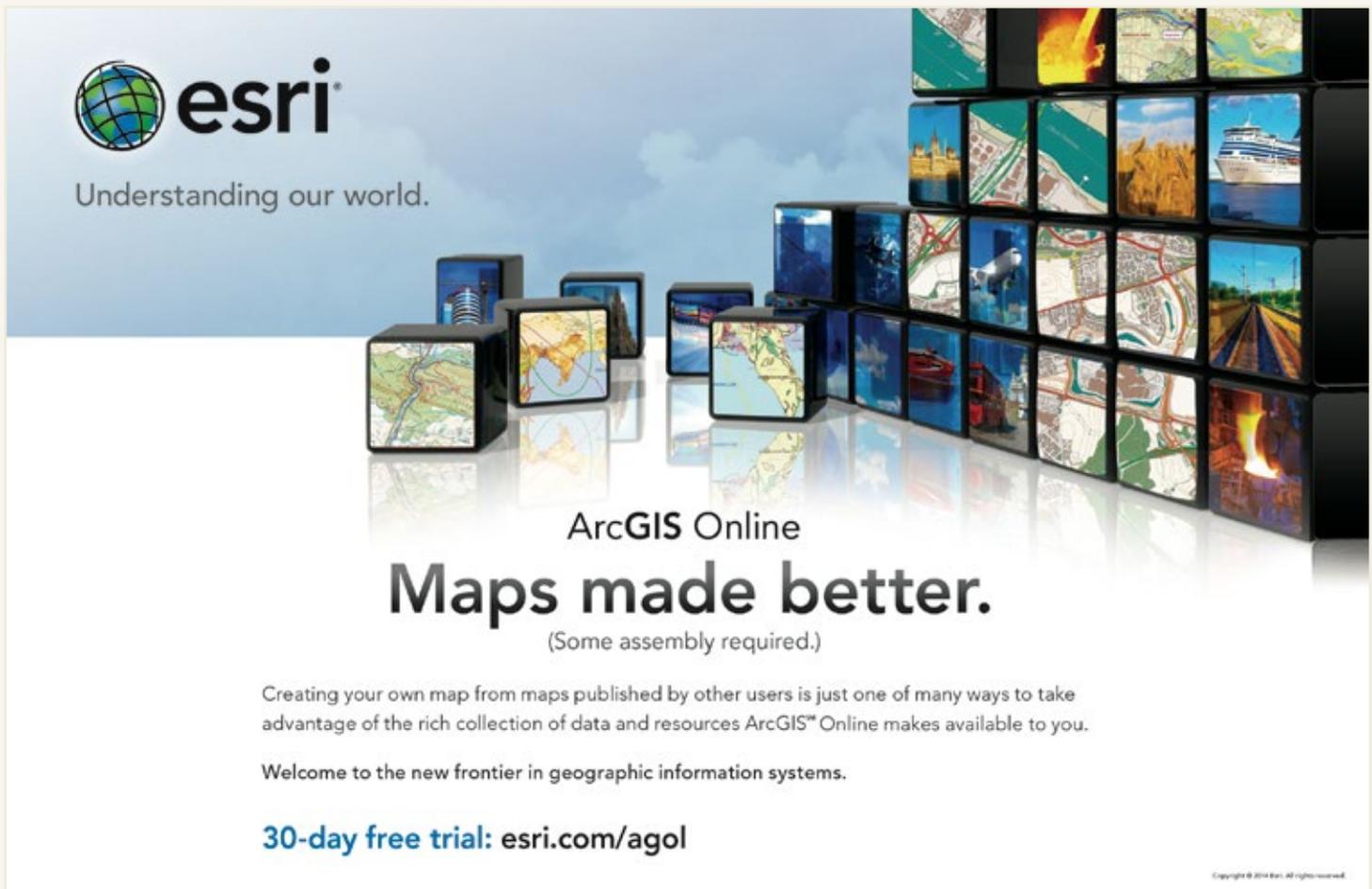
A message board will be available in the South Foyer Registration area. For social media and other electronic connections, please visit page 255.

## Emergency

Professional emergency medical personnel are available at the Convention Center during all Congress operating hours. Should you witness or have a life-threatening medical emergency, please dial 9-1-1 on your mobile phone, then find Congress staff to alert onsite medical staff. For first aid and other non-life-threatening medical issues, please visit the Registration Desk and they can alert medical staff.

## Disclaimer

The Program Book is considered accurate at the time of print. Note that some items may change due to unforeseen circumstances.



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*Section #3*  
**WHO'S WHO**



## International Union of Forest Research Organizations

Union Internationale des  
Instituts de Recherches  
Forestières

Internationaler  
Verband Forstlicher  
Forschungsanstalten

Unión Internacional  
de Organizaciones de  
Investigación Forestal

## IUFRO

IUFRO is a global nonprofit and nongovernmental scientific organization with headquarters in Vienna, Austria. It was founded in 1892 with the aim to promote international cooperation in forest-related research.

IUFRO's members are research organizations, universities, individual scientists, decision-making authorities, and other stakeholders with an interest in and a focus on forests and trees.

IUFRO attains its objectives through networking activities such as the generation, exchange, and dissemination of scientific knowledge; the provision of access to relevant information; and the assistance to scientists and institutions to strengthen their research capacities.

The IUFRO network offers many entry points for voluntary expert cooperation: currently 9 Divisions with their Research Groups and Working Parties, 9 interdisciplinary Task Forces, Special Programmes such as IUFRO-SPDC, Special Projects such as IUFRO-WFSE, IUFRO-led Initiatives such as GFIS and GFEP, and regional Chapters.

Scientific, technical, policy and business matters are taken care of by various organs such as the Congress or general assembly, the International Council, the Board with its committees, the President and Vice-Presidents, the Executive Director and Secretariat, and all cooperating officeholders.

### IUFRO in Figures

- 600+ member organizations in 100+ countries representing 15,000+ scientists
- 700+ voluntary officeholders
- 9 Divisions, 9 Task Forces, 4 Special Programs, Projects and IUFRO-led Initiatives
- 59 Research Groups and 172 Working Parties
- 70 meetings per year on average; IUFRO World Congress every 5 years

### Divisions

IUFRO's field of scientific activity is spread over a number of Divisions, which support researchers in collaborative work. These Divisions provide an organizational structure with units called Research Groups and Working Parties. These units are coordinated by voluntary IUFRO officeholders and develop a series of activities such as organizing meetings, publishing newsletters, conducting study tours, exchanging knowledge and communicating findings, etc.

- Division 1 – Silviculture
- Division 2 – Physiology and Genetics
- Division 3 – Forest Operations Engineering and Management
- Division 4 – Forest Assessment, Modelling and Management
- Division 5 – Forest Products
- Division 6 – Social Aspects of Forests and Forestry
- Division 7 – Forest Health
- Division 8 – Forest Environment
- Division 9 – Forest Policy and Economics

### Task Forces

For IUFRO to be successful, it is important to present effective and research-based responses from the science community to the changes in paradigms concerning forests, forest science, and policies affecting forests. In Task Forces, IUFRO scientists work together across disciplines. Their focus is on emerging key

issues that are of strong interests to policy makers and groups inside and outside the forest sector. Task Forces are established for a limited period only whereas Divisions are of a permanent character.

- International Forest Governance
- Resources for the Future
- Forest and Water Interactions
- Biodiversity and Ecosystem Services
- Forest Bioenergy
- Forests and Climate Change
- Forests for People
- Education in Forest Science
- Forests and Human Health

### Special Programs, Projects and IUFRO-led Initiatives

- IUFRO-SPDC: Special Programme for Development of Capacities exists “to expand and foster forest research capacity in developing and economically disadvantaged countries,” which is done by providing training of scientists, collaborative research networking, and through the scientist assistance programme.
- IUFRO-WFSE: Special Project on World Forests, Society and Environment is a network that shares existing scientific knowledge and participates actively in forest-related policy processes. It promotes global cooperation in high quality research and wide participation in the international discussions and processes.
- GFIS: Global Forest Information Service brings the information that matters to key stakeholders in a single gateway - “www.gfis.net”.
- GFEP: Global Forest Expert Panels is an IUFRO-led initiative of the Collaborative Partnership on Forests (CPF) provides objective and independent scientific assessments of key issues in order to support more informed decision-making at the global level.

### Becoming a Member

IUFRO is organized by nine permanent Divisions, sub-divided into Research Groups and Working Parties, as well as a number of Task Forces that are established for a limited period of time. Scientists from member organizations are welcome to join Divisions, Research Groups and Working Parties and can do so by contacting the coordinator of that group for more information. Application forms and more information about membership can be obtained from the IUFRO Secretariat and the IUFRO website. Benefits of membership are listed at <http://www.iufro.org/membership>.

## ACKNOWLEDGEMENTS

### Congress Organizing Committee

Our gratitude is shared for the countless hours and effort the subcommittee leaders and core teams have given to Congress preparation: James Allen, Vicki Berrett, Nadine Block, Steve Bullard, Cass Cairns, Nan Christianson, Toby Eberly, Rima Eid, Sam Foster, Susan Fox, George Garcia, Lisa Hansen, Michael Huck, Jim Johnson, Lilli Kaarakka, Stan Kitchen, Cindy Miner,

Nalini Nadkarni, Meridith Perkins, John Parrotta, Carlos Rodriguez-Franco, Terry Sharik, Patrick Shea, Bogdan Strimbu, Michael Sullivan, and Tim White.

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To SAF and CIF/IFC: The entire SAF Council; the CIF/IFC National Board of Directors; the SAF/CIF 2014 Program Committee; the SAF staff; the CIF/IFC Executive and Staff; the International Quiz Night Committee; and in particular - Kelton Chapman, Jorge Esguerra, Matt Meade, Matt Menashes, Tat Smith, Carol Redelsheimer, and Christopher Whited.

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To our contractors and vendors: BAV, Convention Services of the Southwest, Hanlon Creative, SMG, and X-CD Technologies.

And finally, to the early partners who helped us envision a successful bid for the Congress and who provided support along the way: Ann Bartuska, Arthur Blazer, Robert Bonnie, Jimmy Reaves, Tom Tidwell, Region 4, and the Forest Service Research & Development executive leadership team; the Executive Committee members of the National Association of University Forest Resources Programs; the Society of American Foresters; colleagues at Visit Salt Lake, including Michael Mack, Chris Peterson, Mark White, and Gian Zini; and, IUFRO Past Presidents Robert Buckman and Jeffery Burley.

### Congress Scientific Committee

This committee deserves more thanks than can be provided in this book, for their tireless efforts and many hours of dedication to ensure a diverse, robust, and high-quality scientific program: John Parrotta (Chair); Jens Peter Skovsgaard (Division 1); Yousry El-Kassaby (Division 2); Hans Heinimann (Division 3); Ronald McRoberts (Division 4); Andrew Wong (Division 5); Tuija Sievänen (Division 6); Tod Ramsfield (Division 7); Robert Jandl (Division 8); James Johnson (Division 9); Lisa Hansen (International Forestry Students Association); Richard Guldin (COC Chair); Jennifer Hayes (COC Project Manager); and Daryl Lederle (COC Specialist).

## Key Partners

### U.S. Department of Agriculture Forest Service

The U.S. Department of Agriculture Forest Service's mission is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations. The U.S. Forest Service manages 77 million hectares of public national forests and grasslands and also provides technical and financial assistance to state and private forestry agencies, playing a direct or indirect role in the management of 80 percent of the nation's forest lands. The Research and Development arm of the U.S. Forest Service works at the forefront of science to improve the health and use of U.S. forests and grasslands and is the largest forestry research organization in the world.

### The National Association of University Forest Resources Programs (NAUFRP)

The National Association of University Forest Resources Programs (NAUFRP), was formed in 1981 and represents 80 of our nation's most prestigious universities and their respective scientists, educators and extension specialists. NAUFRP's purpose is to advance the health, productivity, and sustainability of America's forests by providing university-based natural resource education, research, science, extension, and international programs. Our member institutions' programs develop future leaders, create intellectual capacity, secure financial investments, and advance cutting-edge technology to sustain forest resources. We connect educators, professional managers, scientists, conservation leaders, policy makers, landowners, and forest users to jointly address diverse ecological and human challenges. Our vision for America's forests is that there will be a national long-term investment to maintain, enhance, and protect the quantity and quality of our forests and the benefits and intrinsic values forests offer.

### The Society of American Foresters (SAF)

The Society of American Foresters (SAF) is the national scientific and educational non-profit organization representing the forestry profession in the United States. The Society of American Foresters challenges landowners, decision makers and society at large to make choices about our forests based on professional knowledge, leading-edge thinking, and a century of practical experience. SAF seeks viable pathways forward, balancing diverse demands on our natural resources and setting the standard in forest management, bringing science, best practice, and the best people together to actively shape the future of the profession. With a focus on thriving forests, essential resources and a strong community, SAF unites 12,000 members, representing all U.S. states and from 60 different countries.

### The Canadian Institute of Forestry/l'Institut forestier du Canada (CIF/IFC)

The Canadian Institute of Forestry/l'Institut forestier du Canada (CIF/IFC) is the national voice of forest practitioners. Formed in 1908, the Institute represents foresters, forest technologists and technicians, ecologists, biologists, geographers, educators, scientists, and many others with a professional interest in forestry. The Institute's mission is to provide national leadership in forestry, promote competence among forestry professionals, and foster public awareness of Canadian and international forestry issues.



## Award Winners

### Host Country Scientific Achievement Award Winners

The Host Country Scientific Achievement Award recognizes a distinguished career that has had exceptional impact. The three recipients of this prestigious award are regarded as the preeminent forest scientists of contemporary times in the United States of America. They 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 has 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. The Congress Organizing Committee is proud to present the winners of the U.S. Scientific Achievement Awards.

#### Dr. Harold E. Burkhart



*Dr. Harold E. Burkhart*

Dr. Harold E. Burkhart has been a faculty member in Virginia Tech's Department of Forest Resources and Environmental Conservation since 1969 and now serves as a University Distinguished Professor. He earned his B.S. in Forestry from Oklahoma State University and his M.S. and Ph.D. in Forest Biometrics from the University of Georgia. Burkhart served as department head from 1995 to 2008 and was a Senior Research Fellow at the Forest Research Institute in Rotorua, New Zealand. A leading innovator in forest biometrics, Burkhart has published extensively on forest growth and yield prediction, and forest inventory and sampling. He is lead author of the advanced-level book "Modeling Forest Trees and Stands" and co-author of the textbook "Forest Measurements." His contributions to forestry research and education have earned him IUFRO's Scientific Achievement Award, the Society of American Foresters Barrington Moore Memorial Award, the Forest Landowners Association Forest Champion of the Year, the Virginia Academy of Science J. Shelton Horsley Research Award, the Virginia Tech Alumni Award for Research Excellence, and recognition as Virginia's Outstanding Scientist. A former editor of the journal *Forest Science*, Burkhart is a Fellow in the American Association for the Advancement of Science and the Society of American Foresters.

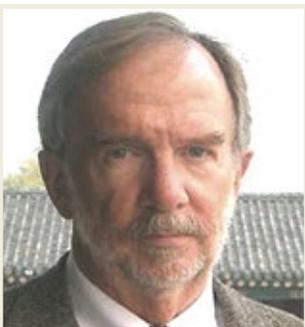
#### Dr. Stephen Hubbell



*Dr. Stephen Hubbell*

Dr. Stephen Hubbell is a Distinguished Professor of Ecology and Evolutionary Biology at UCLA, and an internationally renowned ecologist for his research on tropical rainforests and theoretical ecology. He is the co-founder and co-director of the Center for Tropical Forest Science — which manages a global network of large permanent tropical forest research plots and monitors natural populations of more than 6,000 tropical tree species — and is the founding chairman and a board member of the National Council for Science and the Environment, an organization with more than 10,000 members and more than 200 universities and professional societies. The NCSE's mission is to improve the scientific basis of environmental decision-making. Issues the organization addresses include biodiversity conservation and the extinction crisis. He earned his B.A. from Carleton College in 1963 and his Ph.D. from UC Berkeley in 1969. Hubbell, who joined UCLA's faculty in 2007, is a fellow of the American Academy of Arts and Sciences, a fellow of the American Association for the Advancement of Science, and a Guggenheim fellow. He is author of the unified neutral theory of biodiversity and biogeography, which explains the diversity and relative abundance of species in ecological communities.

#### Dr. Chadwick Dearing Oliver



*Dr. Chadwick Dearing Oliver*

Dr. Chadwick Dearing Oliver is the Pinchot Professor of Forestry and Environmental Studies and Director of the Global Institute of Sustainable Forestry at the Yale School of Forestry & Environmental Studies. His early work focused on the basic understanding of how forest stands develop and can be managed silviculturally. Much of this research was summarized in *Forest Stand Dynamics*, a seminal volume published in 1990 (updated in 1996) with co-author Dr. Bruce Larson. Dr. Oliver has continued this research, expanding it globally and focusing on how this understanding can help resolve scientific, technical, environmental, and management issues at the landscape and global levels. His Landscape Management System — a downloadable, computer-based tool for managing timber resources, wildlife habitat, carbon sequestration, and fire protection — has been used widely to analyze and visualize the effects of disturbances and management on landscapes. Dr. Oliver has authored more than 150 publications; including journal articles, book chapters, and symposia proceedings. He has served on Boards of Directors of foundations and companies, Editorial Boards, government advisory panels, and Ph.D. committees of students from many parts of the world. He received a B.S. from The University of the South and his M.F.S. and Ph.D. from Yale University. He has been on the faculties of the Harvard Forest, University of Washington, Middle East Technical University, and now, Yale University.

## IUFRO Award Winners

## IUFRO Scientific Achievement Award (SAA)



Sally Aitken, Canada



Jürgen Bausch, Germany

Benjamin Cashore, USA/  
Canada

Richard Hamelin, Canada

Christopher Eric Harwood,  
Australia

Shibu Jose, USA



Robert A. Kozak, Canada

Aino A. Mäkelä-Carter,  
Finland

Jolanda Roux, South Africa

Giuseppe Scarascia  
Mugnozza, Italy

## IUFRO Outstanding Doctoral Research Award (ODRA)

Jan R. Bannister Hepp,  
Germany

Susana Barreiro, Portugal



ShuaiFei Chen, China

César Pérez Cruzado,  
Spain

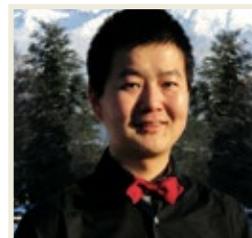
Puneet Dwivedi, India

Sandra Rodríguez Piñeros,  
Mexico

Eli Sagor, USA



Hwei-Shing Sik, Malaysia



Zhun Mao, China

## IUFRO Student Award for Excellence in Forest Sciences (ISA)



*Julius Adewopo,  
USA/Nigeria*



*Tolulope Daramola,  
USA/Nigeria*



*Mika Yoshida, Japan*



*Md. Mohitul Hossain,  
Bangladesh*



*Sharif Ahmed Mukul,  
Bangladesh*



*Ivana Zivojinovic (Guduric),  
Serbia*



## Wangari Maathai Award 2014

The Collaborative Partnership on Forests (CPF) will provide the Wangari Maathai award to one extraordinary individual for improving our forests and the lives of people who depend on them! This award honors and commemorates the impact of this extraordinary woman who championed forest issues around the world. The awardee will receive a cash prize of USD 20,000 along with international recognition of their outstanding contributions to preserve, restore, and sustainably manage forests; and to raise awareness of the key role forests play in supporting local communities, rural livelihoods, women and the environment. The Wangari Maathai Award, given for the first time in 2012, was created by CBD, CIFOR, FAO, GEF, ICRAF, ITTO, IUCN, IUFRO, UNCCD, UNDP, UNEP, UNFCCC, UNFF and World Bank; all members of the CPF. An international jury reviews nominations and considers such elements as empowering women and civil society, fostering social commitment, promoting networks, and improving the valuation of forests in society. The 2014 award will be given at the IUFRO World Congress. Learn who the award winner is on Monday Evening – please join us for the announcement!

Date: Monday 6 October  
Time: 18:15 – 18:45  
Location: Ballroom

# METLA

## From Metla to the Natural Resources Institute Finland (Luke)

*As of January 1st, 2015, the Finnish Forest Research Institute (Metla) will be part of a new powerful research organization, Natural Resources Institute Finland (Luke).*

Under the new entity Metla is joined by MTT Agrifood Research Finland, the Finnish Game and Fisheries Research Institute (RKTL) and the statistical services of the Information Centre of the Ministry of Agriculture and Forestry (Tike).

The merger is part of the reform of Finland's research and innovation system. The new institute will coordinate bioeconomy research nationally and look for increasingly integrated solutions to societal problems and challenges.

Natural Resources Institute Finland will be the second largest research institute in the country and one of the biggest clusters of bioeconomy expertise in Europe. In 2012, the total output of the three institutions was more than 1,700 person-years of research, and their combined turnover was approximately EUR 140 million.

We look forward to continuing our fruitful cooperation with all our old friends inside the IUFRO community, and welcome all new parties who are interested in cooperation with us in the field of natural resources research and expertise, all over the world.

**More information:**

Leena Paavilainen  
Director General, professor  
Phone: +358 29 532 2020  
[www.metla.fi](http://www.metla.fi)

Natural Resources Institute Finland (Luke)



METLA



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Friends





*Section #4*  
**GENERAL CONGRESS PROGRAM**

# Week at a Glance



## Program Schedule

**Registration Hours**  
 Sun, 5 October: 11:00 – 19:00  
 Mon, 6 October: 07:00 – 18:00  
 Tue, 7 October: 07:00 – 19:00  
 Wed, 8 October: 08:00 – 18:00  
 Thu, 9 October: 08:00 – 17:00  
 Fri, 10 October: 08:00 – 17:00  
 Sat, 11 October: 08:00 – 12:00

TIME	SUNDAY OCT 5 <sup>th</sup>	MONDAY OCT 6 <sup>th</sup>	TUESDAY OCT 7 <sup>th</sup>	WEDNESDAY OCT 8 <sup>th</sup>	THURSDAY OCT 9 <sup>th</sup>	FRIDAY OCT 10 <sup>th</sup>	SATURDAY OCT 11 <sup>th</sup>	TIME				
8:00								8:00				
8:30								8:30				
9:00		Opening Ceremony	Concurrent Technical Sessions		Joint Plenary Keynote Speakers (IUFRO/SAF/CIF) & Concurrent Technical Sessions	Concurrent Technical Sessions	Concurrent Technical Sessions	9:00				
9:30												9:30
10:00												10:00
10:30				Refreshment Break				Refreshment Break				10:30
11:00		Keynote Plenary Session	Keynote Plenary Session		Refreshment Break	Refreshment Break	Refreshment Break	11:00				
11:30												11:30
12:00		Lunch Break, & IUFRO Business Sessions	Lunch Break, Poster Viewing & IUFRO Business Sessions	In-Congress Tours (start and end times vary by tour)	Trade Exhibition & Posters	Trade Exhibition & Posters	Trade Exhibition & Posters	12:00				
12:30	Registration Open (11:00-19:00)											
13:00						Lunch Break & Side Events	Lunch Break, Poster Viewing & Side Events	Lunch Break	13:00			
13:30									13:30			
14:00		Concurrent Sub-Plenary Sessions	Concurrent Sub-Plenary Sessions		Concurrent Sub-Plenary Sessions	Concurrent Sub-Plenary Sessions	Concurrent Sub-Plenary Sessions	14:00				
14:30								14:30				
15:00	IUFRO Tree Planting Ceremony	Refreshment Break	Refreshment Break		Refreshment Break	Refreshment Break	Refreshment Break	15:00				
15:30								15:30				
16:00								16:00				
16:30		Concurrent Technical Sessions	Concurrent Technical Sessions		Concurrent Technical Sessions	Concurrent Technical Sessions	Closing Ceremony	16:30				
17:00								17:00				
17:30								17:30				
18:00	Making the Most of the Congress	Wangari Maathai Award Presentation		Trade Exhibition				18:00				
18:30				Exhibit Hall Grand Opening Reception				18:30				
19:00		IUFRO Welcome Reception						19:00				
19:30			IUFRO Business Sessions					19:30				
20:00					Side Events	Side Events & IUFRO Divisional Meetings	Farewell Gala Dinner	20:00				
20:30				International Student Quiz Bowl				20:30				
21:00								21:00				

# IUFRO Special Meetings and Business Sessions

## International Council Meetings

Attendance at this meeting is by invitation only.

Location: Hilton Hotel  
 Dates: Tuesday, 7 October & Friday, 10 October from 15:30 – 18:00 (reception to follow)

## President's Discussion

The IUFRO President's Discussion is open to all registered delegates.

Location: Hall E  
 Dates: Tuesday, 7 October – 08:30 – 10:30  
 Description: A panel of distinguished stakeholders representing different perspectives will engage in a dialogue with the participants about what they see as emerging issues in forest policy and practice. This will give the opportunity to present to a global audience of scientists the topics that should be prominently featured in the scientific agenda in the years to come. The focus will be on the perspectives of nature conservation, recreation, business and industry, development cooperation, and youth.

Moderator: Niels Elers Koch (IUFRO President)  
 Keynote speaker: Robert Bonnie (U.S. Department of Agriculture, USA)  
 Panel discussion: Yemi Adeyeye (International Forestry Students Association, Nigeria), Tuukka Castrén (World Bank, USA), Craig Hanson (Global Director Food, Forests & Water, World Resources Institute, USA), and Emmanuel Ze Meka (International Tropical Timber Organization, Japan). Other panelists to be confirmed.

## IUFRO Business Sessions

These sessions are intended for administrative and business issues related to IUFRO units, and not for the discussion of substantive research issues. Research Group and Working Party meetings will be held on Monday and Tuesday, and Divisional meetings will be held on Friday.

### Monday, 6 October - Business Sessions

Time	Room	IUFRO Unit #	Name of IUFRO Unit	Contact Person
12:00-12:40	150D	1.01.11	Ecology and Silviculture of Ash and Maple	Jens Peter Skovsgaard
	150C	4.02.02	Multipurpose Inventories	R.K. Kohli
	151A	5.04.13	Industrial Engineering, Operations Analysis and Logistics	Henry Quesada
	150A	5.12.00	Sustainable Utilization of Forest Products	Robert Deal
	150E	7.01.00	Impacts of Air Pollution and Climate Change on Forest Ecosystems	Andrzej Bytnerowicz
	150G	9.00.00	Forest Policy and Economics	Daniela Kleinschmit
	150F	9.01.00	Information and Communication	James Johnson
12:50-13:30	151B	1.02.04	Sustainable Management and Genetic Resources in Meliaceae	Sheila Ward (Dep.)
	151A	5.01.00	Wood Quality	Pekka Saranpaa
	151C	5.05.00	Composite and Reconstituted Products	Salim Hiziroglu
	151D	8.01.02	Landscape Ecology	Sandra Luque
	151F	8.02.08	African Wildlife Conservation and Management	Chabi Djagoun
	151E	9.01.02	Communication and Public Relations	Cynthia Miner
	151G	9.03.04 & 9.03.05	Traditional Forest Knowledge in Temperate and Boreal Regions & in Tropical and Subtropical Regions	Yeo-Chang Youn (Dep.) & Jinlong Liu



## Tuesday, 7 October - Business Sessions

Time	Room	IUFRO Unit #	Name of IUFRO Unit	Contact Person
12:00-13:30	150A	6.01 & 6.02 & 6.03 & 6.04 & 6.10	Forest Recreation, Landscape and Nature Conservation & Landscape Planning and Management & Nature-based Tourism & Nature Conservation and Protected Areas & Rural Development	Frank Søndergaard Jensen
12:00-12:40	150F	1.03.00	Short-Rotation Forestry	Sanjeev K. Chauhan
	150G	1.04.00	Agroforestry	August Temu
	151C	2.04.01	Population, Ecological and Conservation Genetics	Om P. Rajora
	151A	3.04.00	Forest Operations Management	Woodam Chung
	151F	4.03.03	Information Management and Information Technologies	Harald Vacik (Dep.)
	151G	5.03.00	Wood Protection	Andrew Wong (Dep.)
	150D	5.07.00	Biorefinery	Dominique Lachenal (Dep.)
	151B	5.10.01	Wood Culture	Howard Rosen
	151E	6.08 & 6.09	Gender and Forestry & Improving Education and Further Education in Forestry	Gun Lidestav & Siegr. Lewark
	150C	8.02.04	Ecology of Alien Invasives	R.K. Kohli
	150E	9.01.03	Extension and Knowledge Exchange	Jurij Begus
	151D	9.05.00	Forest Policy and Governance	Margaret A. Shannon
	150B	TF Biodiversity	Biodiversity and Ecosystem Services	E. Brockerhoff
12:50-13:30	150D	1.01.06	Ecology and Silviculture of Oak	Kurt W. Gottschalk
	151C	1.01.12	Silviculture and Ungulates	Thomas Rooney
	150C	1.06.00	Restoration of Degraded Sites	John Stanturf
	150F	5.02.00	Physiomechanical Properties of Wood and Wood-based Materials	Xiping Wang
	151A	5.06.00	Properties and Utilization of Plantation Wood	Roger Meder
	150B	5.10.00	Forest Products Marketing and Business Management	Eric Hansen
	150E	6.07.00	Urban Forestry	David Nowak
	150G	7.03.00	Entomology	Andrew Liebhold
	151B	9.01.04	Latin American and Caribbean Information Systems Network	Santiago Barros
	151D	GFEP	Global Forest Expert Panel: Forests and Food Security	Bhaskar Vira

## Tuesday, 7 October - Business Sessions

Time	Room	IUFRO Unit #	Name of IUFRO Unit	Contact Person
19:00-19:40	150D	1.01.00	Temperate and Boreal Silviculture	Palle Madsen
	151D	1.01.07	Ecology and Silviculture of Beech	Palle Madsen (Dep.)
	150B	1.02.05	Silviculture and Management in Arid and Semi-Arid Regions	Santiago Barros
	150E	3.03.00	Forest Ergonomics	Yozo Yamada
	151A	4.01.05	Process-based Models for Predicting Forest Growth and Timber Quality	Oscar Garcia
	150C	5.11.00	Non-wood Forest Products	T. Hammett/J. Chamberlain
	150F	7.01.04	Impacts of Air Pollution and Climate Change on Forest Ecosystems – Genetic Aspects	Om P. Rajora
	150G	7.02.00	Pathology	Jolanda Roux
	151B	9.03.00	Forest History and Traditional Knowledge	Mauro Agnoletti
	151F	9.04.03	Ecological Economics	Yeo-Chang Youn
	151C	9.05.08	Forest and Natural Resources Policy and Governance in Latin America and the Caribbean	Ronnie de Camino Velozo
150A	9.07.00	Forest Sector Analysis	Birger Solberg	
151E	GFEP	Global Forest Expert Panel: Forests and Food Security	Bhaskar Vira	

## Friday, 10 October - Business Sessions

Time	Room	IUFRO Unit #	Name of IUFRO Unit	Contact Person
19:00-21:30	355F	Division 1	Silviculture	Bjorn Hanell
	355E	Division 2	Physiology and Genetics	Yousry El-Kassaby
	355D	Division 3	Forest Operations Engineering and Management	Hans R. Heinimann
	355C	Division 4	Forest Assessment, Modelling and Management	Margarida Tomé
	355B	Division 5	Forest Products	Andrew Wong
	355A	Division 6	Social Aspects of Forests and Forestry	Tuija Sievaenen
	255E	Division 7	Forest Health	Eckehard Brockerhoff
	255D	Division 8	Forest Environment	Jean-Michel Carnus
	255A	Division 9	Forest Policy and Economics	Daniela Kleinschmit

## Official and Social Events

### Tree Planting Ceremony

A tree planting ceremony will be held at the International Peace Garden as part of the IUFRO Congress tradition. All delegates are welcome to attend.

Location: International Peace Gardens is located at Jordan Park, 1000 South 900 West, Salt Lake City  
Date: Sunday, 5 October – 14:00-15:30

### Congress Introductory Session – Making the Most of the Congress

If this is your first IUFRO World Congress, you should consider attending this session. Organized by the IUFRO-SPDC, this session gives delegates an overview of what to expect and how to make the most of your experience.

Location: 155 A-C  
Date: Sunday, 5 October – 17:30-18:30

### Opening Ceremony

Congress delegates are invited to attend this ceremony where they will be treated to cultural performances and to opening remarks from invited dignitaries.

Location: Ballroom  
Date: Monday, 6 October – 08:30-10:30

### Welcome Reception

Please join us to celebrate the beginning of the 2014 IUFRO World Congress and to say hello to old and new friends. This informal reception will showcase American cuisine and music.

Location: Hall E  
Date: Monday, 6 October – 18:30-20:30

### Exposition Hall Opening Reception

This Trade Exposition Hall Opening Reception welcomes all IUFRO delegates and the Society of American Foresters and Canadian Institute of Forestry participants. This informal reception is an excellent opportunity to peruse the vendors of the trade exposition and to enjoy unique American food, drink, and music. The reception will take place following the day's In-Congress tour.

Location: Halls A, B & C  
Date: Wednesday, 8 October – 17:30-20:00

### International Student Quiz Bowl

Come watch and cheer on student teams from across the globe test and demonstrate their forestry knowledge.

Location: Convention Center 155-355  
Date: Wednesday, 8 October – 19:00-21:00

### Alumni Receptions

Various universities are organizing receptions. Please check with your alma mater to see if they have one planned. These are not affiliated with the Congress.

Location: Marriott City Creek and Hilton Hotels  
Date: Thursday, 9 October – 19:00-21:00

### Closing Ceremony

All delegates are invited to attend this official closing ceremony where participants will welcome the new IUFRO Board members and learn who will be the host of the 2019 World Congress!

Location: Ballroom  
Date: Saturday, 11 October – 15:30-17:30

### Farewell Gala and Dinner

Enjoy a uniquely western farewell gala and dinner. Delegates from the IUFRO World Congress and the Society of American Foresters/Canadian Institute of Forestry Convention will gather together to experience the music, food, and traditions of the American west. A wide range of food, drink, and entertainment will be provided. Consider dressing in traditional costume as we bid farewell to our new and old friends.

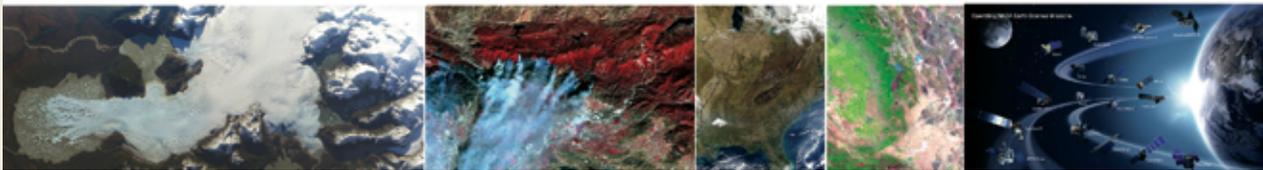
Location: Hall E  
Date: Saturday, 11 October – 18:00-20:30



The NASA Earth Science Division focuses on research and applications uses of satellite and airborne measurements for long-term global observations of the land surface, biosphere, solid Earth, atmosphere, and oceans. NASA conducts and sponsors research, collects new observations, develops technologies and extends science and technology education to learners of all ages. NASA works closely with our global partners in government, industry, and the public to enhance economic security, and environmental stewardship, benefiting society in many tangible ways. The Applied Sciences Program links the research components with partner agencies to foster application and adaptation of NASA-derived capabilities into operational utility.

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## Side Events Program

A diverse set of side events are occurring on the sidelines of the official program. The schedule for these events is below and all are open to registered delegates.

### Monday, 6 October - Side Events

Time	Room	Title	Organizing Institution	Event Lead	Description of Event
18:15-18:45	Ballroom	Wangari Maathai Award Presentation	Collaborative Partnership on Forests	Mita Sen	Presentation of the prestigious Wangari Maathai Award to honour an individual for their outstanding achievements for forests.

### Wednesday, 8 October - Side Events

Time	Room	Title	Organizing Institution	Event Lead	Description of Event
09:00-11:00	Hall E	Metla will become part of the Natural Resources Institute Finland	Finnish Forest Research Institute (Metla)	Erikki Kauhanen	In January 1st, 2015, the Finnish Forest Research Institute (Metla) with the Finnish Game and Fisheries Research (RKTL) and MTT Agrifood Research Finland plus the statistical services of the Information Centre of the Finnish Ministry of Agriculture will merge to form the Natural Resources Institute Finland. The new institute is presented to Metla's international partners.
13:00-17:00	TBD	Joint meeting of U.S. Extension Foresters and IUFRO Extension and Knowledge Exchange Working Party	USDA National Institute of Food and Agriculture	Eric Norland	The U.S. Extension Foresters welcome extensionists who are attending the IUFRO World Congress to a forum to meet and discuss opportunities and challenges in translating forest science into action by landowners and natural resource professionals.

## Thursday, 9 October - Side Events

Time	Room	Title	Organizing Institution	Event Lead	Description of Event
12:00-13:00	150 A	Innovative Developments in Bamboo for Structural Utilization	World Bamboo Organization and Amphibia Group	Susanne Lucas and Hector Archila	The side event will showcase the latest advances in engineered bamboo products development and life cycle assessment tools applied to bamboo products. Experts from industry, academia and the World Bamboo Organization will present these themes and discuss their importance on the future of bamboo as a sustainable alternative to traditional timber.
	150 B	Quantifying and Certifying Ecosystem Services	The Gold Standard	Moriz Vohrer	Carbon, water, biodiversity and erosion protection are all services that forests provide - and are under ongoing pressure. Through quantification and certification their value becomes visible and can be protected more effectively. The interest in these practices increases. This side event explores some of the best practice work done so far.
	Exhibit Hall Stage	Marcus Wallenberg Prize Informational Session	Marcus Wallenberg Prize Committee Sweden	Kaj Rosen and Jeff Burley	The Marcus Wallenberg Prize is awarded annually for a unique research breakthrough that has had or is likely to have a major impact on the forestry and forest products industries. The Prize is 2 million Swedish Crowns and is awarded to one or a small group of scientists. It is an international Prize which beside recognition of the laureate(s) has the intention to stimulate young scientists to engage in forest sector research. The Prize is awarded by the King of Sweden at a glowing ceremony in Stockholm that is followed by a seminar on the topic of the winner. Details of procedures and past winners are shown at <a href="http://www.mwp.org">www.mwp.org</a> .
	250 A	Tropical forest, connecting the world through sustainability	International Tropical Timber Organization	Takeshi Goto and Ramon Carrillo	Interactive panel discussions highlighting the contribution of forest to sustainability of human kind and its interconnections at global level, including provision of goods and services, mitigation and adaptation to climate change, local livelihoods and its contribution to national economies, interconnected timber markets, and trans boundary conservation. A special section will be devoted for the ITTO-IUFRO-FORNESSA project in West Africa.
19:00-21:00	150 B	Forests and water – international momentum and action	Food and Agriculture Organization of the United Nations; IUFRO, ICRAF and the Weyerhaeuser Company	Thomas Hofer	Numerous meetings on forests and water have taken place during recent years, the recommendations of which have been synthesized in a FAO publication entitled 'Forests and Water: International Momentum and Action'. Based on this publication, an international expert group met in Kunming, China, from 24 to 26 March 2014 and developed a concrete 5 year forests and water agenda. During the side event the agenda will be officially presented and further fleshed out from the scientific perspective. Also the building blocks for a forest and water event scheduled to take place at the World Forestry Congress in 2015 in Durban will be finalized.
	150 D	Practical Issues in Implementing Uncertainty Analysis	Quantifying Uncertainty in Ecosystem Studies (QUEST), a Research Coordination Network	Ruth Yanai, David Paré, and George Gertner	We will discuss the decisions required in implementing uncertainty analyses and the compromises required when dealing with real-world applications. Do we need a true value to report error? What error term is relevant (uncertainty in an individual prediction, uncertainty in a mean)? What should we do when the magnitude of some sources of uncertainty is unknown?

## Thursday, 9 October (Cont.) - Side Events

Time	Room	Title	Organizing Institution	Event Lead	Description of Event
19:00-21:00	150 E	Workshop on Trade and Forest Health	Food and Agriculture Organization of the United Nations	Shiroma Sathyapala	A workshop to introduce the e-learning course "Trade in forest commodities and the role of phytosanitary measures and provide the examples of its implementation in different regions in the world. The course contains five modules covering everything from the possible threats to forest health associated with international trade to what information is needed to safely import/export forest products. The e-learning course was based on the "Guide to implementation of phytosanitary standards in forestry" developed by FAO and its partners in collaboration with the with the International Plant Protection Convention (IPPC). In addition there will be a presentation on abiotic factors affecting the forest Health and possible remedial actions.
	250 A	ITTO and CITES collaboration to sustain tropical tree species	International Tropical Timber Organization	Steve Johnson	The International Tropical Timber Organization (ITTO) and the Convention on International Trade in Endangered Species (CITES) have been collaborating for nearly a decade to assist countries to improve management of tropical tree species listed in the CITES Appendices. This event will review progress achieved by this collaborative program throughout the tropics.
	250 B	Enabling Productive Uses of Forests that Reduce Poverty, Create Jobs and Build Resilience	PROFOR - Program on Forests	Diji Chandrasekharan Behr and Tuukka Castren	Productive uses of forests' can contribution to growing local, national, and regional economies. We need to seize opportunities for expanding the contribution of productive uses of forests to green, inclusive and resilient growth. Join a panel of experts to learn more these opportunities and potential contribution of forests, and to discuss how we can collectively engage in this area of work.
	250 C	Celebrating 20 years of FSC Impacts on Forests and People	Forest Stewardship Council	Anakarina Pérez Oropeza	FSC is celebrating 20 years of continuous efforts to find solutions that benefit people and forests worldwide. In this session FSC and keynote speakers will share experiences and findings highlighting FSC's impacts globally over these two decades.
	250 D	Bioeconomy and the forest sector – an overview	Nordic Forest Research (SNS) and Scandinavian Journal of Forest Research	Mats Hannerz	The seminar gives an overview of the bioeconomy concept by reviews of social challenges, policy issues, biological constraints and options, and industrial innovations. The qualified speakers have summarized their fields in a special journal issue, launched at the seminar.
	250 E	Wood Culture Technical Session	International Wood Culture Society	Howard Rosen	This special evening session will continue with the theme of Session 5 Wood and forest culture: merging the past with the present. The session will include several technical talks, a general talk about World Wood Day programs around the world, as well as have artisans doing craft demonstrations.
	250 F	Towards strengthened international science collaboration on planted forests – Main research questions from a stakeholder perspective	European Forest Institute	Christophe Orazio and Stephanie Hayes	The meeting will summarize the outcomes of the 3rd International Congress on Planted Forests 2013 (ICPF), explore the views of the private forestry sector, and discuss options for further collaboration with IUFRO.

## Friday, 10 October - Side Events

Time	Room	Title	Organizing Institution	Event Lead	Description of Event
12:00-13:00	150 A	Shelterbelts' roles, functions, and options to combat climate change	University of Agricultural sciences, Dharwad, Karnataka, India	Shivanna Honnurappa	The shelterbelts are essentially required in the arid and semiarid regions of the world. They also required in both tropical and temperate conditions to normalise the environmental impacts on crops, microclimate change, crop growth and conservation of water, soil, biomes, birds, microbes also they shelter for birds, wild animals, butterflies, honey bees and other creatures in and around them. Hence it is an event to encourage the scientific mass to motivate the issues at farmers level may be in community based or as an official programme as done in Canada. Globally promotional events are essentially required. So .....the proposal.
	150 B	Gender Lens Photo Book Launch	CGIAR	Purabi Bose	International Center for Tropical Agriculture (CIAT) is one of the 15 CGIAR centers with headquarter office in Colombia. The photobook launch as part of IUFRO's side event will be part of CIAT's Forests, Trees and Agroforestry integrating Gender (FTA Gender). CIAT's FTA is taking an initiative to do science with a difference - publishing a photo book as an output of the International Photo Competition 2014 on 'Forest-Agriculture Interface through Gender Lens'. The photobook will be key output of our photo competition with 100 photos that best showcase (success and failure) of forest-agriculture interface with gender as a cross-cutting theme across the globe. For details kindly check this blog <a href="http://dapa.ciat.cgiar.org/international-photo-competition_purabi-bose/">http://dapa.ciat.cgiar.org/international-photo-competition_purabi-bose/</a>
	150 C	Web services and workflows in biodiversity and ecosystem science: A technology showcase	BioVeL	Hannu Saarenmaa	Shared data and models on Internet can be combined with automated workflows to perform complex computational tasks. In this showcase the BioVeL project demonstrates use of workflow technology in ecological niche modelling of forest pests, carbon modelling with the Biome-BGC model, and accessing and sharing data through GBIF and GEOSS.
	250 B	FAO Open Foris Initiative: free tools for forest monitoring	Food and Agriculture Organization of the United Nations	Danilo Mollicone	Open Foris is an FAO-led initiative to develop and share tools and methods for forest monitoring. These tools are already being used to support more than 20 (or is it 40 already?) countries in gathering, analyzing and disseminating reliable information on the state of forest resources. Emphasis is placed on building sustainable capacity through free sharing of all tools and methods, documentation and source-code, thus promoting self-sufficiency, transparency and vendor independence. Open Foris tools are available for everyone without restrictions. Therefore the initiative supports also educational and research institutions as they can apply the tools and even develop them further. Practical examples of Open Foris applications will be presented.
	250 C	Forest Landscape Restoration as a strategy for mitigating and adapting to climate change	IUFRO and World Resources Institute	Michael Kleine	Forest landscape restoration (FLR) aims to improve both ecological integrity and human wellbeing. To this end, a group of IUFRO scientists has developed a framework to demonstrate how FLR can contribute to climate change mitigation and adaptation. This communication tool should help decision-makers to build resilient landscapes and learn how climate objectives can be addressed through FLR. The results presented in this side event are based on work of a collaborative project between the World Resources Institute and IUFRO funded by the German Ministry of Environment.

## Friday, 10 October - Side Events

Time	Room	Title	Organizing Institution	Event Lead	Description of Event
19:00-21:00	250 A	Implementing a Global Plan of Action for Forest Genetic Resources	Bioversity International	Judy Loo	Short presentations: Highlights of the first State of the World's Forest Genetic Resources (FGR) report; Global Plan of Action (GPA) and its implementation; linking to international agendas; key issues in conservation and sustainable use of FGR. Presentations will be followed by discussion on implementing the GPA.
	250 B	IBFRA: International Boreal Forest Research	International Boreal Forest Research Association	Rasmus Astrup	This is a side event arranged by IBFRA in order to foster increased international collaborative research on boreal forest. The side event will combine 3 short keynotes on the research frontier in boreal forest research; introduce new IBFRA research and network activities combined with discussions related to the future needs for boreal forest research.
	250 C	Understanding the resilience of disturbed forests in the tropics	TmFO and its partners	Plinio Sist and Robert Nasi	TmFO aims to assess the impact of logging on forest dynamics, carbon storage and tree species composition at regional level in the Amazon basin, Congo basin and South East Asia. This side event will present this new forest observatory as well as the first results of the research and will give the opportunity to the participants to share ideas and experience of this issue.
	250 D	Developments and the way forward: Establishment of the International Union of Agroforestry	World Agroforestry Centre (ICRAF)	Margaret Kroma	The establishment of an International Union of Agroforestry (IUAF) was proposed and approved in Delhi, India in February 2014 at the World Agroforestry Congress. To formally establish the IUAF, discussions around finalization of a charter and development of requisite institutional infrastructure and resource mobilization mechanisms are necessary. The purpose of the meeting is to engage professionals in the wider community of interest in agroforestry for constructive input of constructive ideas and actions towards these ends.



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## IN-CONGRESS TOURS

Tour #	Title	Area
IC-01-A	Alpine Hydrology & Snow Science	Little Cottonwood Canyon
IC-01-B	Alpine Hydrology & Snow Science	Little Cottonwood Canyon
IC-03	Nature-Based Tourism	Little Cottonwood Canyon
IC-04	Forests to Faucets - Watershed Management	Big Cottonwood Canyon
IC-05	Urban Forest Research and Management	Big Cottonwood Canyon
IC-06	Tourism and Recreation Management - morning	Big Cottonwood Canyon
IC-06	Tourism and Recreation Management - afternoon	Big Cottonwood Canyon
IC-07	Urban Forest Watershed Management	Big Cottonwood Canyon
IC-08	Great Salt Lake Hydrology and International Bird Migration	Antelope Island State Park
IC-09	Salt Lake City Urban Forests	Salt Lake City
IC-10	Walter Mueggler Research Natural Area Hike	Big Cottonwood Canyon
IC-11	A Changing Scene: Forest Health in the High Uinta Mountains	Mirror Lake Scenic Byway
IC-12	Forest Operations and Recreation Management	Mirror Lake Scenic Byway
IC-13	Wildland Fire Management and Post-Fire Restoration	American Fork Canyon
IC-14	Shrublands Research and Restoration	Provo and American Fork Canyon
IC-15	Wasatch Plateau 1 - managing for multiple uses	Spanish Fork Canyon
IC-16	Wasatch Plateau 2 - managing for multiple uses	Spanish Fork Canyon
IC-17	Aspen Reproductive Ecology and Genetics	Fish Lake National Forest & PandoClone
IC-18	Pinyon Juniper Ecology and Management	Beaver/ Southern Utah
IC-19	Arches National Park (not scientific)	Moab
IC-20	Capitol Reef National Park (not scientific)	Capitol Reef
IC-21	Pinion Juniper Treatment, Mobile Pyrolysis, and the Great Salt Lake Marina	South of Salt Lake City
IC-22	Aspen in Logan Canyon: Historical Impacts and Modern Indicators	Logan Canyon
IC-23	Forest Assessment, Inventory and Monitoring	Logan Canyon/ Ogden Valley
IC-25	Forest Health in Northern Utah	Logan Canyon/ Bear Lake
IC-26	Forest Operations and Management in Northern Utah	Logan Canyon/ Bear Lake
IC-27	American West Heritage Center (not scientific)	Logan

Stops	Depart	Return	Tour Lead(s)
Snowbird Ski Area; Alta Ski Area	8:00	14:30	Kelly Elder
Snowbird Ski Area; Alta Ski Area	8:00	14:30	Mike Jenkins
Snowbird Ski Area; Alta Ski Area	9:30	17:30	Dan Williams
Silver Lake Visitor's Center; Brighton Ski Area; Big Cottonwood Water Treatment Plant	8:30	14:00	Tracie Kirkham
Spruces Campground; Brighton Ski Area	9:15	16:00	Sarah Hines
Silver Lake Visitor's Center; Brighton Ski Area	8:00	12:30	Steve Burr & Cathy Kahlow
Silver Lake Visitor's Center; Brighton Ski Area	13:00	17:15	Steve Burr & Cathy Kahlow
Spruces Campground; Silver Lake Visitor's Center	13:00	17:30	Charlie Condrat
Antelope Island; Garr Ranch	8:45	15:00	Alex Hoppus
Redwood Natural Area; Red Butte Gardens; University of Utah	8:30	16:00	Meridith Perkins & Mike Kuhns
Spruces Campground; Mueggler-Butler Fork RNA, Mt. Olympus Wilderness	7:45	15:00	Wayne Padgett & Steve Shelly
Pine Valley Campground; Camp Rogers; Washington Lake Campground	7:45	17:30	Liz Hebertson
Blizzard Lumber; Mirror Lake Overlook	9:00	16:45	Nate Anderson
Northern Interagency Fire Center; Quail Fire - City of Alpine; Mutual Dell; Tibble Fork Campground; Cascade Springs	8:30	16:00	George Garcia
Forest Service Shrub Sciences Laboratory; Brigham-Young University Arboretum; Mutual Dell Campground	8:00	15:00	Susan Meyer
Schofield State Park; Winter's Quarters Cemetery; Old Folks Flat Campground	7:30	17:00	Stan Kitchen
Price History Museum; Old Folks Flat Campground; Huntington Reservoir	7:30	19:00	Rosann Fillmore & Charmaine Thompson
Salina Overlook; PandoClone; Fish Creek Campground	6:00	17:30	Karen Mock
Freemont Indian State Park; Cove Fort Pioneer Settlement; Beaver treatment zone; Beaver equipment demonstration	7:00	19:30	Doug Page
Arches National Park; Moab	6:15	19:00	N/A
Capitol Reef National Park	6:30	18:30	N/A
Great Salt Lake Marina; Stockton Treatment Area; Clover Springs Campground; Pony Express Stop	7:15	16:30	Darren McAvoy
Forest Service Logan Ranger District Office; Tony Grove; Limber Pine Trail	8:15	18:30	Paul Rogers
Tony Grove; Beaver Ski Area; Bear Lake Overlook; Randolph; Monte Cristo Overlook	8:15/9:00	19:15/20:00	John Shaw
Tony Grove Lake; Beaver Ski Area; Bear Lake Overlook; Immigration Pass; Dayton Plantation	6:30	19:15	Barbara Bentz
Logan Canyon; Bear Lake Overlook; Treatment Areas; Jensen Lumber Company	6:30	16:30	Mike Battaglia
American West Heritage Center	10:00	18:30	N/A

Post-Congress Tours are available on a first-come, first serve basis. Visit [westernleisure.com](http://westernleisure.com) and reserve your spot today!

## Post-Congress Tours

We have partnered with Western Leisure to bring delegates an outstanding set of post-congress tours. These tours have limited capacity and are available on a first-come, first-serve basis directly through Western Leisure. Any and all questions about these tours should be directed to Keith Griffall, Western Leisure CEO, at [keith@westernleisure.com](mailto:keith@westernleisure.com), visit the tour website at [www.westernleisure.com/store/iufro2014/](http://www.westernleisure.com/store/iufro2014/), or stop by the Tours desk in the registration area for more information.

### Yellowstone, Tetons & Jackson Hole

3 Days, 2 Nights – October 12-14

### National Parks Spectacular

4 Days, 3 nights – October 12-15

### International Wood Culture Society

3 days, 2 nights – October 12-14

## Accompanying Persons Program and Daily Tours

An exciting Accompanying Persons Program is offered on Tuesday, Thursday, and Friday of the Congress. Registered Accompanying Persons may select one (1) tour from the following list, free of charge, as part of the Accompanying Persons registration fee. They may also purchase any other tours they wish to attend. The In-Congress tour on Wednesday, 8 October is also included in the Accompanying Persons registration fee. Additional tours may also be purchased onsite at the Tour Help Desk or during the registration process.

Full Congress delegates may also choose to purchase these tours. Please visit the Tour Help Desk to purchase.

### AP-01: Park City and Utah Olympic Park

Date: 7 October, 2014 – 13:00-17:30, 4.5 hours

Cost: \$57.00 USD per person

### AP-02: Antelope Island, Great Salt Lake and Ogden Union Station

Date: 9 October, 2014 – 09:00-16:30, 7.5 hours

Cost: \$74.00 USD per person

### AP-03: Great Salt Lake and Salt Lake City

Date: 9 October, 2014 – 13:00-17:00, 4 hours

Cost: \$42.00 USD per person

### AP-04: Gardens of Salt Lake with Temple Square & Red Butte

Date: 10 October, 2014 – 08:00-12:00, 4 hours

Cost: \$52.00 USD per person

### AP-05: Snowbird Resort and Tram to the Top of the Wasatch

Date: 10 October, 2014 – 13:00-17:30, 4.5 hours

Cost: \$67.00 USD per person

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*Section #5*  
**DAILY SCIENTIFIC PROGRAM**

## Technical Sessions

are held in two time blocks, 08:00-10:30 & 15:30-18:00, on Monday, Tuesday, Thursday & Friday; and on Saturday from 08:00-10:30.

**Poster Presentations & Viewing Sessions** will be held Tuesday and Friday during the lunch break.

The scientific program for the XXIV IUFRO World Congress will consist of plenary, sub-plenary, technical, and themed poster sessions. The program reflects diverse contributions from the forest science community across the full range of natural and social science disciplines.

**Sessions are organized around the Congress themes:**

- Forests for People
- Forest Biodiversity and Ecosystem Services
- Forests and Climate Change
- Forest and Water Interactions
- Forest Biomass and Bioenergy
- Forests and Forest Products for a Greener Future
- Forest Health in a Changing World

## Plenary Sessions

Keynote plenary sessions on Monday, Tuesday, Friday, and Saturday from 11:00-12:00. In addition to the traditional IUFRO plenary sessions, a joint plenary session, co-organized by IUFRO, the Society of American Foresters, and the Canadian Institute of Forestry, will be held on Thursday from 08:30-12:00. Please see the next few pages for plenary speaker biographies and information.

## Sub-Plenary Sessions

Unique sub-plenary sessions will be offered each day (excluding Wednesday for the In-Congress Tours). These sessions will provide a broad overview of the state of knowledge on key issues related to each of the Congress themes.

## Technical Sessions

168 technical sessions, featuring the latest advances in forest and natural resources science will be offered. IUFRO delegates are invited to participate in any of the Society of American Forester/Canadian Institute of Forestry offered and co-located technical sessions, 8-11 October.

## Poster Sessions

Poster presentations will be held in in Hall 1 from 12:00-13:30 on Tuesday and Friday and in selected technical sessions during the week.

## Responsibilities of Presenters

Oral presentations must be loaded into the presentation management system at least 24 hours before their scheduled session. The presentation management system is available online or you can visit the Speaker Ready room provided in the Salt Palace (Room 254B). Technical staff will be available in the room to provide assistance. Posters should be placed in the poster hall no later than 12:00, 6 October. Detailed instructions for all presenters can be found at: <http://iufro2014.com/scientific-program/presentation-guidelines/>

# Plenary Speaker Information

## IUFRO 2014 Congress Keynote Speakers

### Andy Buchanan

#### *Modern Timber Buildings from Sustainable Forests*



Dr. Andy Buchanan is Professor of Timber Design at the University of Canterbury, New Zealand. He is a structural engineer with a broad range of interests in timber engineering, sustainability, fire safety, and earthquake engineering. He has led the development of post-tensioned timber for multi-story buildings. Dr. Buchanan's current research supports the construction of innovative timber buildings in Australia and New Zealand, including the rebuilding of Christchurch after recent devastating earthquakes. He has a B.E. (Honors) degree from the University of Canterbury, a Master's degree from the University of California at Berkeley, and a Ph.D. from the University of British Columbia, Canada. Prior to joining the University of Canterbury in 1987, he was a consulting engineer in private practice, involved in structural design of a wide range of buildings. He has wide experience with conservation groups, the timber industry, and the building construction industry. He is Research Director of the Structural Timber Innovation Company, past President of the New Zealand Timber Design Society, and is a Distinguished Fellow of IPENZ, the Institution of Professional Engineers New Zealand. Dr. Buchanan received a 2013 New Zealand Institute of Architects (NZIA) President's Award in recognition of his significant contribution to architecture in the built environment in New Zealand.

Date: Monday 6 October

Session Chair: Andrew Wong

### David Newbery

#### *On maintaining cycles and feedbacks in tropical forest ecosystems: some thoughts from basic research*



Dr. David Newbery is Professor for Vegetation Ecology at the Institute of Plant Sciences, University of Bern, Switzerland, with special focus on tropical forest ecology. His other areas of expertise lie in data analysis and theoretical ecology. Dr. Newbery's work focuses on basic research, though sometimes with view to application in forest management. Three features of his publications are: a long-term commitment through field work at key sites, the ecosystem-community level of enquiry, and the corresponding theory and statistical modeling involved. He was formerly editor of *Journal of Tropical Ecology*. In 1985 he initiated a research program at Danum Valley, Sabah, Malaysia, and continues research there today. This site now has a world-class tropical research station. Dr. Newbery has had a detailed program of forest research in Korup National Park in southwest Cameroon since 1984. This site is in one of Africa's most significant refugia. The central aim overall has been to reach a deeper understanding of tree growth and survival, and forest dynamics, set in an ecosystem framework. These topics and experiences have strongly shaped his ongoing interests in the philosophy of science applied to problems of ecosystems dynamics.

Date: Tuesday 7 October

Session Chair: Su See Lee

**Carol J.P. Colfer***The People and Forests Trajectory- 1994-2014 and Beyond*

Carol J. Pierce Colfer is a Senior Associate at the Center for International Forestry Research and a Visiting Scholar at Cornell University's Southeast Asia Program in Ithaca, New York. She received her MA and PhD in Cultural Anthropology at the University of Washington (Seattle, Washington, 1974), and in 1979, received a second Masters in International Public Health from the University of Hawaii. Her professional life has been interdisciplinary and international in nature, including long stints of ethnographic fieldwork in the forests of Washington State (rural US) and Indonesia (Borneo, Sumatra). Beginning in 1994, with her employment at CIFOR, she began to focus on comparative research, looking at criteria and indicators for sustainable forest management, decentralization and devolution, human health, rights and resources, and landscapes. From 1998-2002, she co-developed and led the adaptive collaborative management program spanning 30 sites in 11 countries, with some 90 collaborators (described in *The Complex Forest and The Equitable Forest*, 2005). Her most recent book is *Collaborative Governance of Tropical Landscapes* (edited with Jean-Laurent Pfund, 2011). Her current work focuses on the governance and equity aspects of landscape management in southern Sulawesi, Indonesia. At Cornell she has contributed to a doctoral program on poverty alleviation and food security in East Africa; an evolving Cornell-Makerere University program (GREAT) to provide faculty with training on gender; and various doctoral committees.

Date: Friday 10 October  
 Session Chair: Daniela Kleinschmidt

**Cecil C. Konijnendijk van den Bosch***City Forests, Forest Cities – exploring the complex liaison between the sylvan and the urban*

Dr. Konijnendijk, a Dutch national based in Sweden, holds the post of Head of the Department of Landscape Architecture, Planning and Management at the Swedish University of Agricultural Sciences. He is also part-time professor of green space management at the University of Copenhagen. Dr. Konijnendijk has a M.Sc. in forest policy from the University of Wageningen, Netherlands, and a D.Sc. (in forest policy and economics) from the University of Joensuu, Finland. His past affiliations include Wageningen University, the European Forest Institute, and his own consulting firm. During his career, Dr. Konijnendijk has studied and promoted the role of forests, trees, and other green spaces in urban societies. He has a special interest in the concepts of urban forestry and urban greening, green space and forest governance, urban ecosystem services, as well as communication and public involvement issues. Dr. Konijnendijk is the (founding) editor-in-chief of the scientific journal *Urban Forestry and Urban Greening*, published by Elsevier since 2002. His over 250 scientific and professional publications have included the co-edited textbook *Urban Forests and Trees* and the book *The Forest and the City: The cultural landscape of urban woodland*. Dr. Konijnendijk has been involved in networking and project activities across the globe.

Date: Saturday 11 October  
 Session Chair: Tuija Sievänen



## Joint Plenary with SAF & CIF

*Note: Different plenary start and end time: 08:30-10:30 & 11:00-12:00*

Date: Thursday 9 October

Keynote Speakers: 08:00-10:30: Jack Dangermond and David George Haskell

Panel: 11:00-12:00: Jack Dangermond, David Haskell, Mila Alvarez, Sally Collins & Mike Wingfield

Moderator: Nalini Nadkarni

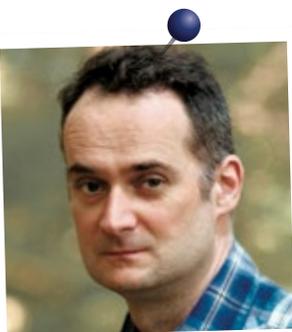
### *Knowledge Discovery, Synthesis, and Application at the Forest Science/Management Interface*

#### Jack Dangermond – Keynote Speaker



Mr. Jack Dangermond is the founder and president of Esri, the widely recognized leader in geographic information system (GIS) technology. More than one million users in over 300,000 organizations use Esri products worldwide. A pioneer in spatial analysis methods, Mr. Dangermond is one of the world's most influential people in GIS. He and his wife Laura Dangermond actively manage Esri as co-owners. For more than 40 years he and his team of forest experts have worked with foresters from around the world to create geospatial tools that improve forest management. Mr. Dangermond is a member of many professional organizations and has served on many advisory committees for U.S. agencies. Mr. Dangermond has a Master of Architecture degree from the Institute of Technology at the University of Minnesota and a Master of Science degree in landscape architecture from the Graduate School of Design at Harvard University. In addition, he holds ten honorary doctorates. Having taken a leadership role in national and global initiatives to facilitate standards for data access and sharing across agencies, Mr. Dangermond has received numerous awards. Among these are the Distinguished Public Service Award from the Secretary's Open Forum of the U.S. Department of State, and the Alexander Graham Bell Medal from the National Geographic Society. Mr. Dangermond is forging ahead with GIS platforms on which people collaborate to design plans for maintaining a green and sustainable planet.

#### David George Haskell – Keynote Speaker



David Haskell's work integrates scientific and contemplative studies of the natural world. His book, *The Forest Unseen: A Year's Watch in Nature*, was a finalist for the 2013 Pulitzer Prize in non-fiction. The book was the winner of the 2013 Reed Environmental Writing Award, the 2012 National Outdoor Book Award for Natural History Literature, and was runner-up for the 2013 PEN/E. O. Wilson Literary Science Writing Award. A profile in *The New York Times* said of Haskell that he "thinks like a biologist, writes like a poet, and gives the natural world the kind of open-minded attention one expects from a Zen monk rather than a hypothesis-driven scientist". Haskell holds degrees from the University of Oxford and from Cornell University. He is Professor of Biology at the University of the South. He is a Fellow of the American Council of Learned Societies and was granted Elective Membership in the American Ornithologists' Union. His scientific research on animal ecology, evolution and conservation has been sponsored by the National Science Foundation, the Environmental Protection Agency, the Fish and Wildlife Service, and the World Wildlife Fund, among others. He has also served on the boards and advisory committees of local and regional land conservation groups. In 2009, the Carnegie and CASE Foundations named him Professor of the Year for Tennessee. The *Oxford American* featured him as one of the southern U.S.'s most creative teachers (2011). He lives in Sewanee, Tennessee, with his wife, Sarah Vance who runs Cudzoo Farm, a homestead farm that produces hand-made goat milk soaps.



### **Mila Alvarez – Panelist**

Mila Alvarez is the Principal of Solutions for Nature, a consulting firm specialized in research and analysis in the fields of domestic and international natural resources policy, management and decision-making. Dr. Alvarez is also a Professor at Virginia Polytechnic Institute and State University, Center for Leadership in Global Sustainability, College of Natural Resources. Alvarez holds a Ph.D. in Forest Resources from the University of Maine and a Master-Bachelor degree in Forest Engineering from the Polytechnic University of Madrid, Spain.



### **Sally Collins – Panelist**

Sally Collins served as the first Director of the USDA Office of Environmental Markets (OEM) prior to retiring from USDA. She has spent more than 25 years in natural resource management, in such positions as Forest Supervisor of the Deschutes National Forest and as Associate Chief for the U.S. Forest Service. Ms. Collins currently owns a consulting firm dedicated to international forestry and ecosystem services valuation. She works as a Fellow with Rights and Resources Initiative (RRI) to help the largest forested countries of the world establish secure tenure arrangements and laws for their forested estates and is co-chair of MegaFlorestais, an organization established to informally connect the top forest leaders in the world.



### **Mike Wingfield – Panelist**

Dr. Michael (Mike) Wingfield has conducted research on tree pests and pathogens especially concerning their global movement for more than thirty years. Among his most important contributions to forestry has been his role as an advisor to more than 60 Ph.D. students. He is the founding Director of the Forestry and Agricultural Biotechnology Institute in South Africa. He has published widely on the topic of tree health in more than 700 research papers and seven books. Dr. Wingfield has been recommended to the IUFRO International Council as the next IUFRO President.



### **Nalini Nadkarni – Moderator**

Dr. Nalini Nadkarni has been both a pioneer in forest canopy studies and in communication of forest canopy research to scientists and the public. In 2011, she became the Director of the Center for Science and Mathematics Education, and a Professor of Biology at the University of Utah. She has published over 100 scientific articles and three scholarly books, including "Between Earth and Sky: Our Intimate Connections to Trees". Dr. Nadkarni is deeply committed to public engagement with science. In 1994, she founded the International Canopy Network, an NGO to foster communication among researchers, educators, and conservationists.



# Technical Sessions by Theme

## Monday 6 October - Technical Session Overview

### Afternoon 15:30-18:00

#### Forests For People

- A-02: Forests And Human Health: The Role Of Research Towards Evidence-Based Practice
- A-04: Resilience And Identity With Urban Forests: A Landscape System Approach
- A-06: Forest-Dependent Community Development
- A-17: Linking Landscape, Forests And People: The Historical Roots Of Biocultural Diversity
- A-21: Coppice Forests - A Tradition With Future
- A-25: Reforming Forest Tenure And Governance For Mitigating Climate Change And Improving People's Livelihoods
- A-30: Achieving Policy Integration Across Fragmented Domains: Forest Policy Perspectives
- A-35: The Social Education Of Foresters

#### Forest Biodiversity And Ecosystem Services

- B-04: Long-Term Forest Research On Forest Ecosystem Management
- B-11: Forest Management For Wildlife Conservation
- B-14: Ecosystem Services Provided By Planted Forests

#### Forests And Climate Change

- C-05: Gender, Participation And Climate Change
- C-09: Dendrochronology: Detecting And Modelling Climate Change And Fire Impacts
- C-22: Advances In Forest Carbon Measurements And Monitoring For Building REDD+ MRV Systems
- C-24: Adaptive Forest Management Under Climate Change – Networking From Local To Global Scales In The Temperate Zones

#### Forests And Water Interactions

- D-01: Long-Term Watershed Studies: What Have We Learned About Eco-Hydrological Functioning

#### Forest Biomass And Bioenergy

- E-03: Evaluation Of Environmental Impacts Of Production And Use Of Wood Products And Wood Energy
- E-07: Genomics And Biotechnology For Improvement Of Woody Energy Crops

#### Forests And Forest Products For A Greener Future

- F-06: Impact Of Forest Certification On Sustainable Forest Management
- F-16: Bio-Based Composite And Engineered Products From Wood And Non-Wood Forest Resources
- F-17: Recovery, Reuse, And Recycling Of Wood Products For A Greener Future

#### Forest Health In A Changing World

- G-01: Air Pollution As A Factor Affecting Global Forest Health
- G-10: Multiple Risk Management In Planted Forests

#### Student Incubator Sessions

- I-1: IUFRO Incubator 1

## TUESDAY 7 OCTOBER – TECHNICAL SESSIONS OVERVIEW

### MORNING 08:00-10:30

#### Forests For People

A-01: Forests And Human Wellbeing: Life Satisfaction And Behavioral Approaches

A-03A: The Value And Challenges Of Integrating Food And Medicinal Forest Products Into Forest Management

A-05: Challenges And Opportunities In Forest Management And Utilization In Rapidly Changing Asian Economies

A-18A: Value Of Traditional Knowledge For Sustainable Forest Management

A-20A: On Farm Trees: Towards The Promotion And Development Of A Traditional Or Local Silviculture In Tropical And Subtropical Forest Regions

A-27A: International To Local Forest Governance: Taking Stock Of Political Theories, Methodologies And Research Findings

A-38: How To Make Forest Science Available For All? Publishers', Editors', And Authors' Challenges

#### Forest Biodiversity And Ecosystem Services

B-05A: The Benefits Of Introducing The Ecosystem Service Concept In Forest Management And Planning At Different Spatial Scales

B-07A: Silvicultural Practices To Facilitate Forest Restoration

B-19A: Forests, Roots And Soil Carbon

#### Forests And Climate Change

C-04: Addressing The Drivers Of Deforestation: Exploring Synergies Between REDD+ And Forest Policy

C-08: Managing Forest For Fire In A Changing Climate

C-17: New Developments In The Use Of Remote Sensing And National Forest Inventories For Estimation And Mapping.

C-19: Implementation Of Silvicultural Treatments And Their Effects Into Forest Growth Models

C-26: Forest Owners And Climate Change Adaptation

#### Forests And Water Interactions

D-05A: Managing Forests And Forest Uses To Protect And Provide Clean Water

#### Forest Biomass And Bioenergy

E-01A: Sustainable Biomass For Energy And Industrial Raw Materials

E-08A: Biobased Products And Bioenergy

#### Forests And Forest Products For A Greener Future

F-05: Gender And Forestry Value Chains

F-18: Emerging Green And Sustainable Alternatives To Classical Wood Preservative To Protect Forest Products

#### Forest Health In A Changing World

G-07: Is Climatic Change Modifying The Characteristics Of Insect Damage In Forests?

G-16: Forest Health In Changing Landscapes: The Roles Of Landscape Patterns

#### Student Incubator Sessions

I-2: IUFRO Incubator 2

## TUESDAY 7 OCTOBER - TECHNICAL SESSIONS OVERVIEW

### AFTERNOON 15:30-18:00

#### Forests For People

A-03B: The Value And Challenges Of Integrating Food And Medicinal Forest Products Into Forest Management

A-09: Communities, Forests, Forest Industries And The Social License To Operate

A-13: Innovative Planning And Managing Approaches For Sustainable Tourism In Forests And Natural Areas

A-18B: Value Of Traditional Knowledge For Sustainable Forest Management

A-20B: On Farm Trees: Towards The Promotion And Development Of A Traditional Or Local Silviculture In Tropical And Subtropical Forest Regions

A-27B: International To Local Forest Governance: Taking Stock Of Political Theories, Methodologies And Research Findings

A-34: Forestry Education Serving Science And Practice

#### Forest Biodiversity And Ecosystem Services

B-05B: The Benefits Of Introducing The Ecosystem Service Concept In Forest Management And Planning At Different Spatial Scales

B-07B: Silvicultural Practices To Facilitate Forest Restoration

B-19B: Forests, Roots And Soil Carbon

#### Forests And Climate Change

C-01: Climate Change: A Driver For Land-Use Change And Adaptive Forest Management On Six Continents

C-07: Forests, Fire And Climate Change Dynamics

C-14: Forest Biomass And Carbon Inventory On Successive Occasions

C-21: Complying With The IPCC Good Practice Guidance For Tropical Carbon Stock Inventories

#### Forests And Water Interactions

D-05B: Managing Forests And Forest Uses To Protect And Provide Clean Water

#### Forest Biomass And Bioenergy

E-01B: Sustainable Biomass For Energy And Industrial Raw Materials

E-08B: Biobased Products And Bioenergy.

#### Forests And Forest Products For A Greener Future

F-10: Precision Land-Use Management - State And Perspectives

F-13: Planted Forests: Meeting Future Global Forest Product Needs Sustainably

#### Forest Health In A Changing World

G-02: Ozone And Forest Health

G-11: Societal Impacts Of Invasive Forest Pathogen And Pests

G-17: Changes In Distributional Ranges In A Changing World

#### Student Incubator Sessions

I-3: IUFRO Incubator 3

## THURSDAY 9 OCTOBER - TECHNICAL SESSIONS OVERVIEW

### MORNING 08:00-10:30

#### Forests For People

A-14: Integrating Landscape Protection, Nature-Based Recreation And Tourism, And Rural Development

A-19: Wood And Forest Culture: Merging The Past With The Present

A-26: Impact Of Tenure Arrangements On Forests, Livelihoods And Gender Dynamics

#### Forest Biodiversity And Ecosystem Services

B-12: Forest Management In Montane Communities.

B-18: Ecology And Dynamics Of Dead Wood Dependent Species At Multiple Trophic Levels – Promoting Natural Pest Control In Managed Forests Or Increasing Hazards?

#### Forests And Climate Change

C-16: Remote Sensing In Carbon Balance Evaluation And Monitoring

C-20: National Forest Sector Greenhouse Gas Inventories Following IPCC Guidance And Guidelines: Requirements, Methods, And National Examples

#### Forests And Water Interactions

D-02A: Conceptual Frames And Research Strategies For Integrated Studies Of Adaptation To Drought

#### Forest Biomass And Bioenergy

E-04A: Forest Biomass Supply Chains: Practice, Economics, And Carbon Balance

#### Forests And Forest Products For A Greener Future

F-09A: Sustaining Bamboo And Rattan Resources

F-15: Applications Of Nanotechnology And Biotechnology In Forest Products Research

#### Forest Health In A Changing World

G-06: Mechanisms Of Tree Defense Across Forest Insect Feeding Guilds: Can A Comparative Approach Help Predict Responses To Climate Change?

G-14A: Impact And Monitoring Of Forest Pests And Pathogens In A Changing World

## THURSDAY 9 OCTOBER - TECHNICAL SESSIONS OVERVIEW

### AFTERNOON 15:30-18:00

#### Forests For People

A-07: The Social Outcomes Of Community Forestry: What Do We Know And How Do We Know It?

A-15: The Future Of Recreation In Forests And Other Nature Areas

A-24: Smallholders And Forest Landscape Transitions: Locally Devised Development Strategies Of Tropical America

A-28: Ineffective International Forest Policy? The Role Of Forest Information, International Law And Politics

A-33: Richer Economies, Better Environmental Policies? Analyzing The "Environmental Question" In Forest Policy In OECD Countries

#### Forest Biodiversity And Ecosystem Services

B-02: Urban Forest Diversity And Ecosystem Services

B-08: Forest Regeneration: Challenges And Prospects

B-10: How Does Biodiversity Help To Manage High-Value Timber Species, And Vice-Versa?

B-15: Forest Ecosystem Services Contributing To Agriculture

B-17: Salamanders: World Icons Of Aquatic Biodiversity In Forests

#### Forests And Climate Change

C-06: Boreal At Risk: Integrative Science As A Strong Foundation For Public Policy Development

C-10: Vegetation Zone Shifts In Response To Climate Change

C-23A: Forest Management For Adaptation To Climate Change

C-25: Forest Management Options To Tackle Climate Change

#### Forests And Water Interactions

D-02B: Conceptual Frames And Research Strategies For Integrated Studies Of Adaptation To Drought

D-09: Ecology And Management Of Coastal Forests And Mangroves

#### Forest Biomass And Bioenergy

E-04B: Forest Biomass Supply Chains: Social And Economic Aspects Of Forest Biomass For Fuelwood And Domestic Heating Applications.

#### Forests And Forest Products For A Greener Future

F-01: Innovation In The Forest Sector: Maximizing The Sector's Competitiveness

F-09B: Sustaining Bamboo And Rattan Resources

F-12: Intensive Or Ecosystem-Based Forest Management – Impact On Yield, Wood Quality And Economic Return?

#### Forest Health In A Changing World

G-03: Critical Loads For Nutritional Nitrogen Deposition: Progress And Problems

G-14B: Impact And Monitoring Of Forest Pests And Pathogens In A Changing World

## FRIDAY 10 OCTOBER - TECHNICAL SESSIONS OVERVIEW

### MORNING 08:00-10:30

#### Forests For People

- A-08A: Small-Scale And Community Forestry For People, Biodiversity And Ecosystem Services
- A-16: Ethics And Values In Relation To Forest, Wildlife And Recreation Management
- A-22: Forests Under Pressure: Prerequisite Conditions For Forest-Related Sustainable Development
- A-29: The Knowledge That Counts – Analyzing Science Policy Interactions In Forest Policy
- A-37A: Knowledge Exchange And Communication Of Forest Research For Human And Community Well-Being

#### Forest Biodiversity And Ecosystem Services

- B-03: Providing Ecosystem Services Under Climate Change: Community Of Practice Of Forest Decision Support Systems
- B-06A: Research And Management Implications Of The Economics Of Ecosystem Services
- B-09A: What Future For Tropical Silviculture?
- B-16A: Contribution Of Genetics And Genomics To Conservation And Sustainable Management Of Forests Under Changing Environmental Conditions

#### Forests And Climate Change

- C-03: Understanding The Relationships Among Biodiversity, Carbon, And People For REDD+ Forests: The Importance Of Environmental And Social Safeguards
- C-11: Forest Resistance And Resilience In The Face Of Natural Hazards
- C-12A: Quantifying Uncertainty In Forest Measurements And Models: Approaches And Applications
- C-23B: Forest Management For Adaptation To Climate Change
- C-30: Novel Ecosystems And Intervention: Adaptation To Climate Change

#### Forests And Water Interactions

- D-03: Land Use/Land Cover Change And Hydroecology: Consequences At Variable Spatial Scales.
- D-08: Sustaining Riparian Biodiversity And Ecosystem Services In A Changing Climate

#### Forest Biomass And Bioenergy

- E-02A: Environmental Impacts Of Intensive Management Of Forest Soils For Timber And Bioenergy Production.

#### Forests And Forest Products For A Greener Future

- F-04: Greening Society And Non-Wood Forest Product Commercialization: Assessing The Environmental, Economic And Social Trade-Offs
- F-11A: Forest Operations Engineering And Management - The Way Ahead

#### Forest Health In A Changing World

- G-05: Global Approaches To The Biological Control Of Invasive Eucalyptus Pests
- G-12: The Co-Evolution Of Insects And Fungi That Form Symbiotic Relationships And Kill Forest Trees
- G-13: Modeling As A Tool For Improving The Knowledge On Forest Vulnerability And Risk Exposure In A Changing World

## FRIDAY 10 OCTOBER - TECHNICAL SESSIONS OVERVIEW

### AFTERNOON 15:30-18:00

#### Forests For People

- A-08B: Small-Scale And Community Forestry For People, Biodiversity And Ecosystem Services
- A-12: Participatory Protected Area Management At The Human Needs And Sustainable Wildlife Conservation Interface
- A-23A: Transitions To Sustainable Forest Management: Economic, Social And Cultural Parameters
- A-32: Innovative Forest And Environmental Legislation For Better Diversity
- A-37B: Knowledge Exchange And Communication Of Forest Research For Human And Community Well-Being

#### Forest Biodiversity And Ecosystem Services

- B-06B: Research And Management Implications Of The Economics Of Ecosystem Services
- B-09B: What Future For Tropical Silviculture?
- B-13: Oak Regeneration To Maintain Biodiversity Around The World
- B-16B: Contribution Of Genetics And Genomics To Conservation And Sustainable Management Of Forests Under Changing Environmental Conditions

#### Forests And Climate Change

- C-15: Monitoring Soil Carbon Stocks And Dynamics At Variable Spatial Scales
- C-12B: Quantifying Uncertainty In Forest Measurements And Models: Approaches And Applications
- C-28: Tropical Forest Wetlands, Climate, And Land-Use Change: Adaptation And Mitigation Opportunities
- C-29: Desertification, Land Degradation And Drought

#### Forests And Water Interactions

- D-06: Role Of Disturbance In Maintaining And Stimulating Aquatic Biological Diversity In Temperate Forest Ecosystems

#### Forest Biomass And Bioenergy

- E-02B: Environmental Impacts Of Intensive Management Of Forest Soils For Timber And Bioenergy Production.
- E-06: Emerging Technologies For Forest Resource Assessment And Genetic Improvement

#### Forests And Forest Products For A Greener Future

- F-03: Contributions Of Business And Marketing To A Greener Future
- F-07: Forest Governance And Legality Of Timber: Challenges Of Legality In Practice
- F-08: Forest Resources Assessment For Non-Wood Forest Products
- F-11B: Forest Operations Engineering And Management - The Way Ahead

#### Forest Health In A Changing World

- G-04: Emerging Invasive Forest Pathogens
- G-09: Ecology And Management Of Invasive Wood Boring Pests In A Changing World

## SATURDAY 11 OCTOBER - TECHNICAL SESSIONS OVERVIEW

### MORNING 08:00-10:30

#### Forests For People

A-10: Establishing Social Institutions For Co-Management Of Public Forest Lands

A-11: American Indian Forestry

A-23B: Transitions To Sustainable Forest Management: Economic, Social And Cultural Parameters

A-31: Forest Policy Science: From Rational Choice To Discourse, From Local Level Forest Owners To A Global Learning Architecture

A-36: From Data To Knowledge, Geospatial Tools And Information Access

#### Forest Biodiversity And Ecosystem Services

B-01: The Future Of Ecosystem Services From Forests

B-20: Radioactive Contamination In Forest Ecosystems And Safe Uses Of Forest Products

#### Forests And Climate Change

C-02: From Understanding Drivers To Gaining Leverage At The Tropical Forest Margins: 20 Years Of ASB Partnership

C-13: Modeling And Simulation Systems

C-18: Using Multi-Source Remotely Sensed Data And Nearest Neighbor Techniques To Improve Inference For Natural Resource Applications.

C-27: Sustainable Management Of Spruce Dominated Ecosystems In Response To Climate Change

#### Forests And Water Interactions

D-04: Hydroecological Studies In The Mediterranean Region

D-07: Impacts Of Forest Roads On Water Resources And Aquatic Habitat

#### Forest Biomass And Bioenergy

E-05: Global And Regional Deployment Of Biomass & CCS (BECCS): Reconciling Top-Down And Bottom-Up Approaches And REDD+BECCS Nexus

#### Forests And Forest Products For A Greener Future

F-02: The Interface Between Quantitative Forest Sector Modeling And Policy Analysis: What Can Be Improved?

F-14: Forestry For Desired Wood Quality And Products From Underutilized Forest Species

#### Forest Health In A Changing World

G-08: Consequences Of Changing Trophic Interactions On Forest Insect Population Dynamics

G-15: Monitoring Emerging Threats To Forest Health In North America Across Regional To National Scales

G-18: Research On Pathway Risk Management And Phytosanitary Policy To Prevent Invasions Of Forest Insects And Pathogens

# ITTO

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- 12:00 hrs. 'Tropical forest, connecting the world through sustainability'
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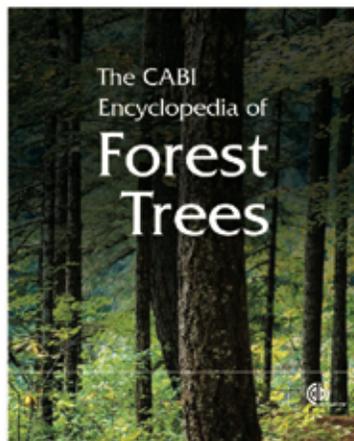
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## WEEK AT A GLANCE

	Monday 6 October			Tuesday 7 October				Thursday 9 October			
Room	11:00 - 12:00	13:30 - 15:00	15:30 - 18:00	08:00 - 10:30	11:00 - 12:00	13:30 - 15:00	15:30 - 18:00	08:00 - 10:30	11:00 - 12:00	13:30 - 15:00	15:30 - 18:00
Ballroom	P-01				P-02				P-03		
150 A			A-04	A-20A			A-20B	B-12			A-24
150 B			A-25	A-01			A-34	A-26			A-28
150 C			A-30	A-38			C-07	B-18			A-33
150 D			A-21	C-17			C-01	G-14A			G-14B
150 E			B-04	C-19			C-14	C-16			B-17
150 F			G-10	C-26			C-21	D-02A			D-02B
150 G			C-24	E-01A			E-01B				B-02
151 A			F-16	F-18			G-02	A-14			A-15
151 B			C-09	F-05			F-10				D-09
151 C			D-01	G-07			F-13				F-12
151 D			A-06	A-05			A-13	A-19			B-08
151 E			E-07	G-16			G-11				G-03
151 F			F-06								
151 G			E-03	B-07A			B-07B				F-01
155 A-C		SP-02	I-1	I-2		SP-08	I-3			SP-11	
155 D-E		SP-01	A-02	D-05A		SP-05	D-05B			SP-09	B-10
155 F		SP-03	B-11	B-19A		SP-06	B-19B	F-09A		SP-10	F-09B
250 A			C-22	A-27A			A-09	E-04A			E-04B
250 B			F-17	E-08A			E-08B	F-15			A-07
250 C			A-17	A-03A			A-03B	G-06			B-15
250 D			A-35	A-18A			A-18B				C-06
250 E			B-14	B-05A			B-05B				C-10
250 F			G-01	C-04			G-17				C-25
251 A-C		SP-04	C-05	C-08		SP-07	A-27B	C-20		SP-12	C-23A





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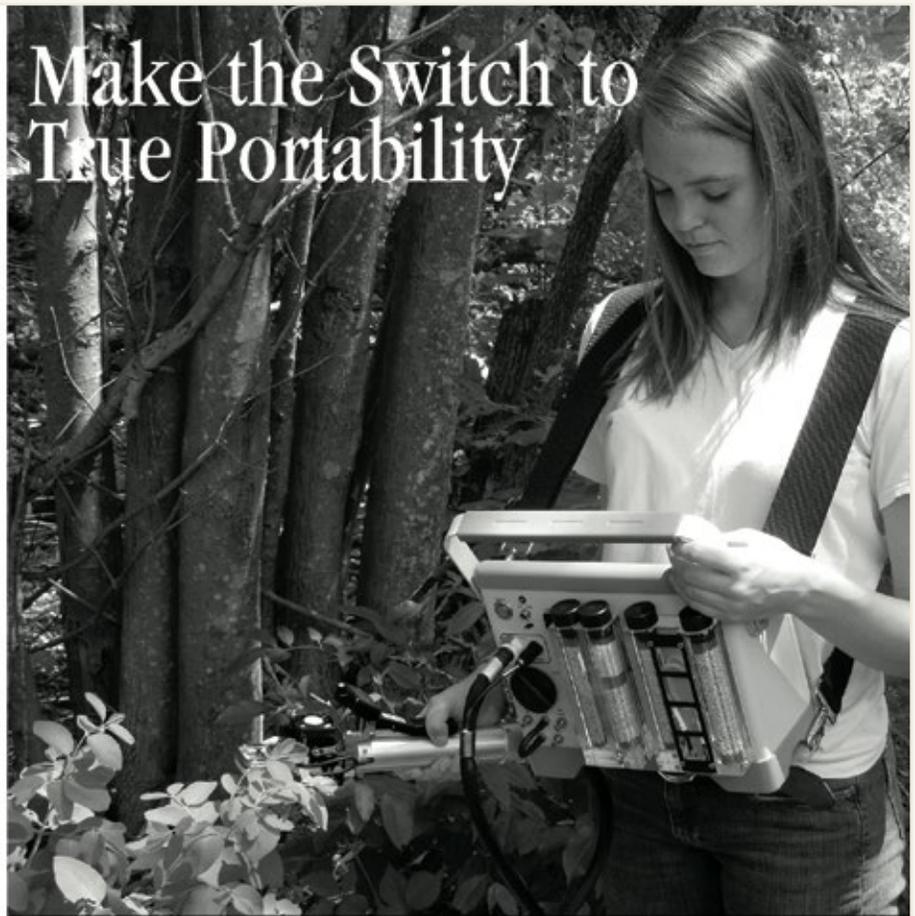
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**MONDAY 6 OCTOBER**



## MONDAY 6 OCTOBER - PLENARY SESSION

### 11:00-12:00

#### Plenary 1: Andy Buchanan: Modern Timber Buildings from Sustainable Forests

**Room:** Ballroom

**Session Chair:** Andrew Wong

**Description:** This paper describes the huge opportunities for engineered wood to be used for constructing modern timber buildings. This is essential for a greener future on our planet, to reduce world-wide dependence on energy and CO2 intensive materials like concrete and steel, by moving to engineered wood to construct homes, factories and offices for growing populations. To promote the design and construction of engineered timber buildings, it is necessary to develop new wood-based materials, to manage the wood supply chain, and to encourage research and innovation by design professionals, and to remove institutional barriers. This is not always easy. The paper describes a New Zealand example, where many of the jigsaw pieces were in place for modern timber buildings in the rebuild of Christchurch following the massive 2011 earthquakes. New Zealand has a mature forest industry, largely based on exotic plantations of radiata pine, and a growing wood processing industry, focusing on LVL. Timber engineering is taught and researched in New Zealand universities, and local structural engineers are leading the world in innovative low-damage seismic design. The paper will describe a successful industry-government research partnership supporting modern timber buildings in New Zealand. Demonstration buildings are needed to catch the imagination of investors and to increase the confidence of all players in the supply chain. New timber buildings have been proposed for Chicago (42 stories), Vancouver (30 stories), and design is well underway for a 14-story building in Ottawa, with the support of the Canadian government.

## MONDAY 6 OCTOBER - SUB-PLENARY SESSIONS

### 13:30-15:00

#### SP-01 Forest Foods, Medicines And Human Health

**Room:** 155 E

**Organizers:** Hannu Raitio (Finnish Forest Research Institute), James Chamberlain (U.S. Forest Service, USA), Carsten Smith-Hall (University of Copenhagen, Denmark) & Tuija Sievänen (Finnish Forest Research Institute)

**Moderators:** James Chamberlain & Carsten Smith-Hall

**Description:** This session will explore the state of knowledge on how forests around the world provide products and services that maintain and improve human health and well-being, and the values and challenges of integrating the forest resources that supply these products and services into forest management.

A Global-Comparative Analysis Of Household-Level Incomes From Environmental Food Products	Carsten Smith-Hall	Denmark
From Forest To Pharmacy - Drug Development From Nature Based Molecules	Kristiina Wahala	Finland
Food Security, Food Sovereignty, And Urban Forests	Marla R. Emery	United States
Wildlife: A Forgotten And Threatened Forest Food Resource	Robert Nasi	Indonesia
Integrating Forest Foods And Medicines Into Sustainable Forest Management	James Chamberlain	United States

## SP-02 Integrating The Economics Of Ecosystem Services Into Sustainable Forest Management

**Room:** 155 A-C

**Organizers:** Donald Hodges (University of Tennessee, USA), Donald Grebner (Mississippi State University, USA) & Lidija Zadnik-Stirn (University of Ljubljana, Slovenia)

**Moderator:** Lidija Zadnik-Stirn (University of Ljubljana, Slovenia)

**Description:** This session will examine specific ecosystem services and the state-of-the art in estimating their values. The session also will address how they have affected sustainable forest management globally - emphasizing issues/barriers to incorporating ecosystem services, identified research needs, appropriate scales for implementation, and innovative methodologies for measuring the inherent multifunctionality of ecosystem services.

The Role Of Bioenergy As An Ecosystem Service	Donald Grebner	United States
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Influence Of The TEEB DE Study On Forest Reporting And Management	Elisabeth Kindler	Germany
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Current Status And Future Research Directions For Assessing Water As An Ecosystem Service	Donald Hodges	United States
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Valuation Of Ecosystem Services Using The Life Satisfaction Approach	Shashi Kant	Canada
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## SP-03 Forest Health In A Changing World

**Room:** 155 F

**Organizers:** Tod Ramsfield (NRCan-Canadian Forest Service) & Eckehard Brockerhoff (Scion/New Zealand Forest Research Institute)

**Moderators:** Tod Ramsfield & Eckehard Brockerhoff

**Descriptions:** This session will examine the role of global change on pest population dynamics, pathway management and global trade, science-policy interactions and forest resilience to promote sustainable forest ecosystems under changing conditions.

Loss Of Resilience Leads To Low Productivity In A Chilean Hardwood Forest	Ian Thompson	Canada
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Forest Biodiversity And Forest Health	Kimiko Okabe	Japan
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Synergies, Feedbacks And Tipping Points: Mountain Pine Beetle's Rapid Range Expansion Threatens Invasion Of North American Boreal Pine Forests	Allan Carroll	Canada
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International Trade In Live Plants: Rationale For Mitigating A High-Risk Pathway For The Introduction Of Forest Pests And Pathogens	Michael Wingfield	South Africa
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## SP-04 The IUFRO Directors' Forum: Crossing Science Boundaries For The Benefit Of Forests And People

**Room:** 251 A-C

**Organizers:** Konstantin von Teuffel (Baden-Württemberg Forest Research Institute – FVA, Germany), Peter Mayer (PM) (Austrian Research Centre for Forests - BFW), Jimmy Reaves (U.S. Forest Service)

**Moderators:** Peter Mayer & Konstantin von Teuffel

**Description:** Research in forestry increasingly needs to cross the boundaries of scientific disciplines. The IUFRO Directors' Forum will discuss how to organize, fund and manage research in order to maintain the relevance of forest-focused research institutions for the benefit of forests and people in the future.

Introduction To The IUFRO Forests For People Strategy	Konstantin von Teuffel, Jimmy Reaves & Peter Mayer	Germany, United States, Austria
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Presentation Of IUFRO Director's Survey Results	Jimmy Reaves	United States
Panel Discussion: Management Strategies For Research Beyond Borders	Ann Bartuska, Mike Wingfield, Martin Apple, Tony Simons (tbc) and Leena Paavilainen (tbc)	United States, United States, South Africa, Kenya, Finland
Open Discussion		
Conclusions	Peter Meyer & Konstantin von Teuffel	Austria, Germany

## MONDAY 6 OCTOBER - TECHNICAL SESSIONS

### 15:30-18:00

#### // FORESTS FOR PEOPLE

#### A-02 (169) Forests And Human Health: The Role Of Research Towards Evidence-Based Practice

**Room:** 155 E

**Organizers:** Takahide Kagawa (Forestry and Forest Products Research Institute, Japan) & Liisa Tyrväinen (Finnish Forest Research Institute)

**Moderators:** Liisa Tyrväinen & Takahide Kagawa

**Description:** This session will focus on research methodologies and recent findings on the effects of forests on human health, and the application of these findings into medical practices, landscape planning, recreational use of forests, and nature-based tourism.

The Spread Of Forest Therapy In Japan	Takahide Kagawa	Japan
A Study On The Healing Effect Of Korean Forestry	Jeonghee Lee	Republic of Korea
Forests For Wood Production And Human Wellbeing – What Are The Trade-Offs In Long-Term Forest Management Planning?	Eva-Maria Nordstrom	Sweden
The Nature, Health & Design Lab- Research On Nature Qualities	Ulrika K. Stigsdotter	Sweden
The Influence Of Urban Nature Environments On Stress Relief — A Field Experiment	Liisa Tyrväinen	Finland
Long-Term Monitoring Of Health Effects Of Urban Forests In Hangzhou, China	Bing Ye	China
Physiological Effects Of Wooden Odors On Humans: Evidence From Laboratory Experiments	Yuko Tsunetsugu	Japan
<b>Poster Presentations:</b>		
The Perception Of Internet Users Regarding Human Health Benefits Provided By Urban Green Areas	Daniela Biondi	Brazil
Sovereignty Of Indonesian Biodiversity Conservation And Health Through Development Of “Kampung Konservasi”	Ellyn Kathalina Damayanti	Indonesia
A Study Of Japanese Attitudes Toward Coniferous Forests And Pollen Allergy	Mari Kawase	Japan
Green Spaces At The Work Place And Allergic Sensitization Of Office Workers In The City And Forest	Jeonghee Lee	Republic of Korea

Analyzing The Willingness For Cooperation Between Forest And Health Experts In Improving People's Health In Germany	Katharina Meyer	Germany
A Cost-Benefit Framework For Urban Green Areas In The Case Of Intensifying Urban Development	Mika Rekola	Finland
The Effects Of Forest Therapy Utilizing Regional Abandoned Forests In Japan	Iwao Uehara	Japan

#### A-04 (88) Resilience And Identity With Urban Forests: A Landscape System Approach

<b>Room:</b>	150 A	
<b>Organizers:</b>	Wybe Kuitert (Seoul National University, Republic of Korea), Cheng Wang (Chinese Academy of Forestry), Giovanni Sanesi (University of Bari, Italy) & Amila Brajic (FOPER-University of Sarajevo, Bosnia-Herzegovina)	
<b>Moderators:</b>	Giovanni Sanesi & Cheng Wang	
<b>Description:</b>	This session will examine recent research on the historical, cultural, and natural landscape systems underlying urban areas and their potential to enhance resilience and identity of cities through appropriate planning, development, and management of urban forests.	
Long-Term Landform Transformations In A Suburban Forest Using Aerial Photographs And Dems Generated From Historical Topographic Maps	Akemi Tamaki (Itaya)	Japan
Determination And Estimation Of Temporal Changes In Land Cover In Northern Forest Of Istanbul, Turkey	Muhittin Inan	Turkey
Improving Urban Forest Management Using Remote Sensing Technologies Along Major Transport Corridors In Sydney, Australia	Mingzhu Wang	Australia
Water Management For Urban Forestry: A Case Study On Urban Parks In Seoul	Shawn Hu	Republic of Korea
The Effect Of Mega-Flood Disaster On Tree Species Diversity In Bangkok Metropolis And Suburban, Thailand	Nisa Leksungnoen	Thailand
Old Growth Urban Forests: Synthetic Research Methodology And Historical Continuity Management	Robert Loeb	United States
Greenspace Infrastructure And Public Perception Of Representative Country Parks In Beijing, China	Yadong Qi	United States
Perceived Restorativeness Of Different Urban Green Typologies Of Two Cities In Italy	Giovanni Sanesi	Italy

#### A-06 (252) Forest-Dependent Community Development

<b>Room:</b>	151 D	
<b>Organizer:</b>	Tuija Sievanen (Finnish Forest Research Institute)	
<b>Moderator:</b>	Tuija Sievanen	
<b>Description:</b>	This session will focus on research of rural communities in which forests are an important asset for livelihoods, incomes, subsistence, health, and culture.	
Contribution Of Gum And Resin Commercialization To Rural Livelihood In The Drylands Of Ethiopia And Sudan	Asmamaw Alemu Abteu	Germany
Conservation By People For People: Impacts Of Community-Ngo Partnership On Forest Conservation And Livelihood Of Riparian People	Rodrigue Castro Gbedomon	Benin
Community Perceptions Of Environmental And Socio-economic Benefits From Forest: An Exploration In Four Protected Areas Of Costa Rica	Sergio Molina Murillo	Costa Rica

Local Stakeholder's Assessment Of Community-Based Forest Management And The Potentials Of Redd Plus	Rose Jane Peras	Philippines
How Do You Do Access? Indigenes And Forest Resources In A Conflict-Affected Indian Region	Siddharth Sareen	Denmark
Community Based Forest Management: An Experience That Goes From The Field Work To The Improvement Of Indigenous Community's Livelihood	Alipse Valera	Peru
Indigenous Associations In The Peruvian Amazon: The Comuneros' Perspectives	Andrea Vasquez	Canada

## A-17 (189) Linking Landscape, Forests And People: The Historical Roots Of Biocultural Diversity

**Room:** 250 C

**Organizers:** Mauro Agnoletti (University of Florence, Italy), Jinlong Liu (Renmin University of China) & Steven Anderson (Forest History Society, USA)

**Moderator:** Mauro Agnoletti

**Description:** This session will explore the historical development of biodiversity patterns associated with “natural” and “cultural” landscapes, including local and landscape-level traditional forest management practices and uses of biodiversity, and the evolution of policies affecting biological and cultural diversity and heritage.

Impact Of Ancient Maya Land Use On Present-Day Forests	Nicholas Brokaw	United States
The Italian National Register Of Historical Rural Landscapes	Mauro Agnoletti	Italy
“Sustainable” Ecological History? A Story Of Forest Management Practices Out Of The Official Silviculture Along 1000 Years Of Landscape Dynamics	Fabio Salbitano	Italy
Disturbance History Of The Medicine Bow Range, Wyoming, Using Historical Documents, Contemporary Forest Inventory, And Lake Sediment Cores	Vachel Carter	United States
Contributions To Human Well-Being From Sharing Ecosystem Services Through Non-Market Social Networks In Satoyama Landscapes	Chiho Kamiyama	Japan
Assessing The Impact Of Changes In Biodiversity On Food Security Of Local Communities: The Case Of The Fatik Province, Senegal	Antoine Sambou	Denmark
Influence Of Culture On Greening The Environment In Ido Local Government Area Of Ibadan, Nigeria	Adebayo John Julius	Nigeria

## A-21 (113) Coppice Forests: A Tradition With Future

**Room:** 150 D

**Organizer:** Gero Becker (Albert-Ludwigs-University Freiburg, Germany)

**Moderator:** Gero Becker

**Description:** This interdisciplinary session will discuss historical and contemporary coppice forests and their management, including such topics as traditional and advanced products, protection functions, biodiversity, climate change adaption, traditional versus modern short rotation systems, and governance regimes.

Sustainable Coppice Forest Management In The Balkan	Peter Kampen	Macedonia
Harvesting Traditional Coppice Stands In The Northwestern Italian Mountains	Raffaele Spinelli	Italy

Study The Potential Of Lebanon Oak ( <i>Quercus Libani</i> Oliv.) For Coppice Regeneration In Northern Zagros Forests Of Iran	Manfred Lexer	Austria
Valuable But Threatened: How The Abandonment Of Traditional Forest Management Systems Influences The Occurrence Of A Rare Tree Species	Patrick Pyttel	Germany
<b>Poster Presentations:</b>		
Ecological Complexity, Stand Basal Area And Rooting Intensity Respond Differently Under Edaphic Drought In Ecotones At Abandoned Coppice Forests	Tamalika Chakraborty	Germany
Potential Production Of Short Rotation Coppice Willow In Denmark	Søren Larsen	Denmark
Eucalypt Coppice Management For Rurally Based, Small-Scale Timber Growers In South Africa	Keith Little	South Africa
Sycamore Maple ( <i>Acer Pseudoplatanus</i> L.) Potential For Coppicing: A Case Study	Valeriu-Norocel Nicolescu	Romania
The Effect Of Harvesting On Stump Mortality And Re-Sprouting In Aged Oak Coppice Forests	Patrick Pyttel	Germany
Hybrid Aspen Coppice Forest For Energy In Hemiboreal Estonia	Hardi Tullus	Estonia

## A-25 (16) Reforming Forest Tenure And Governance For Mitigating Climate Change And Improving People's Livelihoods

**Room:** 150 B

**Organizer:** Runsheng Yin (Michigan State University, USA) & Shashi Kant (University of Toronto, Canada)

**Moderator:** Runsheng Yin

**Description:** This session addresses the knowledge gaps and policy challenges encountered in implementing forest tenure and governance reforms, based on the experience of China, India, and Eastern Europe, and the advances of institutional economics.

Understanding Tenure Security In The Implementation Of Reforms: Clarifying Concepts And Methods	Mani Banjade	Nepal
Today And Tomorrow Of Private Forestry In Central And Eastern Europe	Michał Zasada	Poland
Role Of Devolved Governance In Enhancing Incentives In Participatory Forest Management In Kenya	Joram Kagombe	Kenya
Promoting REDD+ Through Community Forestry In Lombok Island, Indonesia	Dodik Ridho Nurrochmat	Indonesia
Forest Tenure Rights, REDD+ And Livelihoods In Thailand	Surin Onprom	Thailand
China's Forest Tenure Reforms In The New Century: What Remains To Be Pursued And How To Get It Achieved?	Runsheng Yin	United States

## A-30 (37) Achieving Policy Integration Across Fragmented Domains: Forest Policy Perspectives

**Room:** 150 C

**Organizers:** Karl Hogl (University of Natural Resources and Life Sciences, Austria) & Daniela Kleinschmit (Swedish University of Agriculture Sciences)

**Moderators:** Karl Hogl & Daniela Kleinschmit

**Description:** This session will review the state of the art in policy coordination and integration literature for describing and analyzing the evolving relationships within and between a number of substantive resource policy sectors, in particular taking a forest policy perspective.

Integrating Multiple Environmental Regimes: Land And Forestry Policies Under Broader Democratic Reforms In The Bolivian Tropical Lowlands	Wil de Jong	Japan
Multi-Level Governance Of Forests In A Changing Climate: International Influence On Swedish Forest Policy.	Sara Holmgren	Sweden
Integration Of Bio-Energy Policy - A Multi-Sectoral Frame Analysis	Daniela Kleinschmit	Sweden
Multistakeholder Approach For The Development Of New National Forestry Sector Strategy In Nepal	Ram Prasad Lamsal	Nepal
Study On Forest Policy Coordination And Cooperation: Take A Case Of Collective Forest Tenure Reform In China	Meng Yuan	China
Forests In The Non-Forest Policies: How Much Room Is Left To Forest Decision Making?	Bart Muys	Belgium
The Need For Forestry To Understand And Respond To Indirect Impacts Of Climate Change	Carl Olof Olle Olsson	Sweden
The European Forest Policy Paradox – How Policy Integration Fails Through Practices Of Sectoral Polarization	Georg Winkel	Germany

### A-35 (72) The Social Education Of Foresters

**Room:** 250 D

**Organizers:** Lisa Hansen (IFSA/University of British Columbia, Canada) & Louise Fortmann (University of California at Berkley, USA)

**Moderators:** Siegfried Lewark, University of Freiburg, Germany)

**Description:** This technical session examines the importance of, and challenges for, integration of social sciences into forestry curricula, emphasizing the changes in learning outcomes that are needed to meet the needs of tomorrow's foresters.

Teaching Foresters About Gender, Property And Why They Matter	Louise Fortmann	United States
Social Dynamics And Integrative Methods In Forestry Science Education	Bianca Baerlocher	Switzerland
Promoting Gender Competence Of Forestry Students – Experiences From Gencom International Spring School	Marion Karmann	Germany
Facilitating Social Learning To Improve Collaboration Between Forest Managers, Stakeholders And Communities	Susan Kocher	United States
Solving Problems In Forest Landscapes: Definition, Practice, And Barriers Of Transdisciplinary Research	Per Angelstam	Sweden
Does Counseling Matter? An Analysis Of Forest Advisors' Influence On Forest Management Practices	Daniel Sjödin	Sweden
Barriers To Updating University Forestry Curricula	John Innes	Canada

### // FOREST BIODIVERSITY AND ECOSYSTEM SERVICES

#### B-04 (170) Long-Term Forest Research On Forest Ecosystem Management

**Room:** 150 E

**Organizers:** Hosang Kang (Seoul National University, Republic of Korea), Xingguo Han (Institute of Applied Ecology, Chinese Academy of Sciences) & Björn Hånell (Swedish University of Agricultural Sciences)

**Moderators:** Hosang Kang & Batkhuu Nyam-Osor (National University of Mongolia)

<b>Description:</b>	This session will provide a forum for scientists engaged in long-term interdisciplinary forest research to share their experiences and to promote cross-site research collaboration and networking to examine key research questions at larger scales.	
	Shelterwood Method In Hemiboreal Conditions As An Alternative To Clear-Cutting For More Efficient Ecosystem Services Management.	Hardi Tullus Estonia
	Vegetation And Soil Interactions During An 80-Year Succession In Forest Stands In The Moricsala Island Nature Reserve, Latvia.	Guntis Brumelis Latvia
	Variable Retention Harvesting And Sustainable Forest Management In The Boreal Forest Of Canada: Lessons Learned From The Emend Experiment	Jaime Pinzon Canada
	A Study On Long Term Monitoring Of Major Planting Trees In Korea	Yeongwan Seo Republic of Korea
	Forest Observational Studies Network For Growth Modelling And Long-Term Ecological Monitoring	Vindhya Prasad Tewari India
	Use Of Bioindicator For Protected Area Management And Ecological Monitoring In The Western Himalayan Landscape, Uttarakhand, India	VP Uniyal India
	A Preliminary Analysis Of Long Term Dynamics Of Venezuelan Tropical Forests: Evidences From Field-Based Plots	Emilio Vilanova Venezuela

## B-11 Forest Management For Wildlife Conservation

**Room:** 155 F

**Organizers:** Thomas Rooney (Wright State University, United States) & Nobuhiro Akashi (Hokkaido Research Organization, Japan)

**Moderators:** Thomas Rooney

**Description:** This session will feature recent studies from around the world that highlight the importance of forest management for wildlife conservation, an increasingly important issue in research and for managers.

	An Evaluation Of The Effects Of Sika Deer On Forest Regeneration Based On Observation Of Browsed Shoots	Nobuhiro Akashi Japan
	The Attractiveness Of Managed Scots Pine Forests In Different Age As A Foraging Site For Bats	Witold Grzywinski Poland
	Epigaeic Beetle Assemblages In Boreal Forests – Relationships To Environmental Factors And Management History	Therese Johansson Sweden
	Long-Term Effects Of Forest Management On Reindeer Grazing In Northern Sweden: A Scenario Analysis Approach	Anu Korosuo Sweden
	Partial Retention Harvest Benefits Songbird Assemblages In The Boreal Forest Of Canada	Sonya Odsen Canada
	Simulating The Long-Term Effects Of Tree Retention And Forest Set-Asides On The Availability Of Biodiversity Structures At The Landscape Scale	Jean-Michel Roberge Sweden
	Bird And Insect Pollinators Respond Similarly To Aspen Forest Stand Development In Northern Wisconsin, USA	Amber Roth United States
	The Effects Of Landscape Heterogeneity And Ungulate Density On Understory Vegetation In Northwestern Pennsylvania	Alejandro Royo United States
	Pinyon Jay Nest And Cache Site Selection In Pinyon-Juniper Woodlands Of The Great Basin	Chris Witt United States

## B-14 (52) Ecosystem Services Provided By Planted Forests

**Room:** 250 E

**Organizers:** Peter Freer-Smith (Forest Research, UK), Eckehard Brockerhoff (Scion, New Zealand) & Jean-Michel Carnus (National Institute for Environmental and Agricultural Science and Research, France)

<b>Moderators:</b>	Peter Freer-Smith	
<b>Description:</b>	This session will present new research from around the world on the range of ecosystem services provided by planted forests, on the valuation of ecosystem services, and on their relevance to forest management and policy.	
	International Congress Of Planted Forest : Main Issues And Research Needs For Planted Forests	Jean-Michel Carnus France
	Biodiversity And Productivity Of Planted Forests	Juergen Bausch Germany
	Ecosystem Services Of Planted Forests Through Provision Of Habitat	Cormac O'Callaghan Ireland
	Effects Of Planted Forest Biodiversity On Pollination Services	Hisatomo Taki Japan
	Forest Plantation Landscape Management For Water Ecosystem Services Provisioning In Brazil	Silvio Ferraz Brazil
	Ecosystem Services Of UK Woodlands: Downscaling Scenarios And Assessments From National To Landscape Scale	Chris Quine United Kingdom
	Promoting Management Practices Targeting The Conservation Of Biodiversity And Ecosystem Services In Cork Oak Landscapes	Miguel Bugalho Portugal
	The Economic Value Of Forest Ecosystem Services Provided By New Zealand's Planted Forests	Tim Payn New Zealand
	Managing Plantations Worldwide To Benefit Forest Biodiversity And Enhance Ecosystem Services	Robert L. Deal United States

## // FORESTS AND CLIMATE CHANGE

### C-05 (92) Gender, Participation, And Climate Change

<b>Room:</b>	251 A-C	
<b>Organizers:</b>	Bimbika Sijapati Basnett, Esther Mwangi (CIFOR, Indonesia), Peter Cronkleton (CIFOR, Peru) & Terry Sunderland (CIFOR, Indonesia)	
<b>Moderators:</b>	Bimbika Sijapati Basnett	
<b>Description:</b>	This session will focus on challenges, opportunities, and outcomes of securing women's participation in forest governance and link this with issues and experiences in climate change adaptation and mitigation with the aim of providing suggestions for how to strengthen women's meaningful participation in decisions and benefits, improve policy targeting, and mitigate risks in climate change.	
	Challenges, Opportunities, And Outcomes Of Women's Participation In Forest Governance: Lessons From CIFOR's Research	Herry Purnomo Indonesia
	Challenging Perceptions About Men, Women, And Forest Product Use: A Global Comparative Study	Terry Sunderland Indonesia
	Forest Governance, Gender, And Social Inclusion And REDD+ In Nepal	Madhu Ghimire Nepal
	Does Forest Decentralization Strengthen Women's Adaptive Capacity To Climate Change In The Congo Basin? Insight From Cameroon	Anne Marie Tiani Cameroon
	Are Women More Vulnerable To Climate Change And Other Interacting Stressors In The Rural Eastern Cape, South Africa?	Sheona Shackleton South Africa
	Developing Strategies For Reddes Activities In Selected Pilot Areas In Cameroon, Ghana, And Nigeria	Ernest Foli Ghana
	Response To Climate Change In Canadian Forest-Based Communities: Does Gender Matter?	Maureen Reed Canada

## C-09 Dendrochronology: Detecting And Modelling Climate Change And Fire Impacts

**Room:** 151 B

**Organizers:** Pekka Saranpää (Finnish Forest Research Institute)

**Moderators:** Pekka Saranpää

**Description:** This session will examine dendrochronology as an indicator of climate change and disturbance events in forest ecosystems of different regions.

Responses Of The Radial Growth Of Trees To Climate Change At The Timberline In Southeast Tibetan Plateau	He Shang	China
Seasonal Distribution Of Processes Responsible For Radial Diameters And Wall Thickness Of Scots Pine Tracheids	Galina Antonova	Russian Federation
Fire Impact On The Structure And Dynamic Of Prosopis Caldenia Woodlands In The Argentinean Pampas	Stella Bogino	Argentina
Site Selection For Dendroclimatological Studies With Bertholletia Excelsa	Patricia Mattos	Brazil

## C-22 (74) Advances In Forest Carbon Measurements And Monitoring For Building REDD+ MRV Systems

**Room:** 250 A

**Organizers:** Yasumasa Hirata (Forestry and Forest Products Research Institute, Japan) & Andrew Lister (U.S. Forest Service)

**Moderators:** Yasumasa Hirata & Andrew Lister

**Description:** This session aims to exchange scientific knowledge on forest carbon measurement and monitoring for building the REDD+ MRV systems, including topics such as forest inventory development, forest carbon measurement protocols, uncertainty analysis, integration of forest inventory and remote sensing data for estimating forest carbon stocks, and related works.

Strategies For Forest Measurement And Monitoring In Colombia	Edersson Cabrera Montenegro	Colombia
Quantifying Forest Disturbances As Input To Carbon Budget Models In Southeast Mexico	Vanessa Silva Mascorro	Canada
The Development Of Allometric Models For Prediction Of Above- And Below Ground Biomass For All Major Forest Types In Tanzania	Tron Eid	Norway
REDD+ And Wildland Fires: The Contribution Of Satellite Observation Systems	Luigi Boschetti	United States
Above Ground Biomass Estimation Based On Lidar And HJ Data In Subtropical Forest	Yuan Zeng	China
Measuring Tropical Forest Degradation From High-Resolution Remote Sensing Imagery And Field Data For Building A REDD+ MRV System In Mexico	Jaime Paneque-Gálvez	Mexico
Use Of Remote Sensing For Forest Monitoring At A National Level In REDD+ Implementation	Yasumasa Hirata	Japan
Advance And Challenge Of Remote Sensing In Assessing Tropical Forest Biomass Of Malaysia	Hamdan Omar	Malaysia

## C-24 (75) Adaptive Forest Management Under Climate Change – Networking From Local To Global Scales In The Temperate Zones

**Room:** 150 G

**Organizers:** Andreas Bolte (Thünen Institute of Forest Ecosystems, Germany), John Stanturf (U.S. Forest Service) & Palle Madsen (University of Copenhagen, Denmark)

**Moderators:** John Stanturf

**Description:** Topics to be discussed in this session will include native and non-native species and provenance suitability under climate change, adaptive management options to assist forest adaptation, and effective knowledge diffusion among different scales, researchers, politicians, and practitioners.

Adaptive Forest Management In Global Temperate Forests – Pathways For A Co-Operative Network Concept	Andreas Bolte	Germany
Identifying Potential Tipping Points In Forest Ecosystems Using Vegetation Function Traits And Microclimatic Indicators	Peter Hobson	United Kingdom
Europe-Wide Analysis Of Douglas-Fir Provenance Trials: Insights Into Assisted Migration To Address Climate Change	Miriam Isaac-Renton	Canada
Refugial Populations – A Source Of Increased Genetic Diversity For Improved Forest Adaptation Capacity	Palle Madsen	Denmark
Field Experiments And Models As Decision Support For Forest Management Under Increasing Drought Risk	Andreas Rigling	Switzerland
Utilizing The Intraspecific Variation In Climate Response To Select Appropriate Douglas Fir Provenances For European Plantations In Future Climates	Silvio Schueler	Austria
Potential Of Thinning To Mitigate Drought Stress In Trees – A Meta-Analysis	Julia Sohn	Germany
Performance Of The Selected Northern-American Tree Species Introduced In Central Europe	Michał Zasada	Poland

## // FORESTS AND WATER INTERACTIONS

### D-01 (257) Long-Term Watershed Studies: What Have We Learned About Eco-Hydrological Functioning

**Room:** 151 C

**Organizers:** Shirong Liu (Chinese Academy of Forestry) & Xiaohua Wei (University of British Columbia, Canada)

**Moderators:** Shirong Liu and Xiaohua Wei

**Description:** This session will focus on the value of long-term watershed studies as sources of baseline information on how ecosystems and hydrologic systems function, with a particular emphasis on their importance for assessing impacts of, and adaptation to, climate change.

Alteration Of Flow Regimes Caused By Large-Scale Forest Disturbances And Its Ecological Implications	Xiaohua Wei	Canada
The Hydrologic Impacts Of Long-Term Afforestation In An Upland Watershed In North-Central Portugal	Daniel Hawtree	Germany
Effects Of Contemporary Harvest Practices On Water Yield And Snowpack Dynamics In The Continental-Maritime Region Of The USA	Jason Hubbard	United States
Rational Density For Balancing The Water Yield And Other Services Of Larch Plantation In Liupan Mountains Of Northwest China	Yanhui Wang	China
Forests, Land Use Change, And The Water Regime Over Half A Century In The Blue Nile Basin Of Ethiopia	Kevin Bishop	Sweden

Impacts Of Reforestation Of Denuded Land On The Streamflow Regime In A Weathered Granite Mountain Area	Hyung Tae Choi	Republic of Korea
Ecosystem Dynamics Controlled By The Seasonal Distribution Of Precipitation In Forests Of Interior Alaska	John Yarie	United States
Seventy-Seven Years Variation Of Annual Evapotranspiration In Small Watershed With The Forest Restoration And Succession On Denuded Hills	Koichiro Kuraji	Japan

## // FOREST BIOMASS AND BIOENERGY

### E-03 (53) Evaluation Of Environmental Impacts Of Production And Use Of Wood Products And Wood Energy

**Room:** 151 G

**Organizers:** Richard Bergman (U.S. Forest Service) & Adam Taylor (University of Tennessee, USA)

**Moderators:** Richard Bergman

**Description:** This session will use Life Cycle Analysis approaches and methodologies to evaluate forestry and forest product, environmental performance issues related to carbon flows, emerging biomass-conversion technologies, and avoided GHG emissions by product substitution.

GHG Profile Of An Advanced Pyrolysis Unit Using Woody Biomass	Richard Bergman	United States
Local Air Quality Impacts Of Advanced Biofuels In The Pacific Northwest: A Consequential LCA Approach	Indroneil Ganguly	United States
Landscape-Level Net GHG Analysis Of Forest-Based Material And Energy Systems	Leif Gustavsson	Sweden
Lessons From Consecutive LCAs Of Plywood And OSB In The USA	Adam Taylor	United States
Life Cycle Assessment Of A Fuel Switch To Biomass: The Case Of A Direct-Fired Boiler Gasification Energy System	Lal Mahalle	Canada
Improving The Resource Efficiency Of Wood Consumption – An LCA Study On Wood Cascading	Klaus Richter	Germany
Environmental Impact Assessment Of China's Forest-To-Pulp Supply Chain	Wei Xu	Germany
Effects Of Forest Management On Timber And Energy Biomass Production And Climate Change Mitigation Potential In Norway Spruce	Antti Kilpeläinen	Finland
Incorporating Carbon Sequestration Into The Feedstock LCA For Residual Woody Biomass	Francesca Pierobon	Italy
Modeling The Effects Of Forest Management And Wood Products Use On Carbon Budget In Context Of Climate Change	Hubert Jochheim	Germany

### E-07 (160) Genomics And Biotechnology For Improvement Of Woody Energy Crops

**Room:** 151 E

**Organizers:** Carl Douglas (University of British Columbia, Canada)

**Moderators:** Carl Douglas

**Description:** This session will present current research on optimizing woody biomass plantations for bioenergy, natural variation in bioenergy and biomass traits, genetic and genomic approaches to tree domestication for bioenergy uses, and biotechnology for bioenergy biomass optimization.

Target Enrichment And Exome Sequencing For Marker Discovery In Eucalypt Species	Modhumita Dasgupta	India
Variation In Resistance Of Populus Nigra Within And Among Provenances To Septoria Musiva	Kelsey Dunnell	United States
Understanding The Social Context Of Strategies To Develop Biofuels From Optimized Populus Feedstocks In British Columbia	Howie Harshaw	Canada
Insect Feeding On GM Aspens Is More Affected By Intentional (BT Induction) Than Of Unintentional Changes Or Clone Differences In Plant Defense	Joakim Hjalten	Sweden
Fungal Pretreatment Of Lignocellulosic Biomass By Wood Rot Transformants	Myungkil Kim	Republic of Korea
Silver Birch (Betula Pendula): A Novel Model Tree For Molecular Genetics	Kaisa Nieminen	Finland
Resistance Breeding Against Two Major Forest Diseases - Conifer Root Rot And Rust In Willows	Jan Stenlid	Sweden

## // FORESTS AND FOREST PRODUCTS FOR A GREENER FUTURE

### F-06 (125) Impact Of Forest Certification On Sustainable Forest Management

**Room:** 151 F

**Organizers:** Wenming Lu (Chinese Academy of Forestry, China), Robert L. Deal (U.S. Forest Service) and John Innes (University of British Columbia, Canada)

**Moderators:** Wenming Lu & Robert Deal

**Description:** This session will assess different aspects of forest certification, including impacts on forest management and timber markets, effects for forest workers and communities affected by certified forest management, quality of certification audits, and governance and authority of certification schemes.

Evaluation Of Tropical Forest Management Certification	Francis Putz	United States
Challenges Of Forest Certification In China	Wenming Lu	China
FSC - Chain Of Custody (COC). Analysis Of Companies With COC In Spain And Brazil	Carmen Aviles	Spain
Logging Concessions And Local Governance: Social Legitimacy And Effectiveness Of Forest Certification In The Congo Basin	Paolo Cerutti	Kenya
Context Matters: Implementation Of Sustainable Forest Management Under Different Governance And Socio-Economic Conditions	Marine Elbakidze	Sweden
Assessment Of New Methods For Sustainable Management Practices In Remote Areas	Maxim Trishkin	Finland
Analysis On Creation Of A Domestic Forest Certification Scheme In Korea's Forestry And Forest Industries	Se Kyung Chong	Republic of Korea
Evaluating Conservation Impacts Of Forest Management Certification – Testing Causality Through The Use Of Counterfactual Study Design	Colby Loucks	United States

## F-16 (258) Bio-Based Composite And Engineered Products From Wood And Non-Wood Forest Resources

**Room:** 151 A

**Organizers:** Salim Hiziroglu (Oklahoma State University, USA) & Andrew Wong (Universiti Malaysia Sarawak, Malaysia)

**Moderators:** Salim Hiziroglu & Andrew Wong

**Description:** This session will include topics on recent advances in the innovation, processing and utilization of bio-based composites and engineered bio-based products from wood and non-wood forest resources linked to the efficient use of forest residues and plantation resources.

An Engineered Wood Composite Pole Of Superior In-Service Performance At A Commanding Price.	Robert Erickson	United States
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Strength Of Red Meranti (Shorea Leprosula Miq) Three-Layer Particleboard From Natural And Plantation Forest	Yuliati Indrayani	Indonesia
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Development Of Tannins - Based Adhesives And Their Applications In The Biocomposites	Zeinab Osman	Sudan
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Liquefaction And Pyrolysis Conversion Of Forest Resources Into Bio-Oil: For A Greener Epoxy And Potential Wood Composite Applications	Brian Via	United States
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### Poster Presentations:

Use Of Wood And Agricultural Residues In Brick Production: An Environmentally Friendly Alternative To Cement Blocks In Ghana	Emmanuel Appiah-Kubi	Ghana
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Cross Laminated Bamboo-Guadua Panels For Construction	Hector F Archila Santos	United Kingdom
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Maritime Pine Bark Extraction For Tannin-Lignin Adhesives	Fatima Charrier-El Bouhtoury	France
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Flexural Properties Of Wood I-Beam Flanged With Pine (Pinus Sp.) And Curupixá (Micropholis Venulosa)	Cláudio Del Menezzi	Brazil
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Properties Of Wood Plastic Composite Made From Nanoclay Added Eastern Red Cedar	Salim Hiziroglu	United States
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Improving Mexican Forest Viability By Technological Characterization Of Commercial Wood Composites By Nondestructive Methods	Mariana Ramírez-Pérez	Mexico
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Caryocar Villosum (Aubl.) Pers. As A Bioresource: Evaluation Of Particleboard Technological Properties	Paula Surdi	Brazil
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Reinforcement Of Plant Fiber-Based Ultra Low Density Material With Sodium Silicate	Yongqun Xie	China
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## F-17 (186) Recovery, Reuse, And Recycling Of Wood Products For A Greener Future

**Room:** 250 B

**Organizers:** Phil Araman (U.S. Forest Service), Robert Bush & Robert Smith (Virginia Tech, USA)

**Moderators:** Phil Araman

**Description:** This session will present recent innovations to enhance recover, reuse, and recycle construction waste, and end-of-use wood products along with manufacturing residues.

Green Building: Dimensional Stability Of Block Produced From Sawdust And Sand	Olajide Razaq Adejoba	Nigeria
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Home Construction Waste And Potential Recycling Options	Phil Araman	United States
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Local Experience With The Use Of Wood Residues From A Sawmill In Cuba	Katia Manzanares Ayala	Cuba
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Paper Honeycomb Panels And Sustainability	Öznur Özden	Turkey
Wood Pallet Production, Disposal, Recovery, Reuse And Recycling In The U.S.	Phil Araman	United States

## // FOREST HEALTH IN A CHANGING WORLD

### G-01 (180) Air Pollution As A Factor Affecting Global Forest Health

**Room:** 250 F

**Organizers:** Algirdas Augustaitis (Aleksandras Stulginskis University, Lithuania), Andrzej Bytnerowicz (U.S. Forest Service) & Robert Jandl (Research and Training Centre for Forests, Natural Hazards and Landscape, Austria)

**Moderators:** Algirdas Augustaitis & Andrzej Bytnerowicz

**Description:** The session will focus on global impacts of air pollution on forest health related to the relationships between climate change and air pollution effects.

The State Of Forest Health In The United States And Assessment Of Future Risks From Climate Change, Invasive Species, And Air Pollution.	Borys Tkacz	United States
The Complex And Surprising Interaction Of Climate Change And Forest Critical Acid Load Exceedance	Steven McNulty	United States
State Of European Forest Under Environmental Changes	Martin Lorenz	Germany
Soil Amelioration For Combatting Acid Rain – An Appraisal Of Past Efforts	Robert Jandl	Austria
Update On Impacts Of Air Pollution And Climate Change On The Carpathian Forests	Andrzej Bytnerowicz	United States
Drought And Tropospheric Ozone Limit Intra-Annual Stem Growth Of European Beech (Fagus Sylvatica) Across Bavaria/Germany	Rainer Matyssek	Germany
Effects Of Air Pollution And Climate Change On Forests In China	He Shang	China
Evidence Of Inhibited And Reinforced Effects Of Climate Change On Tree Responses To The Integrated Effect Of Air Pollutants On Forest Sustainability	Algirdas Augustaitis	Lithuania

### G-10 (135) Multiple Risk Management In Planted Forests

**Room:** 150 F

**Organizers:** Hervé Jactel (National Institute for Environmental and Agricultural Science and Research, France), Christophe Orazio (European Forest Institute, Finland) & John Moore (Scion, New Zealand)

**Moderators:** Christophe Orazio

**Description:** The session is focused on biotic and abiotic risks to planted forests from the perspectives of hazard assessment, effects of management practices on vulnerability, economic impacts and multiple risks analyses.

Storm Fellings And Pine Weevil Caused Seedling Damage	Helena Bylund	Sweden
Modeling The Dynamics Of Root Rot, European Spruce Bark Beetle And Wind Damages In Even-Aged Norway Spruce Dominated Forests	Juha Honkaniemi	Finland
Interactions Between Biotic And Abiotic Disturbances On Host And Range Expansion Of Mountain Pine Beetle In Novel Jack Pine Forests	Jennifer Klutsch	Canada
Do Prescribed Fires Cause Mountain Pine Beetle Outbreaks?	Crisia Tabacaru	Canada

Belowground Herbivory In Red Pine Stands Initiates A Cascade That Increases Abundance Of Lyme Disease Vectors	David Coyle	United States
Interacting Threats To Forest Plantations In The Douglas-Fir Region, USA	Dave Shaw	United States
How Management Of Planted Forests Can Mitigate The Risk From Multiple Hazards	Margot Régolini	France
Facing Multiple Risks With Limited Knowledge	Philippe Deuffic	France

### Special Session for Students and Young Scientists (The “IUFRO Incubator” 1)

**Room:** 155 A-C

**Organizers:** JP Skovsgaard (Swedish University of Agricultural Sciences), other IUFRO Divisional Representatives & The International Forestry Students Association (IFSA)

**Moderators:** Hugo Pierre (IFSA) & JP Skovsgaard

**Description:** This session will provide a venue for recently graduated students to present brief summaries of their BSc, MSc or PhD theses in the fields of forest ecology, biodiversity, and silviculture.

The Ecology Of Lowe’s Monkey ( <i>Cercopithecus Campbelli</i> Lowe) In Kakum Conservation Area, Ghana	Edward Wiafe	Ghana
Relationship Between Vegetation Structure And Diversity Of Dung Beetle: A Comparison Between A Fragmented Forest, Agroforestry System And Monoculture	Carla Andrea Sandoval Rodríguez	Brazil
Spatial Aspects Of Biodiversity As A Part Of Harvest Scheduling Decision Process	Jan Kaspar	Czech Republic
Multiple Species Responses To Forestry Disturbance: A Case Of Epiphytic Lichens	Åsa Ranlund	Sweden
Vegetation Cover Change In Vancouver Island Mountain Ranges From 1962-2005	Emmeline Natalie Topp	Italy
High Resistance To The 2010 Drought Of The Arboreal Component Of A Terra Firma Forest In The Northwest Amazon	Daniel Felipe Zuleta Zapata	Colombia
Climate-Growth Analysis For A Brazilian Dry Forest Site	Claudio Anholetto	Brazil
Climate Influence On Radial Growth Of <i>Fagus Sylvatica</i> Near To The Lower Edge Of Distribution In Hungary	Balázs Garamszegi	Hungary
Dendroclimatic Relationships And Possible Implications For Oak ( <i>Quercus</i> Sp.) In Central Poland	Agnieszka Bronisz A	Poland
How Silvicultural Treatments And Site Quality Affect Carbon Storage In A Mixed Species Forest In Maine, USA	Joshua Puhlick	United States
Test Domestication <i>Halopegia Azurea</i> (K. Schum.) (Marantaceae): Preliminary Study On The Propagation Of Rhizome In Community Forest Of Copal (Cameroon)	Jean Ernest Mballa Bimi	Cameroon
Ecological Impact Of Harvesting Marantaceae Species From Swampy Ecosystems	Atebeh Uta-Rein Lekah	Cameroon
Growth Of <i>Cedrela Odorata</i> L. And Incidence Of <i>Hypsipyla Grandella</i> Zeller As Affected By Nutrient Management	Celi Gloria Calixto	Mexico
Cultural Practices For Producing <i>Enterolobium Cyclocarpum</i> And <i>Swietenia Humilis</i> Seedlings With Appropriate Features To Reforest Low Fertility Soils	Erickson Basave	Mexico
Forest Dieback In Disturbed Wet Sclerophyll Forests Due To Tri-Trophic Interactions: Can Management Of <i>Lantana</i> Halt Vegetative Declines?	Kathryn Lambert	Australia



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## TUESDAY 7 OCTOBER - PLENARY SESSION

11:00 - 12:00

### Plenary 2: David Newbery: On Maintaining Cycles and Feedbacks in Tropical Forest Ecosystems: Some Thoughts from Basic Research

**Room:** Ballroom

**Session:** Su See Lee

**Description:**

Despite a long tradition of continued research into the ecology of natural rain forests many insights have still to be acknowledged and applied properly in forest management. Relevant advice continues to be largely ignored, and this has important consequences for conservation and long-term sustainability. I suggest that broad pan-tropical generalizations are not going to be particularly useful, and a focused site-orientated scientific approach is likely to be far more effective. Recognition of ecosystems as simple systems, ones in which not more than three or four key components are modelled or altered, may lead to much better progress for forestry. Ecosystems are nevertheless dynamic and contingent, so a middle way is required to steer us out of the current one-versus-many species or factors dichotomy. The need to 'take stock' and re-evaluate our research directions is highly desirable. These ideas will be developed with some theory. They are not all so very new, but their context and immediacy calls for some serious reconsideration. Illustrative examples from two long-term studies in rain forest will be discussed, and some recommendations presented.

## TUESDAY 7 OCTOBER - SUB-PLENARY SESSIONS

13:30-15:00

### SP-05 Biodiversity And Ecosystem Services In Planted Forests

**Room:** 155 E

**Organizers:** Eckehard Brockerhoff (Scion/New Zealand Forest Research Institute), Hervé Jactel (INRA, France) & Peter Freer-Smith (Forest Research, UK)

**Moderator:** Eckehard Brockerhoff

**Description:** This session will review a range of ecosystem services provided by biodiversity in planted forests, identify the state of knowledge for each area, and outline innovative measures by which the provision of ecosystem services from planted forests could be enhanced, at the stand, forest, and landscape scales.

The Impacts Of Pests And Diseases On Future Delivery Of Ecosystem Services	Peter Freer-Smith	United Kingdom
Biodiversity And Resistance To Pests And Pathogens Of Planted Forests	Hervé Jactel	France
Assessing Biodiversity Effects On Forest Multi-Functionality Using A Global Network Of Tree Diversity Experiments	Michael Scherer-Lorenzen	Germany
The Challenge Of Climate Resilient Biodiversity Enrichment In Planted Forests In Post-Tenure Reform China	Shuirong Wu	China

### SP-06 Cultural Values, Quality Of Life And Forest Landscapes

**Room:** 155 F

**Organizer:** Mauro Agnoletti (University of Florence, Italy)

**Moderator:** Steven Anderson (Forest History Society, USA)

<b>Description:</b>	This session will focus on the historical and current role of cultural values in shaping and conserving forest and woodland landscapes worldwide, the historical interrelationships between cultural and biological diversity, cultural landscapes and their management for tangible and intangible benefits, and the potential for integrating cultural values into sustainable forest management.		
	Cultural Values And Forest Policies. The Case Of Europe	Mauro Agnoletti	Italy
	The UNESCO-CBD Joint Programme On The Links Between Biological And Cultural Diversity	Ana Persic	United States
	Bohemian Forest: From Forest Wilderness To Cultural Landscape And Back	Jiri Woitsch	Czech Republic
	Understanding The Role Of Traditional Forest Knowledge And Culture In Landscape Restoration In China	Jinlong Liu	China

### SP-07 The Importance Of Quantifying Uncertainty In Managing Forests

<b>Room:</b>	251 A-C		
<b>Organizers:</b>	Ruth Yanai (State University of New York-ESF, USA), David Paré (Canadian Forest Service), Peter Clinton (Scion, New Zealand) & Bogdan Strimbu (Louisiana Tech University, USA)		
<b>Moderator:</b>	Peter Clinton (New Zealand Forest Research Institute)		
<b>Descriptions:</b>	This session will describe sources of uncertainty in estimates of forest carbon and nutrient pools and fluxes, including natural spatial and temporal variation, measurement error, model uncertainty, and model selection, and address how these uncertainties can guide monitoring designs and affect management and policy decisions.		
	Uncertainty In Forest Management Planning: Why It Will Not Go Away And What Should We Do About It	Pierre Bernier	Canada
	Forest Carbon Stock Change Uncertainty Estimation In Mexico	Oswaldo Carrillo	Mexico
	Uncertainty In Forest Carbon And Nutrient Budgets	Ruth Yanai	United States
	Improving Forestry Decision Making By Accounting For Uncertainty	Annika Kangas	Finland

### SP-08 The Future Of Our Forests

<b>Room:</b>	155 A-C		
<b>Organizers:</b>	William Nikolakis & John Innes (University of British Columbia, Canada)		
<b>Moderator:</b>	John Innes		
<b>Description:</b>	This session will examine the implications of globalization; the consequences from a growing reliance on plantations; the emergence of new products (such as bio-products and advanced building systems), and the development of forest ecosystem services and their impacts for forests, forest research, and forest dependent communities.		
	Drivers Of Future Forest Use	David Cohen	Canada
	European Forests: Facing The Challenges Of The Coming 50 Years	Gert-Jan Nabuurs	Netherlands
	Carbon, Fossil Fuel, And Biodiversity Mitigation Using Both Wood Products And Forests	Chadwick Oliver	United States
	New Generation Plantations: What Future Role Towards Sustainability?	Luis Neves Silva	Portugal

## TUESDAY 7 OCTOBER - TECHNICAL SESSIONS

### 08:00-10:30

#### // FORESTS FOR PEOPLE

#### A-01 (63) Forests And Human Wellbeing: Life Satisfaction And Behavioral Approaches

**Room:** 150 B

**Organizers:** Shashi Kant (University of Toronto, Canada), Sen Wang (NRC-Canadian Forest Service), Martin Hostettler (Cycad Inc., Switzerland) & Peter Deegen (Technische Universität Dresden, Germany)

**Moderator:** Shashi Kant

**Description:** This session will examine new economic approaches to analyze the role of forests in human wellbeing including social, cultural, forest use, education, employment, health, and recreation domains.

Evidence For Health Benefits Of Urban Green Motivates A "Green" Public Health Indicator – Results From A Systematic Review And GIS-Analyses	Matilda Annerstedt van den Bosch	Sweden
Impact Of Health Care Provision On The Contribution Of Medicinal Plants To Health And Livelihoods In Peruvian Amazon	Miki Toda	Japan
Job Habitat - An Index Of The Socio-Economic Potential Of Forest Stands	Michel Soucy	Canada
Forest Incomes In The Vicinity Of A Restoration Concession (A Case Study From Harapan Rainforest, Indonesia)	Nayu Nuringdati Widianingsih	Denmark
How Farmers Adapt To Co-Management Of Land As Sustainable Development Platform - A Study Of Community Forestry Programs In The Philippines	Marcin Jarzebski	Japan
Farmers Woodlots (FWLs) Management And Sustainable Livelihood Development: A Case Study In Southern Sri Lanka	Mangala De Zoysa	Sri Lanka

#### A-03A (192A) The Value And Challenges Of Integrating Food And Medicinal Forest Products Into Forest Management

**Room:** 250 C

**Organizers:** James Chamberlain (U.S. Forest Service), Carsten Smith-Hall (University of Copenhagen, Denmark) & Tytti Sarjala (Finnish Forest Research Institute)

**Moderators:** James Chamberlain & Carsten Smith-Hall

**Description:** This session will explore the state of knowledge on how forests around the world provide products and services that maintain and improve human health and well-being, and the values and challenges of integrating the forest resources that supply these products and services into forest management.

Quantitative Approach Of Sterculia Setigera Del. (Sterculiaceae) Ethnobotanical Uses Among Rural Communities In Togo (West Africa)	Wouyo Atakpama	Togo
Ethnobotany Of Palms (Arecaceae) In Communities Of Bajo Calima, Colombia	Kelly Tatiana Bocanegra-Gonzalez	Colombia
The Economic Consumptive Value Of Forests: Evidence From The Wet And Dry Forest Zones Of Ghana	Beatrice Darko Obiri	Ghana
Potentials Of Raphia Hookeri Wine In Livelihood Sustenance Among Rural And Urban Populations In Nigeria	Adekunle Oladele	Nigeria
Sago Forest Management And Investment Opportunities In Special Autonomy Era In West Papua , Indonesia	Susan Salosa	Indonesia

Biological Properties Of A Non Wood Forest Product (Pistacia Lentiscus Fixed Oil) Growing In Tunisia	Faten Mezni	Tunisia
Recovery Of Boldo (Peumus Boldus), Specie Of High Value In The Field Of The NWFP Through Intensive Management	Susana Benedetti	Chile

### A-05 (62) Challenges And Opportunities In Forest Management And Utilization In Rapidly Changing Asian Economies

<b>Room:</b>	151 D	
<b>Organizers:</b>	Ajith Chandran, Lianzhen Xu, Weiye Wang & Monika Singh (University of British Columbia, Canada)	
<b>Moderators:</b>	Simmathiri Appanah (FAO Regional Office for Asia and the Pacific, Thailand) & Guangyu Wang (University of British Columbia)	
<b>Description:</b>	This session will examine recent research combined with rural community-based forest management experiences, highlighting the value of learning from a diverse knowledge base and the importance of effective communication strategies in Asian economies.	
Communication Challenges In Joint Forest Management In India: Perceptions Of Senior Indian Forest Officers	Ajith Chandran	Canada
Creating Both Conflicts And Solution Between Customary And Legislative Regulation – Case Of China	Jiayun Dong	China
ASEAN-Korea Environmental Cooperation Project As A Successful Model Of Regional Cooperation For Human Resource Development And Local Community Improvement	Ho Sang Kang	Republic of Korea
Participatory Approach To Reduce Deforestation And Forest Degradation: A Case Study From Houykhing Village Cluster, Laung Prabang Province Of Lao PDR	Shyam Paudel	Canada
Increasing Tree Cover In Degrading Landscapes: 'Integration' And 'Intensification' Of Smallholder Forest Culture In The Alutilla Valley, Matiranga, Bangladesh	Syed Rahman	Bangladesh
Changing The Forest Landscape In China	Guangyu Wang	Canada
<b>Poster Presentations:</b>		
Emerging Role Of Jurisprudence In Shaping Forest Management In India	Monika Singh	Canada
Community Involvement In Forest Management (CIFMs) To Improve People Livelihood In Indonesia	Enny Widyati	Indonesia
Discourse Strategy And Action Option: The Natural Reserve And Peasants Under The "Fishing And Grazing Ban" Policy	Yiwen Zhang	China

### A-18A (190A) Value Of Traditional Knowledge For Sustainable Forest Management

<b>Room:</b>	250 C	
<b>Organizers:</b>	Yeo-Chang Youn (Seoul National University, Republic of Korea), Jinlong Liu (Renmin University of China), William Armand Mala (University of Yaounde I, Cameroon) & Ronald Trosper (University of Arizona, USA)	
<b>Moderator:</b>	Jinlong Liu	
<b>Description:</b>	This session will focus on the relevance of traditional knowledge, practices and social/governance institutions in the conservation, management, and restoration of forests and sustainable use of forest biodiversity.	
Threats To Indigenous Beliefs And Cultural Practises Used In Forest Protection: Case Study From Southwest Nigeria	Folaranmi Babalola	Nigeria

Declining Traditional Ecological Knowledge And Implications On Ecosystem Service Utilization And Management In Disaster Prone Savannah Areas Of Northern Ghana	Yaw Agyeman Boafo	Japan
The Status Of Restoration Practices In Degraded Landscapes Of Southern Africa	Paxie Chirwa	South Africa
Uses And Management Of Fire By Rural Communities In Coniferous Forest In The Monarch Biosphere Reserve, Mexico	Héctor Leonardo Martínez Torres	Mexico
Value Of Traditional Knowledge In Sustainable Forest Management	Floribel Paras	Philippines
The Role Of Traditional Forest Management On Local Livelihoods In Northern Zagros Oak Forests Of Iran	Tobias Plieninger	Denmark
Indigenous People And Their Traditional Knowledge On Tropical Plant Utilization: A Case Study Of Murut Communities Of Sabah, Borneo	Theresa Muthu	Malaysia
Gender And Traditional Forest-Related Knowledge In China--A Case From Minority People In Guizhou Province	Juanwen Yuan	China

### A-20A (200A) On Farm Trees: Towards The Promotion And Development Of A Traditional Or Local Silviculture In Tropical And Subtropical Forest Regions

**Room:** 150 A

**Organizers:** William Armand Mala (University of Yaoundé, Cameroon), Jinlong Liu (Renmin University of China), Steven Anderson (Forest History Society, USA) & Yeo-Chang Youn (Seoul National University, Republic of Korea)

**Moderator:** William Armand Mala

**Description:** In this session presentations will focus on the status of on-farm trees research and discuss the integration of traditional silviculture and local ecological knowledge on multipurpose trees for the design of small scale forestry practices.

Indigenous Agroforestry Systems Under Pressure - The Case Of Gedeo Agroforestry And Its Value To Farmers' Livelihoods, Ethiopia	Anique Hillbrand	Germany
Attitudes And Behaviour Towards On-Farm Tree Planting Among Smallholder Farmers In Malawi	Seline Meijer	Ireland
Underutilized And Promising Fruit Tree Species To Enhance Productivity Of Traditional Agroforestry System Through Participatory Domestication In West Java, Indonesia	Budi Hadi Narendra	Indonesia
Traditional Forest Management System From Landscape Perspective In Dong Minority Villages: A Case From S Village In China	Minghui Zhang	China
Profitability Of On-Farm Adoption Of Short Rotation Forestry - A Case Study	Sanjeev Chauhan	India

#### Poster Presentations:

Impact Of Land Use Practices On Traits And Production Of Shea Butter Tree ( <i>Vitellaria Paradoxa</i> C.F. Gaertn.) In Benin	Jean Didier Akpona	Benin
Livelihood Potential Of Moringa Oleifera Tree And Its Role In Food Security And Health Care In Nigeria	Oghenekevwe Joy Arabomen	Nigeria
Boswellia Serrata Gum Oleoresin And Its Contribution To Rural Economy Of Sheopur District Of Central India	Pratibha Bhatnagar	India
Traditional Silviculture Of Butea Monosperma: A Multipurpose Tree Species In Balaghat, India	Pratibha Bhatnagar	India
Seed Producer Candidate Tree Selection Of Bertholletia Excelsa H. B. K. In Degraded Areas And Forest Fragments, Peru Southeast Amazon	Germán Correa	Peru
The Vital Role Of Stallholder Initiatives In Forest Restoration And Reforestation: The Case Of Cameroon	Richard Eba'a Atyi	Cameroon

Agroforestry Systems To Rehabilitation Forest Vocation Lands In Michoacán, México	Guadalupe Geraldine García	Mexico
Participatory Investigation Of The Interaction Between Sclerocarya Birrea And Intercrops In Kilosa District, Tanzania	Pilly Kagosi	Tanzania
Recovering Degraded Forest Area Using Agroforestry Practice: Case Study On Area Of Former Mount Batur Eruption, Bali (Indonesia)	Budi Hadi Narendra	Indonesia
Crop Diversity Of Upland Farms In Apayao Province	David Rodolfo	Philippines
Evaluation Of Tree Species For Agroforestry Development In The Sudan Sahel Region Of Nigeria	Loryisa Verinumbe	Nigeria

### A-27A (26A) International To Local Forest Governance: Taking Stock Of Theories, Methodologies And Findings

**Room:** 250 A

**Organizers:** Lukas Giessen (University of Goettingen, Germany), Bas Arts (Wageningen University, Netherlands), Florian Kraxner (International Institute for Applied Systems Analysis, Austria) & Constance McDermott (University of Oxford, UK)

**Moderator:** Lukas Giessen

**Description:** This session aims at taking stock of innovative theoretical, methodological and empirical achievements in forest governance research, from the local to the global level.

Forest Governance: A Practice Based Approach	Bas Arts	Netherlands
Forest Footprints And The Implications For Equity In Forest Governance	Constance McDermott	United Kingdom
Examining Equity In Forest Governance: Implications For REDD+ And Other Payments For Ecosystem Services Schemes	Melanie McDermott	United States
Constructing A Materialist Conception Of Discursive Institutionalism To Examine Institutional Change In Forest Policy: The Case Of The Assisted Migration Of Species In Canada	Nicole Klenk	Canada
Participatory Forest Governance In Ibero-America: Social And Political Impacts Of The Model Forests Approach	Josique Lorenzo Lemire	Costa Rica
Russian Forest Policy Development: New Experience Based On Stakeholders' Involvement Approach	Elena Kulikova	Russian Federation
The Evolving Role Of Secondary-Level Institutions And Their Continued Legitimacy: Community And Producer Associations Under FLEGT And REDD+ In Ghana And Mexico	Reem Hajjar	Canada

### A-38 (68) How To Make Forest Science Available For All? Publishers', Editors', And Authors' Challenges

**Room:** 150 C

**Organizers:** Pekka Nygren (Finnish Society of Forest Science) & Eeva Korpilahti (Finnish Forest Research Institute)

**Moderator:** Annika Kangas (University of Helsinki, Finland)

**Description:** The session will provide a forum for the exchange of ideas on how to ensure access to high-quality forest information for all interested users in the era of rapidly changing publishing procedures and platforms.

What Future For Research Journals In Forest And Wood Sciences?	Erwin Dreyer	France
Implications Of Changing Publication Formats For Public Accessibility Of Developing Country Forest And Agroforestry Science	Kurniatun Hairiah	Indonesia
From Paper To Bits - How To Make And Keep 100 Years Of Forest Science Available Online?	Pekka Nygren	Finland

Increasing Access To Forest Science Research While Improving Research Impact: A Perspective From Tree Physiology	Danielle Way	Canada
Search Engine Optimization - Should We Edit Or Not?	Sofie Wennström	Sweden
Progress In Knowledge Dissemination: Combining Fundamental And Applied Research Journals	Warren Moser	United States
Bringing Forest Science To The End-User: Three Key Challenges	Henry Stelzer	United States
Development Of Boundary Organizations To Span Barriers Between Fire Science And Fire Managers In The United States	Susan Kocher	United States

## // FOREST BIODIVERSITY AND ECOSYSTEM SERVICES

### B-05A (59A) The Benefits Of Introducing The Ecosystem Service Concept In Forest Management And Planning At Different Spatial Scales

**Room:** 250 E

**Organizers:** Sandra Luque (IRSTEA, France) & Christine Fürst (ZEF Uni Bonn, Germany)

**Moderators:** Sandra Luque & Christine Fürst

**Description:** This session will examine how the distribution of ecosystem services and their monetary and non-monetary values can be influenced by changing scenarios (land use, climate) at different spatial scales, and the development of methodologies for mapping indicators that can be directly related to environmental policy assessments.

Operationalization Of The Concepts Of Ecosystem Services And Natural Capital: Forest Ecosystem Functioning And Trade-Offs	Sandra Luque	France
Forest Management At The Landscape Level – An Integrated Approach	Susanne Frank	Germany
From Forest Functions To Forest Ecosystem Services (ES) – Benefits From Introducing The ES Concept	Christine Fürst	Germany
Perceived Benefits From Boreal Forest Landscapes: The Importance Of Historical Legacies For Interpretation Of Ecosystem Services	Per Angelstam	Sweden
Landscape Sustainability In Sweden, Canada, And Chile In An Ecosystem Services Context	Mark Johnston	Canada
Ecosystem Services In Urban Forest Areas: Balancing Carbon Storage And Biodiversity	Raffaele Laforzezza	Italy
Trade-Offs And Synergies Between Ecosystem Services In Nordic Forests: What Does This Mean For Forest Management Decisions?	Anna Filyushkina	Denmark

### B-07A (210A) Silvicultural Practices To Facilitate Forest Restoration

**Room:** 151 G

**Organizers:** Byung Bae Park (Chungnam National University, Republic of Korea), Palle Madsen (University of Copenhagen, Denmark) & Bryan Finegan (CATIE, Costa Rica)

**Moderator:** Palle Madsen

**Description:** This session will examine current research and practical experiences on silvicultural methods used to facilitate forest restoration, ranging from regeneration establishment to harvesting systems.

The Importance Of Silvicultural Practices To Facilitate Forest Ecological Restoration	Byung Bae Park	Republic of Korea
Improving Forest Restoration In Dipterocarp Rainforest: A Field Trial With 32 Native Tree Species	Malin Gustafsson	Sweden

Successional Trajectories In Tropical Restored Forests Using Direct Seeding Of Fast-Growing Species	Vera Lex Engel	Brazil
Reintroducing Native Fagaceae Species Into Planation Forests In Central Taiwan: Identifying And Alleviating Establishment Limitations	Biing Guan	China-Taipei
Differences In Communities Of Trees Along A Tropical Forest Restoration Gradient, Uganda	Arthur Owiny	Uganda
Potential Plant Functional Groups For The Restoration Of Moist Forests In The Region Of Bajo Calima, Colombia	Fernando Fernandez	Colombia
Silvicultural Control Of Armillaria Root Disease In Manitoba	Tod Ramsfield	Canada
Forest Restoration Is More Than Tree Planting: The Case Of Fire-Disturbed Southern Bog Forests	Jan Bannister	Chile
Restoration Strategies, Methods, And Operations	John Stanturf	United States

## B-19A (104A) Forests, Roots And Soil Carbon

**Room:** 155 F

**Organizers:** Cindy Prescott (University of British Columbia, Canada), Douglas Godbold (University of Natural Resources and Life Sciences, Austria), Heijä-Sisko Helmisaari (University of Helsinki) & Shalom Daniel Addo-Danso (FORIG, Ghana & University of British Columbia, Canada)

**Moderator:** Cindy Prescott

**Description:** This session will present new insights on root contributions to soil carbon, particularly linked to forest management, climate change, biodiversity, and ecosystem services.

Tree Species Identity Influences The Accumulation Of Recalcitrant Deep Soil Carbon	Douglas Godbold	Austria
Revaluating The Role Of Roots And Mycorrhizal Hyphae In Belowground C And Nutrient Cycling In Forests	Dali Guo	China
Relation Of Fine Roots Vertical Distribution To Soil Carbon In Cunninghamia Lanceolata Forest In Subtropical China	Yingchun Liao	China
The Quantity And Storage Mechanisms Of Carbon In Deep Soil Horizons Of The Pacific Northwest	Jason James	United States
The Burial Of Aboveground Woody Debris - An Important Source Of Soil Carbon	Jogeir N. Stokland	Norway

### Poster Presentations:

Methods For Quantifying Root Dynamics For Forest Carbon Studies- A Review	Shalom Daniel Addo-Danso	Canada
Response Of Autotrophic And Heterotrophic Soil Respiration To Long-Term Management In Tree-Based And Treeless Grassland Ecosystems.	Julius Adewopo	United States
Soil Respiration Across Different Scales And Successional Time Scales In Boreal Mixedwood Forests	Oluwabunmi Akande	Canada
Temporal And Spatial Variability Of Soil Carbon Flux In Longleaf Pine Forests In The Southeastern United States	Althea ArchMiller	United States
Foliage And Root Contribution To SOC Pools In Utah Forest Soils	Antra Boca	United States
The Influence Between Morphological Plasticity And Biomass Allocation On Two Provenances Of Abies Holophylla Seedlings Under Different Nitrogen Fertilization Regime	Yuan Chai	China

Spatial Distribution Of Root Biomass Of Pinus Massoniana Plantation In Three Gorges Reservoir Area, China	Ruimei Cheng	China
Estimating Fine Root Biomass Of Pinus Densiflora Using Soil Core Sampling And Minirhizotron Techniques	SeungHyun Han	Republic of Korea
454 Pyrosequencing Analyses Of Mountain Forest Soils Reveal A High Fungal Diversity And A Rapid Response To Successional Stages	Nicola La Porta	Italy

## // FORESTS AND CLIMATE CHANGE

### C-04 (242) Addressing The Drivers Of Deforestation: Exploring Synergies Between REDD+ And Forest Policy

**Room:** 250 F

**Organizers:** Michael Obersteiner (International Institute for Applied Systems Analysis), Austria), Gilberto Camara (National Institute for Space Research-INPE, Brazil); Martin Tadoum (The Central African Forestry Commission-COMIFAC, Cameroun) & Valarie Kapos (UNEP World Conservation Monitoring Centre, UK)

**Moderator:** Michael Obersteiner

**Description:** This session aims at presenting and discussing the latest research on tropical deforestation and degradation drivers, public and private sector efforts addressing these and the identification of effective future invention options based on forest and land-use policies.

Assessing Potential Biodiversity Impacts Of Policies That Address Drivers Of Deforestation To Achieve REDD+ Objectives	Valerie Kapos	United Kingdom
Potentials Of REDD+ In Conserving And Protecting The Remaining Philippine Forests	Leonida Bugayong	Philippines
Comparing The Effectiveness Of National Level Forest Policies Across Central America	Forrest Fleischman	United States
Forest Fragmentation In Mexico: An Evaluation Of The Theory Of Collective Action	Gustavo Perez-Verdin	Mexico
Carbon Offsetting By Small Holder Farmers In The Congo Basin: Economic And Policy Constraints	Stephan A. Pietsch	Austria
Evolution Of Drivers Of Deforestation And Forest Degradation In Central African Forests: Exploring Possible Policy Options To Address Forest Loss	Yitagesu Tekle Tegegne	Finland
Institutional And Policy Drivers Of Deforestation In African REDD+ Countries	Johanna Wehkamp	Germany
Building Consensus On REDD Activities At A Jurisdictional Scale: Case Study In Huila, Colombia	Guillaume Zeender	Colombia

### C-08 (110) Managing Forest For Fire In A Changing Climate

**Room:** 251 A-C

**Organizers:** Cristina Aponte, Helen Vickers, Thomas Fairman (University of Melbourne, Australia) & William Elliot (U.S. Forest Service)

**Moderators:** Cristina Aponte & Helen Vickers

**Description:** This session will focus on the effectiveness of fuel management practices to minimize wildfire risk and the impacts of these practices on forest ecosystems services such as water supply, carbon sequestration, and biodiversity.

Long-Term Effects Of Repeated, Prescribed Fires On Aboveground Carbon Stocks In A Temperate Eucalypt Forest	Cristina Aponte	Australia
Mulching Treatments Alter Understory Vegetation In Forested Ecosystems Of The Western U.S.	Paula Fornwalt	United States

The Season, Severity, And Frequency Of Prescribed Fire Shaping The Community Dynamics Of Heathland Shrub Species	Matthew Chick	Australia
Innovative Techniques To Suppress Wildfires In The Black Sea Region	Sergiy Zibtsev	Ukraine
Greek Fir Forests, Fire And Climate Change	Yannis Raftoyannis	Greece
How Do Recurrent Disturbances Change Temperate Forests? Perspectives From The Decade Of Megafires In Victoria, Australia And Implications For Forest Management	Thomas Fairman	Australia
<b>Poster Presentations:</b>		
Planned Burning Vs. Wildfire Impact On Soil Methane Flux – Implications For Forest Fire Management	Stefan Arndt	Australia
Influencing Factors On Early Vegetation Restoration In Burned Area Of Pinus Pumila – Larch Forest	Fengjun Zhao	China
Mastication Effects On Fuels, Plants, And Soils In Four Western U.S. Ecosystems: Trends With Time-Since-Treatment	Michael Battaglia	United States
Targeting Forest Management Through Fire And Erosion Modeling	William Elliot	United States
Caloric Values Of Species Utilized In The Composition Of Fuel Breaks Of Brazil	Antonio Batista	Brazil
Asymmetric Communication Between Media And Stakeholders And Its Influences To The Ineffectiveness Of Forest Fire Risk Management In Indonesia	Meti Ekayani	Indonesia
Potential Impacts Of Climate Change On Fire Socioeconomic Vulnerability In The Mediterranean Area	Armando González-Cabán	United States
Quantifying Management Priorities In Urban Interfaces Threatened By Wildfires	Mario Elia	Italy
Spatial Analysis Of Forest Fire And Burnt Area In The Northwest Of Madagascar: Role In Forest Management And Biodiversity Conservation	Harifidy Rakoto Ratsimba	Madagascar
Investigation Of Emissions From Heated Essential-Oil-Rich Fuels	Fengjun Zhao	China
Spatial Data Mining Application In Forest Fire Assessment In Tropical Peat Areas	Ahmad Nuruddin	Indonesia

## C-17 (250) New Developments In The Use Of Remote Sensing And National Forest Inventories For Estimation And Mapping

**Room:** 150 D

**Organizers:** Gregory Reams (U.S. Forest Service) & Ken MacDicken (UN-FAO, Italy)

**Moderator:** Temesgen Hailemariam (Oregon State University)

**Description:** This session presents the integration of remotely sensed data and statistical survey information including national forest inventories with an emphasis on large landscape estimation and mapping at the national and global scale of forest metrics such as biomass, carbon, and soils.

Origin And Methodological Aspects Of National Forest Inventory In Brazil (NFI-BR)	Hassan Camil David	Brazil
Development Of Carbon Monitoring Methods In Ecuador	Danilo Granja	Ecuador
Preliminary Results Of The Global Forest Biomass Survey	Sean Healey	United States

Mapping Forests As Renewable Chemicals For Biorefineries	Torbjorn A Lestander	Sweden
A New Soil Erosion Survey Method In The National Forest Inventory Of Japan	Satoru Miura	Japan
Brazilian National Forest Inventory: Remote Sensing And Landscape Analysis Approaches For Nationwide Forest Monitoring And Assessment	Yeda Oliveira	Brazil
Going Beyond National-Level Statistics: A New Data Infrastructure For Ecoregion-Level Forest Resource Assessment	Brad Smith	United States

**Poster Presentations:**

Mapping The Extent Of Conifers Dominating High Conservation Value Forests In Finland Using Landsat Data	Evgeny Lopatin	Finland
Russian Federation Forest Resources Assessment Based On Free Medium Resolution Remote Sensing Data	Evgeny Lopatin	Finland
Measurement And Monitoring Of Carbon In Peru: Methods And Plans For MRV	Renzo Carlos Vergara Arellano	Peru

**C-19 (226) Implementation Of Silvicultural Treatments And Their Effects Into Forest Growth Models****Room:** 150 E**Organizers:** Margarida Tomé (Technical University of Lisbon, Portugal) & JP Skovsgaard (Swedish University of Agricultural Sciences)**Moderators:** Margarida Tomé & JP Skovsgaard**Description:** This session will explore how silvicultural treatment effects, such as those associated with thinning, regeneration, and fertilization, are incorporated into current forest growth models and how these may be improved to better support forest management decisions.

The Forest Projection And Planning System (FPS)	James Arney	United States
Implementation Of Thinnings In Individual Tree And Diameter Distribution Growth Models; An Application To Maritime Pine Stands In Portugal	Teresa Fonseca	Portugal
Using A Light-Capture Based Tree Growth Model To Optimize Uneven-Aged Silviculture Of Picea Mariana In Canada	Arthur Groot	Canada
Modeling Uneven-Aged Management Of Heterogeneous Forests Within Individual Based And Spatially Explicit Simulation Models.	Valentine Lafond	France
Improve The 3-PG Model In Eucalyptus Fertility Modifier Using Twin-Plots	Cristiane Lemos	Brazil
Increases In Soil Carbon And C/N Ratio In Pine Forests 34 Years After Phosphorus Fertilizer Addition: Measurement And Modeling	Phil Polglase	Australia
Growth And Survival Of Seedlings Near Clusters Of Retained Overstory Trees On Forest Plantations In Pacific Temperate Rainforests	Nick Smith	Canada
A Selective Cutting Decision Model For Optimizing Spatial Structure Of Spruce-Fir Forest	Hua Yang	China

**C-26 (27) Forest Owners And Climate Change Adaptation****Room:** 150 F**Organizers:** Robert Jandl (Research and Training Centre for Forests, Natural Hazards and Landscape, Austria), Ulrike Pröbstl (University of Natural Resources and Life Sciences, Austria), Anatoly Shvidenko (International Institute of Applied System Analysis, Austria) & Sandra Luque (National Institute for Environmental and Agricultural Science and Research, France)

<b>Moderator:</b>	Robert Jandl		
<b>Description:</b>	This session will discuss the consequences of a changing structure of forest land owners under the conditions of climate change for development and implementation of appropriate forest management adaptation measures and risk management.		
	Understanding And Directing Small-Scale Private Forest Owner Behaviour Towards Climate Change Adaptation	Ulrike Pröbstl-Haider	Austria
	Forest Owner Perceptions Of Climate Change Effects On Forest Management	Leif Gustavsson	Sweden
	Acting As A Forest Owner In A Climate Of Uncertainty	Philippe Deuffic	France
	Characterizing Climate Change And Forest Carbon Sequestration Attitudes Of NIPF Landowners In The Southern United States	Puskar Khanal	United States
	Family Forest Landowner Interest In Carbon Management And Markets: Insights From The U.S. And Norway	Stephanie Snyder	United States
	Explaining Differences In Perception Of Climate Risks And Adaptation Measures Among Forest Owners And Forestry Advisors	Gregor Vulturius	Sweden
	Scenarios For Forest Management In A Rural Municipality In Sweden, With Respect To Different Private Forest Owners Categories	Jeannette Eggers	Sweden
	Paths For New Services - Important Factors In Owning Forests For Finnish NIPF Owners In The Context Of Ecosystem Services	Osmo Mattila	Finland
	What Is The Baseline Of Forest Carbon Stocks In South Korea: Overestimation Or Underestimation?	Yohan Lee	Republic of Korea

## // FORESTS AND WATER INTERACTIONS

### D-05A (256A) Managing Forests And Forest Uses To Protect And Provide Clean Water

<b>Room:</b>	155 E		
<b>Organizers:</b>	Richard Harper (Murdoch University, Australia) & Jean-Michel Carnus (INRA, France)		
<b>Moderators:</b>	Richard Harper & Jean-Michel Carnus		
<b>Description:</b>	This session will examine the linkages between forests and forest watershed management and water quality for rural and urban water users and consumers.		
	Intensified Forestry In Sweden: How Will It Affect The Sustainability Of Forest Soils And Waters?	Hjalmar Laudon	Sweden
	Long-Term Response Of Streamflow And Groundwater To Timber Harvesting And Declining Rainfall In A Small Forest Catchment In South-Western Australia	Geoff Stoneman	Australia
	Conversion Of Tropical Rainforests To Oil Palm And Rubber Increased Flooding In Peninsular Malaysia	Ismariah Ahmad	Malaysia
	After The Smoke Clears: Evaluating Post-Fire Erosion Risk And Rehabilitation Options	Peter Robichaud	United States
	Optimising Water Co-Benefits From Forest Carbon Mitigation	Richard Harper	Australia
	Quantifying Tradeoffs Of Water And Carbon Among PES-Sponsored Reforestation Strategies In Seasonally-Dry Costa Rica.	Oscar Abelleira Martinez	Costa Rica
<b>Poster Presentations:</b>			
	Effects Of Historic Forest Disturbance On Water Quality And Flow In The Interior Western U.S.	Marek Matyjasik	United States

Interception Loss, Throughfall And Stemflow In Tamaulipan Thornscrub At Species Level, Northeastern Mexico	Israel Cantu Silva	Mexico
Priority Areas For Water Recharge In Temperate Forest Ecosystems In Mexico	Patricia Hernández-de la Rosa	Mexico
The Effect Of Plant Cover On Alimentation Areas On Spring Water Chemistry In The South Of Poland	Stanisław Małek	Poland

## // FOREST BIOMASS AND BIOENERGY

### E-01A (50A) Sustainable Biomass For Energy And Industrial Raw Materials: Biomass Potentials

**Room:** 150 G

**Organizers:** Viktor Bruckman (Commission for Interdisciplinary Ecological Studies, Austrian Academy of Sciences), Sanjeev Kumar Chauhan (Punjab Agricultural University, India) & Robert Jandl (Federal Research and Training Centre for Forests, Natural Hazards and Landscape, Austria)

**Moderators:** Viktor Bruckman & Sanjeev Kumar Chauhan

**Description:** This session aims at disseminating state-of-the-art knowledge of sustainable woody biomass production from common woodland management systems, such as conventional forestry, short rotation forestry and agroforestry with a focus on sustainability in context of changing climate, carbon sequestration and trading, and social benefits.

Survey Of Guidelines For Intensive Forest Biomass Removals From Around The World: Lessons And Recommendations	Brian Titus	Canada
Energy Crops And Trees As A Sustainable Feedstock From Marginal Lands	Michael Jacobson	United States
Eucalyptus Plantations In Florida USA: Economic Analysis Of Current And Potential Uses	Jeff Wright	United States
Biomass Yields From First Rotation Periods In Commercial Short Rotation Forestry (SRF) Plantations In Bavaria Prove To Be Higher Than Those From Previous Field Trials	Sebastian Hauk	Germany
Biochar Application In Forestry: A Multinational Approach To Assess The Potentials For Negative Carbon Emissions	Viktor Bruckman	Austria
Sustainable Urban Forest Maintenance: Re-Thinking Satoyama As A Biomass Resource For The Small-Scale Wood Energy Utilization	Toru Terada	Japan
Forest Energy In West Africa: Situation And Future Scenarios For Burkina Faso And Sierra Leone	Javier Arevalo	Finland
Demonstrating Potential For Commercial Production Of Some Biomass Fuels For Bioenergy Application In Kenya	James Onchieku	Kenya

### E-08A (106A) Biobased Products And Bioenergy

**Room:** 250 B

**Organizers:** Jianchun Jiang, Fuxiang Chu (Chinese Academy of Forestry), Dominique Lachenal (Grenoble INP-Pagora, France) & Jingxin Wang (West Virginia University, USA)

**Moderator:** Dominique Lachenal

**Description:** This session will feature current scientific developments on biomass materials and derived products, technologies for converting biomass into useful products and energy, including techniques under development to produce pure cellulose for dissolving pulp (textile) and for higher value cellulosic polymers and materials.

Woody Biomass Utilization For Bioenergy: Opportunities And Challenges In Biomass Harvest And Logistics In The Northeastern United States	Jingxin Wang	United States
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Nondestructive Estimation Of The Chemical And Thermal Properties Of Forest Biomass Using Vibrational Spectroscopy And Thermogravimetric Analysis	Gifty Acquah	United States
Overcoming Barriers To Cogeneration From Biomass In The U.S. Wood Products Industry	Omar Espinoza	United States
The Research And Development Status Of Chinese Biomass Gasification And Pyrolysis	Jianchun Jiang	China
Upgrading Wood Pyrolysis Oil By Hydrogenation Using Nanocatalysts To Green Transportation Fuels	Yinglei Han	China
Catalytic Upgrading Of Biomass Pyrolysis Vapors	Mark Nimlos	United States
Effect Of Woody Biomass Feedstock On Gasification Synthesis Gas	Les Groom	United States

## // FORESTS AND FOREST PRODUCTS FOR A GREENER FUTURE

### F-05 (90) Gender And Forestry Value Chains

**Room:** 151 B

**Organizers:** Herry Purnomo, Bimbika Sijapati Basnett & Pablo Pacheco (CIFOR, Indonesia) & Sola Phosiso, (CIFOR, Kenya)

**Moderators:** Herry Purnomo & Bimbika Sijapati Basnett

**Description:** Drawing on research carried out on a wide range of forest value chains from charcoal, teak to bush meat and wild vegetables, this panel will shed a light on the role of women in forest value chains in the face of forest loss and a range of uncertainties generated by ever-increasing demands for food, timber, and ecosystem services in a globalized world.

Opportunities For Enhancing Poor Women's Socio-Economic Empowerment In The Value Chains Of Three African Non-Timber Forest Products (NTFPs)	Fiona Paumgarten	South Africa
Gender, Value Added Chains And Certification In Furniture Industry	Herry Purnomo	Indonesia
Women And Charcoal Value Chains In Eastern And Southern Africa	Phosiso Sola	Kenya
The Role Of Women In The Management Of Forest Resources On Afadjato Mountain Ecosystem In Ghana	Edward D. Wiafe	Ghana

### F-18 (159) Emerging Green And Sustainable Alternatives To Classical Wood Preservative To Protect Forest Products

**Room:** 151 A

**Organizers:** Donatien Pascal Kamdem (Michigan State University, USA), Jöran Jermer (SP Technical Research Institute of Sweden), Andrew Wong (Universiti Malaysia Sarawak) & Nasko Terziev (Swedish University of Agricultural Sciences)

**Moderators:** Andrew Wong & Fatima Charrier-El Bouhtoury (Université de Pau et des Pays de l'Adour, France)

**Description:** This session will explore recent research and technology used worldwide to improve stability and durability of wood products such as biological, chemical and physical modification and test methodologies to evaluate and predict their in-service performance in different applications.

Superheated Steam Heat Treatment For Pitch Pine ( <i>P. Rigida</i> ) Lumber	Yonggun Park	Republic of Korea
Temperate Woods In Tropical Climate - How Sustainable	Sundararaj Ramachandran	India

Stilbenes From The Bark Of Norway Spruce ( <i>Picea Abies</i> [L.] Karst. ) As Protective Agents	Pekka Saranpää	Finland
Wood Modification Through Acetylation Process On Three Lesser-Used Timber Species Of Myanmar	Cho Cho Win	Myanmar (Burma)
<b>Poster Presentations:</b>		
Antifungal Potential And Chemical Composition Of <i>Chamaecyparis Formosensis</i> And <i>Chamaecyparis Obtusa</i> Var. <i>Formosana</i> Essential Oils In Liquid And Vapor Phase Against Plant Pathogenic Fungi	Ying-Ju Chen	China-Taipei
<i>Cinnamomum Osmophloeum</i> Leaf Oils Act As Antifungal Agents For Wood Rot Fungus <i>Phellinus Noxius</i>	Sen-Sung Cheng	China-Taipei
Crude Tall Oil Impregnation As A Wood Preservation Method	Henrik Heräjärvi	Finland
Chemical Treatments To Sanitize <i>Phytophthora Ramorum</i> Colonized Timber Material And Mitigate The Risk Of Accidental Sudden Oak Death Dissemination.	Joseph Hulbert	United States
Fungal Decay Of <i>Pinus Kesiya</i> Fascia Boards On External Joinery In Zambia	Elisha Ncube	Zambia
The Role Of Fenton Derived Hydroxyl Radicals In Oxidative And Enzymatic Degradation Of Furfurylated Wood	Klaus Richter	Germany
Utilization Of Naturally Durable Tropical Woods In Society For A Greener Future	Andrew Wong	Malaysia

## // FOREST HEALTH IN A CHANGING WORLD

### G-07 (38) Is Climatic Change Modifying The Characteristics Of Insect Damage In Forests?

**Room:** 151 C

**Organizers:** Francois Lieutier (University of Orleans, France), Timothy Paine (University of California, Riverside, USA) & Rodney Keenan (University of Melbourne, Australia)

**Moderator:** Timothy Paine

**Description:** This session will focus on the effects of climate change and changing forest management systems on insect damage to trees across multiple forest types.

Identifying Features Of Tree-Insect Interactions Prone To Major Alteration By Climate Change	Kenneth Raffa	United States
Climate Change And Insect Dynamics In Temperate Forests Of North America	Daniel Herms	United States
Increasing Damage Due To The Pine Processionary Moth In Europe: Role Of Climate And Landscape Changes	Jérôme Rousselet	France
Insect Outbreaks And Oak Decline Interact To Shape Drier Forests Of The Future	Fred M. Stephen	United States
Biological Characteristics Of The Mediterranean Forest Insects	Francois Lieutier	France
Living On The Edge: Outbreaks Of A Bark Beetle At Its Range Margins-Life-History, Associated Fungi And Host Defenses	Caterina Villari	United States
General Characteristics Of The Boreal Forest Insects	Pekka Niemela	Finland
<i>Dendroctonus Ponderosae</i> , 'The Tree Killer', Confronts Climate Change	Barbara Bentz	United States

**G-16 (184) Forest Health In Changing Landscapes: The Roles Of Landscape Patterns**

<b>Room:</b>	151 E		
<b>Organizers:</b>	Kurt Riitters (U.S. Forest Service) & Peter Vogt (European Commission Joint Research Centre, Institute for Environment and Sustainability)		
<b>Moderators:</b>	Kurt Riitters & Peter Vogt		
<b>Description:</b>	This session is focused on the mitigation of forest health impacts induced by climate change through manipulation of landscape patterns.		
	Slash And Burn Agriculture, Fragmentation And Landscape Dynamics In The Lowland Rainforest Of Madagascar: Case Of Manompana, Northeast Of Madagascar	Harifidy Rakoto Ratsimba	Madagascar
	Morphological Analysis Of State And Trends Of Landscape Pattern	Peter Vogt	Italy
	Natural Forest Fragmentation Evaluation At Campos Gerais Region, South Brazil	Rosemeri Moro	Brazil
	Land-Cover Changes And Future Projection In Gambari Forest Reserve, Southwestern Nigeria Using Landsat Imageries	Olufunke Olayode	Nigeria
	Mapping Spatial And Temporal Pattern Of Hemlock Woolly Adelgid Induced Hemlock Mortality In The Southern Appalachians	Tuula Kantola	Finland
	Abiotic And Biotic Factors Influencing Pine Health In Georgia And Alabama	David Coyle	United States
	National Integration Of In-Place And Remotely-Sensed Forest And Landscape Pattern Inventories To Evaluate Changes In Forest Health	Kurt Riitters	United States

**Special Session for Students and Young Scientists (The "IUFRO Incubator" 2)**

<b>Room:</b>	155 A-C		
<b>Organizers:</b>	JP Skovsgaard (Swedish University of Agricultural Sciences), other IUFRO Divisional representatives & the International Forestry Students Association (IFSA)		
<b>Moderators:</b>	Lilli Kaarakka (IFSA) Yousry El-Kassaby (University of British Columbia), Jamie Barbour & Ronald E. McRoberts (U.S. Forest Service)		
<b>Description:</b>	This session will provide a venue for recently graduated students to present brief summaries of their BSc, MSc or PhD theses in the fields of forest inventory and modelling, forest health, tree physiology and genetics, forest operations, engineering, products, biomass and bioenergy.		
	Scaling Local Tree Mortality Models To A Regional Scale Using Combined Estimators In A Meta-Regression Approach	Suborna Ahmed	Canada
	Site Index Models For Young Trees In Multilayer Silver Fir Stands In Southern Poland	Karol Bronisz	Poland
	Analysis Of Aboveground Carbon Sequestration Potential Of The Redd+ Demonstration Site In Southern, Leyte, Philippines	Rizza Karen Veridiano	Philippines
	Geospatial Methods Of Forest Carbon Monitoring In Relation To Land Use Change For REDD+ In Nepal	Him lal Shrestha	Nepal
	Inter-Annual Difference In The Water Use Of Mature Sugar Maple In Response To Experimental Warming And Irrigation	Alex Collins	United States
	Investigating Drivers Of Spatial Variation In Sugar Maple Leaf Morphology With A Canopy Shading Experiment	Adam Coble	United States
	Severity Of Sugar Maple Crown Dieback In Relation To Winter Climate Variables, Soil Nutrients, And The Presence Of Exotic Earthworms	Tara Bal	United States
	Variation In Photosynthetic Temperature Responses Across Vertical Tropical Forest Canopy Gradients	Alida Mau	United States

Pines Under Pressure: How Sierra Nevada Forests Are Impacted By Ozone And Drought Stress	Stella Cousins	United States
Effects Of Tree Species Biodiversity On Fungal Pathogen Regulation: Understanding The Spread Of The Ash Dieback Pathogen, Hymenoscyphus Pseudoalbidus	Diem Nguyen	Sweden
Effects Of White Pine Needle Damage And Climate Change On Forest Health And Carbon-Water Dynamics Across The Northeastern U.S.	Cameron McIntire	United States
Transmission Of Fungal Pathogens In An Ebb-And-Flow Irrigation System At A Native Plant Nursery	Rebecca Sheridan	United States
Role Of Fungi Of The Gen. Geosmithia In Relation To The Pathosystem Elm - Elm Disease (DED)	Alessia Pepori	Italy
Influence Of Host Plant On The Physiological Attributes Of Field Grown Sandal Tree (Santalum Album L.)	Delphy Rocha	India
Genetical Differences Among Central European Cockchafer Species	Balint Meszaros	Hungary
In Vitro Propagation Of Allanblackia Floribunda (Oliv) Through Nodal Culture	Oluseun Joshua Ogunade	Nigeria
Landscape-Scale Assessment Of Mexican Spotted Owl Nesting Habitat Using MODIS Imagery	Serra Hoagland	United States
FVS-OpCost: A New Forest Operations Cost Simulator, Developed In R And Linked With FVS	Conor Bell	United States
Optimization Of "Waterproof" Forwarding With Lidar Datasets In Sweden	Gustav Friberg	Sweden
Life Cycle Carbon And Economic Assessment Of Biochar-Based Bioenergy Production In Ontario, Canada	Krish Homagain	Canada
A Long-Term Perspective On Biomass Harvesting: Northern Mixedwood Forest Productivity 50 Years After Whole-Tree And Stem-Only Harvesting	Bethany Muñoz	United States

## TUESDAY 7 OCTOBER - TECHNICAL SESSIONS

### 15:30-18:00

#### // FORESTS FOR PEOPLE

#### A-03B (192B) The Value And Challenges Of Integrating Food And Medicinal Forest Products Into Forest Management

**Room:** 250 C

**Organizers:** James Chamberlain (U.S. Forest Service), Carsten Smith-Hall (University of Copenhagen, Denmark) & Tytti Sarjala (Finnish Forest Research Institute)

**Moderators:** James Chamberlain & Carsten Smith-Hall

**Description:** This session will explore the state of knowledge on how forests around the world provide products and services that maintain and improve human health and well-being, and the values and challenges of integrating the forest resources that supply these products and services into forest management.

Impact Of Bark And Foliage Harvesting On Fruit Production Of The Multipurpose Tree Species, Afzelia Africana In Burkina Faso	Blandine Marie Ivette Nacoulma	Burkina Faso
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Management Criteria For Non-Wood Forest Products Of Vegetable Origin Of Importance In The Sociocultural Context	Adolfo Núñez Barrizonte	Cuba
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Non-Wood Forest Products In A Context Of Sustainable Forest Management: Case Studies In Ukraine, Russia And Sweden	Stryamets Nataliya	Ukraine
Natural Resources For Human Health: The Reliance On Medicinal Plants For Health Care In Rural Nepal	Rikke Thorsen	Denmark
Traditional Knowledge Of Mushroom Production In The Changing World: The Case Of Noto-Temari And Dried Shiitake Mushroom In Oku-Noto Area, Japan	Ryo Kohsaka	Japan
Co-Managing Appalachian Hardwood Forests For Timber And Non-Timber Products	James Chamberlain	United States

### A-09 (168) Communities, Forests, Forest Industries And The Social License To Operate

**Room:** 250 A

**Organizers:** Peter Edwards (Swedish University of Agricultural Sciences), Justine Lacey & Kieren Moffat (CSIRO, Australia)

**Moderators:** Peter Edwards

**Description:** This session will include presentations on a variety of aspects related to how the forest industry earns and maintains the informal approval and acceptance that communities and other stakeholders grant to a company or industry engaged in forest resource use and management.

Corporate Responsibility Development Paths In The Forest Sector	Anne Toppinen	Finland
Collaboration Opportunities In Corporate Social Responsibility (CSR) Reporting For Finnish Non-Industrial Private Forestry (NIPF) And Non-Integrated Sawmilling Industry	Katja Lähtinen	Finland
Obtaining And Maintaining Social License To Operate – British Columbia's Quality Assurance Model	Timothy Ryan	Canada
Gaining A Social License To Practice The Assisted Migration Of Species In Forestry	Nicole Klenk	Canada
New Generation Plantations: All Forestry Has To Become Social Forestry	Luis Neves Silva	Portugal
The Socioeconomic Impacts Of Smallholder Industrial Tree Plantations In The Philippines	Rose Jane Peras	Philippines
First Nations And Forestry Companies In Canada: Possibilities And Pitfalls Of An Informal "Social License" In A Contested Environment	Stephen Wyatt	Canada
Social License As Social Contract: Procedural Justice, Democracy And Activism In The Australian Forest Industry	Justine Lacey	Australia

### A-13 (212) Innovative Planning And Managing Approaches For Sustainable Tourism In Forests And Natural Areas

**Room:** 151 D

**Organizers:** Taylor Stein (University of Florida, USA), Peter Fredman (Mid Sweden University, Sweden), Nobuhiko Tanaka, Tokai University, Japan) & Liisa Tyrväinen (Finnish Forest Research Institute)

**Moderator:** Taylor Stein

**Description:** This session's objectives are to address the multiple dimensions associated with tourism in forests and natural areas including benefits to society and local people.

Assessing Sustainability Of Nature Tourism Along Florida National Scenic Trail	Bin Wan	United States
Towards Sustainable Growth In Nature-Based Tourism Destinations: Clients' Views Of Land Use Options In Finnish Lapland	Liisa Tyrväinen	Finland
A Method To Detect Spatiotemporal Changes Of Tourism/Recreational Potential In Nature-Based Areas - With Several Case Studies In Japan	Nobuhiko Tanaka	Japan

Do Forests Matter To The Nature-Based Tourism Industry?	Peter Fredman	Sweden
Tourism Best Management Practices Applications In Southeast Alaska	Linda Kruger	United States
Definition Of Priority Areas For Use Public, In A Conservation Area In Brazil, Using Techniques Geoprocessing	Fabricia Benda de Oliveira	Brazil

### A-18B (190B) Value Of Traditional Knowledge For Sustainable Forest Management

<b>Room:</b>	250 D	
<b>Organizers:</b>	Yeo-Chang Youn (Seoul National University, Republic of Korea), Jinlong Liu (Renmin University of China), William Armand Mala (University of Yaounde I, Cameroon) & Ronald Trosper (University of Arizona, USA)	
<b>Moderator:</b>	Wil de Jong (Kyoto University, Japan)	
<b>Description:</b>	This session will focus on the relevance of traditional knowledge, practices and social/governance institutions in the conservation, management and restoration of forests and sustainable use of forest biodiversity.	
Can The Traditional Knowledge Be Prevented From Being TRIPped?	Medha Kant	India
What Makes Traditional Knowledge Communicable For Sustainable Forest Management?	In-Ae Kim	Republic of Korea
Can Local Wisdom Be Used In Forest Conservation Around National Park? The Case In Seram Island, Central Moluccas, Indonesia	Nining Liswanti	Indonesia
Linking Local Traditional Biodiversity Conservation Knowledge To Combat Rocky Desertification In Karst Area In Southwest China	Yaofeng Luo	China
Governance Of Knowledge Systems In Developing Adaptive Forest-Agriculture Innovations	William Armand Mala	Cameroon
Valuing Traditional Knowledge For Conserving Biodiversity In Indonesia	Herwasono Soedjito	Indonesia
Would Traditional Forest Knowledge Be Useful For Urban Ecological Restoration?	Sojin Youn	Republic of Korea

### A-20B (200B) On Farm Trees: Towards The Promotion And Development Of A Traditional Or Local Silviculture In Tropical And Subtropical Forest Regions

<b>Room:</b>	150 A	
<b>Organizers:</b>	William Armand Mala (University of Yaoundé, Cameroon), Jinlong Liu (Renmin University of China), Steven Anderson (Forest History Society, USA) & Yeo-Chang Youn (Seoul National University, Republic of Korea)	
<b>Moderator:</b>	William Armand Mala	
<b>Description:</b>	In this session presentations will focus on the status of on-farm trees research and discuss the integration of traditional silviculture and local ecological knowledge on multipurpose trees for the design of small scale forestry practices.	
Biodiversity And Socioeconomic Factors Supporting Farmers' Choice Of Wild Edible Trees In The Agroforestry Systems In Benin (West Africa)	Achille Assogbadjo	Benin
REDD+ Versus Practical Silvicultural Management For Rural Society Benefits In Miombo Woodlands, Southern Africa	Coert Geldenhuis	South Africa
Sustaining Ghana's Forest Cover: Evidence Cocoa Agroforestry System	Isaac Nunoo	Ghana
Conservation And Socio-Economic Importance Of Some Agroforestry Fruit Tree Species: Farmers' Participation, Tree Growth Characteristics And Market Assessment	Jonathan Chukwujekwu Onyekwelu	Nigeria
On-Farm Trees Management Drivers Of In Smallholder Landscapes Of Southern Cameroon.	Valentina Robiglio	Peru

Impact Of Traditional Agroforestry Systems Practices On Conservation Effectiveness Of Useful Trees: Case Study Of Borassus Aethiopum Mart. In Benin	Valere Salako	Benin
Multipurpose Trees Based Black Pepper (Piper Nigrum. L) Production Systems In Kerala, India: Biomass Production, Carbon Sequestration And Nutrient Fluxes	TK Kunhamu	India

## A-27B (26B) International To Local Forest Governance: Taking Stock Of Theories, Methodologies And Findings

<b>Room:</b>	251 A-C	
<b>Organizers:</b>	Lukas Giessen (University of Goettingen, Germany), Bas Arts (Wageningen University, Netherlands), Florian Kraxner (International Institute for Applied Systems Analysis, Austria) & Constance McDermott (University of Oxford, UK)	
<b>Moderator:</b>	Lukas Giessen	
<b>Description:</b>	This session aims at taking stock of innovative theoretical, methodological and empirical achievements in forest governance research, from the local to the global level.	
	Forest Relevant Actions To The Three Rio Conventions	Michael Obersteiner Austria
	Stakeholder Opinions On Bioenergy In Norway: Conflicting Perceptions Of Challenges And Opportunities	Berit H Lindstad Norway
	Institutional Work: Community-Based Organizations As Change Agents In Public Lands Governance In The American West	Cassandra Moseley United States
	The Assessment Of Forest Ecological Compensation System In The Southern China	Chengyue Tu China
	Local Forest Governance Assessed Through Social Network Analysis: Comparison Of Three Case Studies In Italy, Bosnia Herzegovina, And Montenegro	Riccardo Da Re Italy
<b>Poster Presentations:</b>		
	Alternative Pathways To Sustainability – A Framework For Comparative Forest Policy Analysis	Karin Beland Lindahl Sweden
	The Analysis Of Forest Governance And Social Capital: Theoretical And Methodological Links, Gaps And Overlaps	Riccardo Da Re Italy
	Brazilian Forest Governance: Trends, And Obstacles, A Proposal To Be Implemented	Vitor Afonso Hoeflich Brazil
	Forest Governance: A Study On Perception Of Actors Involved In The Forest Management Actions In The State Paraná (Brazil)	Vitor Afonso Hoeflich Brazil
	International Influences On National Forest Policy: Analyzing Stakeholder Coalitions And Their Argumentation In The Revision Of Finnish Forest Act	Pia Katila Finland
	Complexity Of Forest Tenure Issues And China's Collective Forest Tenure Reform	Hexing Long China
	Examining The Impact Of Governance On The Effectiveness Of Forest Protected Areas: A Systematic Review Of The Evidence	Biljana Macura Italy
	Forest Policy Re-Mix: Is History Bound To Repeat Itself In The Selection And Implementation Of Forest Policies And Instruments Across Latin America?	Kathleen McGinley United States
	The Atlántida Platform: A Civil-Society Effort Promoting Good Governance In The Honduran Forestry Sector	Mirian Molina Honduras
	State Of The Principles Of Good Forest Governance In Paraguay	Maria Laura Quevedo Fernandez Paraguay

Trans-Atlantic Governance Of Sustainable Solid Wood Bioenergy Supply Chains	CT Smith	Canada
Challenges To Multi-Level Sustainability Governance Of Forest Bioenergy And Impacts For Production And Trade – Global Stakeholder Views And Experiences	Inge Stupak	Denmark
One Methodology, Two Realities: Partnering With Indigenous Peoples In The Peruvian Amazon	Andrea Vasquez	Canada

### A-34 (131) Forestry Education Serving Science And Practice

**Room:** 150 B

**Organizers:** Piotr Paschalis-Jakubovicz (Warsaw University of Life Sciences, Poland), Siegfried Lewark, University of Freiburg, Germany) & Yemi Adeyeye (IFSA/Bangor University, UK)

**Moderator:** Piotr Paschalis-Jakubovicz

**Description:** In this session strategies for improving higher forestry education will be discussed, including new approaches to distance education, technology and didactics of e-learning, movement towards Open Education Resources (OER) and the growing role of universities in continuing education.

Changing The Perception Of A Natural Resource Education Program: A Case Study At Virginia Tech	Bob Smith	United States
Introduction Of Sustainable Forestry Best Learning And Practice Into Russian Forest Higher Education: NGO's Approaches	Elena Kulikova	Russian Federation
The Role And Tasks Of Research On Labour Psychology In The Ergonomic Education Of Foresters	Janusz Sowa	Poland
Competency Surveys: What Empirical Surveys And Economic Models Can Tell Us About Competency Requirements In Working Life	Mika Rekola	Finland
Curriculum Reengineering - The Key To Skill-Based Future Forest Education	Hans R. Heinimann	Switzerland
IUFRO Learning Initiatives – A Necessary Tool For Lifelong Learning Of Forestry Graduates?	Krzysztof Sterenczak	Poland
Recommendations For Forestry Science Education In North America: Results From The Berkeley Summit On Forestry Education	Kevin O'Hara	United States
Need For New Learning Approaches In An Evolving World: An Example Dealing With Climate Change	Jean-Luc Peyron	France

### // FOREST BIODIVERSITY AND ECOSYSTEM SERVICES

#### B-05B (59B) The Benefits Of Introducing The Ecosystem Service Concept In Forest Management And Planning At Different Spatial Scales

**Room:** 250 E

**Organizers:** Sandra Luque (IRSTEA, France) & Christine Fürst (ZEF Uni Bonn, Germany)

**Moderators:** Sandra Luque & Christine Fürst

**Description:** This session will examine how the distribution of ecosystem services and their monetary and non-monetary values can be influenced by changing scenarios (land use, climate) at different spatial scales, and the development of methodologies for mapping indicators that can be directly related to environmental policy assessments.

Exploring The Relationship Between Tree Species Diversity And Forest Ecosystem Services In The Face Of Climate Change	Susana Perez	Austria
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Incentive Payments For Plant Biodiversity Conservation In Forests: Dynamic And Spatial Analysis	Emeline Hily	France
Spatial Modeling Of Ecological-Economic Tradeoffs: Bioenergy Production And Biodiversity Conservation In The Alps	Sabine Fuss	Germany
Spatial-Temporal Analysis Of Forest Ecosystem Services In The South Of Chile	Karla Locher	Germany
Forest Management For Ecological Restoration And Conservation Of Ecosystem Services Around Mexico City: An Applied Ongoing Case Study	Victor Avila-Akerberg	Mexico
Payment For Environmental Services Aims To Combating The Desertification In Irauçuba, Ceará-Brazil	Marco Andrés González Carantón	Brazil
Integrating Ecosystem Services And Forest Ecological Networks Into State Planning At Multiple Scales: The Experience From Colombia	Dolors Armenteras	Colombia
The Potential Of Payment For Watershed Protection In Ndaka-Ini Dam, Murang'a County, Kenya	Joram Kagombe	Kenya

## B-07B (210B) Silvicultural Practices To Facilitate Forest Restoration

**Room:** 151 G

**Organizers:** Byung Bae Park (Chungnam National University, Republic of Korea), Palle Madsen (University of Copenhagen, Denmark) & Bryan Finegan (CATIE, Costa Rica)

**Moderator:** Palle Madsen

**Description:** This session will examine current research and practical experiences on silvicultural methods used to facilitate forest restoration, ranging from regeneration establishment to harvesting systems.

Achieving "Groupy-Clumpy" In Restoration Projects: Innovative Silviculture And Monitoring In The Front Range Collaborative Forest Landscape Restoration Project	Yvette Dickinson	United States
Pioneer Species Used As Nurse Crops – A Powerful Silvicultural Method In Forest Restoration And Forest Adaptation	Palle Madsen	Denmark
Growth And Mortality Assessment In Underplanting Nothofagus Seedlings As Function Of Resources Availability	Daniel Soto	United States
Additive Partitioning Approach: Evaluating The Restoration Efficiency Of Plant Species Diversity In A Warm-Temperate Mountainous Riparian Forest In Japan	Satoshi Ito	Japan
Biodiversity Benefits Of Restoration Of Boreal Forests In Finland	Anne-Maarit Hekkala	Finland
Restoration Of Mixed-Pine Forest Ecosystems Of Eastern Upper Michigan Using Variable-Retention Harvesting	David Hix	United States
A Mixed Species Clearcut Silviculture System To Restore Native Species Composition And Structure Of Old-Growth Forests In Western Washington	Gregory Ettl	United States
Biodiversity Response To Trees Retained At Final Harvest For Conservation Purposes – A Meta-Analysis	Lena Gustafsson	Sweden

## B-19B (104B) Forests, Roots And Soil Carbon

**Room:** 155 F

**Organizers:** Cindy Prescott (University of British Columbia, Canada), Douglas Godbold (University of Natural Resources and Life Sciences, Austria), Heijä-Sisko Helmisaari (University of Helsinki) & Shalom Daniel Addo-Danso (FORIG, Ghana & University of British Columbia, Canada)

**Moderator:** Cindy Prescott

<b>Description:</b>	This session will present new insights on root contributions to soil carbon, particularly linked to forest management, climate change, biodiversity and ecosystem services.		
	Tree Root Systems And Nutrient Mobilization: Mineral Weathering By Rhizospheres And Deep Roots	Rob Harrison	United States
	C Input Into Forest Soil From Below- And Aboveground Litter In Climatically Contrasting Norway Spruce Forests	Heljä-Sisko Helmisaari	Finland
	The Relationship Between Fine Root And Litterfall Dynamics Across Various Types Of Temperate Deciduous And Coniferous Forests	Ji Young An	Japan
	Estimates Of Forest Fine Root Productivity Based On Functional Classification Of Fine Roots And Root Traits	Michael Luke McCormack	China
	Applicability Of Mesh Methods For The Estimates Of Fine Root Production In Forest Ecosystems	Mizue Ohashi	Japan
<b>Poster Presentations:</b>			
	Effects Of Stand Structure Regulation On Soil Labile Organic Carbon Under Pinus Elliottii Plantation	Yuan-qiu Liu	China
	Different Allocation Patterns Of 18 Chemical Elements In Leaves, Branches, And Different Root Branch Orders Across 18 Species In Gurbantünggüt Desert In China	Zeqing Ma	China
	Fine Root Turnover Within Land-Use Change From Primary Forest To Degraded Forest And Oil Palm Plantation On Tropical Peat	Sebastian Persch	Indonesia
	Lateral Root Distribution Of Eucalyptus Camaldulensis And Eucalyptus Pellita Under Different Tree Spatial Arrangements	Geraldo G. Reis	Brazil
	Behaviour Of Roots Of Savanna Species In The Pantanal Wetlands, Brazil	Suzana Salis	Brazil
	Mycorrhizal Communities In Imperata Cylindrical Invaded And Non-Invaded Commercial Pinus Taeda Stands	Adam Trautwig	United States
	Free Air Humidity Manipulation (FAHM) Experiment In Estonia Provides New Knowledge Of Climate Change Effects On Northern Forests	Arvo Tullus	Estonia
	Precipitation Frequency Controls Interannual Variation Of Soil Respiration In A Subtropical Forest	Huimin Wang	China

## // FORESTS AND CLIMATE CHANGE

### C-01 (71) Climate Change: A Driver For Land-Use Change And Adaptive Forest Management On Six Continents

<b>Room:</b>	150 D		
<b>Organizers:</b>	J.P. Skovsgaard (Swedish University of Agricultural Sciences), Jean-Michel Carnus (National Institute for Environmental and Agricultural Science and Research, France), Ronald E. McRoberts (U.S. Forest Service), Tod Ramsfield (NRCan-Canadian Forest Service)		
<b>Moderator:</b>	J.P. Skovsgaard		
<b>Description:</b>	Presenting examples from around the world, this session aims to contrast impacts of climate change on land-use and adaptive forest management.		
	Impact Of Climate Change On Major Forest Ecosystem Services In Europe	Marc Hanewinkel	Switzerland
	Using 3PG To Assess Climate Change Impact On The Management Plan Optimization Of Eucalyptus Plantations. Case Study In Southern Brazil	João HN Palma	Portugal
	Socio-Economic And Policy Issues Of Climate Change For Forests In Asia	Bhaskar Vira	United Kingdom
	Species And Populations Growth Responses To Changed Climate: Implications For Adaptive Forest Management	Laura Leites	United States

A New Paradigm For Adaptive Management	Lucy Rist	Sweden
<b>Poster Presentations:</b>		
Scenarios Of Future Climate For The Camagüey Province, Cuba: Possible Influence On The Forest Plantations Of Mediterranean Distribution	Lorge Acosta	Cuba
Sex-Related, Growth-Climate Association Of Araucaria Angustifolia In Subtropical Planted Forests In Argentina	Stella Bogino	Argentina
Opportunities For Climate Change Mitigation Through Afforestation And Reforestation Of Degraded Lands In The Sub-Saharan Africa	Tolulope Daramola	Nigeria
"Shelterbelts System Of Agroforestry" – Improves Microclimate, Crop Yields, Carbon Sequestration, Mitigate Climate Change In Dry Land Ecosystem Of Peninsular India	Shivanna Honnurappa	India
Vegetation Change In Boundou Natural Community Reserve, Region Of Tambacounda/Senegal From 1974 To 2010	Faye Laurice Codou	Senegal

### C-07 (138) Forests, Fire And Climate Change Dynamics

<b>Room:</b>	150 C	
<b>Organizers:</b>	Bill de Groot (NRCan-Canadian Forest Service), Ainuddin Nurrudin (Universiti Putra Malaysia), Susan Conard (International Boreal Forest Research Organization, USA) & Pieter van Lierop (UN-FAO, Italy)	
<b>Moderator:</b>	Bill de Groot	
<b>Description:</b>	Presentations in this session will focus on the latest scientific understanding of climate change and future global fire regimes, feedback to the global carbon balance, expected human and environmental impacts, and potential management strategies to mitigate negative impacts.	
Climate Change And Wildland Fires In The 21st Century	Mike Flannigan	Canada
Challenges And Pitfalls In Quantifying The Interactions Between Fire And Changing Climate In The Boreal Zone	Susan Conard	United States
Climate Change And Tropical Forest Fires: Impacts And Adaptation	Hety Herawati	Indonesia
Forest Fires And Adaptation Options In Europe	Nikolay Khabarov	Austria
Large Fires In The United States Under Changing Climate	Yongqiang Liu	United States
Response Of Wildfire To Climate Change And Its Implications In Vegetation Dynamics In Northeast Chinese Boreal Larch Forests	Jian Yang	China
Canadian Boreal Forest Timber Vulnerability To Current And Future Fire Risk	Sylvie Gauthier	Canada
Climate Change And Fire Influence The Methane Uptake Capacity In Australian Eucalypt Forest Soils	Stefan Arndt	Australia

### C-14 (9) Forest Biomass And Carbon Inventory On Successive Occasions

<b>Room:</b>	150 E	
<b>Organizers:</b>	Bianca Eskelson (Oregon State University, USA), Cris Brack (Australian National University) & Teresa Fonseca (University of Trás-os-Montes e Alto Douro, Portugal)	
<b>Moderator:</b>	Bianca Eskelson	
<b>Description:</b>	Speakers in this session will discuss national successive inventory designs that integrate factors such as biomass and carbon, and the challenges that arise when dealing with re-measurements, focusing on the importance of research in the development of methods.	

National Biomass And Carbon Inventory Based On Sample Plots	Aleksi Lehtonen	Finland
A Synthesis Of Recent Model Evaluation Activities Conducted In Support Of Canada's National Forest Carbon Monitoring, Accounting, And Reporting System	David Greenberg	Canada
Challenges With Quantifying Causes Of Forest Carbon Flux From Remeasured Inventories	Andrew Gray	United States
Recent Technical Changes To The United States Forest Carbon Inventory	Christopher Woodall	United States
Evolution And Maintenance Of A Permanent Plot System In An Evolving Political And Technical Landscape	David Mannes	Australia
The Role Of Remote Sensing In U.S. Forest Inventories: Past, Present And Future	Gretchen Moisen	United States
Sources Of Sampling Errors Due To The Changes Of Sampling Design In Forest Monitoring	Katarina Merganicova	Slovakia
Efficient Sampling Techniques For The Estimation Of Deadwood Volume And Carbon Storage In Managed Forests	Tim Ritter	Germany
Difference Of Carbon Balance Through Forest Management And Timber Utilization At Different Cutting Periods	Masahiro Iwaoka	Japan

## C-21 (253) Complying With The IPCC Good Practice Guidance For Tropical Carbon Stock Inventories

**Room:** 150 F

**Organizers:** Ronald E. McRoberts (U.S. Forest Service)

**Moderator:** John Coulston (U.S. Forest Service)

**Description:** The session will address methods for complying with the two IPCC Good Practice Guidance estimation criteria: (1) neither over- nor under-estimation (bias), and (2) uncertainties are reduced as far as is practicable (precision).

Assessing REDD+ Performance And Evolving Monitoring Needs	Martin Herold	Netherlands
Properties Of The Stock Change Method For Estimating Greenhouse Gas Emissions From Forests	Goran Stahl	Sweden
Techniques For Using Maps To Enhance Estimates Of Forest/Non-Forest Change	Ron McRoberts	United States
Use Of Multi-Temporal, Multi-Level Remote Sensing And Field Data For Retrospective Estimation Of Biomass In Remote Regions	Hans-Erik Andersen	United States
Estimation Of Biomass And Change In Biomass And Corresponding Uncertainties In Sample Surveys Assisted By Airborne Laser Scanning	Erik Næsset	Norway
Model-Dependent Inference For Biomass Estimation In A Lidar Sample Survey In Liwale, Tanzania	Svetlana Saarela	Finland

## // FORESTS AND WATER INTERACTIONS

### D-05B (256B) Managing Forests And Forest Uses To Protect And Provide Clean Water

**Room:** 155 E

**Organizers:** Richard Harper (Murdoch University, Australia) & Jean-Michel Carnus (INRA, France)

**Moderator:** Richard Harper

<b>Description:</b>	This session will examine the linkages between forests and forest watershed management and water quality for rural and urban water users and consumers.		
	Importance Of Forests To Water Quality In The United States	Thomas Brown	United States
	Modelling The Effects Of Forest Management On Water Quality In Sweden	Salim Belyazid	Sweden
	In-Stream E-Coli Bacteria Loading From Forest And Pasture Land Uses In The Attoyac River, East Texas, USA	Sarah Schwab	United States
	Forestry Reserves And The Regulation Of Water Quality And Algae Structure Of Ponds In A Sub-Saharan Region Of Africa	Bilasse Zongo	Burkina Faso
	Long-Term Forest Planning Taking Stream Water Quality Into Consideration	Johanna Lundström	Sweden
	Forests And Water: Contemporary Science And Its Relevance For Community Forestry In The Asia-Pacific Region	Regan Suzuki (Pairojmahakij)	Thailand
<b>Poster Presentations:</b>			
	Towards Optimized Buffer Zones - Digital Terrain Indices As A Tool For Predicting The Most Sensitive Areas	Anneli Ågren	Sweden
	Enabling Environmental Excellence In Alberta Through Lidar Derived Wet Areas Mapping	Barry White	Canada
	Environmental Fragility Of The Iguaçú River Watershed, Paraná, Brazil	Ana Paula Dalla Corte	Brazil
	Riparian Forests In Pitangui River: A High Heterogeneous Landscape At South Brazil	Rosemeri Moro	Brazil
	Restoring The Eco-Hydrological Function Of The Forest On A Small Karst Island: Case Study On Nusa Penida Island, Bali (Indonesia)	Budi Hadi Narendra	Indonesia

## // FOREST BIOMASS AND BIOENERGY

### E-01B (50B) Sustainable Biomass For Energy And Industrial Raw Materials: Evaluation Of Bioenergy Systems

<b>Room:</b>	150 G		
<b>Organizers:</b>	Viktor Bruckman (Commission for Interdisciplinary Ecological Studies, Austrian Academy of Sciences), Sanjeev Kumar Chauhan (Punjab Agricultural University, India) & Robert Jandl (Federal Research and Training Centre for Forests, Natural Hazards and Landscape, Austria)		
<b>Moderators:</b>	Viktor Bruckman & Sanjeev Kumar Chauhan		
<b>Description:</b>	This session aims at disseminating state-of the art knowledge of sustainable woody biomass production from common woodland management systems, such as conventional forestry, short rotation forestry and agroforestry with a focus on sustainability in context of changing climate, carbon sequestration and trading, and social benefits.		
	Ecohydrological Impacts Of Feedstock Production For Bioenergy Across The Americas: A Multidisciplinary Study To Assess Long-Term Sustainability	Heidi Asbjornsen	United States
	Opportunities To Design Sustainable Bioenergy Systems	Virginia Dale	United States
	Impact Of Commercial Poplar And Willow Short Rotation Forestry Stands On Water, Soil, And Phytodiversity	Ioannis Dimitriou	Sweden
	Harnessing Green Energy From Green Gold: Case Study From Peninsular India	Syam Viswanath	India
	How Much Is Too Much?	Klaus Katzensteiner	Austria

Biomass Partitioning And Fuel Characterization Of Short Rotation Tree Species	Sanjeev Chauhan	India
Carbon, Water And Nutrient Balances Of An Eucalyptus Grandis Plantation In Brazil Over A 5 Year Period	Yann Nouvellon	France
Evaluation On Invasive Species Characteristics And Visions Of Rural People To Introduced Species Prosopis Juliflora (SW.) DC. In Dry Zone Of Myanmar	Wai Wai Than	Myanmar (Burma)

### E-08B (106B) Biobased Products And Bioenergy

**Room:** 250 B

**Organizers:** Jianchun Jiang, Fuxiang Chu (Chinese Academy of Forestry), Dominique Lachenal (Grenoble INP-Pagora, France) & Jingxin Wang (West Virginia University, USA)

**Moderator:** Jianchun Jiang

**Description:** This session will feature current scientific developments on biomass materials and derived products, technologies for converting biomass into useful products and energy, including techniques under development to produce pure cellulose for dissolving pulp (textile) and for higher value cellulosic polymers and materials.

Oil Content And Fatty Acid Profile Of Calophyllum Brasiliense Cambes: A New Resource For Biodiesel Feedstock In Mexico	Antonio Bernabe-Antonio	Mexico
Determination And Quantification Of Fatty And Resin Acid Composition In Boreal Lodgepole Pine And Scots Pine For Biorefinery Applications	Tommy Mörling	Sweden
Two-Stage Autohydrolysis Pretreatment Combined With Refining For Improved Enzymatic Hydrolysis Of Hardwood	Hasan Jameel	United States
Effect Of Chemical Pretreatments On Bamboo For Bioethanol Production	Zhiqiang Li	China
Extraction Of Hemicelluloses From Eucalyptus Globulus Woodchips For Their Valorisation Into Surface-Active Agents	Dominique Lachenal	France
Progress In Dissolving Pulp Manufacture	Annariikka Roselli	Finland
Phenolation Of Kraft Lignin Catalyzed By Boron Trifluoride	Hou-min Chang	United States
Storage Of Torrefied Wood – Investigating The Sorption Properties And Susceptibility To Fungal Degradation	Majja Kymäläinen	Finland

## // FORESTS AND FOREST PRODUCTS FOR A GREENER FUTURE

### F-10 (164) Precision Land-Use Management - State And Perspectives

**Room:** 151 B

**Organizers:** Hans R. Heinimann (ETH Zurich, Switzerland) & Woodam Chung (Oregon State University, USA)

**Moderator:** Woodam Chung

**Description:** This session will explore principles, technologies, and applications of precision land-use management, an emerging, engineering-driven concept based on the vision that future land-use management systems will be able to purposefully control and coordinate biological, technical, and administrative processes in about real-time.

Validation Of Timber Volume Maps Derived From Remote Sensing Data	Jochen Breschan	Switzerland
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Optimizing The Selection Of Individual Tree In Thinning Treatments To Reduce Crown Fire Potential	Marco Contreras	United States
Development And Validation Of A Physically Based Forest Operations Model	Lindsay Grayson	United States
Design Of Efficient Harvesting Units Using Remote Sensing Information And Field Data	Andreas Hill	Switzerland
Evaluating The Best Locations In Coniferous Plantations For The Natural Regeneration Of Broadleaved Forest	Ryohei Morimoto	Japan
Key Initiatives To Enable Sustainable And Profitable Hardwood Silviculture	Gaetan Pelletier	Canada
An Optimization Model Of Masson Pine Multiple Functional Management In South China	Decheng Zhang	China
Social And Economic Consequences Of Eucalyptus Plantation Management	Benjamin Engler	Germany

### F-13 (55) Planted Forests: Meeting Future Global Forest Product Needs Sustainably

<b>Room:</b>	151 C	
<b>Organizers:</b>	Dave Cown (Scion, New Zealand) Jean-Michel Carnus (National Institute for Environmental and Agricultural Science and Research, France), Tim Payn (Scion, New Zealand), João Palma (Technical University of Lisbon, Portugal)	
<b>Moderator:</b>	Jean-Michel Carnus	
<b>Description:</b>	This session will examine the growing importance of planted forests and the potential for intensified production without adversely affecting the wider environment, and will focus on integrated or systems approaches recognizing the importance of interactions of all aspects of forest management.	
	Contribution Of Planted Forest To Sustainable Production Of Forest Products And Ecosystem Services	Thomas Fox United States
	Complexity Of Governance Of Planted Forests	Daniela Kleinschmit Sweden
	Future Expectations Of Forest Soils	Peter Clinton New Zealand
	Future Role Of Plantations In Europe	Mart-Jan Schelhaas Netherlands
	Integrating Our Understanding Of Water, Nutrition, And Physiology To Manage Tropical Eucalyptus And Acacia Plantations	Daniel Mendham Australia
	Management And Valorization Of Stone Pine (Pinus Pinea L.) Stands In Tunisia: Innovations For A Better Governance	Abdemhamid Khaldi Tunisia
	Modeling Potential Site Productivity For Japanese Cedar For Selecting Suitable Sites For Managing Planted Forests	Yasushi Mitsuda Japan
	Sustainability Of The Portuguese Eucalyptus Forest Under Different Scenarios Of Wood And Biomass Demand, Forest Management, And Climate Scenarios	Margarida Tomé Portugal
	Using A Criteria And Indicators Framework To Explore Future Impacts Of Planted Forests On New Zealand's Economy, Environment, And Society	Tim Payn New Zealand
	Introduction Of Eucalyptus Species In Chile	Santiago Barros Chile

**// FOREST HEALTH IN A CHANGING WORLD****G-02 (14) Ozone And Forest Health****Room:** 151 A**Organizers:** Zhaozhong Feng (Chinese Academy of Sciences) & Elena Paoletti (National Research Council, Institute of Plant Protection, Italy)**Moderator:** Zhaozhong Feng & Elena Paoletti**Description:** This session is focused on the impacts of climate change on ground-level ozone formation and ozone damage to vegetation worldwide.

Ozone Changes And Impacts In North American Forests	Andrzej Bytnerowicz	United States
Can We Predict Tree Response To Ozone Under Climate Change ? - Current Status And Perspectives . . .	Rainer Matyssek	Germany
Interactions Of Ozone And Selected Physiological Characteristics Of Mountain Spruce Forest In Beskydy Mts., Czech Republic	Pavel Cudlin	Czech Republic
Reducing Modelling Uncertainties In Ozone-Risk Assessment For Mediterranean Forests From Comparison Of Modelled And Measured Phytotoxic Ozone Dose (POD) Data	Alessandra De Marco	Italy
Leaf Mass Per Area Elucidates Ozone Sensitivity Of Woody Species	Zhaozhong Feng	China
Interaction Of Altered Tropospheric Ozone Concentrations With Loblolly Pine Decline	Jeffrey Chieppa	United States
Ambient Ozone And Its Damage Symptoms Occurred In Sensitive Plants In Beijing, China	Xiaoke Wang	China

**Poster Presentations:**

Ecophysiological Responses Of Beech (Fagus Crenata) Stressed By Ozone Exposure And/Or Water Shortage	Hideyuki Shimizu	Japan
Ozone Stomatal Flux-Based Critical Levels Translated Into Real-World Forest Impacts	Alessandra De Marco	Italy
Stomatal Ozone Flux-Response Relationship For Visible Injury And Net Photosynthesis In Poplar Trees Treated With Or Without Edu	Elena Paoletti	Italy

**G-11 (15) Societal Impacts Of Invasive Forest Pathogen And Pests****Room:** 151 E**Organizers:** Matteo Garbelotto (University of California at Berkeley, USA), Giles Hardy (Murdoch University, Australia) & Paolo Gonthier (University of Turin)**Moderators:** Matteo Garbelotto & Giles Hardy**Description:** This session will explore the social impacts related to the loss of native forests to exotic insects and disease.

Developing Wilt Resistant Acacia Koa For Restoration And Reforestation In Hawaii	Nicklos Dudley	United States
In Spite Of Different Perceptions And Responses To Sudden Oak Death, Involvement Of The Public, Key To Large-Scale Management Of The Disease	Matteo Garbelotto	United States

How Invasive Pathogens And Pests May Threaten A Multipurpose Tree Species: The European Chestnut As A Case Study	Paolo Gonthier	Italy
Impact Of Invasive Phytophthora Species On Wildland Plant Communities In Western Australia And Society Responses To Their Management	Giles Hardy	Australia
Invasion Of Miconia Calvescens In Pacific Island Ecosystems: Impacts And Responses	Todd Osmundson	United States
Risk Management In Response To Threat Of Tree Disease: Social And Economic Barriers	Chris Quine	United Kingdom
Current Status Of Emerging Plant Diseases And Pest Of Plantation Forestry In Colombia	Carlos Rodas	Colombia
Wider Consequences Of Introduced Forest Pathogens To Society In The UK	Joan Webber	United Kingdom

## G-17 (94) Changes In Distributional Ranges In A Changing World

**Room:** 250 F

**Organizers:** Patrick Tobin (U.S. Forest Service) & Christelle Robinet (National Institute for Environmental and Agricultural Science and Research-URZF, France)

**Moderator:** Christelle Robinet

**Description:** The session is focused on abiotic and biotic drivers of changes in species distribution ranges for both invasive and native species.

The Importance Of Range Dynamics Of Insects And Pathogens In Forest Ecosystems	Christelle Robinet	France
Introduced Tachinids Explain Decline Of Browntail Moth In North America	Joseph Elkinton	United States
Modeling Spatial Spread Of The Pine Wilt Disease - An Individual-Based Approach	Fugo Takasu	Japan
Potential Northward Expansion Of Spruce Budworm Outbreaks Under Climate Change And Related Impacts On Forest Ecosystems	Jean-Noel Candau	Canada
Climate-Associated Range Shifts Of Mountain Pine Beetle In Western Canada	Brian Aukema	United States
Range Expansion Of The Pine Processionary Moth In Relation To Climate Warming	Andrea Battisti	Italy
Influence Of Increasing Summer Temperatures On Range Dynamics Of An Invasive Forest Pest And Its Host Tree	Angela Mech	United States
Supraoptimal Temperatures Restrict And Retract The Distributional Range Of The Gypsy Moth	Patrick Tobin	United States
Consequences Of Climate Change For Biotic Disturbances In North American Forests	Matthew Ayres	United States
Range Expansion In Insect Pests: How Important Is Climate Change?	Stig Larsson	Sweden

## Special Session for Students and Young Scientists: The “IUFRO Incubator” 3

<b>Room:</b>	155 A-C		
<b>Organizers:</b>	JP Skovsgaard (Swedish University of Agricultural Sciences), other IUFRO Divisional representatives & the International Forestry Students Association (IFSA)		
<b>Moderators:</b>	Jakob Horl (IFSA) & James Johnson (Oregon State University, USA)		
<b>Description:</b>	This session will provide a venue for recently graduated students to present brief summaries of their BSc, MSc or PhD theses in the fields of forest policy, social sciences, and forest economics.		
	The Politics Of Access, Utilization And Sharing: Lessons From The Ongo Community Forest, Uganda	Yemi Adeyeye	Denmark
	Rethinking Forestry, Beyond The Neoclassical: Case Study Of Quebec	Flor de María Robles-Barreto	Canada
	Participatory Mapping For A Better REDD+ Achievement	Anne Bernard	Canada
	The Political Economy Of Jurisdictional REDD+ Design	Elizabeth Blanchard	United States
	How Illegal Logging Policy Is Made - Discursive Agency In International Forest Policy	Sina Leipold	Germany
	Evaluation Of Market Potentials And Socio-Economic Contribution Of Some NTFPs In Two Ecological Zones, Ondo State, Nigeria	Aladesanmi Daniel Agbelade	Nigeria
	An Economic Assessment Of The Impact Of Raoiella Indica On The Nariva Swamp, Trinidad And Tobago	Marc Garcia	Trinidad and Tobago
	Long-Term Outlook For European Wood Products Markets	Elias Hurmekoski	Finland
	A Gender Sensitive Analysis Of The Marketing Of Agroforestry Tree Products Associated With Cocoa Cultivation In Sierra Leone	Mali Nurith Boomkens	Netherlands
	Can Local Inhabitants Of The Monarch Butterfly Biosphere Reserve Manage Their Forests For Timber Sustainably?	Julia Calderon	Mexico
	Monarch Butterfly Biosphere Reserve 2012 Forest Fires: Characterization And Institutional Responses	Mariana Xanat Cantu Fernandez	Mexico
	Finnish Forest Professionals' Attitude Towards Uneven-Aged Forest Management	Zhuo Cheng	Finland
	Stakeholders' Perspectives On Ecosystem Services Of Sweden's Last Cultural Oak Landscapes	Pablo Garrido	Sweden
	Bamboo Resource Commercialization Options For Ethiopia	Tefera Belay Endalamaw	Germany
	Conservation Education And Motivations Of Farmland And Woodland Owners In West Virginia—A Pilot Assessment	Valerie Grant	United States
	Wildland Fire Risk Assessment For Structures: A National Park Service Case Study	Aaron Lund	United States
	Beliefs, Attitudes, And Behaviour In Relation To Farm-Level Tree Planting And Deforestation In Malawi	Seline Meijer	Ireland
	Appraising Climate Change In Rural Forest Dependent Communities Of South Africa: Community Perceptions And Attitudes	Chidiebere Ofoegbu	South Africa
	Social Considerations In Community Forest Management: A Case Study In Sault-Au-Cochon Forest, Côte-De-Beaupré, Québec	Gabrielle Rivard	Canada
	Crop Diversity Of Upland Farms In Apayao, Northern Philippines	David Rodolfo	Philippines
	History Of Russia's Timber Frontier Through Mapping Forest Use History	Vladimir Naumov	Sweden
	Rehabilitation Of War Veterans With Posttraumatic Stress Disorder In A Healing Forest Garden	Dorthe Varning Poulsen	Denmark
	Qualitative Study Of User-Specific Behaviour In, And Preferences Of Different Categories Of Nature Environments In The Healing Forest Garden Nacadia	Ulrik Sidenius	Denmark
	Contingent Valuation Of Biodiversity In Primary Koa-Dominated Forests In Hawaii	Katherine Wilson	United States





*Daily Scientific Program*  
**THURSDAY 9 OCTOBER**

THURSDAY 9 OCTOBER



## THURSDAY 9 OCTOBER - PLENARY SESSION

### 8:30-10:30 & 11:00-12:00 - SPECIAL JOINT PLENARY WITH SAF-CIF

#### Plenary 3: Jack Dangermond And David Haskell: Knowledge Discovery, Synthesis, And Application At The Forest Science/Management Interface

**Room:** Ballroom

**Session Chair:** Jeremy Fried

**Plenary Panel:** Mila Alvarez, Sally Collins, and Michael Wingfield with Jack Dangermond and David Haskell

**Panel Moderator:** Nalini Nadkarni

**Description:** The central questions to be addressed include what knowledge is, how it can be acquired, and the extent to which things can be “known” about forests and the landscapes where they are found. From this vantage point, how does what we learn through research and adaptive management about both natural and social systems get transformed into usable knowledge, and ultimately, wisdom about forests and how we can steward them for the many products and values they provide that sustain and improve the human condition. Speakers will address the state of the art in “knowing” about forests and related natural resources; observe ways in which we can both acquire science-based knowledge and make that knowledge useful to managers and the constituencies they serve; and challenge us to do better, perhaps differently, for the future around the world. Two keynote speakers followed by a distinguished panel discussion will address the topic of knowledge discovery, synthesis and application at the forest science/management interface.

## THURSDAY 9 OCTOBER- SUB-PLENARY SESSIONS

### 13:30-15:00

#### SP-09 Forests For People: Ecosystem Services Under Pressure?

**Room:** 155 E

**Organizers:** Ulrike Pröbstl-Haider (University of Natural Resources and Life Sciences, Austria) & Perry Brown (University of Montana, USA)

**Moderators:** Ulrike Pröbstl-Haider

**Description:** This session will highlight the current state-of-knowledge on the direct contributions of forests to human well-being in rural and urban landscapes, including their role in supporting livelihoods, health, recreation and tourism, spirituality, culture, and education.

Stretching Community-Based Ecosystem Management To Protect Indigenous Livelihoods: The Beardsy's And Okemasis First Nation And The Prince Albert Model Forest	Sarah Welter	Canada
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Reforestation In The Anthropocene: Biological And Societal Perspectives On Genetic Decisions	Sally Aitken	Canada
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The Role Of Forest Provisioning Ecosystem Services In Coping With Household Stresses And Shocks In Miombo Woodlands Of Zambia	Felix Kalaba	Zambia
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The Future Of Outdoor Recreation, Society And Forests In The United States	Ken Cordell	United States
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Introduction To The IUFRO Forests For People Strategy	Ulrike Pröbstl-Haider	Austria
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## SP-10 Resilience Of Forest Ecosystem Services To Changing Disturbance Regimes

**Room:** 155 F

**Organizers:** Rupert Seidl (University of Natural Resources and Life Sciences, Austria) & Tom Spies (U.S. Forest Service)

**Moderators:** Rupert Seidl & Tom Spies

**Description:** The session will address questions of how forest disturbance regimes might change in the future, how vulnerable ecosystem services are to such changes, and how ecosystem management can foster resilience to changing climate and disturbance regimes.

Disturbance Regimes And Ecosystem Services In A Changing World	Rupert Seidl	Austria
Resilience In Forest Ecosystem Management - An Introduction From The Western Us And Northwestern Mexico	Scott Stephens	United States
Climate Change And Disturbance Regimes In Western North America: Pathways For Building Resilience	David Peterson	United States
Risks For Ecosystem Services Provisioning From Natural Disturbance: A European Perspective.	Mart-Jan Schelhaas	Netherlands
Resilience Of Forest Ecosystem Services To Changing Disturbance Regimes: A Synthesis	Thomas Spies	United States

## SP-11 Advances In Large-Scale Forest Inventories To Support The Monitoring And The Assessment Of Forest Biodiversity And Ecosystem Services

**Room:** 155 A-C

**Organizers:** Anna Barbati (University of Tuscia, Italy), Piermaria Corona (Consiglio per la Ricerca e la sperimentazione in Agricoltura, Arezzo, Italy), Frédéric Gosselin (Irstea, France) & Ronald E. McRoberts (U.S. Forest Service)

**Moderators:** Anna Barbati

**Description:** This session will explore recent progress in the development of indicators for monitoring the effects of forest management activities on ecosystem services provision, and cutting-edge inventory methods for the spatial estimation of biodiversity and ecosystem service indicators on multiple spatial scales.

Contribution Of Floristic And Forest Inventory Of Santa Catarina (IFFSC) To Large Scale Forest Biodiversity Assessment	Alexander Vibrans	Brazil
Inference On Diversity Indexes From Large-Scale Forest Inventories	Piermaria Corona	Italy
Development Of Innovative Models For Multiscale Monitoring Of Ecosystem Services Indicators In Mediterranean Forests	Marco Marchetti	Italy
Assessing Information For Indicators On SFM: Potentials And Pitfalls, Criteria And Indicators (C&I) Have Emerged As A Powerful Tool To Promote Sustainable Forest Management (SFM). Several International Programs And Initiatives Have Developed Sets Of Criteria	Michael Koehl	Germany

## SP-12 Policy Learning For Multi-Level Governance

**Room:** 251 A-C

**Organizers:** Daniela Kleinschmit (Swedish University of Agricultural Sciences) & Ben Cashore (Yale University, USA)

**Moderators:** Daniela Göhler (World Bank, USA)

<b>Description:</b>	This session will explore the potential and pitfalls of policy learning as a way to link scholarly and practitioner communities around problem solving, identify the types of problems policy learning might be able to address, and discuss the current scientific understanding of policy learning processes, and how policy learning can be fostered.		
	The Role Of Policy Learning In Shaping Pathways Of Influence: Lessons From Multi-Level Forest Governance For Designing An Effective Learning Architecture	Benjamin Cashore	United States
	Can Policy Learning Improve Strategic Insights For Practitioners And Policy Makers? Lessons From Collaborative Research On Legality Verification In Brazil	Gabriela Bueno	United States
	Science-Policy Advocacy: Creating New Social Institutions For Policy Learning	Margaret Shannon	United States

## THURSDAY 9 OCTOBER - TECHNICAL SESSIONS

### 08:00-10:30

#### // FORESTS FOR PEOPLE

#### A-14 (251) Integrating Landscape Protection, Nature-Based Recreation And Tourism, And Rural Development

<b>Room:</b>	151 A		
<b>Organizers:</b>	Tuija Sievanen (Finnish Forest Research Institute), Ellyn K. Damayanti (Bogor Agricultural University, Indonesia) & Taiichi Ito (University of Tsukuba, Japan)		
<b>Moderators:</b>	Ellyn K. Damayanti & Taiichi Ito		
<b>Description:</b>	This session deals with research, planning, and management of protected and recreational areas in rural communities, highlighting research on integration of local communities with the parks to enhance local community and visitor benefits, and conflict resolution.		
	An Analysis Of Long-Distance Trail Development In Japan Based On Protected Area Management And Rural Development	Taiichi Ito	Japan
	Is The Sustainable Forest Management For Ecotourism A Food Security Plan?	Sandra Rodriguez	Mexico
	Linking Empowerment Outcomes, Social Capital And Gender In Forest-Based Community Ecotourism In Ghana. A Multi-Method Approach	Ana Elia Ramon Hidalgo	Canada
	Using Future Scenario Analysis To Support Participatory Forest Landscape Planning In Vilhelmina, Northern Sweden	Julia Carlsson	Sweden
	Integrating Community Development With The Management Of Grasslands And Wetlands At Ke'Erqin Nature Reserve, Inner Mongolia, China	Yiwen Zhang	China
	Conservation Of Rafflesia Zollingeriana: Integrating Conservation Policy With Local Livelihood	Ellyn Kathalina Damayanti	Indonesia
	Effects Of Anthropogenic Activities On Forest Landscape In The Khumbu Valley, Nepal	Matteo Garbarino	Italy

#### A-19 (5) Wood And Forest Culture: Merging The Past With The Present

<b>Room:</b>	151 D		
<b>Organizers:</b>	Howard Rosen (U.S. Forest Service) & Woo Chun Young (Kookmin University, Republic of Korea)		

<b>Moderators:</b>	Howard Rosen		
<b>Description:</b>	This session will examine the historical, religious, artistic, and other social values of wood and forest culture, emphasizing the economic, environmental, and scientific impacts to different regions of the world.		
	Vatican Coffins Project: The Wood Analysis Of The Third Intermediate Period Coffins (Egypt)	Victoria Asensi Amoros	France
	Forests For Bamiléké People: Founding Principles Of The Identical Values And Source Of The Community's Economic Development	Nayang Toukam Inocent	Cameroon
	Plantation Grown Tree Species For Wood Carving In Ghana: Concerns Of Traditional Wood Carvers	Emmanuel Appiah-Kubi	Ghana
	Emerging Patterns In The Utilization Of Wood And Plastic Products In Building Construction At Ibadan University Campus, Nigeria	Abel Olorunnisola	Nigeria
	Traditional Wooden Architecture In The Alpine Regions	Antonio Frattari	Italy
	Utilization Of Different Austrian Wood Species In Past Times – Knowledge For The Future	Michael Grabner	Austria
	Protecting Amazon Tropical Forests For The Future: Program São Paulo Friends Of Amazonia	Mario Tommasiello	Brazil
	Study On The Forest Culture Construction Of The Olympic Forest Park In China	Cui Haixing	China

## A-26 (91) Impact Of Tenure Arrangements On Forests, Livelihoods And Gender Dynamics

<b>Room:</b>	150 B		
<b>Organizers:</b>	Purabi Bose (CIAT, Colombia), Anne Larson (CIFOR, Peru), Han van Dijk (Wageningen University, Netherlands), Bimbika Sijapati (CIFOR, Indonesia)		
<b>Moderators:</b>	Han van Dijk & Purabi Bose		
<b>Description:</b>	This session examines the implications of forest and land tenure reforms (in Asia, Africa and Latin America) with emphasis on local institutions, governance, livelihoods, and gender dynamics.		
	How Forest Tenure Mediates Forest Based Rural Livelihoods: Observations From A Global Study On Forests And Poverty	Pamela Jagger	United States
	Dryland Forest Tenure, Political Conflict, And Gender Dynamics In The Sahelian Zone	Han van Dijk	Netherlands
	Influence Of Tenure And Gender On Livelihood Values And Management Of NTFPs In Burkina Faso	Michael Philippe Bessike Balinga	Burkina Faso
	Forest Tenure, Collective Rights, And Gender Dimensions In India, Uganda And Bolivia	Purabi Bose	India
	Challenges And Opportunities For Women's Participation In The Management Of Communal Forests: Experience From Nicaragua's Indigenous Territories	Anne Larson	Peru
	Gender Participation In Mangrove Conservation And Rehabilitation: The Case Of Four Philippine Mangrove Project Areas	Aida Lapis	Philippines
	Mainstreaming Gender Into Forest Strategy Of Nepal	Madhu Ghimire	Nepal
	The Significance Of Supporting Structures For Enhanced Participation Of Women In Forest Management	Kanna Siripurapu	United States

## // FOREST BIODIVERSITY AND ECOSYSTEM SERVICES

## B-12 (122) Forest Management In Montane Communities.

**Room:** 150 A**Organizers:** Pil Sun Park (Seoul National University, Republic of Korea), Raffaele Cavalli (University of Padua, Italy), Roberto Tognetti (University of Molise, Italy) & Karl Stampfer (University of Natural Resources and Life Sciences, Austria)**Moderators:** Pil Sun Park & Raffaele Cavalli**Description:** This session will focus on scientific findings of montane ecosystems and forest practices that contribute to the sustainable management of mountain resources and landscapes and socio-economic development of mountain communities.

Multifunctional Governance Of Mountain Forests In Europe	Zuzana Sarvasova	Slovakia
The Role Of Lawu Montane Forests: Lithocarpus Sundaicus (Bi.) Rehd. In Ecological And Economical Aspect For Local People	Adi Gangga	Indonesia
Stand Structure And Vegetation Of The Deciduous Mixed Oak Forests In The Montane Zone Of The Western Qinling Mountains, China	Chunling Dai	Germany
State Of The Art And Perspectives Of European Cable Yarding Technologies And Systems	Karl Stampfer	Austria
Prospectives And Challenges Of Cable Logging In Japan	Hideo Sakai	Japan
Forest Operation Engineering And Management For Sustainable Use Of Mountain Forests	Raffaele Cavalli	Italy

**Poster Presentations:**

Impact Of Anthropogenic Disturbances On High Value NTFPs In Temperate Moist Oak Forest: A Case Study From The Eastern Himalayas, India	Tamalika Chakraborty	Germany
Seasonal Changes In Understory Composition On Mt. Joongwang, Korea	Pil Sun Park	Republic of Korea
Landscape Patterns In Mountain Pasture-Woodlands Under Changing Environmental Conditions	Harald Bugmann	Switzerland
Tree Species Diversity And Abundance As Indicators Of Understory Diversity And Abundance In French Mountain Forests: Variations In Ecological Space	Frédéric Gosselin	France
Improved Methods For Timber Extraction In South-West China	Dirk Jaeger	Germany

## B-18 (142) Ecology And Dynamics Of Dead Wood Dependent Species At Multiple Trophic Levels – Promoting Natural Pest Control In Managed Forests Or Increasing Hazards?

**Room:** 150 C**Organizers:** Stephen Pawson (Scion, New Zealand), Kimiko Okabe (Forestry and Forest Products Research Institute, Japan) & Antoine Brin (University of Toulouse, France)**Moderators:** Kimiko Okabe & Michael Ulyshen (U.S. Forest Service)**Description:** This session will discuss the full spectrum of saproxylic species, highlighting the functional importance of deadwood across multiple trophic levels within managed forest ecosystems.

Wood-Inhabiting Fungi Diversity Response To Management Abandonment: A Spatiotemporal Perspective	Frédéric Gosselin	France
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An Early Evaluation Of Restoring Natural Disturbances In Boreal Forest Landscapes: Flat Bugs (Aradus Spp.) As Indicators Of Success	Ruaridh Hägglund	Sweden
Combining Of Aggregated And Dispersed Retention Is Effective For Conserving Deadwood-Associated Beetles On Managed Landscapes	Seung-II Lee	Canada
Effects Of Structural And Deadwood Attributes On The Abundance Of Saproxyllic Beetles And Microhabitats In A Silver Fir Forest (Italy).	Fabio Lombardi	Italy
Exploring The Connection Between Arthropod-Accelerated Wood Decay And Forest Productivity	Michael Ulyshen	United States
Effect Of Climate Change And Wood Properties On Fungal Decomposition: Comparison Between Kelo (Old Growth) And Managed Boreal Scots Pine	Parvathy Venugopal	Finland
Colonization And Extinction Rates In Deadwood Substrates And Their Role In Conservation And Restoration	Timothy Work	Canada

## // FORESTS AND CLIMATE CHANGE

### C-16 (117) Remote Sensing In Carbon Balance Evaluation And Monitoring

**Room:** 150 E

**Organizers:** Tomasz Zawila-Niedzwiecki (General Directorate of the State Forests, Poland), Mathias Schardt (Joanneum Research, Austria) & Radomir Balazy (Forest Research Institute, Poland)

**Moderators:** Tomasz Zawila-Niedzwiecki

**Description:** This session will explore innovative methods for carbon assessment based on airborne or satellite remote sensing data.

Satellite-Observed Changes In Terrestrial Photosynthetic Activity Trends Across The Asia-Pacific Region Associated With Land Cover And Climate From 1982 To 2011	Baozhang Chen	Canada
Carbon Mapping Of Regrowth In Tropical Rain Forests Using Airborne Lidar Data In Berau, East Kalimantan, Indonesia	Yousif Hussin	Netherlands
Assessing Carbon Stocks And Socioeconomic Indicators Of Complex Landscapes	Henry Neufeldt	Kenya
Forest Carbon Mapping using Multiple Source Remote Sensing Data In The Greater Mekong Subregion	Yong Pang	China
Methods for EU-wide Mapping of Growing Stock and Above-Ground Biomass Based on Satellite Remote Sensing and Field Measurements	Mathias Schardt	Austria
Forest Carbon Monitoring With Satellite 3D SAR	Svein Solberg	Norway
Forest Above Ground Biomass Estimation in China	Yuan Zeng	China

### C-20 (248) National Forest Sector Greenhouse Gas Inventories Following IPCC Guidance And Guidelines: Requirements, Methods, And National Examples

**Room:** 251 A-C

**Organizers:** Werner A. Kurz (NRCan-Canadian Forest Service), Gregory Reams (U.S. Forest Service) & Thelma Krug (National Institute for Space Research-INPE, Brazil)

**Moderators:** Werner A. Kurz & Gregory Reams

<b>Description:</b>	National greenhouse gas inventories following IPCC guidance are established in many countries and this session will report on requirements, experiences and challenges with particular emphasis on acquisition of land cover and land use data required for greenhouse gas reporting.		
	IPCC Guidance For The Preparation Of National Forest Sector GHG Inventories	Thelma Krug	Brazil
	Relative Contributions Of Land Use And Land Cover Change To Forest Carbon Stock Change	John Coulston	United States
	Methods Of Integrating Remote Sensing And Ground Data In Carbon Accounting Systems	Robert Waterworth	Australia
	The EU Greenhouse Gas Inventory: Experience And Challenges When Dealing With 28 Different National Forest Inventories	Giacomo Grassi	Italy
	Plans For Integrating Carbon Accounting Models And Intensive Carbon Monitoring Sites Into A Tier 3 Approach In Mexico	Marcela Olguín	Mexico
	National Forest Sector Greenhouse Gas Inventory: Russian Example	Dmitry Zamolodchikov	Russian Federation
	Canada's National Forest Carbon Monitoring, Accounting, And Reporting System: Experiences And Next Steps	Werner Kurz	Canada
	Estimating Carbon Stored In Harvested Wood Products For Greenhouse Gas Inventories - IPCC Requirements And Advances In National Methods	Kenneth Skog	United States

## // FORESTS AND WATER INTERACTIONS

### D-02A (80A) Conceptual Frames And Research Strategies For Integrated Studies Of Adaptation To Drought

<b>Room:</b>	150 F		
<b>Organizers:</b>	Philippe Rozenberg (National Institute for Environmental and Agricultural Science and Research, France), Anne Griebel & Gregor Sanders (University of Melbourne, Australia)		
<b>Moderators:</b>	Anne Griebel		
<b>Description:</b>	The session will focus on ecophysiological, genetic, and dendrochronological studies that shed light on xylem adaptive potential to drought in experimental trials as well as in natural populations, including studies of population variation within species as affected by climatic conditions.		
	The Physiology Of Tree Mortality From Drought	Henry Adams	United States
	The Performance Of Ten Ghanaian Tree Species In Response To Drought And Shade	Lucy Amissah	Ghana
	Hydraulic And Ecophysiological Traits Related To Tree Drought Mortality Are Linked To The Aridity Of The Environment In Eucalypts	Stefan Arndt	Australia
	Response Of Pinon And Juniper Respiration To Drought And Warming	Adam Collins	United States
	Variability In Biomass Partitioning, Growth, And Survival Under Water Stress In Seedlings From Two Populations And Three Breeding Generations Of Pinus Radiata In Chile	Sergio Espinoza	Chile
	Unraveling The Adaptive Meaning Of Wood In Eucalyptus Species	Maria Elena Fernandez	Argentina
	Growth, Water Use, And Water Use Efficiency Of Eucalyptus Under Different Spacings And Genotypes	Rodrigo Hakamada	Brazil
	Species Response To Drought And Late Frost Is Affected By Species Diversity	Anke Jentsch	Germany

## // FOREST BIOMASS AND BIOENERGY

### E-04 (137A) Forest Biomass Supply Chains: Practice, Economics, And Carbon Balance

**Room:** 250 A

**Organizers:** Nate Anderson (U.S. Forest Service), Gustaf Egnel (Swedish University of Agricultural Sciences) & Woodam Chung (Oregon State University, USA)

**Moderators:** Nate Anderson

**Description:** This session will cover a wide range of forest biomass supply chain studies from around the world; topics include feedstock production, operations research, conversion technologies, logistics management, economics, and carbon balance associated with forest biomass utilization.

A Review Of Wood Fuel Sourcing Potentials And Sustainability Challenges In Different Regions Of The World	Niclas Scott Bentsen	Denmark
Influence Of Forest Resource Capacity, Logistics, And Public Policy For Co-Combustion Of Woody Biomass	Michael Goerndt	United States
Impact Of EU RES Policies On The Use Of Wood For Energy And International Trade Of Wood Biomass And Pellets	Alexander Moiseyev	Finland
Forest Biomass Supply Chains: Practice, Economics, And Energy Balance In Tochigi Prefecture, Japan	Kazuhiro Aruga	Japan
Modeling The Profitability Of Power Production From Short-Rotation Woody Crops In Sub-Saharan Africa	Thomas Buchholz	United States
Economics Of Forest Biomass Processing And Transport From Harvest Residues In Steep Terrain	Rene Zamora-Cristales	Guatemala
A Full Supply Chain Optimization Model For The Location Of Forest Biomass -Based CHP Production Plants In Finland	Karthikeyan Natarajan	Finland

## // FORESTS AND FOREST PRODUCTS FOR A GREENER FUTURE

### F-09A (98A) Sustaining Bamboo And Rattan Resources

**Room:** 155 F

**Organizers:** Jinhe Fu (International Network for Bamboo and Rattan, China), Yan Yu (International Center for Bamboo and Rattan, State Forestry Administration of China) & Jinzhong Xie (Chinese Academy of Forestry)

**Moderators:** Jinhe Fu & Emmanuel Appiah-Kubi (Forestry Research Institute of Ghana)

**Description:** This session will focus on basic and applied research surrounding the conservation and sustainable utilization of bamboo and rattan resources.

Bamboo As A New Alternative To Wood In The Philippines	Romulo Aggangan	Philippines
Guadua Angustifolia Kunth In Costa Rica, Guidelines For Sustainable Management And Use	Elemer Briceño	Costa Rica
Micro-Differences In Bamboo Commercialization In Ethiopia: Analysis Of Commercial Income And Value Chain Relationships	Tefera Belay Endalamaw	Ethiopia
Bamboo As A Sustainable Biomass Energy	Jinhe Fu	China
A Competitive Analysis Of Bamboo Products In The Global Market	Junqi Wu	China
Field Performance Of Bamboo Propagules Produced Through Micropropagation	Yasodha Ramasamy	India

Edible Bamboo Shoot Utilization– Problems And Prospects In India	Syam Viswanath	India
Preparation And Properties Of Microfibrillated Cellulose (MFC) From Bamboo Processing Residues	Yan Yu	China

### F-15 (259) Applications Of Nanotechnology And Biotechnology In Forest Products Research

**Room:** 250 B

**Organizers:** Jeff Morrell (Oregon State University, US) and Andrew Wong (Universiti Malaysia Sarawak, Malaysia)

**Moderators:** Andrew Wong & Guangping Han (Northeast Forestry University, China)

**Description:** This session considers contributions from the fields of nanotechnology and biotechnology in the development of innovative forest products.

Applying Electrospinning Technology To Produce Lignin Fibers	Feng-Cheng Chang	China-Taipei
Cellulose Nanoparticle-Reinforced Polymethylmethacrylate Composites: Effect Of Acid Hydrolysis Conditions	Guangping Han	China
Effect Of Nano Materials On The Wearing Resistance And Hardness Of Water-Based Wood Coating	Ling Long	China
Classification Of Agarwood Quality By Electronic Nose Technology	Nor Azah Mohamad Ali	Malaysia
Novel Nanotechnology For Forest And Forest Product Protection	Yadong Qi	United States
Life Cycle Assessment Of Cellulose Nanowhiskers Prepared With Ionic Liquid	Wei Xu	Germany

### // FOREST HEALTH IN A CHANGING WORLD

#### G-06 (69) Mechanisms Of Tree Defense Across Forest Insect Feeding Guilds: Can A Comparative Approach Help Predict Responses To Climate Change?

**Room:** 250 C

**Organizers:** Barbara Bentz (U.S. Forest Service) & Ken Raffa (University of Wisconsin, USA)

**Moderators:** Barbara Bentz & Ken Raffa

**Description:** This session will compare defense mechanisms utilized by various host tree species across multiple insect feeding guilds, forest types, and environmental conditions.

Mining Spruce Genomes For Defense Genes And Functions	Joerg Bohlmann	Canada
Mechanisms Of Aspen (Populus Tremuloides) Defense Against Gypsy Moths And Forest Tent Caterpillars	Richard Lindroth	United States
Potential Role Of Alkaloids And Monoamines In Ash Resistance To Emerald Ash Borer	Caterina Villari	United States
Mechanisms Of Tree Defense Against The Spruce Bark Beetle Ips Typographus	Paal Krokene	Norway
Using Water- And Nutrient-Stress Phenotypes To Identify Ash Biomarkers Of Resistance To Emerald Ash Borer	David Showalter	United States
Temperature Affects The Outcome Of Tritrophic Interactions Mediated By Tree Resistance Among Pine Sawflies And Willow Leaf Beetles	Christer Bjorkman	Sweden

Trophic Responses To Climate Change – Host Species, Spruce Budworm, And Natural Enemies	Deepa Pureswaran	Canada
Interactions Of Evolutionary Adaptation With Environmental Variables In Expression Of Ash Resistance Mechanisms To Emerald Ash Borer	Pierluigi Bonello	United States

### G-14A (124A) Impact And Monitoring Of Forest Pests And Pathogens In A Changing World

<b>Room:</b>	150 D	
<b>Organizers:</b>	Maartje J. Klapwijk, Johanna Boberg (Swedish University of Agricultural Sciences) & Jolanda Roux (FABI/University of Pretoria, South Africa)	
<b>Moderators:</b>	Jolanda Roux	
<b>Description:</b>	This session will examine emerging pests and pathogens in relation to global change, the impact of these disturbance agents within the context of forest resilience, and possibilities to monitor for critical changes.	
Tipping Points And Transformation In Forest Pest Ecology: The Challenge Of Rising Uncertainties Under Climate Change Catastrophe Theory	Barry Cooke	Canada
Population Genetic Studies Reveal Complex Patterns Of Global Movement Of Pests And Pathogens In Pinus And Eucalyptus Plantations	Bernard Slippers	South Africa
Myrtle Rust, Current And Future Impacts On Myrtaceous Diversity In Australia	Geoff Pegg	Australia
Invasions Of Forest Insects And Diseases And Their Impacts On Regional Forest Dynamics In North America	Randall Morin	United States
Contrasting Geographical Variation In Invasibility To Non-Native Forest Pests With Their Impacts	Andrew Liebhold	United States
Developing National Biosecurity Charters: Safeguarding Forest And Agro-Ecosystems For Cultural And Functional Integrity	Stephen Williams	United States
Sentinel Nurseries: An Early Warning System To Prevent Alien Forest Pathogens Invasion	Andrea Vannini	Italy
Challenges And Prospects Of Forest Health Monitoring In Smallholder Community Plantations In Ghana	Paul P. Bosu	Ghana

## THURSDAY 9 OCTOBER - TECHNICAL SESSIONS 15:30-18:00

### // FORESTS FOR PEOPLE

#### A-07 (105) The Social Outcomes Of Community Forestry: What Do We Know And How Do We Know It?

<b>Room:</b>	250 B	
<b>Organizers:</b>	Susan Charnley (U.S. Forest Service) & Rebecca McLain (Portland State University, USA)	
<b>Moderators:</b>	Susan Charnley	
<b>Description:</b>	The session will critically evaluate the range of methods used to monitor and assess social benefits associated with community forestry projects, and identify the policy and institutional barriers – and potential solutions - to monitoring these benefits.	
The Social Outcomes Of Mexican Community Forestry: Community Forest Enterprises, Territorial Zoning, And Social Capital	David Bray	United States

The Role Of Community Based Forest Management On The Livelihoods Of Traditional Timber Extractors In Brazilian Central Amazon	Philippe Waldhoff	Brazil
The Social Outcomes Of Community Forestry In The Steward Project Area Of West Africa: Methods, Results, Challenges	Susan Charnley	United States
Changing Scope Of Community-Based Forestry: Analysis Of 30 Years Of Community Forestry Impacts In Nepal	Ram Prasad Lamsal	Nepal
The Assessment Of Successful Community Forest Management In Thailand	Pasuta Sunthornhao	Thailand
Social Contracts And Community Forestry: How Can We Design Forest Policy And Tenure Arrangements To Generate Local Benefits?	Jordan Benner	Canada

## A-15 (103) The Future Of Recreation In Forests And Other Nature Areas

**Room:** 151 A

**Organizers:** Peter Fredman (Mid-Sweden University), Frank S. Jensen (University of Copenhagen, Denmark), Tuija Sievänen (Finnish Forest Research Institute) & David Edwards (Forest Research UK)

**Moderators:** Peter Fredman

**Description:** This session will look at outdoor recreation trends in different countries around the world including new approaches to monitoring, and qualitative observations of new activities, places and contexts.

Outdoor Recreation Future In Finland	Tuija Sievänen	Finland
Inclusion Of Recreational Indicators In The National Forest Inventory – Experiences And Results From Denmark	Frank Søndergaard Jensen	Denmark
A Web-Based Panel Approach To Outdoor Recreation Inventories – Experiences From Sweden	Peter Fredman	Sweden
Using Existing Data In National Biodiversity Monitoring Program (Nils) To Create New Approaches For Monitoring Recreational Indicators	Marcus Hedblom	Sweden
Forest Recreation Monitoring In Great Britain: Lessons Learned And Future Directions	Mariella Marzano	United Kingdom
Understanding Perceptions Of Nature-Based Tourism Adaptive Capacity To Climate Change In Maine	Sandra De Urioste-Stone	United States
Willingness To Travel To Avoid Conflict For Forest Recreation Planning	Fatemeh Bakhtiari	Denmark
Assessment Of Tourism Impacts Towards Sustainable Co-Management Approach: A Case Study At Satchari National Park, Bangladesh	Md. Nazmus Sadath	Bangladesh
Managing Forest Aesthetics In The Boreal Fringe	Anna Stens	Sweden

## A-24 (82) Smallholders And Forest Landscape Transitions: Locally Devised Development Strategies Of Tropical America

**Room:** 150 A

**Organizers:** Benno Pokorny (University of Freiburg, Germany) & Wil de Jong (Kyoto University, Japan)

**Moderators:** Benno Pokorny & Wil de Jong

**Description:** This session will focus on the responses of peasant communities to the development contexts emerging in tropical America's forest landscapes, and the resulting economic, social and environmental outcomes.

The Role Of Smallholders In A Green Economy: The Case Of Peru	Alejandro Guarin	Germany
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Frontier Landscapes In The Peruvian Amazon: Options By Smallholders Along The Forest Transition Curve	Valentina Robiglio	Peru
Forest Management By Smallholders In Western Amazon: Towards More Integrated Approaches	Pablo Pacheco	Indonesia
Traditional Perspectives On Ecology And Timber Extraction In A Bamboo-Dominated Forest: A Complementary Knowledge Base For Sustainable Management	Cara Rockwell	United States
Opportunities And Perceptions Of Smallholders Regarding Their Potential To Contribute To Forest Landscape Transitions Under REDD+: Two Case Studies From Mexico	Margaret Skutsch	Mexico
Employment And Income Generation In The Non-Timber Economic Activities In The Brazilian Amazon	Joaquim Bento de Souza Ferreira Filho	Brazil
Collective Action For Forest Management: Institutional Challenges For Enhanced Social-Ecological Systems Of The "Environmental Agrarian Reform" In Anapu, Brazilian Transamazon	Roberto Porro	Brazil

**Poster Presentations:**

The Role Of Forests, Fallows And Fisheries In Household Income Generation And Flood Shock Coping In The Peruvian Amazon Floodplain	Jamie Cotta	Denmark
Chilean Forest SME Projection	Hans Grosse	Chile
Smallholder Land-Use Management In Bosawás Biosphere Reserve, Nicaragua's Agricultural Frontier	Lisa Hansen	Canada
The Role Of South Brazilian Traditional Community Forests (Faxinais) In Atlantic Forest Conservation	Rosemeri Moro	Brazil
Strengthening Sustainable Forest Management In The Colombian Amazon Oriented By In Situ Wood Transformation	César Polanco	Colombia
New Roles Of Indigenous Peoples As Productive Actors Linked To The Forest Sector Of Bolivia	Walter Benjamín Rivera Coria	Bolivia

**A-28 (188) Ineffective International Forest Policy? The Role Of Forest Information, International Law And Politics**

**Room:** 150 B

**Organizers:** Lukas Giessen (University of Goettingen, Germany), Georg Winkel (University of Freiburg, Germany), Christoph Kleinn & Peter-Tobias Stoll (University of Goettingen, Germany)

**Moderators:** Lukas Giessen

**Description:** The session will include contributions from political science, international law, forest information and monitoring, and other disciplines providing innovative insights into factors influencing the effectiveness of international forest policy.

Horizontal And Vertical Fragmentation Of The International Forest Regime: (In)Effective For Who?	Lukas Giessen	Germany
Millions Of Trees And Multiplicities Of Meaning: On The Framing Of 'Forests' In International Policy Discourse(s)	Scott Cettie	Germany
National Forest Monitoring Programs As Data Providers To Forest Related Policy Processes	Christoph Kleinn	Germany
A Comparative Study Of International Forest Policy Issues In Germany, Poland And Sweden	Jacqueline Logmani	Germany
International Forest Policy: Who Is To Define The Objectives And The Evaluation Criteria?	Berit H Lindstad	Norway
Building The Analytical Toolkit In International Forest Policy: Social Psychology And The Value-Belief-Norm Theory	Peter Edwards	Sweden

International Forest Issues, FLEGT And Potential Directions	Xin Li	China
Continued Evolution Of Australian Forest-Climate Change Policies	Richard Harper	Australia
Impact Analysis On China's Forestry Economic Policy From The Consensus Reached On The Forest Related Climate Conferences	Yukum Cao	China

### A-33 (220) Richer Economies, Better Environmental Policies? Analyzing The “Environmental Question” In Forest Policy In OECD Countries

**Room:** 150 C

**Organizers:** Georg Winkel (University of Freiburg, Germany), Cassandra Moseley (University of Oregon, USA) & Metodi Sotirov (University of Freiburg, Germany)

**Moderators:** Cassandra Moseley

**Description:** This session will assess environmental conflicts in forest policy and responses by forest policy makers (e.g., policies and governance arrangements and their effects) with an emphasis on OECD countries.

The Combat Against Illegal Logging: Are New Policies Game Changes Or Merely Symbolic?	Andreas Ottitsch	United Kingdom
Forest Biomass And Biodiversity: Which Conflicts Arise From Contrary Environmental Goals?	Christina Schumann	Germany
Changes In Environmental Governance And Illegal Logging Policies: The Case Of The European Union's Timber Regulation	Metodi Sotirov	Germany
Payments For Forests: Characterizing Benefits And Governance In The Context Of Watershed Payments For Environmental Services In Europe	Alessandro Leonardi	Italy
On How To Gain Discursive Agency In Environmental Conflicts: Exploring Policy Discourses On Illegal Logging	Sina Leipold	Germany
Institutional Mimicry, Shifting Values And Diverging Policy Paths: Comparing Forest Environmental Policy Evolution In Germany And The United States	Georg Winkel	Germany

## // FOREST BIODIVERSITY AND ECOSYSTEM SERVICES

### B-02 (145) Urban Forest Diversity And Ecosystem Services

**Room:** 150 G

**Organizers:** David Nowak (U.S. Forest Service) & Wesley Kocher (International Society of Arboriculture, USA)

**Moderators:** David Nowak

**Description:** This session will focus on species diversity in cities across the globe, ecosystem services provided by urban trees, how the urban forest composition and species diversity affects various ecosystem services and values, and how the urban forest composition and species diversity are and likely will change in the future.

Changes In Urban Forest Species Diversity And Its Impact On Ecosystem Services In The United States	David Nowak	United States
Diversity Of Urban Tree Species Over The Globe And Their Links To Ecosystem Services	Jun Yang	China
Failures Of Urban Forest Diversification	Robert Loeb	United States
Can Urban Sites Support Increased Species Diversity?	Gary Watson	United States

Effects Of Residential Development On Forest Attributes	Bianca Eskelson	United States
Relative Abilities Of Six Urban Tree Species In Mitigating Elevated CO2	Zhu Ning	United States
Urban Forest Tree Species Diversity And Its Impact On Air Pollution Removal Capacity	Kamran Abdollahi	United States
Cultural And Social Ecosystem Services Of Urban Trees And Forests	Kathleen Wolf	United States

## B-08 Forest Regeneration: Challenges And Prospects

**Room:** 151 D

**Organizers:** Magnus LÖf (Swedish University of Agricultural Sciences)

**Moderators:** Magnus LÖf

**Description:** Regeneration is a key to perpetuating and improving our forests. This session includes highly inspirational research examples from six continents.

Experimental Restoration Ecology In Tropical Rain Forest Areas With Clearcutting And Abandonment, In Southeastern Brazil	Eliana Cardoso-Leite	Brazil
Natural Regeneration In A Disturbed Tropical Seasonal Forest Fragment: Implications For Wildlife Habitat Restoration	Leonardo Augusto Martins	Brazil
Effects Of Forest Fragmentation On The Successional Dynamics Of Secondary Forests In The San Juan-La Selva Biological Corridor, Costa Rica	Ricardo J. Santiago-García	Costa Rica
Intervention Strategies For Community Driven Restoration Of An Iconic Canopy Species With Specific Regeneration Niche Requirements	Katinka Ruthrof	Australia
Effects Of Canopy Cover And Browsing Damage On Aspen Regeneration Following MPB-Caused Lodgepole Pine Mortality Across North-Central Colorado, USA	Kristen Pelz	United States
Current Pictures And Feasibility Of Quasi-Clearcutting In Japan	Keisuke Toyama	Japan
Post-Fire Regeneration In Mountain Forests Of The Alps: Role Of Biological Legacies And Impact Of Restoration Strategies	Emanuele Lingua	Italy
Regeneration Patterns And Persistence Of The Of The Rare Tree Species Sorbus Torminalis In Central European Oak Coppice Forests	Jörg Kunz	Germany
Natural Regeneration Of Whitebark Pine: Factors Affecting Seedling Density	Sara Goeking	United States

## B-10 (219) How Does Biodiversity Help To Manage High-Value Timber Species, And Vice-Versa?

**Room:** 155 E

**Organizers:** Sheila Ward (Mahogany for the Future, Puerto Rico/USA), Emmanuel Opuni Frimpong (Forest Research Institute of Ghana) & Nicholas Brokaw (University of Puerto Rico)

**Moderators:** Nicholas Brokaw & Emmanuel Opuni-Frimpong

**Description:** This session will explore how biodiversity positively impacts management of high-value timber species, (e.g., protection from pests and pathogens) and, conversely, how management for high-value species helps conserve biodiversity (e.g., how planted forests can conserve biodiversity).

Enrichment Of Central African Logged Forests With High-Value Tree Species: Testing A New Approach In Degraded Forests	Jean-Louis Doucet	Belgium
Relation Between Selected Indicators Of Forest Stand Diversity And Quality Of Timber Production In Even-Aged And Uneven-Aged Stands	Katarina Merganicova	Czech Republic
Managing For High Value Timber And Biodiversity In The Congo Basin	Robert Nasi	Indonesia
Effects Of Tree Species Diversity On Stem Quality – Plot And Tree Level Results From Six European Regions	Adam Benneter	Germany
Restoration Of Degraded Lands With Mahogany In Mixed-Species Plantations Promotes Biodiversity And Conservation Of Valuable Timber Species	Emmanuel Opuni Frimpong	Ghana
Combining High-Quality Timber Production, Biodiversity Conservation, And Forest Aesthetics: The Case Of Sorbus Species In Europe	JP Skovsgaard	Sweden

### Poster Presentations:

Effects Of Overstory Species Diversity And Composition On Pest Damage To High Value Species And Understory Ant Diversity In Ghana	Paul P. Bosu	Ghana
Steniscadia Poliophaea (Noctuidae) Is A Major Seedling Herbivore Of Big-Leaf Mahogany Trees In Amazonian Forests	Chris Free	United States
Cedrela Montana In Tropical Montane Rain Forests Of South Ecuador: Key Species For Sustainable Management And Conservation Of Biodiversity Hotspots?	Sven Guenter	Costa Rica
Restoration Of High-Value Broadleaved Forests In Southern Sweden: Synergistic Effects On Biodiversity And Economy	Magnus Löf	Sweden
Can Monoculture Forest Plantation Harbor Biodiversity Similar To Naturally Regenerated Tropical Rainforest Ecosystems Over Time?	Jonathan Chukwujekwu Onyekwelu	Nigeria
Growth And Productivity Of Khaya Grandifoliola In The Dry Semi-Deciduous Forest Of Ghana: A Comparison In Pure And In Diverse Species Stands	Emmanuel Opuni Frimpong	Ghana
Single-Tree Management For High-Value Timber Species In A Mixed Conifer-Hardwood Forest In Northern Japan	Toshiaki Owari	Japan
Comparison Of Species Composition And Stand Structure Between A Secondary Forest And A Mahogany Plantation On Mt. Makiling	Pil Sun Park	Republic of Korea
Growth And Stem Quality Of Oak Trees Established In Cluster Plantings Respond Differently To Intra- And Interspecific Neighbourhood Competition	Somidh Saha	Germany

## B-15 (48) Forest Ecosystem Services Contributing To Agriculture

**Room:** 250 C

**Organizers:** Kimiko Okabe (Forestry and Forest Products Research Institute, Japan) & Ian Thompson (NRCan-Canadian Forest Service)

**Moderators:** Kimiko Okabe & Ian Thompson

**Description:** This session will examine the role of forests in sustaining agricultural livelihoods and the role of landscape management planning to address the social and economic drivers of deforestation in agricultural landscapes and optimize provision of forest ecosystem services to agricultural communities.

The Impact Of Retention Harvesting On Bee And Hoverfly Assemblages In The Boreal Forest Of Northern Alberta	Jared Amos	Canada
Economic Valuation Of Pollination Service In Risaralda Colombian Coffee	Ana Milena Plata Fajardo	Brazil

Strengthening The Provision Of Ecosystem Services In Agricultural Landscapes In Costa Rica	Bastiaan Louman	Costa Rica
Ecosystem Services Of Native Trees: Experiences From Two Traditional Agroforestry Systems In Karnataka, Southern India	Dhanya Bhaskar	India
Agroforestry For Ecosystem Services: A North American Perspective	Shibu Jose	United States
Recovering The Biodiversity In Cacao Plantations In The South Of Maracaibo Lake, Mérida Venezuela	Néstor Gutierrez	Venezuela
Forest Edges As Sources Of Ecosystem Services For Landscape Agroecology	Marc Deconchat	France

### B-17 (13) Salamanders: World Icons Of Aquatic Biodiversity In Forests

<b>Room:</b>	150 E	
<b>Organizers:</b>	Deanna Olson (U.S. Forest Service)	
<b>Moderators:</b>	Deanna Olson	
<b>Description:</b>	This session will present recent research on population ecology and reserve designs, effects of forest and riparian buffer management, climate envelope models, and emerging genetic tools to gauge species occurrence (e-DNA) and habitat connectivity across forest landscapes.	
Woodland Salamanders As Metrics Of Forest Ecosystem Recovery: A Case Study From California’S Redwoods	Hartwell Welsh	United States
Utility Of Riparian Buffers To Retain Salamanders In And Along Streams Of US Pacific Northwest Moist Coniferous Forests	Deanna Olson	United States
In-River Habitat Changes Following Riparian And Upland Deforestation Correlate With The Decline Of Ozark Hellbender Salamander Health And Populations	Max Nickerson	United States
Population Structure And Shelter Characteristics Of Hellbender Salamanders In An Eastern Tennessee Stream	Kirsten Hecht-Kardasz	United States
Relationships Of Salamanders With Downed Wood In Managed Forests Of The United States	Jessica Homyack	United States
The Importance Of Forest Habitat Connectivity For Species Of Ambystomid Salamanders, Focusing On The Eastern Tiger Salamander	Valorie Titus	United States

### // FORESTS AND CLIMATE CHANGE

### C-06 (83) Boreal At Risk: Integrative Science As A Strong Foundation For Public Policy Development

<b>Room:</b>	250 D	
<b>Organizers:</b>	Deepa Pureswaran, Werner A. Kurz, Louis De Grandpré (NRCan-Canadian Forest Service) & Philip G. Comeau (University of Alberta, Canada)	
<b>Moderators:</b>	Deepa Pureswaran	
<b>Description:</b>	This session will present scientific findings and discuss policy implications of integrated research on global change and forest disturbances (fires, insects, and pathogens) affecting circumpolar boreal forest dynamics.	
Boreal At Risk: From Boreal Science To Public Policy	Werner Kurz	Canada
Report From The Global Frontlines: Does Climate Change During This Century Imperil All Historic Forests Across Planet Earth?	Craig D. Allen	United States
Ecosystem Consequences Of The Northward Expansion Of The Eastern Spruce Budworm	Louis De Grandpre	Canada

Can Mixedwood Management Mitigate Climate Change Impacts On Spruce In Western Canada'S Boreal Forests?	Philip Comeau	Canada
Climate, Adaptation, And The Northward Range Expansion Of The Gypsy Moth	Dylan Parry	United States
Preventing Damage From A Southern Pest In Northern Forests: The Future Of The Southern Pine Beetle Prevention Program?	Kier Klepzig	United States
Understanding The Interactions Between Climate Change, Heart Rot And Carbon Sequestration In Populus Tremuloides In The Boreal Forest	Tod Ramsfield	Canada
How Much Dead Wood Is Enough In Canadian Forests? A Review Of The Science And Policy.	André Arsenault	Canada

### C-10 (232) Vegetation Zone Shifts In Response To Climate Change

**Room:** 250 E

**Organizers:** Constance Millar (U.S. Forest Service) & Pavel Cudlin (Global Change Research Centre, Academy of Sciences of the Czech Republic)

**Moderators:** Constance Millar & Pavel Cudlin

**Description:** The aim of this session is to compare model results with critically assessed field and observation data from representative mountain regions on soil, climatic, and ecologic conditions in response to climate change, focusing on opportunities and barriers to adaptation.

Can The Shift Of Vegetation Zones Be Thought Of An Efficient Adaptation Mechanism Or Just A Wishful Thinking?	Pavel Cudlin	Czech Republic
Conservation And Management Of Western North American Trees In Complex Landscapes: Considering Glacial Refugia, Post-Glacial Migration, And The Velocity Of Climate Change	David Roberts	Canada
Assessment Of Vulnerability And Impacts Of Climate Change On Tropical Forests In Papua New Guinea (PNG)	Eko Maiguo	Australia
Climate Change Shifts Environmental Space And Limits Transferability Of Treeline Models	Aleksi Lehtonen	Finland
Integrated Approach For Aleppo Pine Assisted Migration Toward Expected Climate Change In The Mediterranean Basin (Spain)	Antonio D Del Campo	Spain
Siberian Potential Forest Types And Fire Load Projected From Ippcc Climates In The 21st Century	Nadezhda Tchebakova	Russian Federation
Towards Climate-Smart Forest Landscape Management In The Neo-Tropics: Climate, Soil, And Spatial Effects On Vegetation In Three Altitudinal Gradients	Bryan Finegan	Costa Rica
Global Tree Range Shifts Under Forecasts From Two Alternative GCMs Using Two Future Scenarios	William Hargrove	United States
Contrasting Modes Of Response To Historic And Contemporary	Constance Millar	United States

### C-23A (107A) Forest Management For Adaptation To Climate Change

**Room:** 251 A-C

**Organizers:** Rodney Keenan (The University of Melbourne, Australia), Carina Keskitalo (Umea University, Sweden), Kalame Fobissie (WWF Central Africa, Cameroon) & Guangyu Wang (University of British Columbia, Canada)

**Moderators:** Rodney Keenan

**Description:** This session will focus on options for adaptation to climate change in forest management from ecological, social, economic, and policy perspectives including decision tools for adaptation to climate change and best practice case studies in building adaptive capacity from tropical, temperate, and boreal biomes.

Climate Adaptation And Forest Management: The US Forest Service Perspective	David Cleaves	United States
The Role Of Forestry In National Climate Change Adaptation Policy: Cases From Sweden, Germany, France, And Italy	Carina Keskkitalo	Sweden
Climateap And Its Use In Projecting The Climate Niche And Productivity Of Forest Trees In Future Climates In Asia Pacific	Tongli Wang	Canada
Climate Change Impacts And Adaptation In The Canadian Forest Sector	Mark Johnston	Canada
Climate Change Impacts In The Temperate Forests Of Southeast Australia: Can Forest Management Reduce Vulnerabilities?	Craig Nitschke	Australia
Community Forestry As An Approach To Climate Change Adaptation	Regan Pairojmahakij	Thailand
Adaptation Of Planted Forests To Climate Change: From Global To Local Approaches	Jean-Michel Carnus	France

### C-25 (222) Forest Management Options To Tackle Climate Change

<b>Room:</b>	250 F	
<b>Organizers:</b>	Hubert Hasenauer (University of Natural Resources and Life Sciences, Austria), Frits G. Mohren (University of Wageningen, the Netherlands) & Jean-Luc Peyron (Ecofor, France)	
<b>Moderators:</b>	Hubert Hasenauer	
<b>Description:</b>	The session will discuss forest management strategies in mitigating potential climate change effects, including adaptation options, carbon sequestration issues, fossil fuel substitution potentials, and life cycle assessment strategies.	
	Multiple-Use Forest Management Strategies For Mitigation And Adaptation To Climate Change: The EU-FORMIT Project	Godefridus M.J. (Frits) Mohren Netherlands
	Assessing Forest Productivity: Terrestrial Forest Inventory Versus MODIS Satellite Driven Estimates	Hubert Hasenauer Austria
	Enhancing Forest Carbon Mitigation Potentials By Forest Management And Timber Utilization	Michael Koehl Germany
	Approaches To Evaluate The Carbon Neutrality Of The Forest Value Chain	Bart Muys Belgium
	First Signs Of Carbon Sink Saturation In European Forest Biomass: Options For Management	Gert-Jan Nabuurs Netherlands
	Future Of Russian Forests: A Need Of Transformative Adaptation?	Anatoly Shvidenko Austria
	Combining Forest Models With LCA For Optimization Of The Forest's GHG Mitigation Effect	Ellen Soldal Norway
	Synergies And Trade-Offs Between Forest Adaptation And Mitigation	Jean-Luc Peyron France

### // FORESTS AND WATER INTERACTIONS

#### D-02B (80B) Conceptual Frames And Research Strategies For Integrated Studies Of Adaptation To Drought

<b>Room:</b>	150 F	
<b>Organizers:</b>	Philippe Rozenberg (National Institute for Environmental and Agricultural Science and Research, France), Anne Griebel & Gregor Sanders (University of Melbourne, Australia)	
<b>Moderators:</b>	Anne Griebel	

<b>Description:</b>	The session will focus on ecophysiological, genetic, and dendrochronological studies that shed light on xylem adaptive potential to drought in experimental trials as well as in natural populations, including studies of population variation within species as affected by climatic conditions.		
	Defense Allocation Patterns Are Important To The Drought-Mortality Risk Of A Semi-Arid Conifer	Harald Bugmann	Switzerland
	Potassium And Sodium Supply Effects On The Adjustments To Water Deficit Of Eucalyptus Grandis Trees: Insights From A Throughfall Exclusion Experiment In Brazil	Jean-Paul Laclau	France
	Coordinated Adjustments In Xylem Hydraulic Safety, Efficiency And Capacitance Across Climatic Gradients And Axial Gradients Within Trees	Frederick Meinzer	United States
	Identifying Drought Resistant Lodgepole Pine Genotypes For A Changing Climate: Growth And Hydraulic Response Observed In Genetic Field Trials	David Montwé	Germany
	Seedling Establishment Limited By Water Availability: Understanding Spatial And Temporal Limitations To Maximize Outplanting Success	Jeremiah Pinto	United States
	Oak Forest Decline In Mediterranean Environment: Understanding The Linkage Of Climatic Drivers To Physiological And Dendro-Anatomical Variations	Francesco Ripullone	Italy
	Do Leaf Adaptations To Low Water Potential Influence Isohydic Or Anisohydic Responses In A Widely Distributed Genus?	Gregor Sanders	Australia
	Tolerance Of Eucalyptus Clones To Hydric, Thermal, And Biotic Stress Across Sites, Stockings, And Rain-Exclusion Regimes	Jose Stape	United States

### D-09 (255) Ecology And Management Of Coastal Forests And Mangroves

<b>Room:</b>	151 B		
<b>Organizers:</b>	Ariel E. Lugo (U.S. Forest Service)		
<b>Moderators:</b>	Ariel E. Lugo		
<b>Description:</b>	This session will focus on current research on mangroves and other coastal forest ecosystems, and their importance as habitats for marine and estuarine biodiversity and provision other ecosystem services.		
	Monitoring Forest Change Analyzing Change In Resistant Z-Score Using Landsat Data: Case Studies From Bangladesh And Montana	Tanushree Biswas	United States
	Botanical Surveys In Awat-Awat Mangrove Forest, Sarawak, Malaysia	Seca Gandaseca	Malaysia
	Species And Functional Diversity Of Mangrove Forest For Conservation Planning Of Alibijaban Wilderness Island In San Andres Quezon, Philippines	Nelson Manguiat Pampolina	Philippines
	Impact Of Climate Change On The Nypa Palm Of Sundarbans	Md. Mizanur Rahman	Bangladesh
	Effects Of Climate Change On Coastal Forest Ecosystems And Marine Environment Of Cameroon	Emmanuel Suka	Cameroon
	Local Mangrove Forest Management Of Cyclone-Affected Areas In Myanmar	Thinn Thinn	Japan

**// FOREST BIOMASS AND BIOENERGY**
**E-04 (137B) Forest Biomass Supply Chains: Domestic Fuelwood And Biomass Heating**

**Room:** 250 A

**Organizers:** Nate Anderson (U.S. Forest Service), Gustaf Egnel (Swedish University of Agricultural Sciences) & Woodam Chung (Oregon State University, USA)

**Moderators:** Nate Anderson

**Description:** Emphasizing case studies from Africa, Europe, and the Americas; this session is focused on the economic, social, and environmental aspects of forest biomass used for household heating, cooking, charcoal production, and other domestic end-use applications.

Use And Sources Of Domestic Firewood In Wales, UK	Simon K. Atherton	United Kingdom
Evaluation Of Forest Biomass As A Substitute For Firewood As An Energy Source In Costa Rican Households	Jean Morales	Costa Rica
Wood-Energy In Cameroon: The Overlooked Contribution To The National Economy	Richard Eba'a Atyi	Cameroon
Who Gets What: Analysis Of Wood Fuel Value Chain In Ghana	Isaac Nunoo	Ghana
Profitability Analysis Of Fuelwood Marketing In Ibadan, Nigeria	Oluseyi Olugbire	Nigeria
Decision Support For Sustainable, Community-Based, Wood Biomass Energy For Heating	Cecilia Danks	United States
Greenhouse Gases Accounting For Producing And Utilization Of Woody Biomass For Heat Energy Purpose	Maryam Bakhshi	Iran
Biomass Energy Supply Chains In Europe: Are We Burning The House We Live In?	Andreas Ottitsch	United Kingdom
Evaluating The Greenhouse Gas Mitigation Potential And Cost-Competitiveness Of Forest Bioenergy Systems In Northeastern Ontario	CT Smith	Canada

**// FORESTS AND FOREST PRODUCTS FOR A GREENER FUTURE**
**F-01 (87) Innovation In The Forest Sector: Maximizing The Sector's Competitiveness**

**Room:** 151 G

**Organizers:** Eric Hansen (Oregon State University, USA), Erlend Nybakk, (Norwegian Forest and Landscape Institute), Lyndall Bull (Australian National University) & Gehard Weiss (University of Natural Resources and Life Sciences, Austria)

**Moderators:** Rajat Panwar, University of British Columbia, Canada (rpanwar@northland.edu)

**Description:** This session is designed to catalog the state-of-the-art in forest sector innovation research covering a diverse set of industry sectors including nature-based tourism, ecosystem services, wood manufacturing, and wood construction.

Innovation In Forest Management For New Forest Owner Types: A Literature Review	Erlend Nybakk	Norway
Analysing Multi-Product Economic Efficiency Relative To Forest Ownership Types In Spain: Implications For Management And Policy.	Sonia Quiroga	Spain
Environmentally Conscious Forest Landowners As Forerunners For Multiple Uses Of Forests?	Liina Häyrinen	Finland
Renewing Wood Product Value Chains And Timber Procurement Solutions	Henrik Heräjärvi	Finland

Production Planning At A Sawmill – Comparing Optimization Models With Simple Heuristics For The Short Term Multi-Period Production Problem	Maria Anna Huka	Austria
“Awareness, Perceptions And Willingness To Adopt CLT In The United States”	Maria Fernanda Laguarda Mallo	United States
Innovation Diffusion Of Biorefinery Materials And Chemicals	Anders Roos	Sweden
Factors Influencing Architects In Specifying Eco-Labeled Wood Products In The U.S. Residential Construction Industry.	Tait Bowers	United States

## F-09B (98B) Sustaining Bamboo And Rattan Resources

**Room:** 155 F

**Organizers:** Jinhe Fu (International Network for Bamboo and Rattan, China), Yan Yu (International Center for Bamboo and Rattan, State Forestry Administration of China) & Jinzhong Xie (Chinese Academy of Forestry)

**Moderators:** Jinhe Fu & Emmanuel Appiah-Kubi (Forestry Research Institute of Ghana)

**Description:** This session will focus on basic and applied research surrounding the conservation and sustainable utilization of bamboo and rattan resources.

Bamboo Resources For Greener Future: Assessment Of Species Characteristics For Furniture Manufacturing And Green Building In Ghana	Emmanuel Appiah-Kubi	Ghana
Harnessing Diversity Of Rattans And Its Myriads Of Benefits For Green Economy And Environment	Aida Lapis	Philippines
Effectiveness Assessment Of Forest Tenure Reform On The Resource Cultivation And Institutional Innovation On Livelihood Development In Bamboo Areas: Case Studies In China And India	Li Zhiyong	China

### Poster Presentations:

Profiling Of Aroma Compounds Released From Four Major Bamboo Shoots Of High Economic Value In Taiwan	Min-Jie Chung	China-Taipei
Study On Novel Dyeing Methods For Green-Color Preservation Of Three Bamboo Culms And Their Colorfastness	Chia-Ju Lee	China-Taipei
Comparative Anatomy Of Developmental Moso Bamboo Culms	Zhiqiang Li	China
Surveillance Of Bamboos Species In An Experimental Plantation In Southern Brazil	Adalberto Novaes	Brazil
Vegetative Propagation Of Two Bamboo Species In Southern Brazil	Adalberto Novaes	Brazil
Study On The Soil Nutrients Limiting Factors In Bambusa Rigida Forest Land	Shuping Tu	China
Harvesting And Coppice Management Of Beta Vulgaris (Bamboo) In Protected And Unprotected Areas	Edward D. Wiafe	Ghana

## F-12 (41) Intensive Or Ecosystem-Based Forest Management – Impact On Yield, Wood Quality, And Economic Return?

**Room:** 151 C

**Organizers:** Pekka Saranpää (Finnish Forest Research Institute), Alexis Achim (Laval University, Canada), Robert Deal (U.S. Forest Service) & John Moore (Scion, New Zealand)

**Moderators:** Pekka Saranpää & Alexis Achim

<b>Description:</b>	Presentations in this session will feature current research relevant to silvicultural planning and management to enhance the resistance and resilience of managed forests to global change, while maintaining or improving productivity and profitability.		
	Lumber Value From Selection Cuttings In Uneven-Aged Northern Hardwood Forests	Alexis Achim	Canada
	Balancing Landowner Objectives: Society's Desire For Ecological Sustainability, And Wood Quality In The United States	Jamie Barbour	United States
	Value Recovery In Intensively Managed Second-Growth Forests: Is All Volume Created Equal?	Cosmin Filipescu	Canada
	Profitability Of Uneven-Aged Forest Harvesting Practices: Learning From Central India	Bharat Gotame	Nepal
	The Economics Of Product Quantity vs Product Quality In Great Britain'S Forest Resource	Paul McLean	United Kingdom
	Douglas Fir Roundwood Quality – Impact Of Growth Space On Juvenile Development, Wood Density And Branch Development For Future Timber Quality	Udo H. Sauter	Germany
	Wood Quality Of Uneven-Aged Norway Spruce Sawn Goods: A Case Study In Southern Finland	Pekka Saranpää	Finland

## // FOREST HEALTH IN A CHANGING WORLD

### G-03 (85) Critical Loads For Nutritional Nitrogen Deposition: Progress And Problems

<b>Room:</b>	151 E		
<b>Organizers:</b>	Sarah Jovan, Andrzej Bytnerowicz & Mark Fenn (U.S. Forest Service)		
<b>Moderators:</b>	Sarah Jovan & Andrzej Bytnerowicz		
<b>Description:</b>	The session is focused on the concept of Critical Loads as a management tool for air pollutant loading and the development of science-based air quality policy that protects ecosystem health.		
	Atmospheric Nitrogen Deposition And Critical Loads For Holm Oak Forests In Spain	Rocío Alonso	Spain
	Using Nitrogen Critical Loads To Develop Research Priorities, Ecosystem Condition Assessments, And Restoration Strategies For U.S. National Park Service Lands	Tamara Blett	United States
	Nitrogen Flux Measurements: Toward Ecosystem Effects And Critical Load Development	Mark Fenn	United States
	Lichen-Based Critical Loads Of Nitrogen For Forested Eco-Regions Of The United States	Linda Geiser	United States
	Evaluating Effects Of Atmospheric N And S Deposition And Climate On Forest Ecosystem Services Based On The Critical Loads Paradigm	Todd McDonnell	United States
	Critical Loads For Nitrogen And Sulfur Atmospheric Deposition In The Great Smoky Mountains National Park, USA	Habibollah Fakhraei	United States
	Critical Load Of Atmospheric Nitrogen Deposition In French Forests: Modelling Soil And Vegetation Response In A Context Of Climate Change	Simon Rizzetto	France
	Does Low-Dose N Addition Enhance Growth In Fertile Picea Abies Forests?	Ulf Sikström	Sweden
	Critical Loads And Climate Change In The Polish-Saxon Border Region	Thomas Scheuschner	Germany

## G-14B (124B) Impact And Monitoring Of Forest Pests And Pathogens In A Changing World

**Room:** 150 D

**Organizers:** Maartje J. Klapwijk, Johanna Boberg (Swedish University of Agricultural Sciences) & Jolanda Roux (FABI/University of Pretoria, South Africa)

**Moderators:** Jan Stenlid (Swedish University of Agricultural Sciences)

**Description:** This session will examine emerging pests and pathogens in relation to global change, the impact of these disturbance agents within the context of forest resilience and possibilities to monitor for critical changes.

Why Dose A Species Become A Pest? Comparison Of Three Physokermes Species	Olle Anderbrant	Sweden
Global Climate Change And Gall Rust Disease Epidemic On Falcataria Molluccana In Indonesia And Malaysia	Sri Rahayu	Indonesia
Reconstructing The Routes Of Invasion And Genetic Diversity Of Thaumastocoris Peregrinus (Hemiptera: Thaumastocoridae) Using Microsatellite Markers	Eston Mutitu	Kenya
Monitoring Population Densities Of Ips Typographus L. Using Pheromone Traps And Trapping Trees	Minna Lyytikäinen	Finland
454 Pyrosequencing Reveals Important Eucalyptus Pathogens On Seed And Seed-Capsules	Jolanda Roux	South Africa

### Poster Presentations:

Physokermes Inopinatus, A New Forest Pest Due To Changing Climate?	Olle Anderbrant	Sweden
Monitoring Air, Water And Insect-Borne Invasive Forest Pathogens In Sweden	Johanna Boberg	Sweden
Neonectria Canker On True Fir In Western USA	Gary Chastagner	United States
Monitoring Of Sesia Apiformis Infestations In Poplar Plantations At Different Spatial Scales	Julio Javier Diez-Casero	Spain
Dead Stands From The Space: Experiences With Synergized Multi-Date Medium Resolution Imagery To Describe Damages Caused By European Bark Beetle	Hooman Latifi	Germany
Detection And Epidemiology Of Invasive Fungal Pathogens By Real Time Quantitative PCR	Nicola Luchi	Italy
Monitoring Bark And Ambrosia Beetles In Commercial Forestry In Uruguay	Gonzalo Martinez	Uruguay
Mycosphaerella Leaf Disease And Its Impact On Eucalyptus Plantations In Uruguay	Carlos Pérez	Uruguay
The Swiss Needle Cast Foliage Disease Epidemic On The Northwestern Coast Of The US.	Dave Shaw	United States

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The background of the entire page is a solid green color. Overlaid on this background are the dark silhouettes of several trees, likely pines or cypresses, with their branches and needles clearly visible. The trees are positioned in the lower half of the page, creating a sense of depth and a natural setting.

*Daily Scientific Program*  
**FRIDAY 10 OCTOBER**

FRIDAY 10 OCTOBER



## FRIDAY 10 OCTOBER - PLENARY SESSION

### 11:00-12:00

#### Plenary 4: Carol J.P. Colfer: The People And Forests Trajectory- 1994-2014 And Beyond

**Room:** Ballroom

**Session Chair:** Daniela Kleinschmidt

**Description:** Much progress on the people-forest nexus has occurred within the forestry world. Forestry researchers are taking serious notice of the impacts of forests on people, and people on forests. Encouraging examples include attention to human well-being, attempts to work collaboratively with communities and their subgroups, a focus on power relations (devolution, ethnic and gender studies), and attention to people's knowledge about forests. More controversial topics like swidden agriculture, human health, nutrition, human rights and population have also been addressed. But much remains to be done. We know how dependent people living in forests are upon them and that their influence can be positive or negative. The desire to maximize the positive suggests the need for a greater focus on equity. The female half of forest populations, for example, still tends to be invisible. Yet studies focused on women alone have proven difficult to integrate into forestry. To activate all human capabilities, we need to better understand the relations between men and women as they interact with each other and with the forest. This will require courageously addressing: a) sensitive issues like population, the division of labor within households, religious beliefs and associated ideals, and violence against women; and b) methodologically complex ones like values, norms, and other powerful but intangible cultural topics. The secret to our ultimate success will be effectively integrating the many disciplines involved so that we can expand our understanding of the forests - people nexus.

## FRIDAY 10 OCTOBER - SUB-PLENARY SESSIONS

### 13:30-15:00

#### SP-13 Forest Biodiversity, Ecosystem Services And Human Well-Being – Harnessing Biodiversity For Adaptation To Global Change

**Room:** 155 A-C

**Organizers:** Bryan Finegan (CATIE, Costa Rica), Robert Jandl (Research and Training Centre for Forests, Natural Hazards and Landscape, Austria), Eckehard Brockerhoff (Scion/New Zealand Forest Research Institute), & JP Skovsgaard (Swedish University of Agricultural Sciences)

**Moderators:** Bryan Finegan

**Description:** The session will explore the current state of knowledge regarding the role of taxonomic and functional diversity in the provision of various forest ecosystem services, the trade-offs often required for successful multi-functional management of forests for different ecosystem services, and associated management and policy challenges including governance at the territorial scale.

Biodiversity, Ecosystem Services And Resistance To Invasion Of Planted Forests    Eckehard Brockerhoff    New Zealand

On Beyond S: Why Other Metrics Of Biodiversity Can Tell More About Ecosystem Services Than Species Richness    David Hooper    United States

Forest Landscape Heterogeneity And Local Plant Species Richness Effects: A Proxy For Biodiversity Monitoring    Sandra Luque    United Kingdom

Effective Territorial Governance For The Maintenance And Restoration Of Ecosystem Services: Analysis Of Experiences    Ronnie De Camino    Costa Rica

#### SP-14 Energy From Trees: Technology, Opportunities, And Challenges

**Room:** 155 E

**Organizers:** Woodam Chung (Oregon State University, USA) & Hans Heinimann (Swiss Federal Institute of Technology in Zurich, Switzerland)

**Moderators:** Woodam Chung

<b>Description:</b>	This session will introduce the state-of-the-art technologies for forest biomass production and utilization for bioenergy, and discuss the technical, logistical, financial, social and environmental challenges and opportunities of biomass utilization for energy in the rapidly advancing bioeconomy.		
	Feedstock Production Practices And Challenges In Sweden	Gustaf Egnell	Sweden
	Economics And Logistics Of Forest Biomass Supply: Integrated Supply Chain Research To Reduce Costs, Increase Value And Quantify Uncertainty	Nathaniel Anderson	United States
	The Global Footprint Of Traditional Woodfuels: A Spatially Explicit Assessment Of Supply, Demand, And Sustainability	Robert Bailis	United States
	Social Processes, Challenges And Opportunities For Forest Bioenergy Harvesting	Peter Edwards	Sweden
	Environmental Impacts And Site Sustainability Of Biomass-For-Bioenergy Harvest Operations	Deborah Page-Dumroese	United States
	Life-Cycle Assessment LCA Of Biomass Fuels - State And Perspectives	Hans R. Heinimann	Switzerland

### SP-15 Historical Responses Of Research To Global Forestry Issues

<b>Room:</b>	251 A-C		
<b>Organizers:</b>	Jeffery Burley (University of Oxford, UK)		
<b>Moderators:</b>	Niels Elers Koch		
<b>Description:</b>	The session will comprise a leading paper reviewing the changes in the forestry sector since the 1980s, followed by responses given by four IUFRO Past-Presidents (1990-2010) showing how the research community responded to the challenges during their time in office.		
	Global Forest Challenges Over The Past Quarter Century	Juergen Blaser	Switzerland
	Research Responses To Major Forestry And Forest Products Challenges Over The Past Quarter Century	Jeffery Burley	United Kingdom
	Historical Responses Of Research To Global Forestry Challenges, 1991 – 1995: Forestry Research From A Tropical Perspective Forestry Research From A Tropical Perspective	Salleh Mohd. Nor	Malaysia
	Historical Responses Of Research To Global Forestry Challenges, 1996 – 2000: Into The Third Millennium	Jeffery Burley	United Kingdom
	Historical Responses Of Research To Global Forestry Challenges, 2001 – 2005: Contributions To International And National Policy Processes	Risto Seppälä	Finland
	Historical Responses Of Research To Global Forestry Challenges, 2006 – 2010: Continuity And Strengthening	Don Koo Lee	Republic of Korea

### SP-16 Triumphs, Tribulations And Transitions – The Graduate Research Experience From The Student IUFRO Award Winners

<b>Room:</b>	155 F		
<b>Organizers:</b>	Shirong Liu (Chinese Academy of Forestry) & Lisa Hansen (IFSA/University of British Columbia, Canada)		
<b>Moderators:</b>	Lisa Hansen & Shirong Liu		
<b>Description:</b>	This session will provide a venue for the winners of the IUFRO Outstanding Doctoral Research Award (ODRA) and IUFRO Student Award for Excellence in Forest Sciences (ISA) to present short overviews of their personal and intellectual triumphs and tribulations encountered while conducting their winning research projects and to share some insight on their future professional directions they now envision for themselves.		

<b>ISA Awardees:</b>	Tolupe Daramola (USA/Nigeria): Division 1
	Mika Yoshida (Japan): Division 3
	Julius B. Adewopo (USA/Nigeria): Division 5
	Sharif Ahmed Mukul (Bangladesh): Division 6
	Md. Mohital Hosain (Bangladesh): Division 8
	Ivana Guduric Živojinovi (Serbia): Division 9
<b>ODRA Awardees:</b>	Jan R. Bannister (Chile/Germany): Division 1
	César Pérez Cruzado (Spain): Division 2
	Puneet Dwivedi (USA/India): Division 3
	Susana Barreiro (Portugal): Division 4
	Sik Huai-Shing (Malaysia): Division 5
	Sandra Rodríguez-Pineros (Mexico): Division 6
	ShuaiFei Chen (China): Division 7
	Zhun Mao (China): Division 8
	Eli Sagor (USA): Division 9

## FRIDAY 10 OCTOBER - TECHNICAL SESSIONS 08:00-10:30

### // FORESTS FOR PEOPLE

#### A-08A (108A) Small-Scale And Community Forestry For People, Biodiversity And Ecosystem Services

<b>Room:</b>	250 A		
<b>Organizers:</b>	John Herbohn (University of the Sunshine Coast, Australia), Gun Lidestav (Swedish University of Agricultural Sciences), Gary Kerr (UK Forestry Commission), Jessica Leahy (University of Maine, USA) & Christoph Hartebrodt (Forest Research Institute Baden-Württemberg, Germany)		
<b>Moderators:</b>	Christoph Hartebrodt		
<b>Description:</b>	This session will address the complex and multidimensional nature of small-scale and community forestry systems, with a focus on the economic, institutional and policy issues; uneven-aged and mixed species silviculture of small-scale and community forestry; forest land ownership in change and its significance for management and policy; and the links between attitudes and behaviors of small-scale forest landholders.		
	Designing Mixed Species Systems For Community And Smallholder Forestry In The Tropics To Achieve Multiple Objectives	John Herbohn	Australia
	Forest Land Ownership Changes In Europe: Significance For Management And Policy	Gun Lidestav	Sweden

The Association Of Forest Owners After The Restitution Process In The Czech Republic	Vilem Jarsky	Czech Republic
Factors Influencing The Level Of Participation Of Community Forest Association Members In Participatory Forest Management: A Case Study Of Kenya	Josephine Musyoki	Kenya
The Present State And Prospects Of Private Forest Owners' Associations	Špela Pezdevšek Malovrh	Slovenia
A Culturally Focused Life Cycle Sustainability Assessment: Analysis Of Forestry Value Chain Options With Māori Land Owners	Stefania Pizzirani	New Zealand
Factors Influencing Choice Of Forest Management Strategy Among Small-Scale Private Forest Owners In Sweden	Jeannette Eggers	Sweden

## A-16 (28) Ethics And Values In Relation To Forest, Wildlife And Recreation Management

**Room:** 150 B

**Organizers:** Christian Gamborg & Frank S. Jensen (University of Copenhagen, Denmark)

**Moderators:** Christian Gamborg

**Description:** This session will explore approaches for handling human-wildlife relations as well as conflict situations arising in forest, wildlife and recreation management.

Fires, Forests And Conflict In Times Of Rapid Environmental Change In Sweden And Australia	Katarina Eckerberg	Sweden
A Bottom Up Approach To Criteria And Indicators: Values And Cues In Public Evaluations Of Forest Management In Australia	Rebecca Ford	Australia
Effectiveness Of Integrated Conservation And Development Projects Around Central Indian Tiger Reserves	Biljana Macura	Italy
Triad Stimulus Nur (Nature, Use, Religion) Pro-Conservation For Sustainable Forest Management In Indonesia	Ellyn Kathalina Damayanti	Indonesia
Conflictive Interactions Between Forestry Traditional Knowledge Of Dong Minority And Modern Policy Interventions In S Village: An Actor-Oriented Perspective	Minghui Zhang	China
Negotiating Indigenous Collaboration In Forestry In Quebec, Canada: Finding Pathways Through Multiple Processes And Actors	Stephen Wyatt	Canada
The Importance Of The Social And Cultural Dimensions Of Wildmeat In Periurban Indigenous Communities In Leticia (Colombia)	Blanca Yague	Colombia
Recreational Hunting – A Comparative Study Of Attitudes To Rear And Release Among Danish Hunters, Land Owners And The General Public	Christian Gamborg	Denmark

## A-22 (66) Forests Under Pressure: Prerequisite Conditions For Forest-Related Sustainable Development

**Room:** 250 B

**Organizers:** Pia Katila (Finnish Forest Research Institute)

**Moderators:** Markku Kanninen (University of Helsinki)

**Description:** This session will present the main findings of the IUFRO-WFSE book “Forest under Pressure: Local Responses to Global Issues”, focusing on ‘prerequisite conditions’ that foster progress towards sustainable forest management and forest-related sustainable development.

Introduction To The WFSE-Project And The New Book Forests Under Pressure: Local Responses To Global Issues	Pia Katila	Finland
Community-Based Forest Management In Quintana Roo, Mexico	Jose Antonio Sierra Huelsz	Mexico

Forest Citizenship In Acre, Brazil	Marianne Schmink	United States
Khasi Responses To Forest Pressures: A Community REDD + Project From Northeast India	Mark Poffenberger	United States
Community Rights And Participation In The Face Of New Global Interests In Forests And Lands – The Case Of Mozambique	Almeida Siteo	Mozambique
Prerequisite Conditions For Sustainable Forest Management: Synthesis Of The Case Studies	Glenn Galloway	United States
Forests Under Pressure: Possible Future Pathways	Wil de Jong	Japan

### A-29 (136) The Knowledge That Counts – Analyzing Science Policy Interactions In Forest Policy

**Room:** 150 C

**Organizers:** Michael Böcher (Georg-August-University Goettingen, Germany) & Georg Winkel (University of Freiburg, Germany)

**Moderators:** Michael Böcher & Georg Winkel

**Description:** This session will focus on the interactions between scientific research and forest policy making and practices, including problems and prospects for scientific knowledge transfer in forest policy and assessment of long term trends of the science-policy interface.

The Riu-Model As Framework For Analyzing Science Policy Interactions In Environmental And Forest Policy	Michael Böcher	Germany
Forest Biodiversity In Climate Change Adaptation; What Is The Role Of IPBES And IPCC?	Yusuf Samsudin	Indonesia
Publicly-Funded Forest Research In Canada: Discriminating Between Strategic, Tactical And Technical Policy Relevance	Gordon Hickey	Canada
Application Of Bayesian Belief Networks To Science Based Policy Development	Mike Briennesse	Canada
Is Forest Research In Accord With The Strategic Challenges Of The Forest Sector? A Case Study On Finland.	Risto Seppälä	Finland
Actionable Knowledge For Forest Owners Associations In Slovakia	Jaroslav Šálka	Slovakia
Governing Uncertainty In Forest Management. Forest Counselors' Handling Of Risk And Uncertainty After Extreme Events	Rolf Lidskog	Sweden
Under The Veil Of Science: A History Of State Management Of Ghana'S High Forest Zone	Christian Pilegaard Hansen	Denmark

### A-37A (227A) Knowledge Exchange And Communication Of Forest Research For Human And Community Well-Being

**Room:** 150 A

**Organizers:** Cynthia Miner (U.S. Forest Service), Jurij Begus (Slovenia Forest Service), Guy Smith (NRCan- Canadian Wood Fibre Centre) & Alejandra Real (National Forestry Corporation, Chile)

**Moderators:** Cynthia Miner & James Johnson (Oregon State University)

**Description:** The session will focus on the processes used to implement research findings in policies, programs and practices in maintaining and enhancing human health and community well-being, with an emphasis on the human dimensions of sharing and using knowledge.

Biodiversity, And Their Communication Gaps In The Mass Media: Experience From The CBD COP10 And Beyond	Ryo Kohsaka	Japan
Science In Forest Policy Program And Political Discussion: The Example Of Bangladeshi Forest Policy Program And Print Media Discourse.	Md. Nazmus Sadath	Bangladesh

Exploring The Science – Stakeholder Interface In Climate Change Adaptation Research Within Swedish Forestry	Åsa Gerger Swartling	Sweden
Differences In Biodiversity Assessment Strategies Between Experts And Novices In Ecology In Logged Forests.	Johan Pihel	Sweden
Cartografía Social Para La Determinación De Dinámicas Ambientales En Contextos Rurales. Caso Cuenca Río Grande, Departamento De Antioquia, Colombia.	Connie Paola Lopez Gomez	Colombia
Forest As A Place For Health, Recreation And Learning - Case Studies	Milan Sarvas	Slovakia
Assessment Of The Impact Of Forestry Research Institute Of Nigeria Activities On The Neighboring Communities	Adebayo John Julius	Nigeria
<b>Poster Presentations:</b>		
Community Wood Energy Handbook And Computer App	Dennis R Becker	United States
Participatory Approach Potentials In Adoption Of Agronomic, Land And Water Management Technologies In Semi Arid Areas Of Tanzania	Pilly Kagosi	Tanzania
Managing Knowledge In A Research Organisation: The Case Of Kenya Forestry Research Institute	Sheila Mbiru	Kenya
Forest Models Dissemination And Knowledge Transfer On Cork Oak Based Ecosystems: Bridging The Gap Between Research And Practice	João HN Palma	Portugal
IUFRO And Global Forest Decimal Classification - Status And Future	Jarmo Saarikko	Finland
A Role For Research In Supporting Small-Scale Emerging Tree Growers In South Africa	Sally Upfold	South Africa

## // FOREST BIODIVERSITY AND ECOSYSTEM SERVICES

### B-03 (118) Providing Ecosystem Services Under Climate Change: Community Of Practice Of Forest Decision Support Systems

**Room:** 150 D

**Organizers:** Harald Vacik (University of Natural Resources and Life Sciences, Austria), Jose Borges & Jordi Garcia-Gonzalo (Technical University of Lisbon, Portugal) & Lujsk-Ola Eriksson (Swedish) University of Agricultural Sciences)

**Moderators:** Harald Vacik & Jose Borges

**Description:** The session will explore how Decision Support Systems (DSS) are currently designed and applied for a sustained provision of ecosystem services under climate change, including case studies and overviews on models, methods, techniques and frameworks.

Community Of Practice Of Forest Management Decision Support Systems And Lessons Learned For DSS Development And Application	Harald Vacik	Austria
Design Features Behind The Success Of The Ecosystem Management Decision Support System	Keith Reynolds	United States
Supporting Participatory Land Use Planning Processes And Decisions – The Giscame Platform	Christine Fürst	Germany
Studying Trade-Offs Between Biodiversity And Ecosystem Services: An Integrated Modeling Approach Based On Uneven-Aged Mountain Forests.	Valentine Lafond	France
Ecosystem Services And Climate Change. A Decision Support Process For A Community Forest In The Austrian Alps	Florian Irauschek	Austria
Architecture Of A Decision Support System To Address Climate Change (SADfLOR)	Jordi Garcia-Gonzalo	Portugal

Long-Term Forest Planning Under Risk And Uncertainty; Can Robust Linear Programming Help?	Antti Mäkinen	Finland
<b>Poster Presentations:</b>		
DSS Optimal - A Case Study From The Czech Republic	Robert Marusak	Czech Republic
Spatial Aspects Of Biodiversity As A Part Of Harvest Scheduling Decision Process	Jan Kaspar	Czech Republic
Balancing Biomass And Biodiversity In Protected Areas, The Triglav National Park Case Study	Aleš Poljanec	Slovenia
Evaluating Future Wood Availability In Europe. Methods And Tools	Susana Barreiro	Portugal
The System Of Silviculture For Conservation And Development (SICODESI), Lessons From A Successful Case Of Forest Management In Jalisco, México	Francisco Dominguez Hernandez	Mexico

### B-06A (217A) Research And Management Implications Of The Economics Of Ecosystem Services

<b>Room:</b>	150 E	
<b>Organizers:</b>	Donald Hodges (University of Tennessee, USA), Donald Grebner (Mississippi State University, USA) & Runsheng Yin (Michigan State University, USA)	
<b>Moderators:</b>	Donald Hodges (University of Tennessee, USA), Donald Grebner (Mississippi State University, USA)	
<b>Description:</b>	This session will include presentations focused on research and management related to the economic and accounting aspects of ecosystem services, including the effects on management decisions.	
	Lessons Learned From China For Designing And Implementing Payments For Ecosystem Services Initiatives	Runsheng Yin United States
	Remote Sensing And Field-Level Evaluation Of Payments For Forest Conservation: Ecuador's Socio Bosque Program	Phillip Mohebalian United States
	Public Management Model In Payment For Environmental Services In The Sabiaguaba Dune's Natural Park, Fortaleza-Brazil.	Marco Andrés González Carantón Brazil
	Experimental Differentiated Valuation Of Forest Services' Socio-Economic Importance In The Frame Of Czech Republic	Ludek Sisak Czech Republic
	Participatory And Multi-Criteria Analysis For (Forest) Ecosystem Management: A Case Study Of Pohorje, Slovenia	Lidija Zadnik (Stirn) Slovenia
	An Investigation Of Nationality And Distance Dependence For Biodiversity Transnational Coordination.	Fatemeh Bakhtiari Denmark

### B-09A (64A) What Future For Tropical Silviculture?

<b>Room:</b>	155 E	
<b>Organizers:</b>	Robert Nasi (CIFOR, Indonesia) & Plinio Sist (CIRAD, France)	
<b>Moderators:</b>	Robert Nasi & Plinio Sist	
<b>Description:</b>	This session will present experimental data on the sustainability of selective logging and plantation management in the tropics, with an emphasis on the impact of tropical silviculture on biodiversity, biomass production and ecological processes natural and planted forests.	
	Current State And New Trends In The Silviculture And Sustainable Management Of Tropical Production Forests	Plinio Sist France
	Past, Presence And Possible Futures Of The Western Congolian Lowland Rainforest (WCLRF)	Stephan A. Pietsch Austria

Forest Resilience Depends On The Stand Variations: Forest Dynamics Of An Amazonian Forest 30 Years After Logging	Lucas Mazzei	Brazil
Tropical Shelterwood System And Its Impact On The Heterogenous Forests Of West Africa: The Nigerian Experience.	EKeoba Isikhuemen	Nigeria
Adaptation Of Eucalypt Trees To Water And Nutrient Deficiencies: Insights From Brazilian Experiments Question Conventional Recommendations	Jean-Paul Laclau	France
<b>Poster Presentations:</b>		
Eucalyptus Stocking And Soil Preparation In A Frontier Region At North Of Brazil: Necessity Of Changing Concepts From Traditional Regions	Rodrigo Hakamada	Brazil
Post-Logging Stand Dynamics Of A Tropical Rain Forest In The Brazilian Amazon	Angela Luciana De Avila	Brazil
Natural Regeneration Management Of "Pau Mulato" In Amazonian Estuary Floodplains Forests	Marcelino Carneiro Guedes	Brazil
Impact Of Logging Operations On The Remnant Forest Of A Humid Tropical Forest In The Imataca Forest Reserve, Venezuela	Néstor Gutierrez	Venezuela
18 Years Of Post-Logging Recovery In A Mixed Dipterocarp Forest Sabah, Borneo: Evaluation Of Modified Ril And Climber Cutting.	Daniel Lussetti	Sweden
Potential Of Natural Forest Production In Sinop County At Amazonia Region, Brazil	Patricia Mattos	Brazil
Development Of Pericopsis Elata's Seedling Around Seed Bearer In A Logging Forest Of South East Cameroon	Nnanga Mebenga Ruth Laure	Cameroon
Tree Diversity And Soil Nutrient Studies Of Logged-Over Forest In Peninsular Malaysia	Mohd Nazip Suratman	Malaysia
The Vegetation Recovery Of Tropical Rain Forests Under Different Commercial Logging Manners On Hainan Island, China	Yi Ding	China

## B-16A (178A) Contribution Of Genetics And Genomics To Conservation And Sustainable Management Of Forests Under Changing Environmental Conditions

**Room:** 250 D

**Organizers:** Om Rajora (University of New Brunswick, Canada) & Wickneswari Ratnam (Universiti Kebangsaan, Malaysia)

**Moderators:** Om Rajora

**Description:** The session will explore the impacts of and future directions for forest genetics and genomics research on the conservation and sustainable management of forest genetic resources and understanding adaptation in forest trees and their responses to climate and environmental change.

The Role Of Genomics Research In Understanding Responses And Adaptation Of Forest Trees To Changing Climate And Environmental Conditions	Om Rajora	Canada
Assessing The Adaptive Portfolio Of Reforestation Stocks For Future Climates	Sally Aitken	Canada
Population And Landscape Genomics To Study Local Adaptation In Loblolly Pine ( <i>Pinus taeda</i> L.) Populations And To Breed More Climate Change Resilient Trees	Konstantin Krutovsky	Germany
Bioprospecting For Novel Genes Through Characterization Of Leaf Transcriptome Of <i>Withania somnifera</i> , A Valued Medicinal Plant	Modhumita Dasgupta	India
Range-Wide Geographic Variation In <i>Prunus africana</i> At The Molecular And Chemical Level	Thomas Geburek	Austria

The Evolutionary History And Genetic Diversity Of Ponderosa Pine: Management Implications For An Important Species Of Western North America	Kevin Potter	United States
Visualising The Environmental Responses Of Forest Tree Populations	Roger Meder	Australia
Using Case Studies For Enhancing Capacity In Managing Forest Genetic Resources	Judy Loo	Italy

## // FORESTS AND CLIMATE CHANGE

### C-03 (46) Understanding The Relationships Among Biodiversity, Carbon, And People For REDD+ Forests: The Importance Of Environmental And Social Safeguards

**Room:** 250 E

**Organizers:** Ian Thompson (NRCan-Canadian Forest Service), Kimiko Okabe (Forestry and Forest Products Research Institute, Japan), Jae Soo Bae (Korea Forest Research Institute, Republic of Korea) & John Parrotta (U.S. Forest Service)

**Moderators:** Ian Thompson

**Description:** This session will examine the important relationships that exist among biodiversity, carbon storage and people in REDD planning, with a particular emphasis on formulation and application of environmental and social safeguards.

Improved Understanding Of The Role Of Biodiversity In Ecosystem Services Leads To Better REDD Forest Management	Ian Thompson	Canada
Social And Economic Considerations Relevant To REDD+	Bhaskar Vira	United Kingdom
Integrating REDD+ Governance: Lessons At Global, National And Local Scales	Constance McDermott	United Kingdom
Local Participation In Global Conservation: Villagers' Knowledge And Perceptions Of Incipient REDD+ Initiatives	Amy Duchelle	Brazil
An Assessment Of The Impacts Of The REDD+ Pilot Project On Community Forests User Groups (CFUGs) And Their Community Forests In Nepal	Tek Maraseni	Australia
REDD+ And Community Adaptive Capacity In The Central Highlands Of Vietnam	Thu-Ba Huynh	Australia
Collaborative Forest Management With Effective REDD+ Social Safeguards: An Experience From A National Park In East Java, Indonesia	Kazuhiro Harada	Japan
Analyses Of Potential Livelihood Outcomes, Farming Practices And Conflicts In Natural Resource Use Under A REDD+ Implementation In Ghana	Kwame Antwi Oduro	Ghana

### C-11 (143) Forest Resistance And Resilience In The Face Of Natural Hazards

**Room:** 151 A

**Organizers:** Alexia Stokes (National Institute for Environmental and Agricultural Science and Research, France), Frank Telewski (Michigan State University, USA) & Thierry Fourcaud (CIRAD, France)

**Moderators:** Alexia Stokes, Frank Telewski

**Description:** The session will explore how natural, plantation and urban forests can withstand weather and geomorphological hazards, as well as the mechanisms of ecosystem resilience and failure after disturbance.

Natural Hazards In Forests - Does Time Heal All Wounds?	Alexia Stokes	France
Thigmomorphogenesis: Increasing Tree Resistance To Wind Storms	Frank Telewski	United States

Impact Of Changing Climate And Disturbances On Forests Providing Protection From Gravitational Hazards	Giorgio Vacchiano	Italy
Spatial Analyze Of Trends In Extreme Precipitation And Prediction The Landslide Susceptibility Of National Forestland In Kaoping Basin, Taiwan	Ya-Li Huang	China-Taipei
Strategies For Improving Hybrid-Mechanistic Windthrow Models	Stephen Mitchell	Canada
Understory Dynamics After Disturbance Accelerate Succession From Spruce To Beech Dominated Forest	Andreas Bolte	Germany
Multi-Year Response To Historic Drought-Induced Canopy Dieback In A Mediterranean-Type Forest In Southwestern Australia	George Matusick	Australia

#### **Poster Presentations:**

Simulating Forest Dynamics And Vulnerability Of Cork Oak Woodland Production Systems: A New Index For Vulnerability Assessment And Control.	Nuno Almeida Ribeiro	Portugal
Spatiotemporal Heterogeneity Of Water And Root Distribution And Their Impact On The Slope Stability In A Mixed Mountains Forest	John Kim	France
How Does The Asymmetry Of Root System Architecture Modify Soil Strength And Slope Stability?	Zhun Mao	France
Drought Effects On Forest Health And Growth In The Western Part Of The Eurasian Steppe Region	Ionel Popa	Romania
Impacts Of Natural Forest Landslides In A Rural Community Of Morretes, Pr-Brazil	Maria Augusta Rosot	Brazil
Rehabilitation Process Of Natural Mixed Forest After Wind Disturbance By Typhoon In Hokkaido, Japan In Northern, Hokkaido	Masayoshi Takahashi	Japan

### **C-12A (58A) Quantifying Uncertainty In Forest Measurements And Models: Approaches And Applications**

**Room:** 250 F

**Organizers:** George Gertner (University of Illinois, USA), Bogdan Strimbu (Louisiana Tech University, USA), David Paré (NRCan-Canadian Forest Service) & Peter Clinton (Scion, New Zealand)

**Moderators:** George Gertner

**Description:** This session will present approaches to analyzing uncertainty in forest measurements and give examples of applications of uncertainty analysis in above- and belowground estimates of forest biomass, carbon, and nutrient pools and fluxes, and other ecosystem attributes.

Quantifying Uncertainties In National Estimates Of Living Biomass – A Comparison Of Methods	Johannes Breidenbach	Norway
On Identifying And Establishing Confidence Limits Of Trends	Biing Guan	China-Taipei
Characterizing Uncertainty In Forest Disturbance Maps Derived From Landsat Time Series	Warren Cohen	United States
Assessment Of Scenario Generation Approaches For Forest Management Planning Through Stochastic Programming	Kyle Eyvindson	Finland
Parameterization Of 3-PG Model For Slash Pine Trees: Assessing Climate Change Effects On Stand Dynamics And Productivity	Carlos Gonzalez-Benecke	United States
A Systematic Framework For Monte Carlo Simulation Of Remote Sensing Errors Map In Carbon Assessments	Sean Healey	United States
Scaling Of Uncertainty In Carbon Emission Estimates And Implications For Locally Appropriate Designs To Reduce Emissions From Degradation, Deforestation And Agroforestation In Landscape Mosaics	Meine van Noordwijk	Indonesia

Uncertainty In Estimating The Timing Of Greenhouse Gas Emission Balance Of Forest Bioenergy	David Pare	Canada
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### C-23B (107B) Forest Management For Adaptation To Climate Change

**Room:** 251 A-C

**Organizers:** Rodney Keenan (The University of Melbourne, Australia), Carina Keskitalo (Umea University, Sweden), Kalame Fobissie (WWF Central Africa, Cameroon) & Guangyu Wang (University of British Columbia, Canada)

**Moderators:** Rodney Keenan

**Description:** This session will focus on options for adaptation to climate change in forest management from ecological, social, economic and policy perspectives including decision tools for adaptation to climate change and best practice case studies in building adaptive capacity from tropical, temperate and boreal biomes.

Effectiveness Of Climate Change Communication In Promoting Engagement With Climate Science And Adaptation Among Forestry Stakeholders	Gregor Vulturius	Sweden
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Overcoming Adaptation Barriers Surrounding Climate Change In U.S. Federal Land Management Agencies: The Importance Of Research-Management Communication And Scale.	Kerry Kemp	United States
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A Multiple Values Trade-Offs Framework For Climate Change Adaptation	Qinglin Li	Canada
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Integrating Multi-Discipline Models To Estimate Impacts Of Climate Change And Mitigation Policies On The Global Forestry Economics Sector	John Kim	United States
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Impact Of And Responses To Climate Change From The Perspective Of Traditional Forest Knowledge In Guizhou Province Of China	Juanwen Yuan	China
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Applying Resilience Thinking To Production Forest Ecosystems	Lucy Rist	Sweden
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Testing The Insurance Hypothesis: Can Tree Species Diversity Buffer Ecosystem Services Against Disturbance Impacts?	Mariana Pedro	Austria
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How Fast Can European Forests Adapt To Climate Change?	Geerten Hengeveld	Netherlands
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### C-30 (19) Novel Ecosystems And Intervention: Adaptation To Climate Change

**Room:** 150 F

**Organizers:** John Stanturf (U.S. Forest Service) & Palle Madsen (University of Copenhagen, Denmark)

**Moderators:** Palle Madsen

**Description:** This session will explore current perspectives on restoring forests under the simultaneous pressures of land use change, trade globalization and climate change.

Novel And Neo-Native, Native And Exotic, Restoration And Intervention, Oh My!	John Stanturf	United States
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Paleoclimatic Shifts And Novel Ecosystems	Constance Millar	United States
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Novel Ecosystems Resulting From Altered Fire Regimes	Richard Bradshaw	United Kingdom
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The Influence Of Climate Change On Forest Ungulates: The Paradox Of "Restoring" Novel Ecosystems	Thomas Rooney	United States
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Can We Predict The Ecological Implications For Restoration Of An Extirpated Forest Tree Species Under Global Change?	Douglass Jacobs	United States
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Role Of Assisted Migration In Forest Ecosystems On The Cusp Of Change	Kasten Dumroese	United States
Complex Forest Stand Structures For Risk Reduction And Adaptation	Kevin O'Hara	United States
Pushing The Envelope: Forest Management Strategies For Adapting To A Changing Climate In Canada	Philip Burton	Canada

## // FORESTS AND WATER INTERACTIONS

### D-03 (127) Land Use/Land Cover Change And Hydroecology: Consequences At Variable Spatial Scales

**Room:** 151 B

**Organizers:** Latif Kalin (Auburn University, USA), Yusuf Serengil (Istanbul University, Turkey) & Xiaohua (Adam) Wei (University of British Columbia, Canada)

**Moderators:** Latif Kalin

**Description:** This session will focus on hydrologic and ecologic issues in watershed at various spatial scales, as affected by spatial mosaic of land use (and associated water use and management practices), and multiple stress factors such as urbanization, climate change, and air pollution.

The Effect Of Land Use Change On The Ecosystem Services Provided By Headwater Wetlands In Alabama	Christopher Anderson	United States
Mind The Gap: Trees Can Improve Groundwater Recharge In The Seasonally Dry Tropics	Aida Bargaúes Tobella	Sweden
How Much Do Bark Beetles Change The Annual Water Cycle Of A Spruce-Fir Forest?	John Frank	United States
Floodplain Forest Restoration: Rethinking Management Legacies For Flood Mitigation And Consumptive Water Use In Flood Prone Lands	Jason Hubbart	United States
The Impacts Of Forest Changes On Flow Regimes In The Upper Reach Of Poyang River Basin	Wenfei Liu	China
Role Of Land Use/Cover And Water Quality On West Nile Virus Incidence	Navideh Noori	United States
Prediction Of Channel Erosion In Watersheds Along Urban-Rural Transition	Pinar Pamukçu	Turkey
Effect Of Forest Changes On River Discharge And Sediment In A Large Scale Watershed	Ping Zhou	China

### D-08 (238) Sustaining Riparian Biodiversity And Ecosystem Services In A Changing Climate

**Room:** 151 C

**Organizers:** Kathleen Dwire (U.S. Forest Service), Michael Pollock (National Oceanic and Atmospheric Administration, USA) & Chris Frissell (University of Montana, USA)

**Moderators:** Kathleen Dwire

**Description:** This session will focus on innovative approaches to restoration and maintenance of biological diversity and essential ecosystem services in riparian forests.

Riparian Forest Conservation And Restoration: A Few Examples From Eastern France	Herve Piegay	France
The Critical Role Of Fluvial Disturbance For Riparian Forest Development Along Large Rivers In Dry Regions (California, USA)	John Stella	United States
Does Thinning Restore Late-Successional Forest Structure?	Michael Pollock	United States

Climate Change And Forest Thinning With Riparian Buffers: Relationships To Shrinking Headwater Stream Habitat	Deanna Olson	United States
Historic And Current Fire Patterns In Sierra Nevada Riparian Forests	Malcolm North	United States
Streamside Buffers Moderate Effects Of Forest Thinning On Riparian Microclimates And Stream Temperatures In Western Oregon, USA	Paul Anderson	United States
Fuels And Fuel-Reduction Treatments In Riparian Conifer Forests: Challenges Of Maintaining Streamside And Aquatic Habitats	Kathleen Dwire	United States
Effects Of Wild Ungulate Herbivory On Riparian Restoration For Salmonids	Mary Rowland	United States

## // FOREST BIOMASS AND BIOENERGY

### E-02A (11A) Environmental Impacts Of Intensive Management Of Forest Soils For Timber And Bioenergy Production

**Room:** 150 G

**Organizers:** Deborah Page-Dumroese (U.S. Forest Service), Peter Clinton (Scion, New Zealand), Liisa Ukonmaanaho, (Finnish Forest Research Institute) & Hailong Wang (Zhejiang Agricultural and Forestry University, China)

**Moderators:** Peter Clinton & Liisa Ukonmaanaho

**Description:** This session will address a range of biogeochemical and environmental consequences of timber harvesting or bioenergy production; topics will include intensive forest soil uses such as cultivation, fertilization, nutrient removals in biomass, replacement of soil nutrients via deposition and biodiversity.

Biomass Harvesting In Fennoscandian Boreal Forests – Nutrient Removals And Nutrient Status	Leena Finér	Finland
Short- And Long-Term Ecological Consequences Of Removal Of Harvesting Residues For Bioenergy From Forests In Norway	Nicholas Clarke	Norway
Sustainable Forest Harvest Requires Nutrient Supply From Soil Pools: Ecosystem Budgets For Second-Growth Northern Hardwoods In New Hampshire, USA	Ruth Yanai	United States
A Sustainability Index For Improving Nutrient Management In Short Rotation Bioenergy Systems	Stanley Sochacki	Australia
Assessment Of Forest Logging Influence On Soil Environment	Martina Cambi	Italy
Linking Forest Soils And Ecophysiology To Improve Sustainable Management Of Forest Plantations	Thomas Fox	United States
Hydrological Constraints In Eucalyptus Plantations Harvest Scheduling Models	Juan Carlos Gimenez	Spain

## // FORESTS AND FOREST PRODUCTS FOR A GREENER FUTURE

### F-04 (162) Greening Society And Non-Wood Forest Product Commercialisation: Assessing The Environmental, Economic And Social Trade-Offs

**Room:** 151 D

**Organizers:** Luis Fontes (Technical University of Lisbon, Portugal), Jenny Wong (Wild Resources Ltd, UK), Robert Mavsar (European Forest Institute, Finland) & Marla Emery (U.S. Forest Service)

**Moderators:** Robert Mavsar & Marla Emery

**Description:** This session will explore trade-offs inherent in the sustainable provision of NWFPs and the possible consequences of globalization of demand for new products and services on the environment and on forest-dependent communities.

Balancing Subsistence And Commercialization: Perspectives From North American Indigenous Peoples' Experience	Marla R. Emery	United States
Forest Conservation And NTFPs Utilization In Southwest Ethiopia: An Overview Of Actors And Their Interactions	Tefera Belay Endalamaw	Ethiopia
European Non-Wood Forest Products (NWFPs) Network	Luis Fontes	Portugal
Economic Contribution Of Gums And Resins Resources To Household Livelihoods And National Economy Of Ethiopia	Zenebe Mekonnen Gebretsadik	Ethiopia
Development Of The Global Trade Of Non-Wood Forest Products	Robert Mavsar	Finland
Towards A New Paradigm: Valuation Of The Impacts Of Reforestation And Non Timber Value-Chain Projects On Fundamental Human Needs	Nicolas Métro	France
Non-Timber Forest Products: A Sustainable Development Path Full Of Obstacles. A Case Study In Costa Rica	Roger Villalobos	Costa Rica

#### **Poster Presentations:**

Socio-Economic Importance Of Indigenous Fruit Trees: Strychnos Cocculoides And Schinziophyton Rautanenii In Rundu Rural West Constituency, Kavango Region, Namibia	Selma Ndemutilla Elago	Namibia
Analysis Of Non-Timber Forest Products Activities And Income Among Rural Households In Nigeria	Oluseyi Olugbire	Nigeria
Decision-Making Along A Tropical Forest Product Commodity Chain: Implications For Ecological Sustainability	Jose Antonio Sierra Huelsz	Mexico
The Characteristics Of Global Trade Of Truffles	Enrico Vidale	Italy
Wild Mushroom In Italy: From A Commodity To A Recreational Service.	Enrico Vidale	Italy
Non-Timber Forest Products Income Contribution To Households Economy In Xing'An Mountains Forest Area	Hongge Zhu	China

### **F-11A (183A) Forest Operations Engineering And Management - The Way Ahead**

**Room:** 155 F

**Organizers:** Hans R. Heinimann (ETH Zurich, Switzerland) & Woodam Chung (Oregon State University, USA)

**Moderators:** Hans R. Heinimann

**Description:** The session aims at bringing together regional perspectives of research and development in forest operations engineering and management, and setting an agenda of issues to be addressed collectively and internationally during the next 5 years.

Forest Operations Engineering And Management Achievements And Perspectives - The Formec View	Karl Stampfer	Austria
Forest Operations Engineering And Management Achievements And Perspectives - The Cofe View	Woodam Chung	United States
Forest Operations Engineering And Management Achievements And Perspectives - The SSFAR/IIFORMS/INCOSE View	Sophie D'Amours	Canada
Environmental Assessment Of The Technological Innovation Process On Forestry Harvesting	Carla Portugal	Brazil
The Future Roles Of Ergonomic Research In World Forests And Forestry	Yozo Yamada	Japan

## // FOREST HEALTH IN A CHANGING WORLD

## G-05 (166) Global Approaches To The Biological Control Of Invasive Eucalyptus Pests

**Room:** 151 E**Organizers:** Simon Lawson (Queensland Department of Agriculture, Fisheries and Forestry, Australia), Toni Withers (Scion, New Zealand) & Helen Nahrung (University of the Sunshine Coast, Australia)**Moderators:** Simon Lawson & Toni Withers**Description:** This session focuses on biological control of eucalypt pests worldwide, including updates on biocontrol programs for long-established pests, recent invasions, and the selection of effective control agents..

An Island Down-Wind Of Australia Has A Unique Experience Of Eucalyptus Pest Biological Control - The New Zealand Story	Toni Withers	New Zealand
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The Californian Experience Of Eucalypt Insect Biological Control With Special Emphasis On The Red Gum Lerp Psyllid Glycaspis Brimblecombei	Timothy Paine	United States
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Lessons From Successful Classical Biological Control In Israel Of Leptocybe Invasa And Ophelimus Maskelli	Zvi Mendel	Israel
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Biological Control Of The Eucalyptus Gall Wasp, Leptocybe Invasa, In South Africa	Brett Hurley	South Africa
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Towards Biological Control Strategies For The Bronze Bug Thaumastocoris Peregrinus On Eucalyptus Plantations In South America	Gonzalo Martinez	Uruguay
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Biological Control Of The Bronze Bug Thaumastocoris Peregrinus (Hemiptera: Thaumastocoridae) In Eucalyptus Plantations In Brazil	Carlos Wilcken	Brazil
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Bicep: Australia's Key Role In Providing Biocontrol Solutions For Global Australian-Origin Eucalypt Pests.	Simon Lawson	Australia
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## G-12 (34) The Co-Evolution Of Insects And Fungi That Form Symbiotic Relationships And Kill Forest Trees

**Room:** 250 C**Organizers:** Mee-Sook Kim (Kookmin University, Republic of Korea) & Philip Cannon (U.S. Forest Service)**Moderators:** Mee-Sook Kim & Phil Cannon**Description:** This session will focus on tree mortality that is the result of mutualistic symbioses between insects and fungi.

Fungal Associates Of The Pine-Infesting Bark Beetle Dendroctonus Approximatus In Mexico And Central America	Tessa Bauman	United States
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Fungi And Insects Diversity Associated With Pinus Radiata In Pitch Canker Affected Stands	Julio Javier Diez-Casero	Spain
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Fusarium Dieback And Its Ambrosia Beetle (Coleoptera: Scolitinae) Vector: A Generalist Disease/Pest Complex Threatening Agricultural And Natural Landscapes In California	Akif Eskalen	United States
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The Tree-Killing Ambrosia Symbiosis Illuminated With Modern Methods: Sometimes Stable, Sometimes Promiscuous, And Increasingly More Predictable	Jiri Hulcr	United States
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Factors Influencing The Percentage Of Tree Mortality By The Japanese Oak Wilt	Naoto Kamata	Japan
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Overview And Origin Of Oak Mortality Caused By An Ambrosia Beetle-Fungus Complex In South Korea	Mee-Sook Kim	Republic of Korea
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Chemical Ecology Of The Walnut Twig Beetle, A Pest Of Significance To The International Cultivation Of Walnut For Nut And Timber Production	Steven Seybold	United States
Co-Evolution Of The Siricid-Amylostereum Mutualism On Conifers	Bernard Slippers	South Africa

### G-13 (8) Modeling As A Tool For Improving The Knowledge On Forest Vulnerability And Risk Exposure In A Changing World

**Room:** 151 F

**Organizers:** Alessandra De Marco (ENEA, Italy) & Salim Belyazid (Lund University, Sweden)

**Moderators:** Salim Belyazid

**Description:** This session will explore various modeling approaches to assess the effects of climate change and air pollution on forest ecosystems.

Can Modeled And Measured Data Interact To Evaluate Forest Health Condition?	Elena Paoletti	Italy
Combining Large-Scale Simulation With Economic Models To Investigate Impacts Of Climate Change On Forests	Marc Hanewinkel	Switzerland
Impact Of Climate And Site Conditions On The Growth-Mortality Relationship In European Tree Species	Lisa Hülsmann	Switzerland
Uncertainty And Sensitivity Analyses: Can Model Structure Be Improved? The Case Of The Wind-Risk Model Forestgales	Tommaso Locatelli	United Kingdom
Predicting The Spore Infection Depending On Climate To Model The Heterobasidion Annosum Dynamics In Even-Aged Pinus Pinaster Stand	Céline Meredieu	France
Modeling Spruce Beetle And Fire Disturbance Under Climate Change And Adaptive Management In Subalpine Forests Of Northern Colorado, USA	Christian Temperli	United States

## FRIDAY 10 OCTOBER - TECHNICAL SESSIONS

15:30-18:00

### // FORESTS FOR PEOPLE

#### A-08B (108B) Small-Scale And Community Forestry For People, Biodiversity And Ecosystem Services

**Room:** Room: 250 A

**Organizers:** Organizers: John Herbohn (University of the Sunshine Coast, Australia), Gun Lidestav (Swedish University of Agricultural Sciences), Gary Kerr (UK Forestry Commission), Jessica Leahy (University of Maine, USA) & Christoph Hartebrodt (Forest Research Institute Baden-Württemberg, Germany)

**Moderators:** Moderators: Emily Silver (University of Maine) & John Herbohn

**Description:** Description: This session will address the complex and multidimensional nature of small-scale and community forestry systems, with a focus on the economic, institutional and policy issues; uneven-aged and mixed species silviculture of small-scale and community forestry; forest land ownership in change and its significance for management and policy; and the links between attitudes and behaviors of small-scale forest landholders.

Family Forest Ownership Research In The United States: Past, Present, And Future.	Brett Butler	United States
Small-Scale Forestry And Policy Challenges In East Asia	Noriko Sato	Japan

Biodiversity And Ecosystem Carbon Budget In The Upland Landscapes Following Shifting Cultivation By Small-Holder Kaingin Farmers In The Philippines	Sharif Ahmed Mukul	Australia
Attitude Towards Risk And Production Decision : An Empirical Analysis On French Private Forest Owners	Marielle Brunette	France
Community Forestry And Fire Management: Combining Social And Ecological Research To Strengthen Land Management In Communal Forests In Rural Mexico	Rachel Sheridan	United States
Modeling Private Woodland Owner Timber Harvesting Behavior Using Social Interactions, Risk Perception, And Peer-To-Peer Networking	Emily Silver	United States
Understanding Forest Owners' Propensity To The Provision Of Ecosystem Services: A Survey In The Veneto Region Of Italy	Enrico Vidale	Italy
Why Bother To Plant Trees? The Difficulties Of Legally Harvesting Small-Scale Community Forests In The Philippines.	John Herbohn	Australia

### A-12 (174) Participatory Protected Area Management At The Human Needs And Sustainable Wildlife Conservation Interface

**Room:** 150 D

**Organizers:** C.A.M. Sylvestre Djagoun (Université d'Abomey-Calavi, Benin), Hugues Akpona (National Forest Office, Benin), Edward D. Wiafe (Presbyterian University College, Ghana) & Achille Assogbadjo (Université d'Abomey-Calavi, Benin)

**Moderators:** C.A.M. SylvestreDjagoun & Hugues Akpona

**Description:** This technical session will highlight experiences and best practices in participatory wildlife management involving local communities in protected areas throughout the world, with a particular focus on Africa.

Bovid Responses To Anthropogenic Effects, Habitat And Environmental Parameters In The Pendjari Biosphere Reserve (Northern Benin) During The Dry Season	Chabi Djagoun	Benin
Spotted Necked Otters Vs. Fishermen In Hlan River, Benin: Key Ecological And Socio-Economic Factors Of A Conflict.	Hugues Akpona	Benin
Rodents As Food Sources In Lama Forest Reserve In Benin	Achille Assogbadjo	Benin
Integrating Local Communities To Safeguard Livelihoods And Resolve Conflicts In The Kakum Conservation Area, Ghana	Emmanuel Danquah	Ghana
Wildlife Laws Monitoring As An Adaptive Management Tool In Protected Area Management In Ghana: A Case Of Kakum Conservation Area	Edward D. Wiafe	Ghana

#### Poster Presentations:

Exploring Opportunities For Participatory Wildlife Management At The Bia Biosphere Reserve In Western Ghana	Emmanuel Danquah	Ghana
Stable Carbon Isotope Analysis Of The Diets Of West African Bovids In Pendjari Biosphere Reserve (Northern Benin)	Chabi Djagoun	Benin
Manning The Front Lines Of Biodiversity Conservation: Developing Competency Standards For Protected Areas Management In The Philippines	Floribel Paras	Philippines
Co-Management Approach To Protect The Protected Areas: Realistic Or Naive?	Md. Nazmus Sadath	Bangladesh
Evaluation Of The Efficacy Of Pepper-Grease Fence To Prevent Elephant Crop Raiding On Farms Around Kakum National Park, Ghana	Edward D. Wiafe	Ghana

## A-23A (101A) Transitions To Sustainable Forest Management: Economic, Social And Cultural Parameters

**Room:** 250 B

**Organizers:** Jinlong Liu (Renmin University of China), Wil de Jong (Kyoto University, Japan), Yeo-Chang Youn (Seoul National University, Republic of Korea) & De Lu (Asia-Pacific Network on Sustainable Forest Management and Rehabilitation, China)

**Moderators:** Jinlong Liu

**Description:** This session will examine recent studies that shed new light on the comprehensive and dynamic interrelationship between forest transition and economic, social, cultural, and political changes and discuss the implication for forest policy and related environmental and climate change policies.

The Indigenous Roots Of The 1996 Bolivian Forestry Law And Implications For The Decline In Forestry Certification	Michael Dockry	United States
'No Chop Um, No Kill Um, But Keep Um": Moving Prunus Africana From An Endangered Species To Everyday Tree In Cameroon?	Verina Ingram	Netherlands
Forest Common Resources And Sustainability: Van (Forest) Panchayat And Forest Protection Committee In Garhwal, India	Kazuyo Nagahana	Japan
Land Tenure, Agrarian Change And Forest Cover: The Case Of Mexico	Beth Bee	United States
Study On The Intelligent Management Of Ecosystem Based On The Complex System Theory	Zuomin Wen	China
The Local Level Cooperation Forms In Forestry And Their Governance: Croatia And Serbia As Case Studies Of South East Europe	Marina Miovska	Italy
How Do Local Communities Interpret And Shape Forest Policy Intervention? – Case Of Collective Forest Tenure Reform In China	Yaofeng Luo	China
Economic Evaluation Of Forest Management Sustainability In Lithuania	Diana Mizaraite	Lithuania

## A-32 (42) Innovative Forest And Environmental Legislation For Better Diversity

**Room:** 150 B

**Organizers:** Peter Herbst (Villach, Austria) & Rastislav Sulek (Zvolen Technical University, Slovak Republic).

**Moderators:** Peter Herbst & Rastislav Sulek

**Description:** This session will examine contributions, effects and conflicts between specific forest and other environmental legislation in addressing the challenges and manifold threats to forest biodiversity.

Historical Reasons Behind The State Domination Of Forest Ownership In Turkey	Ustuner Birben	Turkey
Legal Framework Of Community Forestry Of Indigenous Peoples In The Amazonian Countries: A Comparison Of National Land And Forest Laws	Siu Lang Carrillo Yap	Germany
Forest Genetic Resources In The Amazon Tropical Forests – Legal Forestry Framework, Divergences Of Use And Considerations For Conservation	Michelliny Bentes Gama	Brazil
Legally Binding Agreement On Forests In Europe – A Conventional Negotiating Progress?	Katerina Ventrubova	Czech Republic
Sources Of Contradictions In Forest And Nature Protection Legislation	Rastislav Sulek	Slovakia
Challenges Of The Forest And Environment Legislation For Better Biodiversity In Albania	Erjon Muharremaj	Albania
Locating The Status Of Forest Laws Amongst Other Law Disciplines	Peter Herbst	Austria

**A-37B (227B) Knowledge Exchange And Communication Of Forest Research For Human And Community Well-Being****Room:** 150 A**Organizers:** Cynthia Miner (U.S. Forest Service), Jurij Begus (Slovenia Forest Service), Guy Smith (NRCAN- Canadian Wood Fibre Centre) & Alejandra Real (National Forestry Corporation, Chile)**Moderators:** Moderators: Cynthia Miner & James Johnson (Oregon State University)**Description:** The session will focus on the processes used to implement research findings in policies, programs and practices in maintaining and enhancing human health and community well-being, with an emphasis on the human dimensions of sharing and using knowledge.

Capacity Building – Training For Forestry Sector To Support Better Cooperation With Local Population; Guyana Case Study

Aleš Poljanec

Slovenia

A Systematic, Evidence-Based Review Of Key Issues Facing Oregon Family Forest Owners

Janean Creighton

United States

Predicting WUI Homeowners' Perceptions Of Risk And Willingness To Conduct Defensible Space Activities

Christine Olsen

United States

**Poster Presentations:**

Network "Forest Culture" In Austria. A New Approach To Put International Agreements Into Practice For The Benefit Of Local People

Elisabeth Johann

Austria

Pedagogy Of Place Institute

Linda Kruger

United States

Pest Scene Investigators: A Citizen Science-Based Effort To Improve Forest Health In Oregon

Paul Oester

United States

Uneven-Aged Management In A Mixed-Conifer Forest In Northeast Oregon: A Case Study With An Innovative Educational Approach

Paul Oester

United States

Forest Culture In The Neotropics: What Is It? Why Is It Needed?

Roger Villalobos

Costa Rica

**// FOREST BIODIVERSITY AND ECOSYSTEM SERVICES****B-06B (217B) Research And Management Implications Of The Economics Of Ecosystem Services****Room:** 150 E**Organizers:** Donald Hodges (University of Tennessee, USA), Donald Grebner (Mississippi State University, USA) & Runsheng Yin (Michigan State University, USA)**Moderators:** Donald Hodges & Donald Grebner**Description:** This session will include presentations focused on research and management related to the economic and accounting aspects of ecosystem services, including the effects on management decisions.

Bio-Econometric Analysis Of The Efficiency Of Payments For Biodiversity Conservation: A Case Study Of Natura 2000 Forest Contracts In France

Emeline Hily

France

Economic Value Of Recreational Role Of Selected Urban Forest In Slovenia's Capital: New Information Supporting Sustainability In Forest Management Planning

Anže Japelj

Slovenia

Walking The Land: Building An Ecosystem Approach In The Highlands &amp; Islands By Connecting Cultural Drivers With Woodland Expansion Interests

Euan Bowditch

United Kingdom

Economic Evaluation Of Carbon Capture In The Apa - Serra De Baturité – Brazil – 2012	Ana Milena Plata Fajardo	Brazil
An Assessment Of Revenue Loss From Legal Timber In Indonesia	Riko Wahyudi	Indonesia
Harmonizing Applications Of Economics And Ecology To Evaluate Ecosystem Services Tradeoffs In Public Lands Management, An Oregon Example	Jeffrey Kline	United States
Economics Of Forest Fire Management: Accounting Of Benefits	Jose Sanchez	United States

## B-09B (64B) What Future For Tropical Silviculture?

**Room:** 155 E

**Organizers:** Robert Nasi (CIFOR, Indonesia) & Plinio Sist (CIRAD, France)

**Moderators:** Robert Nasi & Plinio Sist

**Description:** This session will present experimental data on the sustainability of selective logging and plantation management in the tropics, with an emphasis on the impact of tropical silviculture on biodiversity, biomass production and ecological processes natural and planted forests.

Harvest Regulation For Multiresource Management, Old And New Approaches	Martin Mendoza	Mexico
Managing High-Value Tropical Timber Species For Carbon Capture	Sheila E. Ward	United States
Dry Forests Of Ecuador, Potential For Natural Forest Management And Carbon Sequestration?	Sven Guenter	Costa Rica
Multiple-Use Forest Management In Madre De Dios, Peru: The Sustainability Of Brazil Nut Production And Timber In An Integrated System	Manuel Guariguata	Peru
Sustainable Pathways For Primary Forest Under A Changing Climate: Ecological, Social And Economic Constraints	Dominick A. DellaSala	United States

### Poster Presentations:

Testing A Silvicultural Recommendation: Brazil Nut Responses 10 Years After Liana Cutting	Karen Kainer	United States
Growth Pattern Of Qualea Albiflora And Goupia Glabra In Amazon Forest, Mato Grosso State, Brazil	Patricia Mattos	Brazil
Mezilaurus Itauba Sustainable Management In Brazilian Amazon	Patricia Mattos	Brazil
Species' Grouping For Timber Management In Brazilian Eastern Amazon	Liz Ota	Brazil
Temperature Effects On Tree And Birds Richness In A Managed Forest For Timber In East Amazonia (Brazil)	Miguel Angel Quimbayo Cardona	Colombia
Forest Structure And Biodiversity Of Managed Tropical Rainforest For Timber In East Amazonia (Brazil)	Miguel Angel Quimbayo Cardona	Colombia
A Simplified Method For Yield Regulation Of Miombo Woodlands In The Context Of Participatory Forest Management	Massimiliano Sanfilippo	Italy
Characteristics, Structure, And Tree Species Diversity Of A Tropical Exploitation Forest After 40 Years Of Regeneration	Franziska Schier	Germany

## B-13 (247) Oak Regeneration To Maintain Biodiversity Around The World

**Room:** 250 C

**Organizers:** Kurt Gottschalk, Brian Lockhart (U.S. Forest Service), Aytakin Ertas (Istanbul University, Turkey) & Eduard Hochbichler (University of Natural Resources and Life Sciences, Austria)

**Moderators:** Kurt Gottschalk

**Description:** This session will examine oak regeneration around the world in the context of different silvicultural systems and practices to sustain oak forests and their values.

Regenerating Oak Forests To Maintain Biodiversity: Oak Forests Around The World	Kurt Gottschalk	United States
Protected Forests And Habitat Management Alternatives In Oak-Rich Forests In Southern Sweden	Jenny Leonardsson	Sweden
Regeneration Of Oaks By Direct Seeding – A Review	Magnus Löf	Sweden
The Development Of Prescribed Fire As A Silvicultural Treatment For Sustaining Biodiversity In Upland Oak Ecosystems In Eastern North America	Patrick Brose	United States
Large-Scale Patterns Of Quercus Ilex, Quercus Suber, And Quercus Pyrenaica Regeneration In Central-Western Spain	Tobias Plieninger	Denmark
Oak (Quercus Robur And Q. Petraea) Cluster Planting Increases Tree Species Richness, Stand Productivity And Fosters Oak Growth And Quality	Somidh Saha	Germany
Effects Of Solar Radiation Transmittance Variability On The Regeneration Of Quercus Aliena Var. Acutiserrata In The Western Qinling Mountains, China	Chunling Dai	Germany
The Effect Of The Host Plant Phenotypic Variation On Leaf Miner And Gall Forming Insect Associations	Katalin Tuba	Hungary

## B-16B (178B) Contribution Of Genetics And Genomics To Conservation And Sustainable Management Of Forests Under Changing Environmental Conditions

**Room:** 250 D

**Organizers:** Om Rajora (University of New Brunswick, Canada) & Wickneswari Ratnam (Universiti Kebangsaan Malaysia)

**Moderators:** Om Rajora

**Description:** The session will explore the impacts of and future directions for forest genetics and genomics research on the conservation and sustainable management of forest genetic resources and understanding adaptation in forest trees and their responses to climate and environmental change.

Gene Dispersal Inference Across Multiple Forest Patches In An Endangered Medicinal Tree	Haile Yineger Tariku	Ethiopia
Genetic Diversity Of Central And Peripheral Populations Of Toona Ciliata Var. Pubescens, An Endangered Tree Species Endemic To China	Jun Liu	China
Identifying Site Characteristics That Explain Variation In Douglas-Fir Productivity, Stem Form And Adaptability	Lauren Magalska	United States
Karyological Studies On Picea Species	Elena Muratova	Russian Federation
Development Of A Dna-Based Timber Tracking System For Koompassia Malaccensis In Malaysia	Chai Ting Lee	Malaysia

Genetic Structuring And Triploidy In North American Aspen (Populus Tremuloides)	Karen Mock	United States
Timber Identification Of Cites-Listed Species Dalbergia Retusa And Non-Cites-Listed Species Dalbergia Tucurensis: Wood Anatomy Or Dna Barcoding?	Yafang Yin	China
Genetic Diversity Of Introduced Species Facing Climate Change – Example Of Eucalyptus Robusta In Eastern Madagascar	Tahiana Ramanantoandro	Madagascar

## // FORESTS AND CLIMATE CHANGE

### C-12B (58B) Quantifying Uncertainty In Forest Measurements And Models: Approaches And Applications

<b>Room:</b>	250 F	
<b>Organizers:</b>	George Gertner (University of Illinois, USA), Bogdan Strimbu (Louisiana Tech University, USA), David Paré (NRCan-Canadian Forest Service) & Peter Clinton (Scion, New Zealand)	
<b>Moderators:</b>	David Paré	
<b>Description:</b>	This session will present approaches to analyzing uncertainty in forest measurements and give examples of applications of uncertainty analysis in above- and below ground estimates of forest biomass, carbon, and nutrient pools and fluxes, and other ecosystem attributes.	
	Distribution Of Errors Along Stem In Carbon Estimation Using Hemispherical Photography	Bogdan Strimbu United States
	Modeling The Intra-Stand Variability Of Carbon And Water Fluxes In Clonal Eucalyptus Plantations	Mathias Christina France
	Total Error Propagated And Partitioned In A Lidar Driven Single Tree Growth Model	George Gertner United States
	The Effects On Large Area Forest Volume Estimates Of Uncertainty In Individual Tree Volume Model Predictions	Ron McRoberts United States
	Allometric Equations For Biomass Estimation In Central African Rain Forests: State Of The Art And Challenges	Nicolas Picard Cameroon
	Quantifying Sources Of Uncertainty Through Traceable And Empirical Approaches At The National Ecological Observatory Network	Joshua Roberti United States
	Uncertainty And Sensitivity Analysis Of A Tree Mortality Monitoring System	Chonggang Xu United States
	Testing Of Soil Carbon Models Using Repeated Inventories	Holger Lange Norway

### C-15 Monitoring Soil Carbon Stocks And Dynamics At Variable Spatial Scales

<b>Room:</b>	150 C	
<b>Organizers:</b>	Robert Jandl (Research and Training Centre for Forests, Natural Hazards and Landscape, Austria)	
<b>Moderators:</b>	Robert Jandl	
<b>Description:</b>	This session will explore the challenge of evaluating changes in total soil carbon stocks and its components in planted and natural forests through several case studies worldwide.	
	Estimating Soil Carbon Dynamics In Northern Forests For Reporting To The United Nations Framework Convention On Climate Change (UFCCC)	Lise Dalsgaard Norway
	Estimating Forest Floor Carbon Content In The United States	Charles Perry United States
	Warming Effects On Soil C-Cycling: Recap After Nine Years Of Artificial Soil Warming In A Temperate Spruce Forest	Andreas Schindlbacher Austria

Carbon Loss And Degradation Indicators In Nothofagus Forests Of The Andes And Coastal Range In The Mediterranean Region Of Chile	Francis Dube	Chile
Humus Dynamics In Timberline Ecotones - Case Studies From The Austrian Alps	Klaus Katzensteiner	Austria
Estimation Of Forest Floor Carbon Stocks In A Tropical Montane Forest	Jeyanny Vijayanathan	Malaysia
Soil Organic Carbon And Nitrogen Sequestration Over An Age Sequence Of Pinus Patula Plantations In Eastern Highlands Of Zimbabwe	Lizzie Mujuru	Zimbabwe
Biomass And Soil Carbon Stocks Of Sudanese Acacia Savanna Woodland	Syed Ashraf Alam	Finland

### C-28 (81) Tropical Forest Wetlands, Climate, And Land-Use Change: Adaptation And Mitigation Opportunities

**Room:** 150 F

**Organizers:** Richard Birdsey, Randall Kolka (U.S. Forest Service), Daniel Murdiyarto (CIFOR, Indonesia) & Boone Kauffman (Oregon State University, USA)

**Moderators:** Richard Birdsey

**Description:** This session will present recent research on carbon stocks and greenhouse gas emissions from intact and converted wetland forests and associated land uses, ecosystem C dynamics modeling tools, and roles of tropical wetlands in climate change adaptation and mitigation strategies.

The Global Significance And Future Of Tropical Forested Wetlands	Boone Kauffman	United States
Ecosystem Carbon Storage Of Indonesia's Peat Swamp Forests	Matthew Warren	United States
Land-Use Change Threats And Knowledge Of Climate Affecting Variables In Tropical Peat Swamp Forests: A Comparison Between Indonesia And Peru	Kristell Hergoualc'h	Peru
Simulating The Impacts Of Climate Change And Land Conversion On The Carbon Balance Of Tropical Peatlands In Indonesia	Steve Frolking	United States
Carbon Stocks And Dynamics In The High Altitude Mountain Peatlands Of South America	John Hribljan	United States
Approaches To Regional And Continental Estimates Of Carbon Stocks And Fluxes In Tropical Wetland Forests And Mountain Peatlands	Erik Lilleskov	United States
A Preliminary Account Of Carbon Stocks In Mangrove Ecosystems In The Mekong Deltas	Vien Ngoc Nam	Viet Nam
Carbon Stocks In Mangroves Within The Zambezi Delta, Mozambique	Carl Trettin	United States
Sediment And C Accumulation Rates In Mangrove Forests	Richard Mackenzie	United States

### C-29 (163) Desertification, Land Degradation And Drought

**Room:** 250 E

**Organizers:** Hoduck Kang (Dongguk University, Republic of Korea)

**Moderators:** Hoduck Kang

**Description:** This session will focus on desertification, land degradation and drought in arid or semi-arid areas with presentations of recent research, operational experiences and lessons learned on rehabilitation of degraded lands and combating desertification.

Assessment Of Current Status Of Forest Management On Degradation In Myanmar With Emphasis On Social Aspect To Local People	Inkyin Khaine	Myanmar (Burma)
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Rehabilitation Of Degraded Agroecosystem Services Through Forestry In Irrigated Croplands Of Central Asia	Asia Khamzina	Germany
Estimation And Mapping Of Desertification Using Landsat Imagery And Correlation Of Some Variables On A Regional Scale	Munkhnasan Lamchin	Mongolia
Lidar-Derived Structural Diversity Indices As Ecological Indicators For Managing Semi-Arid Ecosystems At Risk Of Desertification	Claudia Listopad	Portugal
Growth Performance Of Several Woody Species In Afforestation Site In Dry Steppe Of Mongolia Under Different Watering And Fertilizer Treatments	Batkhuu Nyam-Osor	Mongolia
Effect Of Land Use Gradient On Sudanian Woody Vegetation Layers In West Africa	Oumarou Ouedraogo	Burkina Faso
Strategies To Improve Degraded Arid Rangelands In Rajasthan, India	Vindhya Prasad Tewari	India
Causal Effects Of Shelter Forests And Water Factors On Desertification Processes During 2000-2010 In The Horqin Sandy Land Region, China	Qiaoling Yan	China

## // FORESTS AND WATER INTERACTIONS

### D-06 (86) Role Of Disturbance In Maintaining And Stimulating Aquatic Biological Diversity In Temperate Forest Ecosystems

**Room:** 151 D

**Organizers:** Robert Danehy (National Council for Air and Stream Improvement, USA)

**Moderators:** Robert Danehy & R.D. Moore (University of British Columbia)

**Description:** This session will focus on the impacts of two natural disturbances (fire and debris flows), and one anthropogenic (clear-cut logging) on aquatic biota and the relationship between disturbance severity and recovery period and possible recovery trajectories.

Aquatic Responses To Forest Disturbances: Stream Chemistry From USFS Experimental Forests	Alba Argerich	United States
Natural And Anthropogenic Disturbance Influences On Aquatic Biological Diversity In Western Oregon	Robert Danehy	United States
How Does Confounding Impacts Of Flood And Forest Thinning Alter Benthic Macroinvertebrate Community In Japanese Headwater Streams	Takashi Gomi	Japan
Emulating Natural Disturbance In Riparian Forests To Enhance Shoreline And Aquatic Biodiversity	David Kreutzweiser	Canada
The Post-Wildfire Response Of Fishtrap Creek, British Columbia: Lessons For Emulation Of Natural Disturbance As A Forest Management Approach	Dan Moore	Canada

## // FOREST BIOMASS AND BIOENERGY

### E-02B (11B) Environmental Impacts Of Intensive Management Of Forest Soils For Timber And Bioenergy Production.

**Room:** 150 G

**Organizers:** Deborah Page-Dumroese (U.S. Forest Service), Peter Clinton (Scion, New Zealand), Liisa Ukonmaanaho, (Finnish Forest Research Institute) & Hailong Wang (Zhejiang Agricultural and Forestry University, China)

**Moderators:** Peter Clinton & Liisa Ukonmaanaho

**Description:** This session will address a range of biogeochemical and environmental consequences of timber harvesting or bioenergy production; topics will include intensive forest soil uses such as cultivation, fertilization, nutrient removals in biomass, replacement of soil nutrients via deposition and biodiversity.

Negative Effects Of Stump Harvest And Deep Soil Cultivation On The Soil Carbon Pools Are Mitigated By Enhanced Tree Growth	Arnis Jurevics	Sweden
Stump Harvest At Final Felling – Impact On Soil Surface Disturbance, And Carbon And Nitrogen Dynamics	Lilli Kaarakka	Finland
Manipulating Forest Soils For Greater Productivity: Are There Limits?	Peter Clinton	New Zealand
Environmental Sustainability Of Intensive Forest Biomass Removals: Results Of A Global Meta-Analysis	Robert Fleming	Canada
Variables Of Soil, Plant And Productivity Related With Age And Site Index In Gmelina Arborea Plantation In North Colombia	Miguel E. Cadena	Colombia

## E-06 (61) Emerging Technologies For Forest Resource Assessment And Genetic Improvement

**Room:** 151 B

**Organizers:** Xiping Wang (U.S. Forest Service), Jianxiong Lu (Chinese Academy of Forestry), Kyu-Suk Kang (Korea Forest Research Institute, Republic of Korea) & Marco Marchetti (Italian Academy of Forest Sciences)

**Moderators:** Xiping Wang & Jianxiong Lu

**Description:** This session will focus on assessment of wood and fiber properties of forest plantations for optimized wood utilization, development of geo-referenced wood property databases for resource management, and selection of superior clones in tree breeding operations.

Rapid, Cost-Effective And Non-Destructive Phenotypic Determination Of Meaningful End Use Properties In Tree Breeding Programmes	Roger Meder	Australia
Distinction Of The Eucalyptus Clones Stiffness Using Ultrasound Applied On Standing Trees	Raquel Gonçalves	Brazil
Biomass Production In The Short Rotation Coppice Of Poplar Treated With Low-Concentrated Liquid Fertilizer	Kyu-Suk Kang	Republic of Korea
Genetic Improvement And Advanced Generation Breeding Of Larix Spp. In China	Xiaomei Sun	China
Evaluating Thinning And Bio-Solid Fertilization Effects On Wood Quality In A 70-Year-Old Douglas-Fir Stand With TOF Acoustic Wave Measurement	Xiping Wang	United States
Full Automatic Process To Create Forest Inventory Using Terrestrial Lidar	Akira Kato	Japan
Automated Wood Species Identification By CT Technology	Udo H. Sauter	Germany
Near Infrared Reflectance (NIR) Spectroscopy: Dialing Stem Chemistry For Optimal Root Disease Resistance And Forest Products.	Brian Via	United States

## // FORESTS AND FOREST PRODUCTS FOR A GREENER FUTURE

### F-03 (25) Contributions Of Business And Marketing To A Greener Future

**Room:** 151 C

**Organizers:** Eric Hansen (Oregon State University, USA), Tom Hammett (Virginia Tech, USA) & Birger Solberg (Norwegian University of Life Sciences)

**Moderators:** Richard Vlosky (Louisiana State University, USA)

**Description:** This session covers a wide range of business and marketing theory topics that address how products and markets (timber and non-timber) can be expected to contribute to a greener future.

Media Consumption, Environmental Values, And The Sustainability Of Forestry: Exploring Perceptions Of Paper And Digital Media	Robert Kozak	Canada
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"First I Would Go To IKEA": A Consumer Cultural Approach To Young People's Choice Of Wooden Household Furniture In Germany And Finland	Anne Toppinen	Finland
Designers' Wooden Furniture Ecodesign Implementation In Scandinavian Country-Of-Origin (COO) Branding	Katja Lahntinen	Finland
Fundamentals Of Viable Inclusive Or Pro-Poor Business Models In Community Forestry	Martin Greijmans	Thailand
Global Forest Management Certification – Future Development Potentials	Florian Kraxner	Austria
Role Of The Private Sector In Forest Ecosystem Services (FES): Markets, Drivers, Constraints And Strategies Towards Market Development	Ning Li	Finland
Producer Versus Customer-Oriented Mix Within The Forest Biomass Market	Daniel Halaj	Slovakia
Ongoing Corporate Responsibility Initiatives Amidst An Economic Downturn	Rajat Panwar	United States

## F-07 (241) Forest Governance And Legality Of Timber: Challenges Of Legality In Practice

**Room:** 151 A

**Organizers:** Margaret Shannon (University of Freiburg, Germany), Wenming Lu (Chinese Academy of Forestry), Mersudin Avdibegovic (University of Sarajevo, Bosnia-Herzegovina) & Qiang Li (International Tropical Timber Organization, Japan)

**Moderators:** Margaret Shannon & Wenming Lu

**Description:** This session will critically examine the expectation that forest governance can be improved by strengthening institutional and legal requirements for timber legality within a transnational legal context and with emerging national systems for legality assurance.

Legality And 'The Three Gs'	Bas Arts	Netherlands
Governance, Legality Of Timber And Corruption: The Case Of The Federation Of Bosnia-Herzegovina	Mersudin Avdibegovic	Bosnia and Herzegovina
Legal Challenges For FLEGT And EUTR	Wenming Lu	China
Are Timber Legality Requirements Giving Rise To An International Forest Law?	Errol Meidinger	United States
Feminist Perspectives On Legality Of Timber And Governance	Margaret Shannon	United States

### Poster Presentations:

Evaluation Of The Management Of Two Community Forests In The Eastern Region Cameroon (Asdebym And Codecbom) Under The FLEGT.	Ghislain Aime Fomou Nyamsi	Cameroon
The Potential Of Legal Timber Trade Policies To Expand Demand For Us Wood Products In The Chinese Re-Exports Sector	Ziyi Lu	United States
Impact Of Timber Legality Policies On Us Wood Importers And Their Business Practices	Benjamin Roe	United States
How Can Forest Governance Approaches Under FLEGT VPA And REDD+ Be Helpful For Each Other?	Yitagesu Tekle Tegegne	Finland
Residual DNAs Extracted From Timbers And Its Effectiveness For Identification Of Wood Species	Ugai Watanabe	Japan

## F-08 (197) Forest Resources Assessment For Non-Wood Forest Products

**Room:** 151 E

**Organizers:** Marco Marchetti (University of Molise, Italy); James Chamberlain (U.S. Forest Service), Pawel Staniszewski (Warsaw University of Life Sciences, Poland) & David Pettenella (University of Padua, Italy)

**Moderators:** Marco Marchetti & James Chamberlain

**Description:** This session will explore the status and challenges of including non-wood forest products in national forest resource assessments.

Potential Gum Hagar Production From Commiphora Holtziana In Kenya	Sheila Mbiru	Kenya
Uses And Preferences Of Ntfps Among Urban Households In Ado-Ekiti Metropolis, Ekiti State, Nigeria.	Gideon Adedayo	Nigeria
Combined Impact Of Exploitation And Habitat Degradation On The Abundance And Structure Of Mimusops Andongensis Hiern In Benin	Koupamba Gisèle Sinasson Sanni	Benin
Resource Assessment And Mapping Of Acacia Senegal Var. Kerensis In Samburu And Isiolo Counties, Kenya	Meshack Muga	Kenya
Underground Value: Assessing Non-Timber Forest Products In Appalachia	Steve Kruger	United States
Assessment Of Non-Wood Forest Product Resources - Trends In Poland	Pawel Staniszewski	Poland
Estimation Of The Value Of Non-Timber Forest Products (NTFP) And Services In Austria	Harald Vacik	Austria

## F-11B (183B) Forest Operations Engineering And Management - The Way Ahead

**Room:** 155 F

**Organizers:** Hans R. Heinimann (ETH Zurich, Switzerland) & Woodam Chung (Oregon State University, USA)

**Moderators:** Woodam Chung

**Description:** The session aims at bringing together regional perspectives of research and development in forest operations engineering and management, and setting an agenda of issues to be addressed collectively and internationally during the next 5 years.

Forest Operations Engineering And Management Achievements And Perspectives - The JFES View	Jun'ichi Gotou	Japan
Harvesting Of Heart Stumps From Poplar And Maritime Pine Forest In South West France	Richard Emeyriat	France
Quantifying Potential Benefits Of Implementing Computer Generated Skid-Trail Networks	Marco Contreras	United States
Appling The Optimal Bucking Method To Maximize Profits On Nasunogahara Area, Tochigi Prefecture, Japan	Kazuhiro Aruga	Japan
A New Numerical Tool To Optimize The Set-Up Of A Standing Skyline And Improve Cable Yarding Planning	Sylvain Dupire	France
Forest Work Studies: Who, Why, How	Raffaele Spinelli	Italy
Landscape-Scale Planning For Biodiversity In Tasmanian Production Forests	Amelia (Amy) Koch	Australia

**Poster Presentations:**

The Forest Roads Information Database System	Jurij Beguš	Slovenia
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Developing Dynamic Maps Of Forest Roads With Routes To GPS Navigation Receivers	Amaury Paulo de Souza	Brazil
Biomechanical Evaluation In Eucalyptus Silviculture Operations, In Brazil	Amaury Paulo de Souza	Brazil
Analysis Of Factors Affecting Forest Road Network Planning: A Delphi Study	Elyas Hayati	Iran
Cultivation Of Forest Regeneration Materials Under Artificial Radiant Sources - Effects Of Light Intensity On Energy Consumption And Seedlings' Development.	Marco Hernandez Velasco	Sweden
Comparison Of Thinning Productivities For The Ordinary Systems To The New System With A Small Wheel-Mounted Harvester And Forwarder	Masahiko Nakazawa	Japan
Operational Efficiency Of The Containerized Seedlings Planting Machine	Yukihito Ochiai	Japan
Extraction Of Collapse Risk Factors For Spur Road Using High Resolution DTM	Masashi Saito	Japan
Generalizing Over Graph Representations Of Road Segments: A Zigzag Alignment Model And A Smooth Alignment Model	Hiroaki Shirasawa	Japan
Valorization Of Complementary Working Time Lengths In Timber Harvesting And Skidding Operations	Janusz Sowa	Poland
A New Guide For Work Studies In Forestry	Raffaele Spinelli	Italy
Ergonomic And Productive Effects Of Replacement Steel Wire Ropes With Synthetic Ropes For A Mobile Tower Yarder	Ryosuke Watanabe	Japan
Comparative Study Of The Ergonomic Spectrum At The Levels Of Logging Entities And Prefectures	Yozo Yamada	Japan

## // FOREST HEALTH IN A CHANGING WORLD

### G-04 (102) Emerging Invasive Forest Pathogens

**Room:** 151 G

**Organizers:** Organizers: Phil Cannon (U.S. Forest Service); JP Skovsgaard (Swedish University of Agricultural Sciences), Ned Klopfenstein (U.S. Forest Service) & Steve Woodward (University of Aberdeen, UK)

**Moderators:** Moderators: Ned Klopfenstein & Phil Cannon

**Description:** Description: This session will highlight the emerging forest pathogens *Puccinia psidii* and *Hymenoscyphus pseudoalbidus*, which are causing significant disease in the southern and northern hemispheres respectively.

Alien Invasive Threats To UK Forests: A Reassessment In The Wake Of Ash Dieback	Steve Woodward	United Kingdom
Role Of Infection Pressure And Cuticle In Leaf Infection By <i>Hymenoscyphus Pseudoalbidus</i>	Isabella Børja	Norway
Dieback Of European Ash: Understanding The Inherent Host Resistance And Conservation Strategies For This Ecologically And Economically Important Tree Species	Michelle Cleary	Sweden
Laboratory And Field Experiments To Test The Susceptibility Of Several Conifers To The Pitch Canker Disease	Julio Javier Diez-Casero	Spain
The Impact Of Different Strains Of <i>Puccinia Psidii</i> On Hawaii's Ohia ( <i>Metrosideros Polymorpha</i> ).	Philip Cannon	United States

Genetic Diversity Of Puccinia Psidii - The Cause Of Guava/Eucalypt/Myrtle Rust - And Preliminary Predictions Of Global Areas At Risk	Amy Ross-Davis	United States
Emerging Diseases Threaten The White Pine Resource In Eastern North America	Isabel Munck	United States
Characterization And Distribution Of Fungi Associated With Needle Defoliation Of Eastern White Pine (Pinus Strobus)	Stephen Wyka	United States

### G-09 (206) Ecology And Management Of Invasive Wood Boring Pests In A Changing World

**Room:** 151 F

**Organizers:** Juan Carlos Corley (CONICET- INTA, Argentina), Massimo Faccoli (DAFNAE-Agripolis, Italy), Michael Smith (USDA-ARS, USA) & Brett Hurley (University of Pretoria, South Africa)

**Moderators:** Juan C. Corley & Massimo Faccoli

**Description:** This session will focus on two specific groups of invasive insects, longhorned beetles and wood wasps, which are causing significant damage to forest ecosystems worldwide.

Toward The Eradication Of The Asian Longhorned Beetle, Anoplophora Glabripennis (Coleoptera: Cerambycidae), From North East Italy	Massimo Faccoli	Italy
Invasive Longhorned Beetles (Cerambycidae) In North America: Who, Where, And What Is Being Done?	Robert Haack	United States
Can Acoustic Technologies Be Used To Protect Trees From Insects?	Richard Hofstetter	United States
Intercontinental Ecological Comparisons As A Global Tactic For Managing Invasives	Flora Krivak-Tetley	United States
Patch Size For Sirex Noctilio In Fragmented Landscapes.	Juan Corley	Argentina
Invasive And Endemic Sirex/Amylostereum Associations	Ann Hajek	United States
Sirex Noctilio Flight: Patterns In Vertical Distribution.	Andres Martinez	Argentina
Sirex Noctilio Woodwasp In Australia: A Little Further North Each Year	Helen Nahrung	Australia





*Daily Scientific Program*  
**SATURDAY 11 OCTOBER**



## SATURDAY 11 OCTOBER- PLENARY SESSION

### Plenary 5: Cecil Konijnendijk van den Bosch: City Forests, Forest Cities – Exploring The Complex Liaison Between The Sylvan And The Urban

**Room:** Ballroom

**Session Chair:** Tuija Sievänen

**Description:** Since the rise of the first cities, the relationship between the Sylvan and the Urban has been complex. Although city and forest have often been regarded as enemies, or at least as opposite ends on a continuum between the man-made and the natural, cities have also been heavily dependent on forests, not in the least for their very development. Moreover, some cities have developed as true 'forest cities', integrating trees and woodland into their very fabric and mentality. This presentation analyses the current relationship between forest and city, based on historical insights and present policies, initiatives and projects from across the globe. It emphasises the role of research in strengthening the ties between urban and sylvan, as for example reflected in the advances made by the urban forestry field. Developments such as the rise of green infrastructure thinking and the provision of a range of ecosystem services are critically analysed. Difficulties in assessing cultural ecosystem services are hampering the development of the urban-forest relationship, as forests and trees in urban areas provide a range of cultural services that contribute to the health, wellbeing and happiness of urbanites. Lessons will be drawn for the role of forestry in an urbanising world.

## SATURDAY 11 OCTOBER 11 - SUB-PLENARY SESSIONS 13:30-15:00

### SP-17 Forests, Water, And People

**Room:** 155 E

**Organizers:** Shirong Liu (Chinese Academy of Forestry); Ge Sun (U.S. Forest Service) & Tony Simons (World Agroforestry Centre, Kenya)

**Moderators:** Xiaohua Wei

**Description:** This session will review the state of knowledge on forest and water relations at multiple geographical scales, water availability for ecosystems and people under multiple global change stressors, and forest watershed management policies to meet increasing multiple needs and adapt to a changing world.

Forest And Water Relations Under A Changing Environment: Worldwide Evidences At Multiple Spatial Scales	Shirong Liu	China
From Forests To The Faucets: Water Supply Functions Of Forests Under Global Change	Ge Sun	United States
Forest Watershed Management Policies And Practices Meeting Increasing Multiple Needs In A Changing World	Leon Bren	Australia

### SP-18 Stemming Invasions Of Forest Insects And Pathogens: Research Supporting Pathway Risk Management And Phytosanitary Policy

**Room:** 155 F

**Organizers:** Andrew Liebhold (U.S. Forest Service) & Eckehard Brockerhoff (Scion/New Zealand Forest Research Institute)

**Moderators:** Andrew Liebhold & Eckehard Brockerhoff

**Description:** This session will provide an overview of current research on pathway management and phytosanitary policy to reduce the risks of introduction of forests pests and diseases associated with international trade.

Forest Insect Invasion Pathways In Europe	Alain Roques	France
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Global Forest Pathogen Invasion Pathways	Alberto Santini	Italy
Pathways Of Major Invasive Forest Pests In China And Issues With International Collaboration	Jianghua Sun	China
Pathway Level Analysis Of Trade Policy For Reducing Invasive Species Risk	Brian Leung	Canada

### SP-19 IUFRO Strategy 2015-2019 – Research Excellence And Information For The Benefit Of Forests And People

**Room:** 155 A-C

**Organizers:** Niels Elers Koch (IUFRO President, Denmark) & Mike Wingfield (IUFRO Vice-President for Divisions, South Africa)

**Moderators:** Mike Wingfield

## SATURDAY 11 OCTOBER - TECHNICAL SESSIONS 08:00-10:30

### // FORESTS FOR PEOPLE

#### A-10 (239) Establishing Social Institutions For Co-Management Of Public Forest Lands

**Room:** 250 C

**Organizers:** Jamie Barbour (U.S. Forest Service), Cassandra Moseley (University of Oregon, USA) & Susan Charnley (U.S. Forest Service)

**Moderators:** Cassandra Moseley

**Description:** Presentations in this session will examine the socioeconomic and sociopolitical constraints on establishing co-management of public lands worldwide and the potential biophysical benefits from different management approaches.

Stakeholders' Participation In Community Based Forest Management (CBFM) In Cross River State, Nigeria	Ene Abi	Nigeria
Eco-Agriculture, Green Rural Economy And Sustainable Governance Of The Forests In The Congo Basin	Jean Claude Stone Njomkap	Cameroon
Participatory Forest Management Networks Of Odisha - Time For More Recognition	Kanna Siripurapu	United States
Implementing Collaborative Natural Resources Governance For The Sustainable Management Of The Mt Makiling Forest Reserve, Philippines	Nathaniel Bantayan	Philippines
Participatory Management Model Of The Socio-Ecological System For Sustainable Rural Development And Community Forestry Wellbeing In Mexico	Concepcion Lujan	Mexico
The First Four Years Of A Collaborative Forest Landscape Restoration Project On Colorado's Front Range: Successes And Lessons Learned	Yvette Dickinson	United States
Co-Management Of Government-Owned Lands: Lessons From Across The Globe	Jamie Barbour	United States

## A-11 (39) American Indian Forestry

**Room:** 150 G

**Organizers:** Donald Motanic (Intertribal Timber Council, USA)

**Moderators:** Donald Motanic

**Description:** This panel discussion will explore the perspectives and forest stewardship practices used by Indian tribes in the U.S. to address contemporary challenges such as forest health, climate change, and declines in forest products processing infrastructure.

Overview Of Indian Forests And Forestry	Phil Rigdon	United States
Anchor Forests : A Multi-Ownership Pilot Project In Eastern Washington To Maintain Working Forests.	Steve Andringa	United States
Sustainable Forest Management Within The Context Of Ecological Change: Community Perspectives And Challenges From The Menominee Tribe Of Indians Of Wisconsin	Michael Dockry	United States
Recruitment And Retention Of Tribal Youth As Future Management Leaders	Serra Hoagland	United States
PNW Research Station Tribal Climate Change Research Program	Linda Kruger	United States

## A-23B (101B) Transitions To Sustainable Forest Management: Economic, Social And Cultural Parameters

**Room:** 250 B

**Organizers:** Jinlong Liu (Renmin University of China), Wil de Jong (Kyoto University, Japan), Yeo-Chang Youn (Seoul National University, Republic of Korea) & De Lu (Asia-Pacific Network on Sustainable Forest Management and Rehabilitation, China)

**Moderators:** Wil De Jong

**Description:** This session will examine recent studies that shed new light on the comprehensive and dynamic interrelationship between forest transition and economic, social, cultural and political changes and discuss the implication for forest policy and related environmental and climate change policies.

Exploring The Future Of Timber Resources In The High Forest Zone Of Ghana	Kwame Antwi Oduro	Ghana
Economic Development, Government Intervention, And Forest Transition In China	Hexing Long	China
Transition To Sustainable Forest Management And Rehabilitation In The Philippines	Floribel Paras	Philippines
Public Participation In Forest Restoration And Urban Forest Management In The South Korea	Yeo-Chang Youn	Republic of Korea
Indonesia'S Forest Management Units As Agents Of Social Safeguards In REDD+ Implementation	Yeonsu Kim	United States
Transition To Sustainable Forestry Management And Rehabilitation In Japan	Kaori Shiga	Japan
Forest Transition In China And Interprovincial Flow Of Commodity, Population And Forestry Investment	Huidan Xue	China
Comparative Analysis Of Forest Transitions In Nine Asian Countries – An Economic Modeling	Yeo-Chang Youn	Republic of Korea

## A-31 Forest Policy Science: From Rational Choice To Discourse, From Local Level Forest Owners To A Global Learning Architecture

<b>Room:</b>	150 B		
<b>Organizers:</b>	Karl Hogl (University of Natural Resources and Life Sciences, Austria), Alexander Buck (IUFRO) & Peter Mayer (Federal Research and Training Centre for Forests, Natural Hazards and Landscape)		
<b>Moderators:</b>	Karl Hogl		
<b>Description:</b>	This session, dedicated to the memory of Prof. Dr. Peter Glück, will include presentations of recent scholarly work which provide a sample of the much broader theoretical-conceptual and thematic areas to which Peter significantly contributed in the course of his academic career.		
	Rationalist vs. Communicative Approaches To Forest Policy: From Policy Science Theory To Institutional Practice	Margaret Shannon	United States
	Organize Or Drown: Western Balkans Forest Owners Ready For Effective Interest Group Formation?	Mersudin Avdibegovic	Bosnia and Herzegovina
	It-Based Tools, Models And Simulations - Bane Or Boon To Legitimacy At The Science-Policy Interface?	Andreas Ottitsch	United Kingdom
	Rethinking Forest Governance In Europe: Beyond Multi-Budgeting	Helga Pülzl	Austria
	Sustainable Forest Management: An Encouraging Discourse Or Dangerous Rhetoric?	Bas Arts	Netherlands
	Towards A Problem Focused Learning Architecture	Benjamin Cashore	United States

## A-36 (209) From Data To Knowledge, Geospatial Tools And Information Access

<b>Room:</b>	250 D		
<b>Organizers:</b>	Carla Heister (Yale University, USA), Dave Vanderzanden (U.S. Forest Service), Gillian Petrokofsky (Oxford University, UK) & Kevin Megown (U.S. Forest Service)		
<b>Moderators:</b>	Carla Heister		
<b>Description:</b>	This session will focus on forest web/database research and applications for supporting the collection, management, storage and updating of enterprise information and geospatial data for retrieval and access by researchers, land managers, and public end users.		
	Embed A Librarian In Your Research Group	Carla Heister	United States
	Providing Critical Geospatial Information Through Enterprise Systems - A USFS Experience	Dave Vanderzanden	United States
	Western U.S. Climate Change Geobrowser	Charlie Schrader-Patton	United States
	Ground-Truthing Validation For A Near Real Time Deforestation Monitoring System In The Ucayali Region, Peru	Alejandro Coca Castro	Colombia
	Landscape Change Monitoring System To Support All Lands And Owners For Conus, Hawaii And Alaska	Brian Schwind	United States
	Observatory For Forest Of Central Africa : The Tool For Local Data Collection And Regional Reporting.	Carlos de Wasseige	Congo, Democratic Republic of the
	A Forest Lands Information System In Support Of Sustainable Management And Use Of Forests	Moschos Vogiatzis	Greece
	Forest Atlas Of The United States	Charles Perry	United States
	Bringing The Science Back Into Literature Reviews Of Science	Gillian Petrokofsky	United Kingdom

## // FOREST BIODIVERSITY AND ECOSYSTEM SERVICES

## B-01 (139) The Future Of Ecosystem Services From Forests

**Room:** 150 D**Organizers:** William Nikolakis & John Innes (University of British Columbia, Canada)**Moderators:** John Innes**Description:** The session will focus on how the emergence of forest ecosystem services will re-shape forests and forest research, with particular focus on the design of such systems and their effect on human communities and the landscape.

Direct And Functional Economic Value Marginal Effects Of Tropical Forest Conversion To Cacao Agroforestry Systems	Elizabeth Asantewaa Obeng	Ghana
What Is Needed To Make Markets For Forest Ecosystem Services A Reality?	David Brand	Australia
The Future And Legitimacy Of Forest Ecosystem Services Schemes For Indigenous Peoples: Insights From Clayoquot Sound, British Columbia	Harry Nelson	Canada
Current And Future Provision Of Ecosystem Services In European Mountain Forests	Manfred J. Lexer	Austria
Future Payment For Forest Environmental Services: Lessons Learned From Vietnam	Phuong Vu Tan	Viet Nam
Designing Payments For Environmental Services Programmes	Sven Wunder	Brazil
Biodiversity Offsets: Delivering Additionality To The Conservation Woodlands In Italy?	Ariadna Chavarria Resendez	Italy
Institutions And Natural Resource Management: Exploring Payments For Ecosystem Services (PES) In The Context Of Decentralised Native Tree Planting In Lebanon	Arbi James Sarkissian	United Kingdom
Integrating Ecosystem Services Into United States Forest Service Programs And Operations	Nikola Smith	United States

## B-20 (77) Radioactive Contamination In Forest Ecosystems And Safe Uses Of Forest Products

**Room:** 155 F**Organizers:** Masamichi Takahashi (Forestry and Forest Products Research Institute, Japan), Frédéric Coppin (Institut de Radioprotection et de Sûreté Nucléaire, France) & George Shaw (Nottingham University, UK)**Moderators:** George Shaw and Frédéric Coppin**Description:** This session will present current research on the impacts and long-term dynamics of radioactive fallout on forest ecosystems and countermeasures for rehabilitation of affected forest ecosystems and safe utilization of products derived from them.

Biogeochemical Cycling Of Radiocesium In Contaminated Forest Area: An Overview	Yves Thiry	France
Distribution And Migration Of Radiocesium In The Forest Ecosystem After The Fukushima Dai-Ichi Nuclear Power Plant (NPP) Accident	Shinji Kaneko	Japan
Modelling Of Radionuclides Transfer And Ambient Dose Rates In Fukushima Forest Ecosystems: A Preliminary Study	Marc-Andre Gonze	France
Inside Contamination Of Japanese Cedar Tree By Radiocesium From Fukushima Nuclear Power Plant Accident	Hideki Ogawa	Japan
Managing The Irradiated Forest Of The Chernobyl Exclusion Zone For Nature Conservation, Fire Protection, And Biomass Fuel Production	Sergiy Zibtsev	Ukraine

<b>Poster Presentations:</b>		
Radiocesium Contamination In Satoyama Forests In Kashiwa City, Suburb Of The Tokyo Metropolitan Area	Kenji Fukuda	Japan
Transport Of Cs In Japanese Bamboo -Perspective On Decontamination Of Radiocesium From Bamboo Forests	Mitsutoshi Umemura	Japan
Predominant Factor In The Depth Profile In Forest Soil Of Radiocesium, Released By The Fukushima Daiichi Nuclear Power Plant Accident	Yoshito Sasaki	Japan
Transportation Of Radiocesium From Forest To Agricultural Fields	Hirohisa Yoshida	Japan
Acquisition Of Radioactive Cesium In The Stems Of Trees In Japan	Tsutomu Takano	Japan
Seasonal Change Of Cesium 137 In Different Age Needles And Male Flowers Of Japanese Cedar (Cryptomeria Japonica) In Fukushima	Tsutomu Kanasashi	Japan
Accumulation Of Cs-137 By Higher Fungi After The Accident On The Chernobyl NPP	Nataliia Zarubina	Ukraine
Carrying Out Of Remediation Of Forest Soils With Use Of Fruit Bodies Of The Higher Fungi	Nataliia Zarubina	Ukraine
Radioactive Contamination Of Aquatic Animals In Stream Impacted By The Fukushima Nuclear Power Plant Accident	Mayumi Yoshimura	Japan
Radiocesium Inventory Of Forested Land In Japan Just Before Fukushima Daiichi Nuclear Power Plant Accident	Satoru Miura	Japan
Impact Of Forest Vegetation On Long Term Recycling Of Radionuclides At Polluted Sites	Yves Thiry	France

## // FORESTS AND CLIMATE CHANGE

### C-02 (193) From Understanding Drivers To Gaining Leverage At The Tropical Forest Margins: 20 Years Of ASB Partnership

**Room:** 151 A

**Organizers:** Peter Akong Minang & Elizabeth Kahurani (World Agroforestry Centre, Kenya)

**Moderators:** Peter Akong Minang

**Description:** This session will discuss the evolution of theories and approaches to addressing the complex drivers of deforestation and forest degradation and the experiences of the ASB Partnership in order to draw lessons and define questions for further research.

Theories Of Change And Change In Theory Of Managing Landscapes Within The Past Twenty Years	Markku Kanninen	Finland
Theories Of Change And Change In Theory Within Twenty Years Of ASB Partnership For The Tropical Forest Margins	Meine van Noordwijk	Indonesia
Assessing The Drivers Of Forest Degradation And Forest Change In Tropical Dry Forest Landscapes: A Case Study In Western Mexico.	Lucía Morales	United Kingdom
Identifying Policy Levers Of Deforestation And Recovery Of Tree Cover From The Driver Analyses: A Case Study From Indonesia	Sonya Dewi	Indonesia
Potential For Reducing Deforestation Through Agricultural Intensification In Landscape Mosaics In Sub-Saharan Africa	Sara Namirembe	Kenya

Farmers' Learning Of Private And Common Values Of Conservation Contracts As Determinant For Performance-Based Of Landscape Rehabilitation	Beria Leimona Hairu	Indonesia
Assessing Sustainability Of Swidden Systems In The Tropical Forest Margins	Martin Yemefack	Cameroon

### C-13 Modeling And Simulation Systems

**Room:** 151 D

**Organizers:** Grant Domke (U.S. Forest Service)

**Moderators:** Grant Domke

**Description:** This session will examine applications of large scale models and simulation systems for forest planning and management and for assessing the potential of climate change and mitigating strategies.

Considering Climate Change: Growth And Yield Forecasting Using Climate-FVS	Nicholas Crookston	United States
New Tools For The Use Of Spatially-Explicit Forest Disturbance Data In The Estimation Of Forest Carbon Budgets Within North America	David Greenberg	Canada
REDD Options As A Risk Management Instrument Under Policy Uncertainty And Market Volatility	Nikolay Khabarov	Austria
Modelling The Economics Of The Reference Levels For Forest Management Emissions In The EU	Jani Laturi	Finland
Exploring Economic Optimization For Managed Tropical Forests Using Individual-Based Modeling: An Exercise With Data From Quintana Roo, Mexico	Sebastian Palmas	Mexico
Estimating The Fertility Rating Parameter Of The 3PG Model From Soil Properties. Application To Eucalyptus Globulus In Portugal	Margarida Tomé	Portugal

### C-18 (49) Using Multi-Source Remotely Sensed Data And Nearest Neighbor Techniques To Improve Inference For Natural Resource Applications

**Room:** 150 C

**Organizers:** Temesgen Hailemariam (Oregon State University, USA)

**Moderators:** Temesgen Hailemariam

**Description:** This session will bring together research scientists and practitioners to exchange ideas related to some of the challenges and opportunities in using multi-source remotely sensed data and nearest neighbor techniques to improve inference for sustainable forest management.

A Monte Carlo Appraisal Of Four Different Interpolation Methods To Couple Remotely Sensed And Ground Data	Piermaria Corona	Italy
Ensemble Approaches To The Nearest Neighbor Problem	John Coulston	United States
Using Multi-Source Remotely Sensed Data And Nearest Neighbor Techniques To Improve Inference For Natural Resource Applications	Valerie LeMay	Canada
Approaches For Estimating Stand And Tree-Level Variables For Use In Large Scale National Forest Inventories	Kyle Lochhead	Canada
Variable Selection Strategies For Nearest Neighbor Imputation In Remote Sensing Based Forest Inventory	Petteri Packalen	Finland

Small-Area Estimation Across Large Areas Of Forest	Nan Pond	United States
Restricted Imputation For Improved Forest Scenario Analysis	Goran Stahl	Sweden
Imputations Using The Enhanced R Package Yalmpute: Bootstrapping, Ensembles, And A New Fit Statistic	Nicholas Crookston	United States

## C-27 (79) Sustainable Management Of Spruce Dominated Ecosystems In Response To Climate Change

<b>Room:</b>	151 G	
<b>Organizers:</b>	Phil Comeau (University of Alberta, Canada), Bill Mason (Forest Research, UK), Ulf Johannson & Bjorn Hanell (Swedish University of Agricultural Sciences)	
<b>Moderators:</b>	Phil Comeau	
<b>Description:</b>	This session will include discussion of the potential impacts of climate change on the distribution, growth and dynamics of natural and planted spruce forests and silvicultural, policy and planning options that may be available for sustainable management of spruce forests.	
Environmental Control Of Growth Variation In Norway Spruce In Finland	Harri Mäkinen	Finland
Geographic Patterns Of Genetic Variation In White Spruce ( <i>Picea Glauca</i> ): Developing Breeding And Deployment Strategies Under Climate Change	Laura Gray	Canada
Long-Term Volume Increment, Ingrowth And Changes In The Stand Structure In Partially Harvested Uneven-Aged Norway Spruce Stands In Northern Sweden	Martin Ahlström	Sweden
Mitigation Of Drought By Thinning: Short-Term And Long-Term Effects On Growth And Physiological Performance Of Norway Spruce ( <i>Picea Abies</i> )	Julia Sohn	Germany
Ecophysiological Aspects Of Growing Douglas Fir In Central Europe	Josef Urban	Czech Republic
Use Of Continuous Cover Forestry Enhances Delivery Of Ecosystem Services And Adaptation To Climate Change In Sitka Spruce Planted Forests.	Bill Mason	United Kingdom

## // FORESTS AND WATER INTERACTIONS

### D-04 (18) Hydroecological Studies In The Mediterranean Region

<b>Room:</b>	150 E	
<b>Organizers:</b>	Yusuf Serengil (Istanbul University, Turkey), Xiaohua Wei (University of British Columbia, Canada) & Ferhat Gokbulak (Istanbul University, Turkey)	
<b>Moderators:</b>	Yusuf Serengil	
<b>Description:</b>	The objective of this session is to evaluate long- and short-term studies in the Mediterranean region on hydrology–ecosystems interaction to better understand the effects of anthropogenic stressors in the region.	
Bringing Water Quantification Into The Management Of Semiarid Forests: A Need For Implementing Adaptive Silviculture And Watershed Services Programs	Antonio D Del Campo	Spain
Mediterranean Vegetation-Water Interactions: A Model Comparison At Different Scales	Alberto García Prats	Spain
Thinning Effect On Monthly Runoff In A Forested Watershed	Ferhat Gokbulak	Turkey

Improvement Of Forest Management Towards Optimizing Water Production In Marmara Region Of Turkey	Yusuf Serengil	Turkey
Timber Harvest Effect On Selected Physical Water Characteristics In A Forested Watershed	Betül Uygur	Turkey

### D-07 (36) Impacts Of Forest Roads On Water Resources And Aquatic Habitat

**Room:** 150 A

**Organizers:** Charles Luce (U.S. Forest Service) & Artemio Cerdà (University of València, Spain)

**Moderators:** Charles Luce & Carlos E. Ramos Scharrón (University of Texas, USA)

**Description:** This session reviews the latest science on runoff generation, surface erosion, mass wasting and gully formation, sediment delivery, mitigation treatment effectiveness, and how these affect aquatic habitat.

An Unusual Suspect- The Threat Posed By Unpaved Roads To Coral Reefs Of The Eastern Caribbean	Carlos Ramos-Scharron	United States
The Relationship Between Forest Roads And Aquatic Habitat Conditions In Western Montana, USA	Tom Black	United States
Plot-Scale Hydro-Geomorphological Response On Gravelly Roadbed, A Case Study From Southern Brazil	Edivaldo Thomaz	Brazil
GRAIP-Lite: A Tool For Large Scale Assessment Of Road Erosion	Nathan Nelson	United States
Road Sediment Production And Delivery: Effects Of Management Activities And Climate Change	Lee MacDonald	United States
Assessing Controls On Sediment Delivery From Forest Roads	Charles Luce	United States

#### Poster Presentations:

Monitoring The Hydrologic And Geomorphic Effects Of Forest Road Decommissioning And Road Improvements	Tom Black	United States
The Impact Of Ground Based Timber Harvesting On Soil Hydrophysical Properties: A Case Study In Hyrcanian Forest	Elyas Hayati	Iran
Water And Sediment Behavior On Rolled Grade Roads	Hiroko Muneoka	Japan
Quantification And Modeling Of Foot Trail Surface Erosion In A Dry Sub-Tropical Forest Setting In The Eastern Caribbean	Carlos Ramos-Scharron	United States
Effectiveness Of Road Decommissioning	Gabriel Sosa-Perez	United States
Quantitative And Qualitative Investigation Of Road Construction Standards In Arasbaran Forest, Iran	Manije Talebi	Iran

## // FOREST BIOMASS AND BIOENERGY

### E-05 (243) Global And Regional Deployment Of Biomass & CCS (BECCS): Reconciling Top-Down And Bottom-Up Approaches And REDD+BECCS Nexus

**Room:** 150 F

**Organizers:** Florian Kraxner (International Institute for Applied Systems Analysis, Austria); Sabine Fuss (Mercator Research Institute on Global Commons and Climate Change, Germany); Ruben Lubowski (Environmental Defense Fund, USA); Nathalie Walker (National Wildlife Federation, USA)

<b>Moderators:</b>	Florian Kraxner & Sabine Fuss		
<b>Description:</b>	This session aims at presenting and discussing the latest research on combining bioenergy with carbon capture and storage (BECCS), its important potential co-benefits as well as risks for e.g. the conservation of biodiversity, and to identify possible (funding) synergies and challenges from the REDD+/BECCS nexus.		
	Principles Of BECCS - Regional And National Case Studies – Assessing The Potentials	Florian Kraxner	Austria
	Balancing Risks And Regret From Climate Policy Uncertainties: The Role Of REDD And Other Near-Term Opportunities	Ruben Lubowski	United States
	BECCS+REDD: Synergies Between Bioenergy-Based Climate Change Mitigation Options And Reducing Emissions From Deforestation	Sabine Fuss	Germany
	The Potential Of REDD+BECCS Nexus For Selected Provinces In Indonesia	Manahan Parlindungan Saragih	Indonesia
	BECCS Use And Sustainability Of The Land-Use In Mitigation Pathways	Etsushi Kato	Japan

## // FORESTS AND FOREST PRODUCTS FOR A GREENER FUTURE

### F-02 (181) The Interface Between Quantitative Forest Sector Modeling And Policy Analysis: What Can Be Improved?

<b>Room:</b>	151 B		
<b>Organizers:</b>	Birger Solberg (Norwegian University of Life Sciences), Daniela Kleinschmit (Swedish University of Agriculture Sciences) & Clark C. Binkley (International Forestry Investment Advisors, USA)		
<b>Moderators:</b>	Birger Solberg		
<b>Description:</b>	This session will explore the strengths and weaknesses of using forest sector models in policy analyses, recent methodological improvements and pending needs in forest sector modelling, and the scope for improvement in the interface between policy analyses and forest sector modeling.		
	A Long Term Analysis Of The Potential Of Swedish Forests To Satisfy Sector Demand	Ola Eriksson	Sweden
	Future Of The European Forest-Based Sector: Combining Forest Sector Models With Foresight Analysis	Lauri Hetemaki	Finland
	The Linkage Between Environmental Policies And International Trade In Pulp And Paper Industry	Jaana Korhonen	Finland
	A Model Of Timber Supply In Finland	Jussi Lintunen	Finland
	Improving Forest Sector Model Inputs On Wood Supply Through European Forestry Dynamics Model (EFDM)	Tuula Packalen	Finland
	Support To Forest Policy Analysis In The European Union Through The Forest Information System For Europe (FISE)	Peter Vogt	Italy
	Scenario Generation For Future Development Of Forested Landscapes – Linking Practice And Policy Through Foresight And Modelling	Ida Wallin	Sweden
	Modelling For Adaptive Forest Management Under Climate Change In Europe	Rasoul Yousefpour	Germany

### F-14 Forestry For Desired Wood Quality And Products From Underutilized Forest Species

<b>Room:</b>	151 C		
<b>Organizers:</b>	Andrew Wong (Universiti Malaysia Sarawak, Malaysia) & Pekka Saranpää (Finnish Forest Research Institute)		

**Moderators:** Robert Deal & Andrew Wong

**Description:** This session considers the potential of hitherto lesser-utilized wood species for forestry and that would yield useful products.

Assessing Wood Quality And Developing Markets For Landowners Growing High-Value Native Hardwoods In Hawaii	James Friday	United States
Mechanical Characterization Of Quercus Spp. Mexican Wood By Nondestructive Methods	Mariana Ramírez-Pérez	Mexico
Indian Sandalwood (Santalum Album Linn.), An Important Bio-Resource Of India And Its Scope In Greening India	Sundararaj Ramachandran	India
High-Value Lesser Known Timber Species From Secondary Tropical Dry Forests In Colombia	Angela Cristina Paredes Alvarado	Germany

## // FOREST HEALTH IN A CHANGING WORLD

### G-08 (153) Consequences Of Changing Trophic Interactions On Forest Insect Population Dynamics

**Room:** 151 E

**Organizers:** Aaron S. Weed, Carissa F. Aoki & Nina K. Lany (Dartmouth College, USA)

**Moderators:** Aaron Weed

**Description:** This session is focused on how climate change, nitrogen deposition, and land use change can influence forest insect abundance via effects on trophic interactions.

On How To Study The Effects Of Climate Change On Trophic Interactions: A Holistic Approach	Christer Bjorkman	Sweden
Positive Direct Effects Of Increased Temperature On Forest Lepidoptera Are Outweighed By Negative Indirect Effects Of Predators And Food Quality	Nina Lany	United States
Population Dynamics Under Climate Change - Modeling The Interactions Between Predator And Prey	Tea Ammunét	Sweden
Effect Of Forest Fragmentation On Parasitism Of Forest Tent Caterpillar Through A Full Population Cycle	Jens Roland	Canada
Impacts Of Insect Host Diversity, Tree Species And Temperature On Parasitism Of The Eucalyptus Snout Beetle (Gonipterus Spp.) By Anaphes Nitens	Jeffrey Garnas	South Africa
Changing Climate Associated With Homogenization Of Forest Assemblages Of Boreal Ground Beetles (Coleoptera: Carabidae)	John Spence	Canada

### G-15 (191) Monitoring Emerging Threats To Forest Health In North America Across Regional To National Scales

**Room:** 250 A

**Organizers:** Borys Tkacz (U.S. Forest Service) & Kevin Potter (North Carolina State University)

**Moderators:** Kevin Potter

**Description:** This session will explore indicators of forest health trends from regional to national scales that are useful for monitoring change across the landscape.

Overview Of The USDA Forest Service Forest Health Monitoring National Program	Borys Tkacz	United States
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Using Vascular Plant Inventory Data To Derive Indicators Of Forest Health	Bethany Schulz	United States
The Influence Of Climate Gradients And Climate Change On Nitrogen Sensitive Lichen Species Across Forests Of Oregon, Washington, And California	Sarah Jovan	United States
Primary Drivers Of Forest Regeneration Dynamics In The Eastern US	Christopher Woodall	United States
From Local To National: Mining And Transformation Of Local Urban Forest Inventory Data For Use In National-Scale Monitoring And Assessments	Mark Ambrose	United States
Mechanisms Of Rapid Synchronization In Gypsy Moth Populations	Derek Johnson	United States
Is The Western United States Running Out Of Trees?	John D. Shaw	United States
Comparison Of Tree Mortality Rates On Reserves vs Non-Reserved Land The Interior West Using Forest Inventory And Analysis Annual Inventory	Michael Thompson	United States
Data, Data Everywhere: Detecting Spatial And Temporal Patterns In Fine-Scale Forest Health Information Collected Across A Continent	Kevin Potter	United States

## G-18 (172) Research On Pathway Risk Management And Phytosanitary Policy To Prevent Invasions Of Forest Insects And Pathogens

<b>Room:</b>	151 F	
<b>Organizers:</b>	Eckehard Brockerhoff (Scion, New Zealand), Andrew Liebhold (U.S. Forest Service) & Jolanda Roux (FABI/University of Pretoria, South Africa)	
<b>Moderators:</b>	Eckehard Brockerhoff	
<b>Description:</b>	This session will cover a wide range of current research on pathway risk management and phytosanitary policy aimed at reducing the risk of pest and disease introduction associated with international trade.	
Facilitating International Trade And Preventing Forest Pest Invasions: Progress And The Challenge Ahead	Eckehard Brockerhoff	New Zealand
Effects Of ISPM-15 On Bark- And Wood-Infesting Insect Infestation Rates Of Wood Packaging Material	Robert Haack	United States
Probability Of Pest Dissemination In Europe With Imported Wood Products: A Focus On Pine Wood Nematode And Oak Wilt Disease	Jacob Douma	Netherlands
International Plant Trade Associated Risks: Laissez-Faire Or Novel Solutions?	Jarkko Hantula	Finland
Plant Smuggling – A Pathway For Invasions By Damaging Non-Native Forest Insects And Pathogens	Andrew Liebhold	United States
Designing Cost-Effective Inspection Programs And Phytosanitary Policy For Reducing Pest Risk From Live Plant Imports	Rebecca Epanchin-Niell	United States
<b>Poster Presentations:</b>		
Allee Effects And The Establishment Of Exotic Invasive Bark Beetles	Eckehard Brockerhoff	New Zealand
Megastigmus Parasitism Of North American Cupressaceae	Jean-Noel Candau	Canada
Nurseries As Pathways For Phytophthoras To Enter The Turkish Forests	Tugba Dogmus-Lehtijarvi	Turkey
The Use Of EDDMapS To Monitor The Range Extension Of Two Invasive Insect Species In Hungary	Katalin Tuba	Hungary



# Poster Information (located in Hall 1)

IUFRO Division	Poster Number	Title	Presenter	Country	Abstract ID
<b>D1</b>					
D1	001	Strategies and practices to grow non-wood forest product species in degraded hilly area of southern China	Zaizhi Zhou	China	442
D1	002	Assisted natural regeneration in degraded dry monsoon forests with the participation of rural people in Sri Lanka	Bandumala Suduhakuruge	Sri Lanka	910
D1	003	Evaluation of the vegetation and proposal of species for rehabilitation of the patrimonial area "Necropolis Cristóbal Colón" in the Havana, Cuba	Marta Marina Jiménez Águila	Cuba	2171
D1	004	Traditional silviculture through butea monosperma: a multipurpose tree species in Balaghat, India	Pratibha Bhatnagar	India	2422
D1	005	Agroforestry systems to rehabilitation forest vocation lands in Michoacán, México	Guadalupe Geraldine García	Mexico	335
D1	006	Recovering degraded forest area using agroforestry practice: case study on area of former Mount Batur eruption, Bali (Indonesia)	Budi Hadi Narendra	Indonesia	1164
D1	007	Evaluation of tree species for agroforestry development in the Sudan Sahel region of Nigeria	Ioryisa Verinumbe	Nigeria	906
D1	008	Ecological complexity, stand basal area and rooting intensity respond differently under edaphic drought in ecotones at abandoned coppice forests	Tamalika Chakraborty	Germany	2677
D1	009	Potential production of short rotation coppice willow in Denmark	Søren Larsen	Denmark	1217
D1	010	Eucalypt coppice management for rurally based, small-scale timber growers in South Africa	Keith Little	South Africa	2588
D1	011	Sycamore maple ( <i>Acer pseudoplatanus</i> L.) potential for coppicing: A case study	Valeriu-Norocel Nicolescu	Romania	2149
D1	012	The effect of harvesting on stump mortality and re-sprouting in aged oak coppice forests	Patrick Pyttel	Germany	2011
D1	013	Hybrid aspen coppice forest for energy in hemiboreal Estonia	Hardi Tullus	Estonia	2019
D1	014	A forest for all - management for multiple uses	Petter Axelsson	Sweden	2961
D1	015	The Cuban experience within integrated forest farms: the case of "La Aurora", municipality of San Cristobal, Artemisa Province, Cuba	Efrain Alejandro Calzadilla Zaldivar	Cuba	2209
D1	016	Experimental forests: An anchor in a changing scientific world	Warren Moser	United States	3758
D1	017	Biodiversity and ecosystem services project in Cambodia	Bunnath Khun	Cambodia	529
D1	018	How tree-fall gaps characteristic approaching to ecological forestry? (Case study: a virgin Hyrcanian forest, north of Iran)	Saeed Rahbari Sisakht	Iran	1379
D1	019	The evolution of forests in Israel – from monocultural forest to uneven-age, mixed-species forests that designated for provision of ecological services	David Brand	Israel	3162
D1	020	Assessment of nitrogen fertilization of a managed douglas-fir forest stand in the Pacific Northwest and the application in sub-Saharan Africa	Tolulope Daramola	Nigeria	27
D1	021	Enrichment of restored forests with <i>Euterpe edulis</i> Martius (Arecaceae): the soil water deficit limits its successful establishment	Vera Lex Engel	Brazil	3380
D1	022	Seed rain assessments and forest plantations composition in sites undergoing restoration in Brazil	Vera Lex Engel	Brazil	3519

D1	023	Restoration of endemic dwarf pine ( <i>pinus culminicola</i> ) populations in North Mexico	Javier Jimenez	Mexico	1188
D1	024	Study on seeding regeneration potential of Taiwan Beech ( <i>Fagus hayatae</i> ) in Northeastern Taiwan	Shu Tzong Lin	China-Taipei	576
D1	025	Assessing the outcomes of ecological restoration by afforestation along a new high-speed railway in north-western Italy	Fabio Meloni	Italy	2547
D1	026	Restoring old-growth features to managed forests in the eastern Italian Alps	Renzo Motta	Italy	2561
D1	027	Effect of soil condition improvement on <i>Calliandra calothyrsus</i> and <i>Antidesma bunius</i> growth in Batur Mountain Conservation Area, Bali (Indonesia)	Budi Hadi Narendra	Indonesia	1122
D1	028	Selection of appropriate legume cover crop in reforestation of former tin mining overburden in Bangka Island, Indonesia	Budi Hadi Narendra	Indonesia	1825
D1	029	Management determination by silvicultural groups in restoration plantings in the Brazilian Atlantic Forest	Liz Ota	Brazil	3683
D1	030	Future strategies for restoration of ridge-mountains at Baekdu Daegan in the Republic of Korea	Yeong Dae Park	Republic of Korea	1577
D1	031	Management of natural regeneration of Spanish elm ( <i>Cordia alliodora</i> R. & P.) for the purpose of forest restoration of dry forests of Colombia	Nathaly Rodríguez Santos	Colombia	336
D1	032	The fire ecology of American Chestnut regeneration: implications for restoration	Mike Saunders	United States	2936
D1	033	Identification of degradation levels of dry evergreen forests for restoration in Sri Lanka	Bandumala Suduhakuruge	Sri Lanka	598
D1	034	The vegetation recovery of tropical rain forests under different commercial logging manners on Hainan Island, China	Yi Ding	China	224
D1	035	Impact of logging operations on the remnant forest of a humid tropical forest in the Imataca forest reserve, Venezuela	Néstor Gutierrez	Venezuela	2734
D1	036	Eucalyptus stocking and soil preparation in a frontier region at north of Brazil: necessity of changing concepts from traditional regions	Rodrigo Hakamada	Brazil	2261
D1	037	18 years of post-logging recovery in a mixed dipterocarp forest Sabah, Borneo: evaluation of modified RIL and climber cutting	Daniel Lussetti	Sweden	2143
D1	038	Development of <i>Pericopsis elata</i> 's seedling around seed bearer in a logging forest of South East Cameroon	Nnanga Mebenga Ruth Laure	Cameroon	3383
D1	039	Testing a silvicultural recommendation: Brazil nut responses 10 years after liana cutting	Karen Kainer	United States	1271
D1	040	Characteristics, structure, and tree species diversity of a tropical exploitation forest after 40 years of regeneration	Franziska Schier	Germany	3341
D1	041	<i>Steniscadia poliophaea</i> (Noctuidae) is a major seedling herbivore of big-leaf mahogany trees in Amazonian forests	Chris Free	United States	2145
D1	042	<i>Cedrela montana</i> in tropical montane rain forests of South Ecuador: key species for sustainable management and conservation of biodiversity hotspots	Sven Guenter	Costa Rica	253
D1	043	Restoration of high-value broadleaved forests in southern Sweden: Synergistic effects on biodiversity and economy	Magnus Löf	Sweden	1202
D1	044	Can monoculture forest plantation harbor biodiversity similar to naturally regenerated tropical rainforest ecosystems over time?	Jonathan Chukwujekwu Onyekwelu	Nigeria	1511

D1	045	Growth and productivity of <i>Khaya grandifoliola</i> in the dry semi-deciduous forest of Ghana: a comparison in pure and in diverse species stands	Emmanuel Opuni Frimpong	Ghana	1975
D1	046	Single-tree management for high-value timber species in a mixed conifer-hardwood forest in northern Japan	Toshiaki Owari	Japan	2382
D1	047	Comparison of species composition and stand structure between a secondary forest and a mahogany plantation on Mt. Makiling	Pil Sun Park	Republic of Korea	1649
D1	048	Growth and stem quality of oak trees established in cluster plantings respond differently to intra- and interspecific neighbourhood competition	Somidh Saha	Germany	1514
D1	049	Landscape patterns in mountain pasture-woodlands under changing environmental conditions	Harald Bugmann	Switzerland	1059
D1	050	Why bank on ban on felling for managing mountain forests sustainably?	Promode Kant	India	1449
D1	051	Advanced oak seedling development as influenced by shelterwood treatments, competition control, deer fencing, and prescribed fire	Kurt Gottschalk	United States	3318
D1	052	Dominance probabilities for oak seedlings in Pennsylvania: variation in seedling size and ecological sections affects seedling success	Gary Miller	United States	3353
D1	053	Epicormic potential of common eastern North American oak species	Mike Saunders	United States	2963
D1	054	Linking ecosystem service tradeoffs with perceived benefits from reforestation in human-modified tropical landscapes	Oscar Abelleira Martinez	Costa Rica	2474
D1	055	Evaluation of natural regeneration of woody plants in a mixed plantation of tree species	Manuel Marino Enciso Gomez	Paraguay	2002
D1	056	Provenance trial of <i>Shorea leprosula</i> miq. in Palembang, South Sumatra, Indonesia.	Ade Ayu Dewayani	Indonesia	2061
D1	057	Short-term responses of saproxylic insects to different types of forest restoration	Joakim Hjalten	Sweden	3026
D1	058	How can <i>Macrotermes</i> termites provide ecosystem services in a savanna woodland in Burkina Faso, West Africa?	Saran Traoré	Burkina Faso	617
D1	059	The influence between morphological plasticity and biomass allocation on two provenances of <i>Abies holophylla</i> seedlings under different nitrogen fertilization regime	Yuan Chai	China	1830
D1	060	Lateral root distribution of <i>Eucalyptus camaldulensis</i> and <i>Eucalyptus pellita</i> under different tree spatial arrangements	Geraldo G. Reis	Brazil	2642
D1	061	Precipitation frequency controls interannual variation of soil respiration in a subtropical forest	Huimin Wang	China	2700
D1	062	Wood carbon storage in a semideciduous seasonal secondary fragment in the Atlantic forest domain, in Brazil, over 20 years	Maria G. Ferreira Reis	Brazil	2684
D1	063	Water deficit is a good predictor of maximum stocking in <i>Eucalyptus</i> clonal plantation in Brazil	Rodrigo Hakamada	Brazil	2263
D1	064	The relationship between replanted tree growth and frequency of bush clearing in replanted Sugi ( <i>Cryptomeria japonica</i> ) forests	Fumiaki Kitahara	Japan	569
D1	065	European beech trees have developed an adaptive strategy of survival through crown die-back under stress of drought and plant competition	Tamalika Chakraborty	Germany	3331
D1	066	Silver fir ( <i>Abies alba</i> Mill.) - native or alien tree species in the north Poland	Dorota Dobrowolska	Poland	1363
D1	067	Responses in physiology and growth of minor central European tree species to drought events	Jörg Kunz	Germany	2964
D1	068	Which management under climate change? An assessment of the provisioning of ecosystem services in mountain forests	Harald Bugmann	Switzerland	2510

D1	069	Initial effects of crop tree release treatment on carbon stocks in a southern China Chinese fir plantation	Yixiang Wang	China	3816
D1	070	Development and dynamics of young aspen-spruce mixedwood stands in western Canadian boreal forests	Philip Comeau	Canada	1559
D1	071	Introduction of adaptable tree species to arid climate in Iran (Case study: Fars Province, Darab)	Fatemeh Azhdari	Iran	3153
D1	072	Implementation of sustainable agroforestry in Mongolia	Hyun-Kil Jo	Republic of Korea	765
D1	073	Effects of soil amendments on survival rate and growth of <i>Populus sibirica</i> and <i>Ulmus pumila</i> seedling in a semi-arid region, Mongolia	Yowhan Son	Republic of Korea	1124
D1	074	Growth characteristic of <i>Ulmus pumila</i> L. seedlings from different seed sources in Mongolia	Enkhchimeg Tsedensodnom	Mongolia	2327
D1	075	Salt tolerance of <i>Ulmus pumila</i> L. seedlings from geographically different seed sources	Enkhchimeg Tsedensodnom	Mongolia	2338
D1	076	Technology model of alpine sand lands controlling on the China Tibetan Plateau	Xuequan Wang	China	1334
D1	077	Newly transplanted <i>Larix olgensis</i> Henry stock with greater root biomass has higher early nitrogen flux rate	Xingyuan He	China	1149
D1	078	Sustainable Energy for coffee benefited from wood energy plantations Coopetarrazú	Edwin Esquivel	Costa Rica	2275
D1	079	Mixed-species plantations of <i>Eucalyptus</i> and <i>Acacia mangium</i> as an alternative for bioenergy production in tropical regions	Rodrigo Hakamada	Brazil	2281
D1	080	Bioenergy and fiber use of bamboo biomass from small-scale plantations in Thailand	Maliwan Haruthaithanasan	Thailand	2567
D1	081	Short rotation forestry in Bavaria (Southern Germany): results of a survey of operators	Sebastian Hauk	Germany	307
D1	082	Short-rotation forestry with hybrid aspen in hemiboreal Estonia: implications for forest management, science and society based on 15-year experience	Reimo Lutter	Estonia	898
D1	083	Growth and nutrient dynamic of plantation forest of <i>Eucalyptus</i> hybrid as raw material for pulp industry in Indonesia	Nina Mindawati	Indonesia	209
D1	084	Initial yield of biomass production in wood energy plantations in the Guanacaste province, Costa Rica	Sara Molina	Costa Rica	826
D1	085	The effect increasing biomass demands on forest management in Central Europe	Christina Schumann	Germany	1861
D1	086	Selecting cold-hardy <i>Eucalyptus</i> species for the Southeastern United States using a region-wide network: 4 years-results	Jose Stape	United States	3681
D1	087	Improvement of soils conditions to increase productivity of <i>Tectona grandis</i> in Northern Costa Rica: established plantations	Elemer Briceño	Costa Rica	587
D1	088	Pointing the sustainability and profitability of <i>Eucalyptus</i> 2 years rotation for biomass production: study case in Brazil	Rodrigo Hakamada	Brazil	2266
D1	089	Effects of repeated whole-tree harvesting on soil properties and tree growth in a Norway spruce ( <i>Picea abies</i> (L.) Karst.) stand	Lilli Kaarakka	Finland	446
D1	090	Short-term effects of whole tree and stem-only harvesting on C and N fluxes in two <i>Picea abies</i> stands, Norway	O. Janne Kjønaas	Norway	2628
D1	091	Effects of different harvesting intensities on the macro nutrient pools in aged oak coppice forests	Patrick Pyttel	Germany	1943
D1	092	Trade-offs between utilising fine woody debris and minimizing rotation time in hybrid poplar plantations	Melanie J. McCavour	Canada	2166
D1	093	Effects of organic matter removal and nitrogen and carbon leaching fluxes in Douglas-fir plantation	Marcella Menegale	United States	2391

D1	094	The carbon balance in forest fuels from long rotation forestry: the outcome is in the assumptions	Gustaf Egnell	Sweden	2466
D1	095	Dendroenergetic analyses of <i>Acacia mearnsii</i> De Wild. culture	Ana Paula Dalla Corte	Brazil	1549
D1	096	Use of lignocellulosic biomass as biofuel: a key for sustainable future	Vindhya Prasad Tewari	India	98
D1	097	Surveillance of bamboos species in an experimental plantation in Southern Brazil	Adalberto Novaes	Brazil	3119
D1	098	Vegetative propagation of two bamboo species in Southern Brazil	Adalberto Novaes	Brazil	3155
D1	099	Harvesting and coppice management of <i>Beta vulgaris</i> (bamboo) in protected and unprotected areas	Edward D. Wiafe	Ghana	278
D1	100	Specific gravity-driven southern pine silviculture: an opportunity to improve ecosystem services and multifunctional forests	Don Bragg	United States	940
D1	101	Sustained yield forestry in Sweden and Russia: how does it correspond to sustainable forest management policy?	Marine Elbakidze	Sweden	2048
D1	102	Long-term response of natural-origin even-aged southern pine to early competition control and density management in Arkansas, U.S.A.	Andrew Nelson	United States	3107
D1	103	Growth reaction of a multiple use species ( <i>Tectona grandis</i> L. F.) to pruning in the State of Rondonia, Brazilian Amazon	Michelliny Bentes Gama	Brazil	3569
D1	104	The technological properties of plantation grown mahogany in Ghana: are they inferior to naturally grown ones?	Emmanuel Opuni Frimpong	Ghana	2841
D1	105	Height growth of Korean pine saplings planted under strip-cut larch plantations in northeast China	Toshiaki Owari	Japan	995
D1	106	Analysis of seedling production in forest nurseries in the Alto Paraná District of Paraguay	María Ysabel Perdomo Rolón	Paraguay	114
D1	107	Nutrient evaluation and DRIS diagnosis of young teak ( <i>Tectona grandis</i> L.f.) plantations in acid soil in South China	Zaizhi Zhou	China	441
D1	108	Effects of nitrogen deposition on growth and phosphate efficiency of <i>Schima superba</i> of different provenances grown in phosphorus-barren soil	Rui Zhang	China	69
D1	109	Natural regeneration in Mediterranean pines forests: a conceptual approach under climate change	Teresa Fonseca	Portugal	3198
D1	110	Effect of nitrogen fertilization on morphological parameters <i>Balsamorhiza hirsuta</i> , <i>Oxalis gigantea</i> and <i>Balsamorhiza pedicularis</i> : xerophytic species of importance in arid zones of Chile	Jose Hernandez	Chile	3402
D1	111	The characteristics of seedlings occurrence by different regeneration methods in a natural <i>Pinus densiflora</i> stand of South Korea	Jaehong Hwang	Republic of Korea	1432
D1	112	Variations in early seedling growth of <i>Quercus acutissima</i> in strip cut <i>Larix kaempferi</i> plantation	Jaehong Hwang	Republic of Korea	2287
D1	113	The comparison of early growth of <i>Pinus koraiensis</i> seedlings in harvested deciduous and evergreen coniferous plantations	Jaehong Hwang	Republic of Korea	2290
D1	114	Phenology observation of <i>Macaranga tanarius</i> in four regions in peninsular Malaysia	Rosdi Koter	Malaysia	2720
D1	115	Variations of vegetation biodiversity in wild pistachio forest among different altitudinal levels- Case Study	Mohammadreza Negahdarsaber	Iran	196
D1	116	Characterizing aspen regeneration by presence of ungulates, topography, and tree species composition	Aaron Rhodes	United States	3579
D1	117	Variation throughout the year of N <sub>2</sub> -fixation of <i>Acacia mangium</i> in pure stand or in association with <i>Eucalyptus grandis</i>	Ranieri Ribeiro Paula	Brazil	3570
D1	118	Environmental limitations to natural regeneration in a restored seasonally dry tropical forest	Hathai Sangsupan	United States	3601

D1	119	Successional dynamics of community structure and species diversity after clear-cutting of <i>Abies faxoniana</i> forest stands	Zuomin Shi	China	1607
D1	120	Examining native and exotic <i>Pinus taeda</i> plantation spacing, resource availability and varietal effects using crown ideotypes	Timothy Albaugh	United States	3484
D1	121	Carbon contents in <i>Acacia mearnsii</i> De Wild. plantations	Ana Paula Dalla Corte	Brazil	1550
D1	122	Evaluation of the effectiveness of the use of bokashi on seedling quality of <i>Balfourodendron riedelianum</i> (Engl.) Engl (Guatambu)	Marias Lis Garcia	Paraguay	3129
D1	123	Enhancing mine and energy crop soils to promote willow and poplar growth using ash and biosolids: a greenhouse trial	Nichola Gilbert	Canada	3750
D1	124	Volume or biomass? Evaluating trade-offs in aboveground live tree growth across a range of wood density in temperate forests of the eastern US	Christopher Woodall	United States	124
D1	125	Teak ( <i>Tectona grandis</i> Linn.f) biomass and carbon stocks in FIO Thong Pha Phum Plantation, Western Thailand	Sapit Diloksumpun	Thailand	2296
D1	126	Growth, biomass accumulation and functionality of <i>Gmelina arborea</i> (L.) Roxb, in climate change scenarios for Colombia	Omar Melo Cruz	Colombia	206
D1	127	Tropical dry forests above-ground biomass measurements in West Africa, Abdoulaye Wildlife Reserve (Togo)	Hodabalo Pereki	Germany	1014
D1	128	Growth response of <i>Moringa oleifera</i> ( Lam) seedlings to organic and inorganic fertilizers on an alfisol in South-Western Nigeria	Olubunmi Adejoh	Nigeria	369
D1	129	Assessment of current woody species and potentially candidate for forest exploitation: implication for reforestation system improvement in Benin	Hugues Akpona	Benin	738
D1	130	Fate of applied 15N fertilizer in a Douglas-fir Plantation	Stephani Michelsen-Correa	United States	3305
D1	131	Effects of artificial pruning on growth in young plantations of <i>Nothofagus</i> in South-central Chile	Daniel Soto	United States	3143
D1	132	Carbon storage capacity of monoculture and mixed-species plantations in subtropical China	Youjun He	China	1475

## D2

D2	001	Genetic admixing of two evergreen oaks, <i>Quercus acuta</i> and <i>Q. sessilifolia</i> (subgenus <i>Cyclobalanopsis</i> ), is the result of frequent interspecific hybridization	Ichiro Tamaki	Japan	1430
D2	002	Multipurpose trees as tools for ecosystem services deployment: a case study in Uruguay	Zohra Bennadji	Uruguay	1714
D2	003	Genetic characterization of marginal pedunculate oak populations adapted to xeric conditions: implications for conservation and sustainable management	Alexandru Lucian Curtu	Romania	2240
D2	004	Management of Cedar ( <i>Cedrela odorata</i> L.) by means of in vitro propagation techniques	Miladys Delgado	Cuba	2900
D2	005	Genetic diversity and population structure of Himalayan Cedar ( <i>Cedrus deodara</i> ) in Western Himalayas determined with cpSSR markers	Harish Ginwal	India	651
D2	006	Nuclear population structure of the Austrian <i>Picea abies</i> population	Heino Konrad	Austria	2490
D2	007	Male sterilization of <i>Cryptomeria japonica</i> by the barnase/barstar system	Manabu Kurita	Japan	1568
D2	008	Discovery of genic microsatellite markers from transcriptome sequences of <i>Eurycoma longifolia</i> root	Chai Ting Lee	Malaysia	3099
D2	009	Morphological assessment of <i>Parkia biglobosa</i> accessions from different agro ecological zones in Nigeria	Quadri Onilude	Nigeria	2354

D2	010	Genetic variation at microsatellite markers in four North American <i>Quercus</i> species	Sandra A Owusu	United States	3640
D2	011	An association mapping approach using ISSRs and AFLPs to identify molecular markers for resin yield in <i>Pinus roxburghii</i> Sarg	Anita Rawat	India	1733
D2	012	Genetic evaluation of <i>Pinus roxburghii</i> genotypes varying in resin yield using microsatellite markers	Anita Rawat	India	2849
D2	013	Identification of <i>Ganoderma</i> species associated with <i>Acacia cyclops</i> mortality in the Western Cape region of South Africa	Jolanda Roux	South Africa	1755
D2	014	Genetic diversity of <i>Quercus ilex</i> L. as a tool for retracing the dynamics of the Mediterranean forest ecosystems	Fabio Salbitano	Italy	3458
D2	015	Annual climate variation shapes adaptive seedling characters: A contribution to the adaptation of trees to future climates?	Silvio Schueler	Austria	3033
D2	016	Conservation monitoring of <i>Erythrina velutina</i> in riparian forest area	Renata Silva Mann	Brazil	1092
D2	017	Genetic diversity and evolutionary relationship of <i>Dyera costulata</i> and <i>Dyera lowii</i> in Jambi, Indonesia based on AFLP markers	Ulfah J. Siregar	Indonesia	2073
D2	018	Genetic diversity and relation of <i>Zoysiagrasses</i> ( <i>Zoysia</i> spp.) native to South Korea	Byungoh Yoo	Republic of Korea	1596
D2	019	The effect of plus tree selection to the genetic diversity of two <i>Acacia mangium</i> seedling seed orchards in Indonesia	Vivi Yuskianti	Indonesia	1683
D2	020	Genetic diversity and differentiation within three species of the family Lauraceae in southeast China	Rui Zhang	China	68
D2	021	Genetic diversity of natural populations of endangered <i>Ormosia hosiei</i> , endemic to China	Rui Zhang	China	70
D2	022	Temporal and spatial variability of soil carbon flux in longleaf pine forests in the southeastern United States	Althea ArchMiller	United States	405
D2	023	454 Pyrosequencing analyses of mountain forest soils reveal a high fungal diversity and a rapid response to successional stages	Nicola La Porta	Italy	3142
D2	024	“Shelterbelts system of agroforestry” – improves microclimate, crop yields, carbon sequestration, mitigate climate change in dry land ecosystem of peninsular India	Shivanna Honnurappa	India	1983
D2	025	Planned burning vs. wildfire impact on soil methane flux – implications for forest fire management	Stefan Arndt	Australia	2299
D2	026	Genome-wide effects of selective breeding on adaptation of reforestation seedlots for future climates	Ian MacLachlan	Canada	3609
D2	027	Selection of poplar clones to combat desertification in Inner Mongolia, China	Wonwoo Cho	Republic of Korea	1583
D2	028	The assessment of <i>Populus</i> spp. and <i>Ulmus pumila</i> for combating desertification in Mongolia	Myeong Ja Kwak	Republic of Korea	2370
D2	029	Effect on chlorophyll fluorescence in seedlings of four families of <i>Pinus leiophylla</i> under drought and recovery	Natalia Castelán Muñoz	Mexico	319
D2	030	Evaluating the water use efficiency of selected plantation species in the Philippines	Marilyn Combalicer	Philippines	1477
D2	031	Effect of drought on physiological and growth processes of selected beech and spruce provenances in Central Europe	ubica Ditmarová	Slovakia	1868
D2	032	Seasonal and diurnal water relations in four native shrubs, Northeastern Mexico	Humerto Gonzalez Rodriguez	Mexico	434
D2	033	The influence of drought on the density of different softwood species and provenances grown in Eastern Austria	Michael Grabner	Austria	1922
D2	034	Lateral root and shoot formation in <i>Rhizophora stylosa</i> Griff. ( <i>Rhizophoraceae</i> ) geared towards effective mangrove conservation and management in the Philippines	Nelson Manguiat Pampolina	Philippines	2702

D2	035	Slow release fertilizer and mycorrhizal inoculum potential effective for <i>Acacia mangium</i> under nursery conditions	R.T. Aggangan	Philippines	1306
D2	036	Assessing variability and divergence of <i>Jatropha curcas</i> Linn. germplasm under ex-situ conditions	Divakara Baragur	India	574
D2	037	Effects of exogenous GA3 application on growth and fiber quality of selected varieties kenaf ( <i>Hibiscus Cannabinus</i> L) plants	Md. Aktar Hossain	Malaysia	2027
D2	038	Somatic embryogenesis in <i>Hyeronima alchorneoides</i> (Euphorbiaceae) from zygotic embryos	Alejandra Rojas	Costa Rica	709
D2	039	Wastelands rehabilitation by growing genetically improved <i>Melia composita</i> Willd	Shruti Sharma	India	2493
D2	040	Mycorrhiza enhanced growth and heavy metal tolerance of <i>Acacia mangium</i> , <i>A. aulacocarpa</i> and <i>Swietenia macrophylla</i> in mine waste soil	R.T. Aggangan	Philippines	1365
D2	041	Spatial expression analysis of developing xylem specific cellulose synthase gene from <i>Eucalyptus tereticornis</i> and its molecular characterization	Modhumita Dasgupta	India	843
D2	042	Isolation, characterization and expression profiling of two homeodomain-leucine zipper transcription factor genes in <i>Eucalyptus tereticornis</i>	Modhumita Dasgupta	India	1804
D2	043	Aspects and prospects of <i>Eucalyptus</i> improvement in India	Harish Ginwal	India	650
D2	044	Genetic linkage map development in eucalypts for abiotic stress tolerance	Yasodha Ramasamy	India	876
D2	045	Genetic diversity and breeding strategies for genetic improvement of <i>Melia composita</i> Willd	Shruti Sharma	India	1166
D2	046	Impact of biochar soil amendment on growth and physiology of tree saplings	Kamran Abdollahi	United States	3730
D2	047	Study on the soil nutrients limiting factors in <i>Bambusa rigida</i> forest land	Shuping Tu	China	2330
D2	048	Effect of silvicultural intensity and spacing on crown architecture of four loblolly pine clones	Eric Carbaugh	United States	3371
D2	049	Variation of stem growth and morphology traits of some pine hybrids in southern China and their correlations	Jingmin Jiang	China	950
D2	050	<i>Eucalyptus</i> in Orinoco Colombia, challenges and opportunities	Victor Nieto	Colombia	3677
D2	051	Species diversity effects on productivity and water use in a tropical tree plantation	Katherine Sinacore	United States	3357
D2	052	454 sequencing to assess the differential expression of genes due to ozone stress in <i>Viburnum lantana</i> L.	Nicola La Porta	Italy	2874
D2	053	Heritability of height and diameter for six-year-old <i>Shorea leprosula</i>	Mohd Zaki Abdullah	Malaysia	2846
D2	054	Sex ratio and status number in progenies test of dioecious tree species	Ananda Virginia Aguiar	Brazil	3479
D2	055	Effect of pre-treatment and sowing media on germination of <i>Tetrapleura tetraptera</i> (Schum. & Thonn.) seeds	Adejoke Akinyele	Nigeria	156
D2	056	Management of Cedar ( <i>Cedrela odorata</i> L.) by means of in vitro propagation techniques	Miladys Delgado	Cuba	1978
D2	057	Micropropagation of Ruil ( <i>Nothofagus alessandrii</i> ): biotechnology applied for conservation and management of a threatened species	Rolando García	Chile	2028
D2	058	Long night treatment for induction of cold hardiness using artificial lights - effects of photoperiod on seedlings' storability and energy consumption	Marco Hernandez Velasco	Sweden	1762
D2	059	Provenance study of <i>Cassia fistula</i> L. for pod, seed and seedling traits	Shivanna Honnurappa	India	2473

D2	060	Propagation of <i>Entada rheedii</i> : a threatened climber species in Bangladesh with extremely thick and hard seed coat	Md. Aktar Hossain	Malaysia	2052
D2	061	Effects of irrigation period on growth performances and photosynthesis of container seedlings of <i>Fraxinus mandshurica</i>	Jaehong Hwang	Republic of Korea	1466
D2	062	The effects of CO <sub>2</sub> transfer via sap flow and bark conductance on stem respiration	Masaaki Naramoto	Japan	2667
D2	063	Seedling emergence and growth of African locust bean ( <i>Parkia biglobosa</i> R.Br. ex (G. Don) under different light conditions	Olufunke Olayode	Nigeria	2021
D2	064	Sustainable regeneration of African mahogany: The effects of potting mixtures on vegetative propagation of <i>Khaya ivorensis</i> and <i>Khaya grandifoliola</i>	Esther Mensah Opoku	Ghana	1240
D2	065	Impact of biochar on potting media for the rooting of <i>Khaya ivorensis</i> and <i>Khaya grandifoliola</i> leafy stem cuttings	Emmanuel Opuni Frimpong	Ghana	2007
D2	066	Genetic variation in natural and planted populations of <i>Shorea guiso</i> (Dipterocarpaceae) in the Philippines revealed by microsatellite DNA markers	Crusty Tinio	Philippines	2927
D2	067	Assessment of seed quality and mycoflora of <i>Bauhinia retusa</i> in different storage conditions	Manisha Thapliyal	India	1819
D2	068	Effects of open-field experimental warming using the infrared lamp on seed germination characteristics of major coniferous species in Korea	Jaehong Hwang	Republic of Korea	1463
D2	069	Investigating the interception of photosynthetically active radiation (PAR) among selected deciduous trees at Prairie Pines Preserve, Lincoln, NE	Humphrey Kalibo	United States	1519
D2	070	Nocturnal isoprene emission from deciduous trees in Japan	Takafumi Miyama	Japan	3756
D2	071	Effect of different watering regimes on germination and early seedling growth of <i>Irvingia gabonensis</i> var <i>gabonensis</i>	Felix Aya	Nigeria	3101
D2	072	Promoting heartwood formation of young trees of <i>Santalum album</i> by plant growth regulators	Xu Daping	China	1156
D2	073	Severity and control of foliar bacterial disease in <i>Eucalyptus</i> spp. seedlings according to the technological level in nurseries	Júlia Faria	Brazil	2256
D2	074	Cryopreservation of teak ( <i>Tectona grandis</i> L.f.) seeds	Ana Hine	Costa Rica	486
D2	075	The effects of seed pre-treatment, media conditions for germination of <i>Ricinus communis</i> in in-vitro system	Hyeonsoo Jang	Republic of Korea	1668
D2	076	Provenance variation of growth and stem-form characteristics of <i>Khaya senegalensis</i> , and future improvement strategies in Sri Lanka	Bandara Ariyaratna Kangane Mudiyansele	Sri Lanka	935
D2	077	Preliminary study of root penetration on degradable bioplastic-based planting pots	Kang Chiang Liew	Malaysia	272
D2	078	Predicting storage life and viability of <i>Melia volkensii</i> seeds after extraction	Stephen Ndung'u	Kenya	2192
D2	079	Sustainable regeneration of African mahogany: the effects of potting mixtures on vegetative propagation of <i>Khaya ivorensis</i> and <i>Khaya grandifoliola</i>	Esther Mensah Opoku	Ghana	1085
D2	080	Variation in fibre dimensions and basic density of plantation grown African mahogany from three forest ecological zones of Ghana	Emmanuel Opuni Frimpong	Ghana	865
D2	081	Mass propagation of Korean raisin tree through veneer grafting	Youngki Park	Republic of Korea	2579
D2	082	ABTS radical scavenging activity from fruit water extracts of selected Korean wild pear species	Youngki Park	Republic of Korea	2601
D2	083	Transition wood age from early wood to late wood of <i>Pinus radiata</i> D. Don, in the Andean region of Cochabamba City, Bolivia	Evelin Sirpa Espinoza	Bolivia	673

D2	084	Rhizome macroproliferation - a new technique of propagating herb and fern	Anita Tomar	India	642
D2	085	A new approach to propagate <i>Spondias pinnata</i> without potting media	Anita Tomar	India	644
D2	086	Effect of soluble sodium silicate on wild <i>Panax ginseng</i> growth in red soil in Korea	Sora Lee	Republic of Korea	2552
D2	087	Ex situ germination behaviour of stored seeds of medicinal plants from Indian Himalayas	Manisha Thapliyal	India	2645
D2	088	Eucalypts in China: Research History, Present Situation of Breeding and Silviculture and Future Prospect	Jianmin Xu	China	2
02	089	The eco-physiological responses of <i>Quercus variabilis</i> seedlings to increased atmospheric CO <sub>2</sub> and N supply	Lei Jingpin	China	193

## D3

D3	001	Wood harvesting rate, policies and cultural haulage methods in southwest Nigeria: implication on carbon sequestration	Victor Adekunle	Nigeria	3333
D3	002	Analyzing the potentiality and use of forest waste biomass in the production of clean energy in Nepal	Dharam Raj Uprety	Nepal	1871
D3	003	Simulator for the cost integral analysis of reforestation projects	José Ciro Hernández-Díaz	Mexico	1548
D3	004	A role for research in supporting small-scale emerging tree growers in South Africa	Sally Upfold	South Africa	2611
D3	005	A silvicultural practice to facilitate forest restoration – a new seedling cultivation technology for regeneration establishment	Marco Hernandez Velasco	Sweden	1761
D3	006	Natural regeneration management of “pau mulato” in Amazonian estuary floodplains forests	Marcelino Carneiro Guedes	Brazil	3393
D3	007	Species' grouping for timber management in Brazilian Eastern Amazon	Liz Ota	Brazil	3410
D3	008	Improved methods for timber extraction in South-West China	Dirk Jaeger	Germany	2779
D3	009	Effects of stand structure regulation on soil labile organic carbon under <i>Pinus elliottii</i> plantation	Yuan-qiu Liu	China	3591
D3	010	Spatiotemporal heterogeneity of water and root distribution and their impact on the slope stability in a mixed mountains forest	John Kim	France	3343
D3	011	How does the asymmetry of root system architecture modify soil strength and slope stability?	Zhun Mao	France	2064
D3	012	Thinning of Norway spruce stands under changing climate	Harri Mäkinen	Finland	1146
D3	013	Monitoring the hydrologic and geomorphic effects of forest road decommissioning and road improvements	Tom Black	United States	3295
D3	014	The impact of ground based timber harvesting on soil hydrophysical properties: a case study in Hyrcanian forest	Elyas Hayati	Iran	1637
D3	015	Water and sediment behavior on rolled grade roads	Hiroko Muneoka	Japan	1115
D3	016	Quantification and modeling of foot trail surface erosion in a dry sub-tropical forest setting in the eastern Caribbean	Carlos Ramos-Scharron	United States	733
D3	017	Effectiveness of road decommissioning	Gabriel Sosa-Perez	United States	3510
D3	018	Quantitative and qualitative investigation of road construction standards in Arasbaran forest, Iran	Manije Talebi	Iran	1478
D3	019	Optimizing biomass resource allocation for industrial and energetic utilization in the light of forest certification	Benjamin Engler	Germany	3326
D3	020	Energy biomass production with downy birch ( <i>Betula pubescens</i> ) on cutaway peatlands	Paula Jylhä	Finland	762
D3	021	Factors critical damage to the environment of the production chain of charcoal in Brazil	Fabrcia Menez Mota	Brazil	3689

D3	022	Amount and quality of residue biomass generated in forest harvesting systems for pine and eucalypt plantations in southern Brazil	Mateus Sanquetta	Brazil	1070
D3	023	A case study of wood fuel utilization by community forestry for sustainable, cost-effective management of local forest in Japan	Yasushi Suzuki	Japan	1178
D3	024	Soil impacts and forest operations in southeastern USA	Emily Carter	United States	3368
D3	025	Elemental composition in wood and different tree compartments on the quality of chips for fuel	Nicola La Porta	Italy	2966
D3	026	Estimating harvesting costs and projecting available amounts of logging residues with small-scale forestry in Nasushiobara City, Tochigi Prefecture, Japan	Kazuhiro Aruga	Japan	1022
D3	027	Evaluation of the drying potential of wood chips inside breathable flexible containers and modeling of moisture content transition	Maya Fujiwara	Japan	3141
D3	028	Log distribution planning for efficient wood supply chains	Dirk Jaeger	Germany	2859
D3	029	The impact of longer-term storage (3-6 months) on forest chip properties	Paula Jylhä	Finland	570
D3	030	The storage of Scots pine forest chips - CO <sub>2</sub> fluxes as an indicator of dry matter losses	Paula Jylhä	Finland	572
D3	031	Forest woody biomass collection through a bundling process in mountainous area	Toshio Nitami	Japan	2918
D3	032	Impacts of forest resource competition on future bioenergy production in Austria – answers by a system dynamics model	Peter Rauch	Austria	187
D3	033	Establishment of logistics for economic biomass energy supply chain in Japanese condition	Mika Yoshida	Japan	2329
D3	034	Automatic mapping of forest operation possibilities: a decision support tool for forest planning	Sylvain Dupire	France	2940
D3	035	Evaluation of the wood hauling logistic performance in farm forest areas using Petri net	Carlos Machado	Brazil	877
D3	036	The impacts of selective logging on litter input, soil carbon and nutrient stocks, in the Brazilian Amazon	Barbara Bomfim	United States	3090
D3	037	Economic impact analysis on forest road construction using input-output analysis	Se Kyung Chong	Republic of Korea	1591
D3	038	Evaluation of environmental impacts of forest harvesting and its effects on sustainability	Luis Freitas	Brazil	3124
D3	039	Energy efficiency in intensified production of forest regeneration materials – design of a photovoltaic system for sustainably powering an innovative forestry incubator	Marco Hernandez Velasco	Sweden	1767
D3	040	Areas of forest required to maintain sustainable, local wood supplies in pacific northwest communities	Robert Keefe	United States	3772
D3	041	Technical and technological valorisation of forest areas for machine timber harvesting on the basis of the CI index (Cone Index) in European forestry	Adam Lubera	Poland	2080
D3	042	Durability of chemically stabilized soils for forest road applications	Carlos Machado	Brazil	872
D3	043	Analysis of the traffic performance in forest roads using computational methods	Carlos Machado	Brazil	873
D3	044	Ergonomic evaluation of skyline models used in forest extraction	Carla Portugal	Brazil	881
D3	045	Slope restrictions on land-use practices: consequences for Borneo of different definitions and limits	Francis Putz	United States	972
D3	046	Production target for workers of digging holes machines for eucalyptus seedlings planting, as function of ergonomic factors, in Brazil	Amaury Paulo de Souza	Brazil	806

D3	047	Assessment of workers physical workload in semi-mechanized silviculture operations in mountainous regions, in Brazil	Amaury Paulo de Souza	Brazil	899
D3	048	The forest roads information database system	Jurij Beguš	Slovenia	3186
D3	049	Developing dynamic maps of forest roads with routes to GPS navigation receivers	Amaury Paulo de Souza	Brazil	900
D3	050	Biomechanical evaluation in eucalyptus silviculture operations, in Brazil	Amaury Paulo de Souza	Brazil	971
D3	051	Analysis of factors affecting forest road network planning: a Delphi study	Elyas Hayati	Iran	1552
D3	052	Cultivation of forest regeneration materials under artificial radiant sources - effects of light intensity on energy consumption and seedlings' development	Marco Hernandez Velasco	Sweden	1764
D3	053	Comparison of thinning productivities for the ordinary systems to the new system with a small wheel-mounted harvester and forwarder	Masahiko Nakazawa	Japan	2619
D3	054	Extraction of collapse risk factors for spur road using high resolution DTM	Masashi Saito	Japan	1133
D3	055	Generalizing over graph representations of road segments: a zigzag alignment model and a smooth alignment model	Hiroaki Shirasawa	Japan	493
D3	056	Valorization of complementary working time lengths in timber harvesting and skidding operations	Janusz Sowa	Poland	2142
D3	057	A new guide for work studies in forestry	Raffaele Spinelli	Italy	917
D3	058	Ergonomic and productive effects of replacement steel wire ropes with synthetic ropes for a mobile tower yarder	Ryosuke Watanabe	Japan	2415
D3	059	Comparative study of the ergonomic spectrum at the levels of logging entities and prefectures	Yozo Yamada	Japan	1448
D3	060	The research about raising the safety awareness of forestry in Japan	Yukina Funasaka	Japan	1147

#### D4

D4	001	Spatial distribution of green spaces in the urban area of Ponta Grossa (Paraná-Brazil)	Silvia Méri Carvalho	Brazil	3584
D4	002	Urban forestry identification with high resolution remote sensing	Mayssa Grise	Brazil	1916
D4	003	Towards a harmonized monitoring of water provisioning, regulating and purifying services in urban forests	Anže Japelj	Slovenia	1937
D4	004	Geoprocessing in creating for the purpose of conservation areas in Parque Estadual da Cachoeira da Fumaça/ES, Brazil	Carlos Henrique Rodrigues de Oliveira	Brazil	3158
D4	005	Monitoring and evaluation of impacts of FSC forest management certification	Marion Karmann	Germany	3125
D4	006	Terra-i: An initiative to monitor forests and other natural covers based on the use of geospatial tools	Alejandro Coca Castro	Colombia	3699
D4	007	Use of Lidar technology to create a management plan for an urban park in Belo Horizonte, Minas Gerais, Brazil	Felipe Coelho de Souza Petean	Brazil	3268
D4	008	The contribution of historical vegetational database recovering to study the forest biodiversity in Trentino (Italy)	Nicola La Porta	Italy	1773
D4	009	Integrating a forest ecosystem services finder in WEFES, a web based explorer for forest ecosystem services	Tim Payn	New Zealand	2551
D4	010	Forest information in Brazil: evolution and strengthening	Fernanda Pieruzzi	Brazil	3532
D4	011	Global Forest Information Service (GFIS) in Russia	Valentin Shalaev	Russian Federation	1766
D4	012	Forest models dissemination and knowledge transfer on cork oak based ecosystems: bridging the gap between research and practice	João HN Palma	Portugal	2272

D4	013	Comparing methodologies for assessing forest ecosystem services in South Korea	Cholho Song	Republic of Korea	2557
D4	014	Environmental valuation of trees in urban area of Ponta Grossa - PR by the emergy analysis	Silvia Méri Carvalho	Brazil	3372
D4	015	The afforestation present in the squares of the city of Ponta Grossa-Paraná-Brazil	Silvia Méri Carvalho	Brazil	3637
D4	016	Green public areas as an increase to the connectivity between forest remnants in urban landscapes	Rogério Hartung Toppa	Brazil	1919
D4	017	In situ conservation of an urban forest fragment in the Botanical Garden of Salvador	Luciano Souza dos Santos	Brazil	3522
D4	018	Evaluating future wood availability in Europe. Methods and tools	Susana Barreiro	Portugal	483
D4	019	The system of silviculture for conservation and development (SICODESI), lessons from a successful case of forest management in Jalisco, México	Francisco Dominguez Hernandez	Mexico	182
D4	020	Spatial aspects of biodiversity as a part of harvest scheduling decision process	Jan Kaspar	Czech Republic	1843
D4	021	DSS OPTIMAL - a case study form the Czech Republic	Robert Marusak	Czech Republic	1867
D4	022	Forest cover dynamics of Dxing'anling Forest Zone over last four decades	Shiming Li	China	2948
D4	023	Biodiversity monitoring for sustainable conservation of Mt. Makiling Forest Reserve and Banahaw to support regional food security and climate change	Nelson Manguiat Pampolina	Philippines	2394
D4	024	Austrian Forest Biodiversity Index (AFBI) – concept and results	Thomas Geburek	Austria	2814
D4	025	Long term forest planning with consideration to fragmentation	Karin Ohman	Sweden	1812
D4	026	Species richness and forest productivity: a large-scale geospatial analysis	James Watson	United States	1541
D4	027	Forest management and carbon regulation: an integrated economic perspective based on sequestration, storage and substitution	Jean-Luc Peyron	France	3546
D4	028	Post-logging stand dynamics of a tropical rain forest in the Brazilian Amazon	Angela Luciana De Avila	Brazil	2912
D4	029	Potential of natural forest production in Sinop County at Amazonia region, Brazil	Patricia Mattos	Brazil	3272
D4	030	Growth pattern of Qualea albiflora and Goupia glabra in Amazon forest, Mato Grosso State, Brazil	Patricia Mattos	Brazil	3545
D4	031	Mezilaurus itauba sustainable management in Brazilian Amazon	Patricia Mattos	Brazil	3554
D4	032	A simplified method for yield regulation of miombo woodlands in the context of Participatory Forest Management	Massimiliano Sanfilippo	Italy	2816
D4	033	Urban forest ecosystem assessment in Louisiana using i-Tree Eco model	Kamran Abdollahi	United States	3718
D4	034	Effect of Pistachio canopy on the spatial distribution of soil chemical characteristics in the Zagros forests of Iran	Reza Akhavan	Iran	399
D4	035	Research strategies for geneecological zonation of teak in India	Yasodha Ramasamy	India	884
D4	036	Response of autotrophic and heterotrophic soil respiration to long-term management in tree-based and treeless grassland ecosystems	Julius Adewopo	United States	2861
D4	037	Fine root turnover within land-use change from primary forest to degraded forest and oil palm plantation on tropical peat	Sebastian Persch	Indonesia	2546
D4	038	Mapping of forest disturbance in northeast China using time-series remote sensing data	Shiming Li	China	2380
D4	039	Landsat-MODIS data fusion for automatic mapping of fire disturbances in forest environment	Andrea Melchiorre	United States	1081

D4	040	Characterization of fire regimes in Utah's subalpine forests using remotely sensed data	Aaron Rhodes	United States	3573
D4	041	Using financial indicators to manage risk in timber supply modelling	Georgina Rodriguez	Canada	1284
D4	042	Adaptability of an ecosystem-based management to climate induced increase in fire frequency and growth anomalies in an eastern Canadian boreal forest	Georgina Rodriguez	Canada	3121
D4	043	MODIS based forest fire burnt area assessment in Hind-Kush-Himalayan (HKH) region	Him Lal Shrestha	Nepal	1484
D4	044	Relationships between ground cover biomass and prescribed fire in longleaf pine forests in the southeastern U.S.	Tom Stokes	United States	380
D4	045	Targeting Forest Management through Fire and Erosion Modeling	William Elliot	United States	3444
D4	046	Ecological adaptation of the shea butter tree ( <i>Vitellaria paradoxa</i> C.F. Gaertn.) along climatic gradient in Benin, West Africa	Jean Didier Akpona	Benin	740
D4	047	Effects of climate change on suitable habitat of trees. Analysis into two ecoregions	Carmen Osorio	Peru	1427
D4	048	Simulating forest dynamics and vulnerability of cork oak woodland production systems: A new index for vulnerability assessment and control	Nuno Almeida Ribeiro	Portugal	1980
D4	049	Rehabilitation process of natural mixed forest after wind disturbance by typhoon in Hokkaido, Japan in northern, Hokkaido	Masayoshi Takahashi	Japan	2638
D4	050	Comparison of methodologies for quantifying deforestation: a study case of Chico Mendes Resex, Brazilian Amazon	Barbara Bomfim	United States	2738
D4	051	The effect of varying estimation procedures on downed dead wood carbon stock estimates using the national forest inventory of the United States	Grant Domke	United States	2871
D4	052	Random Forests and Stochastic Gradient Boosting for Predicting Tree Canopy Cover: Comparing Tuning Processes and Model Performance	Elizabeth Freeman	United States	3686
D4	053	Wood volume estimation for eucalyptus plantations using ALS metrics and stand age	Eric Bastos Görgens	Brazil	257
D4	054	Novel automated terrestrial Lidar sensor decreases forest measurement uncertainties when used in a multi-method approach.	Anne Griebel	Australia	1656
D4	055	Towards precise estimation of foliar biomass turnover rates in Finland	Aleksi Lehtonen	Finland	2671
D4	056	Can detailed physiological measurements be efficiently used in forest modeling?	Katarina Merganicova	Slovakia	3324
D4	057	Opportunities and challenges in evaluating medium-term climatic impacts: The U.S. Northern Forest Futures Project	Warren Moser	United States	3676
D4	058	The impact of climate change on Eucalyptus globulus plantations productivity. Bayesian model averaging of two process-based models	João HN Palma	Portugal	1933
D4	059	Modelling the uncertainty of climate change impacts on Eucalyptus fastigata productivity in New Zealand	João HN Palma	Portugal	3251
D4	060	Comparing probability-proportional-to-size and simple random sampling designs in model-assisted estimation of growing stock in a boreal forest area in Finland	Svetlana Saarela	Finland	2413
D4	061	Testing alternative response designs for training forest disturbance and attribution models	Todd Schroeder	United States	3656
D4	062	A system for assessing live biomass of Northern Eurasian forests: methodology, models, results, and uncertainties	Anatoly Shvidenko	Austria	2141
D4	063	A transferable framework to interpret quality results of large data sets	Jeffrey Taylor	United States	3422
D4	064	Height-diameter mathematical models comparisons for three subtropical forest types in southern Brazil	Alexander Vibrans	Brazil	1230

D4	065	Fake forests and quantifying uncertainty in allometric equations for the 'real world'	Craig Wayson	United States	3602
D4	066	Detectable differences in carbon stocks of forest soils in Japan: boosted regression trees analysis can identify stratifying factors	Satoru Miura	Japan	1915
D4	067	Comparing alternatives for intensifying sampling intensity in forest inventories	Jock Blackard	United States	3669
D4	068	Forest carbon storage and tree biomass dynamics under the Natural Forest Protection Project in northeastern forest region of China	Limin Dai	China	1102
D4	069	Deposited carbon in Ukrainian forests: current stock and midterm forecast	Petro Lakyda	Ukraine	1954
D4	070	Evaluation of permanent sites for the monitoring and modeling of biomass and CO <sub>2</sub> in Mexico's mixed forests	Luis Alejandro Lopez-Ochoa	Mexico	3831
D4	071	Contribution of forest management to carbon sequestration in Brazilian Amazon	Cintia Souza	Brazil	51
D4	072	Carbon stock and dynamics of pioneers and non-pioneers forest species in an undisturbed forest in Brazilian Amazon	Cintia Souza	Brazil	78
D4	073	Contribution of families Sapotaceae, Burseraceae and Lecythydaceae in the carbon sequestration of an unmanaged forest in Brazilian Amazon	Cintia Souza	Brazil	79
D4	074	Biomass and forest carbon accounting in cold-temperate ecosystems in Northern Mexico	Benedicto Vargas-Larreta	Mexico	3304
D4	075	Influence of extreme storm events on forest soil carbon stock changes in Baden-Wuerttemberg, Germany	Bin You	Germany	1930
D4	076	Estimates of forest biomass carbon storage in Liaoning Province of Northeast China: a review and assessment	Li Zhou	China	1112
D4	077	Western Africa tropical Sudanian riparian forest contribution in ecosystem carbon balance performance in Togo	Fousseni Folega	Togo	188
D4	078	Identifying priority areas for carbon reservoirs in the Sierra Norte de Puebla, Mexico	Manuel de Jesús González-Guillén	Mexico	3480
D4	079	Comparison of point clouds from 3D airborne image matching and airborne Lidar in mapping carbon or tropical rain forest in Indonesia	Yousif Hussin	Netherlands	3507
D4	080	Using MODIS data to estimate the leaf area index of different forest types in Taiwan	Tzu-Fang Lin	China-Taipei	661
D4	081	Geospatial biomass estimation in the Sierra Madre Occidental in Durango (Mexico)	Pablito Marcelo Lopez-Serrano	Mexico	3470
D4	082	The effect of changing forests on seasonal patterns of the albedo in boreal forests	Petr Lukes	Finland	2730
D4	083	Industrial forest mapping with satellite data	Luca Marini	United States	1089
D4	084	A new concept for the biomass estimation of conifer dominated boreal forest using remote sensing data	Parvez Rana	Bangladesh	721
D4	085	Considerations for using a plot based approach to model forest biomass and canopy structure at the landscape level using lidar technology	Charlie Schrader-Patton	United States	3854
D4	086	Predictive models for estimating the above ground biomass of oil palm plantations using Landsat Thematic Mapper	Mohd Nazip Suratman	Malaysia	956
D4	087	Evaluation of the revegetation process in forest fire areas for the monitoring and modeling of aerial biomass	Eduardo Treviño	Mexico	3830
D4	088	Forest crown closure retrieval using an inverted geometric-optical model	Yuan Zeng	China	2842
D4	089	Mapping the extent of conifers dominating high conservation value forests in Finland using Landsat data	Evgeny Lopatin	Finland	3240

D4	090	Russian Federation forest resources assessment based on free medium resolution remote sensing data	Evgeny Lopatin	Finland	3270
D4	091	Measurement and monitoring of carbon in Peru: methods and plans for MRV	Renzo Carlos Vergara Arellano	Peru	3592
D4	092	Assessing forest change across Canada using successive kNN-based maps of imputed forest inventory data	Pierre Bernier	Canada	1203
D4	093	Combining lidar structure and ecology data in predictive ecosystem mapping models for improved estimates of landscape-scale forest carbon	Melissa Fedrigo	Australia	1699
D4	094	Comparative assessment of riparian forests based on remote sensing in a Hungarian-Slovakian cross-border area	Géza Király	Hungary	2986
D4	095	Land use and land cover change estimation - a sample strategy monitoring	Kevin Megown	United States	3703
D4	096	RapidEye object-based image classification and landscape ecology analysis to support geospatial component of Brazilian National Forest Inventory	Yeda Oliveira	Brazil	3400
D4	097	Comparison of landcover classification using medium resolution and high resolution imageries	Him Lal Shrestha	Nepal	1483
D4	098	Potentials of canopy stratification in modeling planted forests in a changing world: application to pine plantations in Nigeria.	Peter O. Adesoye	Nigeria	267
D4	099	Zoning productivity and growth constraints for Eucalyptus forest plantation in Southeast of Brazil	Cristiane Lemos	Brazil	3078
D4	100	Site quality and climate factors in stand level modeling of biomass growth of hybrid poplar in Southern Scandinavia	Anders Tærø Nielsen	Denmark	3213
D4	101	Comparing spatially and non-spatially explicit algorithms to implement thinnings in an individual tree growth model for cork oak stands	Margarida Tomé	Portugal	3494
D4	102	Development of country-specific EF and NFI system for National GHG Inventory in forest sector, Korea	Jae Soo Bae	Republic of Korea	1129
D4	103	Carbon dioxide sequestration potential of the national greening program of the Philippines	Jose Alan Castillo	Philippines	648
D4	104	Annual changes in forest longitudinal data for use in greenhouse gas reporting under the UNFCCC and its Kyoto Protocol	Gro Hysten	Norway	2685
D4	105	Predicting forest carbon storage and sequestration based on national forest inventory using forest growth model	Kim Moonil	Republic of Korea	2489
D4	106	New Zealand's plantation forest inventories for Kyoto and UNFCCC reporting – Five years of measuring and modelling in a changing landscape	Thomas Paul	New Zealand	981
D4	107	A decision making framework for designing a carbon accounting system	Robert Waterworth	Australia	2554
D4	108	Snow dynamics suppressed the carbon emission in North America	Zhen Yu	United States	459
D4	109	National greenhouse gases inventories in a scope of REDD+: study of case in Nicaragua	Sheila Edith Zamora Lopez	Germany	3776
D4	110	Modeling forest biomass baselines in Miombo forests of southern Africa: approaches and uncertainties	James Halperin	Canada	3092
D4	111	Estimating above-ground biomass using airborne LiDAR in tropical seasonal forests for REDD+ implementation	Tetsuji Ota	Japan	1114
D4	112	Detection and quantification of forest carbon in intact tropical rain forests of Brunei Darussalam using remote sensing for REDD+	Mihae Yoon	Republic of Korea	2571
D4	113	A geostatistical approach to integrate the national forest inventories and monitoring issues in a scope of REDD+	Sheila Edith Zamora Lopez	Germany	3530

D4	114	Climate change impact in the Uruguayan forest sector: an empirical evidences analysis	Zohra Bennadji	Uruguay	1717
D4	115	Protected areas adaptation to future climate and land use changes in northern Thailand	Yongyut Trisurat	Thailand	20
D4	116	Research infrastructure & network for monitoring and adapting European Atlantic forests under climate change (REINFFORCE)	Christophe Orazio	France	1900
D4	117	Using species distribution models to select climate change resistant species for ecological restoration of bowé in West Africa	Elie Padonou	Benin	230
D4	118	Estimating carbon storage in forest ecosystems in Poland basing on data from national forest inventory	Karol Bronisz	Poland	2968
D4	119	Why aren't we making progress with predicting future forest dynamics?	Harald Bugmann	Switzerland	3019
D4	120	Application of the CBM model to estimate Europe's current and future forest carbon sequestration	Giacomo Grassi	Italy	2188
D4	121	Floristic composition, species diversity and carbon storage in charcoal and agriculture fallows and management implications in Miombo woodlands of Zambia	Felix Kalaba	Zambia	341
D4	122	Assessing the climate change mitigation potential of residue-based bioenergy in Canada's forest sector	Werner Kurz	Canada	2970
D4	123	Simulating effects of forest management to the European forest carbon stocks and carbon balance	Annikki Mäkelä	Finland	2503
D4	124	Developing modular methods for predicting forest growth responses to environmental change	Annikki Mäkelä	Finland	2828
D4	125	Inclusion of carbon cycle and albedo in LCA for bioenergy	Ellen Soldal	Norway	1707
D4	126	Systematic review of impacts of the white spruce tree improvement program in the boreal forest of Canada: a meta-analytical approach	Suborna Ahmed	Canada	975
D4	127	Intra-annual xylem formation of Norway spruce and Scots pine across latitudinal gradient in Finland	Harri Mäkinen	Finland	854
D4	128	Blue carbon of selected plantation and natural stands of mangrove forests in the Philippines	Jose Alan Castillo	Philippines	1305
D4	129	The change analysis of Myanmar dryland land cover and vegetation temperature condition index	Eun Jung Lee	Republic of Korea	2559
D4	130	Paired catchment experimental methodology: a critique	Jami Nettles	United States	931
D4	131	Using inventory-based tree-ring data as a proxy for historical climate: investigating the Pacific decadal oscillation and teleconnections	Robert DeRose	United States	3875
D4	132	An idea of things to come: using satellite observations for assessing site-specific sensitivities of European beech to excessive drought conditions	Joachim Hill	Germany	2260
D4	133	Using forest landcover disturbance detection as a proxy for monitoring water quality in the Lake Michigan and Superior Basins	Charles Perry	United States	3853
D4	134	Forest recovery on runoff and river discharge at different scales in subtropical area of China	Guoyi Zhou	China	1690
D4	135	Riparian forests in Pitangui River: a high heterogeneous landscape at South Brazil	Rosemeri Moro	Brazil	3620
D4	136	A proposed coastal pine reforestation model on the Great East Japan Earthquake	Kanji Mizutani	Japan	237
D4	137	Estimation of the tree radial growth in the South Western bushes of Madagascar by growth rings analysis	Tahiana Ramanantoandro	Madagascar	3283
D4	138	Impacts of biomass operations on soil erosion	William Elliot	United States	3630
D4	139	A global meta-analysis of forest bioenergy greenhouse gas emissions accounting studies (1991-2012)	Thomas Buchholz	United States	2012

D4	140	'Carbon debt' - lost in the forest?	Niclas Scott Bentsen	Denmark	3367
D4	141	Assessment of above-ground biomass and soil carbon storage of the fallow forests after swidden cultivation in the Bago Mountains, Myanmar	Nyein Chan	Myanmar (Burma)	1485
D4	142	Local and general above-stump biomass functions for loblolly pine and slash pine trees	Carlos Gonzalez-Benecke	United States	810
D4	143	Modeling woody biomass utilization for energy feedstock in the northwest United States	Ryan Jacobson	United States	3762
D4	144	An object-based analysis of high resolution imagery to map canopy cover across semi-Mediterranean stands in western Iran	Hooman Latifi	Germany	2032
D4	145	Genomics-assisted selection of white spruce benefits from SilviScanTM: advanced phenotyping technology for measuring industrially relevant wood traits	Gail Sherson	Canada	3632
D4	146	Growing stock, community management and deforestation rates in the Brazilian biomes	Fernanda Pieruzzi	Brazil	3537
D4	147	A national assessment of non-timber forest products: prospects for improving the reporting of volumes and values of these products	James Chamberlain	United States	550
D4	148	Log distribution planning for efficient wood supply chains	Margarida Tomé	Portugal	1411
D4	149	A methodological proposal for the assessment of the sustainability of Eucalyptus SPP plantations in Spain	Luis Diaz-Balteiro	Spain	977
D4	150	Influence of spacing regimes on the development of loblolly pine ( <i>Pinus taeda</i> L.) in southern Brazil	Andre Lacerda	Brazil	3169
D4	151	Growth dynamics of silvertop ash regrowth forests in East Gippsland in response to contrasting thinning and fertiliser applications: A twenty-year evaluation	Emma Soraya	Australia	636
D4	152	Risk analysis and forest scenario modelling	Vindhya Prasad Tewari	India	97
D4	153	A simplified method for assessing forest health changes during 7 years using <i>Triplochiton scleroxylon</i> stands in south west Nigeria	Peter O. Adesoye	Nigeria	129
D4	154	Effects of different harvesting scenarios in a Brazilian eucalyptus catchment	Vinicius Guidotti de Faria	Brazil	1881
D4	155	Multi-scale spatial controls of understory vegetation in Douglas-fir – western hemlock forests of western Oregon, USA	Julia Burton	United States	2250
D4	156	Stand canopy cover prediction from individual tree measurements: stocking, crown width, and overlap functions	Andrew Gray	United States	3148
D4	157	Variation in floristic composition during secondary succession of forest in Cataniapo River Basin, Amazonas state, Venezuela	Pedro Villa	Venezuela	2078
D4	158	Methods for determining the thresholds of forest gaps (treefall gaps)	Jiaojun Zhu	China	2575
D4	159	Validation of five nonlinear growth models for plantation grown <i>Terminalia superba</i> in Ibadan, Nigeria	Bola Monisola Awosusi	Nigeria	1221
D4	160	Future demand for ecosystem services from terrestrial ecosystems from global power production scenarios to 2100: the role of forest biomass	Ingeborg Callesen	Denmark	2850
D4	161	Monitoring Trends and Burn Severity for CONUS	Brad Quayle	United States	3727
D4	162	Evaluation of carbon content in forests of northeastern Mexico	Oscar Alberto Aguirre Calderón	Mexico	1347
D4	163	Three experiences of geostatistics application for estimation and mapping of forest stock in the Caspian region of northern Iran	Reza Akhavan	Iran	398
D4	164	Estimating stand heights and crown structure of subtropical broadleaved forest using Lidar data in Okinawa Island, Japan	Azita Binti Ahmad Zawawi	Japan	1139
D4	165	An historically consistent and broadly applicable MRV system based on Lidar sampling and Landsat Time-Series	Warren Cohen	United States	3286

D4	166	Exploring options for the estimation of forest carbon stocks from 1990 to the present using the national forest inventory of the United States	Grant Domke	United States	2848
D4	167	Perspectives of integrating multi-phenological and multi-sensory remote sensing data into operational forest management	Joachim Hill	Germany	2676
D4	168	Measuring photosynthesis of beech seedlings with field imaging spectroscopy	Joachim Hill	Germany	2756
D4	169	A spatiotemporal assessment of forest cover changes in Mongolia using remotely sensed data	Tsogtbaatar Jamsran	Mongolia	2383
D4	170	The United States government's SilvaCarbon Program: technology transfer for MRV development	Andrew Lister	United States	3629
D4	171	The variations analysis of forest canopy closure estimated from airborne Lidar data	Qingwang Liu	China	2563
D4	172	Remote sensing, GIS and successive inventory for forest resource assessment in the Blue Nile region, Sudan	Mustafa M. El-Abbas	Germany	3239
D4	173	Towards an understanding of shifting cultivation systems as a form of forest degradation	Lucía Morales	United Kingdom	3280
D4	174	A new European climate dataset	Adam Moreno	Austria	1222
D4	175	Estimating aboveground tree biomass in three different miombo woodlands and associated land use systems in Malawi	Henry Neufeldt	Kenya	779
D4	176	Forest aboveground biomass estimates in Madagascar: new insights from the use of wood specific gravity data	Tahiana Ramananantoandro	Madagascar	2163
D4	177	Effect of field plot location on estimating tropical forest attributes of Nepal using ALS (Airborne Laser Scanning) data	Parvez Rana	Bangladesh	725
D4	178	Forest carbon stocks in longleaf pine forests in the southern United States	Lisa Samuelson	United States	373
D4	179	Modelling bark thickness and volume for Norway spruce ( <i>Picea abies</i> [L.] Karst) in SW-Germany	Stefan M. Stängle	Germany	1963
D4	180	New approach for extracting growth trends and climate information from radial increment of Scots pine and Norway spruce	Nicole Suty	Sweden	3463
D4	181	Longitudinal and radial variation of the wood density in a unmanaged stand of <i>Araucaria angustifolia</i>	Patricia Mattos	Brazil	3172
D4	182	Small area estimation of forest attributes within fire boundaries	Tracey Frescino	United States	3245
D4	183	Historical investigation of forest landscapes and their various uses in the early 20th century, based on national forest management plans	Asako Miyamoto	Japan	913
D4	184	Estimation of carbon emission and removal from the harvested wood products pool following the 2013 IPCC KP Supplement in Japan	Yuko Tsunetsugu	Japan	2708

**D5**

D5	001	Strategies for sustainable dependence on the forest: the case of wood carvers in Ghana	Emmanuel Appiah-Kubi	Ghana	2764
D5	002	Comparing the potential of Black Pine essence for use in pharmaceutical industries (Case study: Ardabil and Guilan provinces, North Iran)	Mehrdad Akbarzadeh	Iran	696
D5	003	Profitability analysis of commercial processing of <i>Vitellaria paradoxa</i> on livelihood of rural dwellers in Savanna Area of Oyo State.	Oghenekevwe Joy Arabomen	Nigeria	46
D5	004	Importance of <i>Pseudocedrela kotschyi</i> and <i>Mitragyna inermis</i> in well being of communities in Sudanian zone of Benin	Emeline P.S. Assede	Benin	174
D5	005	Beekeeping as a source of livelihood strategy in Oyo State, Nigeria	Adedunmola Abosede Ayomide	Nigeria	1179

D5	006	Evaluation of the sapote fruit ( <i>Capparis scabrida</i> H.B.K.) in relation to the tree's characteristics, from Humedades Community, Motupe, Lambayeque-Perú	Farrah Indira Galindo Jara	Peru	3595
D5	007	Livelihood sustenance potentials of herbal medicine in rural areas of Abia State, Nigeria	Kikelomo Kola-Oladji	Nigeria	277
D5	008	Coumarins content of seed and crude oil of <i>Calophyllum inophyllum</i> from forest stands in Indonesia	Budi Leksono	Indonesia	905
D5	009	Forest leafy vegetables marketing and sustainable rural livelihood in Rivers State, Nigeria	Adekunle Oladele	Nigeria	130
D5	010	Potentials for promotable oil products identified by traditional knowledge on native trees in Burkina Faso	Amadé Ouedraogo	Burkina Faso	36
D5	011	Contribution of NTFPs in livelihood and carbon management in moist temperate forests of Kashmir Valley, India	Ishtiyak Ahmad Peerzada	India	293
D5	012	Sustainable management of <i>Copaiba</i> ( <i>Copaifera</i> spp.) for oil production: definition of an optimal rotation	Luiz Carlos Estraviz Rodriguez	Brazil	1285
D5	013	Endophytic fungi as a source of bioactive compounds	Tytti Sarjala	Finland	1855
D5	014	Protecting forest and medicinal plant resources: a legal brief on <i>Prunus africana</i>	Emmanuel Suka	Cameroon	16
D5	015	Saving blood fruit and monkey cola from disappearing in Cameroon's forest	Emmanuel Suka	Cameroon	17
D5	016	Contradictive "dragon blood" rattan: promising people livelihood, conversely, species in the doorway of extinction	Enny Widyati	Indonesia	366
D5	017	Sustainable utilization and marketing of selected non-timber forest products to support the handicraft industry and the development of rural communities	Romulo Aggangan	Philippines	2311
D5	018	Potential of the forest to produce raw material for the wood carving industry in Ghana	Blankson Baffo	Ghana	620
D5	019	Impact of land use practices on traits and production of shea butter tree ( <i>Vitellaria paradoxa</i> C.F. Gaertn.) in Benin	Jean Didier Akpona	Benin	737
D5	020	Livelihood potential of <i>Moringa oleifera</i> tree and its role in food security and health care in Nigeria	Oghenekevwe Joy Arabomen	Nigeria	44
D5	021	<i>Boswellia serrata</i> gum oleoresin and its contribution to rural economy of Sheopur District of central India	Pratibha Bhatnagar	India	523
D5	022	An example of an ecologically sustainably territory in Cuba	Katia Manzanares Ayala	Cuba	283
D5	023	Impact of anthropogenic disturbances on high value NTFPs in temperate moist oak forest: a case study from the Eastern Himalayas, India	Tamalika Chakraborty	Germany	3449
D5	024	Impact of alternative fertilization with sodium on growth and wood quality of <i>Eucalyptus grandis</i> plantations in Brazil	Mariana Pires Franco	Brazil	3330
D5	025	Intra-annual phloem and xylem formation, and primordial shoot development in Norway spruce saplings exposed to elevated CO <sub>2</sub> and temperature	Hisashi Abe	Japan	2457
D5	026	Case study: impact of climate change on industrially relevant white spruce wood traits determined with SilviScanTM	Tessie Tong	Canada	3625
D5	027	Energy value of wood residues from <i>Gmelina arborea</i> Roxb. and <i>Tectona grandis</i> Linn. f.	Gloria Titi Anguruwa	Nigeria	548
D5	028	Firewood production of <i>Eucalyptus urophylla</i> in Brazilian savanna area	Milton Meira-Junior	Brazil	2063
D5	029	Sustainable bio-energy development in Kenya	Nellie Oduor	Kenya	1205
D5	030	Longitudinal and radial variation of the charcoal production in eucalypts	Paulo Trugilho	Brazil	887

D5	031	Wood-based biomass-to-electricity sector development in rural Uttarakhand, India	Richard Vlosky	United States	345
D5	032	Optimizing wood utilization in regard to GHG emissions and primary energy consumption on a regional level exemplified for south-east Germany	Karin Höglmeier	Germany	470
D5	033	Harvesting the dead and decaying forests: potential carbon storage and avoided emissions	Wyatt Klopp	Canada	3557
D5	034	Evaluation of environmental impacts for Korean harvested wood products	Joo-Saeng Park	Republic of Korea	986
D5	035	Radial variation of wood density and wood anatomy of <i>Quercus</i> spp. (Fagaceae) in Japan	Hisashi Abe	Japan	842
D5	036	The conversion yield from wood to charcoal can be estimated by Near Infrared Spectroscopy	Paulo Hein	Brazil	1515
D5	037	Optimization of dilute acid hydrolysis of I-214 poplar clone wood grown in Turkey	Bahattin Gurboy	Turkey	2832
D5	038	Heterologous expression of lignin-degrading enzymes from white rot fungi in <i>Pichia pastoris</i>	Myungkil Kim	Republic of Korea	261
D5	039	Intra and inter-island variations of biofuel content and their physical-chemical properties of <i>Calopyllum inophyllum</i> in Indonesia	Budi Leksono	Indonesia	581
D5	040	Production of cellulose from wood: formation of oxidized groups and their effect on cellulose properties	Jordan Perrin	France	3907
D5	041	Drying dimension lumber - winning the game without breaking the rules	Robert Erickson	United States	3498
D5	042	Role of US homebuilders' psychographic orientation in their adoption and use of certified wood in residential construction projects	Indroneil Ganguly	United States	3254
D5	043	Wood materials and products in the development of Bio-Economy - RDI programme of the Finnish Forest Research Institute (Metla)	Henrik Heräjärvi	Finland	1816
D5	044	Growth drivers within the firewood industry	Erlend Nybakk	Norway	1190
D5	045	Key problems of the use of environmental-friendly straw board in furniture production: some countermeasures	Liming Shen	China	2328
D5	046	Assessment for half-life and carbon stock of harvested wood products in Korea	Hwanmyeong Yeo	Republic of Korea	3613
D5	047	Nanocellulose market volume projections: a derived demand analysis	Edward Bilek	United States	3848
D5	048	Timber trade and its effectiveness in the context of Slovakia	Yvonne Brodrechtova	Slovakia	1964
D5	049	Relationships between environmental impacts and added value in Norwegian wood processing industries	Kristian Bysheim	Norway	2562
D5	050	The current status of wood utilization for residential housing in Okinawa prefecture, Japan	Yoshiyuki Chinen	Japan	1376
D5	051	Small enterprises and the U.S. secondary wood industry	Omar Espinoza	United States	2578
D5	052	Bringing the forest in: establishing the link between the use of wood and health in the built environment	David Fell	Canada	3481
D5	053	Consumer preferences for wood product information content in sustainability context	Jani Holopainen	Finland	939
D5	054	What makes wood so attractive? Transforming consumers' emotions into material characteristics	Andreas Manuel	Germany	2039
D5	056	Factors impacting exports of US hardwoods: A case of study in Germany, China, and Vietnam	Henry Quesada-Pineda	United States	946
D5	057	Platform for cost efficient environmental assessment	Tarmo Rätty	Finland	2922
D5	058	Biomass supply chains: mapping flows and identifying forest sector business opportunities	Richard Vlosky	United States	347

D5	059	Consumer perceptions of children's furniture in Shanghai and Shenzhen, China	Minli Wan	Finland	238
D5	060	Forest products trade and wood carbon flows --- case study of forest product trade between US west coast and China	Xiaoping Zhou	United States	2099
D5	061	Socio-economic importance of indigenous fruit trees: <i>Strychnos cocculoides</i> and <i>Schinziophyton rautanenii</i> in Rundu Rural West Constituency, Kavango Region, Namibia	Selma Ndemutilla Elago	Namibia	1228
D5	062	Analysis of non-timber forest products activities and income among rural households in Nigeria	Oluseyi Olugbire	Nigeria	710
D5	063	Decision-making along a tropical forest product commodity chain: implications for ecological sustainability	Jose Antonio Sierra Huelsz	Mexico	2982
D5	064	Wild mushroom in Italy: from a commodity to a recreational service.	Enrico Vidale	Italy	2929
D5	065	The characteristics of global trade of truffles	Enrico Vidale	Italy	3108
D5	066	Sustainable development – international framework – overview and analysis in forest and forest product context	Annika Hyytiä	Finland	2520
D5	067	Residual DNAs extracted from timbers and its effectiveness for identification of wood species	Ugai Watanabe	Japan	2541
D5	068	Domestication of the prioritized medicinal and aromatic plants in community forestry	Dhananjaya Lamichhane	Nepal	495
D5	069	Main non-timber forest products' socio-economic importance for inhabitants of the Czech Republic	Ludek Sisak	Czech Republic	1191
D5	070	Production of mate ( <i>Ilex paraguariensis</i> ) in Rio Grande do Sul, Brazil in the last years: discussing the current crisis	Maurício Vassali	Brazil	2792
D5	071	Profiling of aroma compounds released from four major bamboo shoots of high economic value in Taiwan	Min-Jie Chuang	China-Taipei	855
D5	072	Study on novel dyeing methods for green-color preservation of three bamboo culms and their colorfastness	Chia-Ju Lee	China-Taipei	599
D5	073	Comparative anatomy of developmental moso bamboo culms	Zhiqiang Li	China	1633
D5	074	Influence of rot on living trees Norway spruce ( <i>Picea abies</i> (L.) Karst.) wood density and strength properties	Marius Aleinikovas	Lithuania	1794
D5	075	Properties of guapuruvu wood ( <i>Schizolobium parahyba</i> (Vell.) Blake) from forest recovery areas in Brazil	Julia Carolina Athanázio-Heliodoro	Brazil	3408
D5	076	Modelling the effects of partial harvesting on lumber product assortment and value: a case study in the eastern Canadian boreal forest	David Auty	Canada	3300
D5	077	Enzymatic biodegradable characterization of wood decaying fungi	Myungkil Kim	Republic of Korea	263
D5	078	Use of wood and agricultural residues in brick production: an environmentally friendly alternative to Cement Blocks in Ghana	Emmanuel Appiah-Kubi	Ghana	871
D5	079	Cross laminated bamboo-Guadua panels for construction	Hector F Archila Santos	United Kingdom	788
D5	080	Maritime pine bark extraction for tannin-lignin adhesives	Fatima Charrier-El Bouhtoury	France	870
D5	081	Flexural properties of wood I-beam flanged with pine ( <i>Pinus</i> sp.) and curupixá ( <i>Micropholis venulosa</i> )	Cláudio Del Menezzi	Brazil	279
D5	082	Properties of wood plastic composite made from nanoclay added Eastern red cedar	Salim Hiziroglu	United States	1055
D5	083	Improving Mexican forest viability by technological characterization of commercial wood composites by nondestructive methods	Mariana Ramírez-Pérez	Mexico	1554
D5	084	<i>Caryocar villosum</i> (Aubl.) Pers. as a Bioresource: Evaluation of particleboard technological properties	Paula Surdi	Brazil	3079

D5	085	Reinforcement of plant fiber-based ultra-low-density material with sodium silicate	Yongqun Xie	China	3627
D5	086	Role of extractives in the photo-discoloration of <i>Cryptomeria japonica</i> wood caused by UV irradiation	Tzu-Cheng Chang	China-Taipei	1780
D5	087	Antifungal potential and chemical composition of <i>Chamaecyparis formosensis</i> and <i>Chamaecyparis obtusa</i> var. <i>formosana</i> essential oils in liquid and vapor phase against plant pathogenic fungi	Ying-Ju Chen	China-Taipei	1344
D5	088	Crude tall oil impregnation as a wood preservation method	Henrik Heräjärvi	Finland	1017
D5	089	Fungal decay of <i>Pinus kesiya</i> fascia boards on external joinery in Zambia	Elisha Ncube	Zambia	1941
D5	090	Premature failure of creosote treated electricity transmission wood poles in Zambia	Elisha Ncube	Zambia	1961
D5	091	Phosphine fumigation for protection of wood from powderpost beetle damage in Indian conditions	Remadevi O.K.	India	2408
D5	092	The role of Fenton derived hydroxyl radicals in oxidative and enzymatic degradation of furfurylated wood	Klaus Richter	Germany	2852
D5	093	Utilization of naturally durable tropical woods in society for a greener future	Andrew Wong	Malaysia	3784
D5	094	Soil contamination with aqueous wood extractives does not inhibit seed germination of vegetables okra and tomato	Andrew Wong	Malaysia	3797
D5	095	Soil contamination with chromated copper arsenate preservative, an organophosphate and two synthetic pyrethroids affecting seed germination of vegetables okra and tomato	Andrew Wong	Malaysia	3803
D5	096	Bamboo shoots sector in China: encountering a great opportunity with some challenges	Liangru Wu	China	3547
D5	097	Financial analysis of charcoal production methods in Ghana	Beatrice Darko Obiri	Ghana	2257
D5	098	Screening of fruiting genes in <i>Lentinula edodes</i>	Myungkil Kim	Republic of Korea	264
D5	099	Growth stresses and wood basic density of eucalyptus related to the productivity of the plantation site	José Lima	Brazil	3439
D5	100	The Utah Biomass Resources Group: from the Dragon Wagon to mobile pyrolysis	Darren McAvoy	United States	3045
D5	101	Evaluation of pellet fabricated from plantation wood and several agricultural crops utilizing X-ray densitometry	Mario Tommasiello	Brazil	1095
D5	102	Bidimensional scanning by means of acoustic tomography of six trees in the park of Ducuara at the University of Tolima, Colombia	Luis Alfredo Lozano Botache	Colombia	327
D5	103	Effect of water availability on the radial profile of wood density by X-ray densitometry for <i>Eucalyptus grandis</i> , at 36 months old in Brazil	Vinicius Castro	Brazil	3204
D5	104	Comparative wood anatomy of <i>Cordia trichotoma</i> (Boraginaceae) from seeds of two provenances and analysis of its growth rings	Caroline Caum	Brazil	2737
D5	105	Evolution of quality wood flooring in Brazilian companies members of a certification program	Ariel Andrade	Brazil	2245
D5	106	Analysis of defects in wood flooring manufactured by Brazilian companies members of a certification quality program	Ariel Andrade	Brazil	3138
D5	107	Combined compression and thermal modification of silver birch and European aspen sawn wood – color changes along the profile	Jukka Antikainen	Finland	1859
D5	108	Exploring lesser used timber species in Ghana for greener construction: a case of <i>Cola gigantea</i> and <i>Ficus sur</i>	Emmanuel Appiah-Kubi	Ghana	874
D5	109	Promotion and utilization of plantation grown timber species in Ghana: the kiln drying schedule of <i>Khaya ivorensis</i>	Emmanuel Appiah-Kubi	Ghana	2682

D5	110	Promotion and characterization of the mechanical properties of the non timber forest product <i>Borassus aethiopum</i>	Osei Asibe Asafu-Adjaye	Ghana	3606
D5	111	Microwave assisted extraction of condensed tannins from maritime pine ( <i>Pinus pinaster</i> ) bark	Fatima Charrier-El Bouhtoury	France	869
D5	112	Effect of heat treatment on the physical properties of moso bamboo ( <i>Phyllostachys pubescens</i> )	Chih-Lung Cho	China - Taipei	1589
D5	113	Yield and chemical composition of essential oils from leaves of two Brazilian savannah trees	Cláudio Del Menezzi	Brazil	360
D5	114	The occurrence of wet pockets in the drying of <i>Acacia mangium</i> using conventional steam-heated kiln	Kee Seng Gan	Malaysia	1152
D5	115	Developing the evaluation method for wood stiffness of Sugi (Japanese Cedar, <i>Cryptomeria japonica</i> D. Don) at nursery stage	Yuji Kurahara	Japan	2291
D5	116	Morphological variability and nutrient composition of Tunisian aromatic apiaceae <i>Magydaris pastinaceae</i> L. growing in the Northern Forest zones	Arbia Labidi Ben Slimane	Tunisia	2159
D5	117	Indonesian fast-growing tree species as alternative raw material for forest industries	Nina Mindawati	Indonesia	210
D5	118	Macroscopic characterization and dimensional stability in selected specimens of <i>Prosopis alba</i> Griseb in the Chaco region of Argentina	Alisson Molina Bejarano	Colombia	450
D5	119	Impact of compression and thermal modification on mechanical properties of silver birch and European aspen wood	Veikko Möttönen	Finland	1676
D5	120	Non-timber forest products in the Atlantic forest and savanna in São Paulo state, Brazil	Liz Ota	Brazil	3674
D5	121	Potential of non-timber forest product in Perum Perhutani	Corryanti Sambodo	Indonesia	1645
D5	122	Dynamic characteristics of 25 Mexican woods with a potential for structural use evaluated by stress waves	Germán Suárez-Béjar	Mexico	1895
D5	123	Dimensional changes behavior of <i>Erisma uncinatum</i> Warm. submitted to additional heat treatment at 90°C after conventional drying	Saly Takeshita	Brazil	2740
D5	124	Physical and chemical characterization of three hardwood species with potential for commercial use	Saly Takeshita	Brazil	2743
D5	125	Nondestructive estimation of mode I fracture toughness of wood using near infrared (NIR) spectroscopy	Ken Watanabe	Japan	2731
D5	126	Effect of different surface treatment processes on the printability and absorbability of decorative base paper	Jianfeng Xu	China	1581
D5	127	Development of center-bored outer-surface sealed timber drying method and evaluation of the drying energy consumption	Hwanmyeong Yeo	Republic of Korea	3631
D5	128	Comparison of color, brightness and chroma of natural dye-coated veneer	Byungoh Yoo	Republic of Korea	1935
D5	129	Use of medicinal plants among Panchen-Monpa tribe in remote region in the Eastern Himalayas, India	Somidh Saha	Germany	3478
D5	130	Plants used to treat infectious diseases in Togo: <i>Pterocarpus erinaceus</i> Poir (Fabaceae) and <i>Daniellia oliveri</i> (Rolfe) Hutch. and Dalz (Caesalpinioideae)	Nassifatou Koko Tittikpina	Togo	528

## D6

D6	001	Amenity forestry and environmental sustainability: the example of Calabar Botanic Garden, Cross River state, Nigeria	Felix Aya	Nigeria	3319
D6	002	Ecosystem services and human well-being in the Brazilian Amazon: contributions from a landscape analysis	Vagner Camilotti	Brazil	3538

D6	003	Fear of crime in urban parks –does age, gender and ethnic makes a difference?	Sreetheran Maruthaveeran	Malaysia	2537
D6	004	Forest offenders become the protector of the forest: A case study from Bangladesh inland Sal Forest	Md. Nazmus Sadath	Bangladesh	3020
D6	005	Analysing of different community based forestry in relations to employment and local livelihood in Nepal	Dharam Raj Uprety	Nepal	1828
D6	006	The perception of internet users regarding to human health benefits provided by urban green areas	Daniela Biondi	Brazil	2083
D6	007	Sovereignty of Indonesian biodiversity conservation and health through development of “Kampung Konservasi”	Ellyn Kathalina Damayanti	Indonesia	1643
D6	008	A study of Japanese attitudes toward coniferous forests and pollen allergy	Mari Kawase	Japan	2426
D6	009	Green spaces at the work place and allergic sensitization of office workers in the city and forest	Jeonghee Lee	Republic of Korea	2465
D6	010	Analyzing the willingness for cooperation between forest and health experts in improving people’s health in Germany	Katharina Meyer	Germany	1689
D6	011	A cost-benefit framework for urban green areas in the case of intensifying urban development	Mika Rekola	Finland	3261
D6	012	The effects of forest therapy utilizing regional abandoned forests in Japan	Iwao Uehara	Japan	466
D6	013	Assessment of honey (NTFP) and its utilization on the rural livelihoods in the rainforest ecological zone of Nigeria	Quadri Onilude	Nigeria	438
D6	014	Determinants and global patterns of bushmeat hunting	Mariève Pouliot	Denmark	1722
D6	015	Dietary pattern of indigenous people, local people and immigrant in the vicinity of Harapan Rainforest – Indonesia	Nayu Nuringdati Widianingsih	Denmark	2969
D6	016	Analysis of factors contributing to the urban green space cooling island intensity in the summer	Fanhua Kong	China	989
D6	017	Urban forestry changes in the western U.S.	Michael Kuhns	United States	461
D6	018	Geographic information system and monitoring of urban forest in Boa Vista, Roraima, Brazil	Everaldo Lima Neto	Brazil	3457
D6	019	Effects of urbanization of Ghana on urban forests and peri-urban community livelihoods	Emmanuel Opuni Frimpong	Ghana	3523
D6	020	How to make a joint-management artistically: a case study on several urban parks in Guiyang, China	Shawn Hu	Republic of Korea	717
D6	021	Implementing REDD+ in community managed forests: Lessons from India	Swapan Mehra	India	2856
D6	022	Impact of socio-economic circumstances to forest management and forest cover in Java Island, Indonesia	Kaori Shiga	Japan	2990
D6	023	Community involvement in forest management (CIFMs) to improve people livelihood in Indonesia	Enny Widyati	Indonesia	183
D6	024	Rural development with non-timber forest products: the case of Qiannan Buyi and Miao Autonomous Prefecture, Guizhou in China	Hang Xun	China	3511
D6	025	Participatory monitoring of non-timber forest products. What factors lead to cooperation?	Alice Brites	Brazil	501
D6	026	The role of mangrove forests in sustaining household livelihoods in the Niger Delta, Nigeria	Kelechi Eleanya	Nigeria	3037
D6	027	Research on present status of sustainable livelihood of workers’ families in China’s key state-owned forest region	Yuechen Liang	China	3605
D6	028	A carrying capacity approach to forest management in developing countries	Misa Masuda	Japan	3687

D6	029	Enhancing community livelihoods through nature based enterprises: the case of Matinyani women group, Kitui, Kenya	Oscar Mayunzu	Kenya	250
D6	030	Subsistence strategies and means of the river populations of the Luki Biosphere Reserve in the Democratic Republic of Congo	Jean Semeki	Congo, Democratic Republic of the	176
D6	031	Alternative livelihoods and biodiversity conservation	Terry Sunderland	Indonesia	2870
D6	032	Participation of stakeholders in community-based forestry in Cross River State, Nigeria	Ene Abi	Nigeria	612
D6	033	Participatory forestry and rural development: sharable lessons for better management across south Asia	Kazi Kamrul Islam	Bangladesh	712
D6	034	What makes community forest management successful in Myanmar?	Phyo Thu	Myanmar (Burma)	2460
D6	035	Joint forest management in western Uganda - impacts of internal governance on local livelihoods and conservation	Nico Wilms-Posen	Germany	787
D6	036	Exclusion of low-income households from forestry management: a study on forestry specialized cooperatives in China	Ruolei Zhu	Singapore	127
D6	037	The local particularity of the livelihoods of Taungya participants in the teak plantations in the Bago Mountains, Myanmar	Ei	Japan	2613
D6	038	Community food forests in the United States: what environmental and social benefits do they provide? who is using them and why?	Catherine Bukowski	United States	3345
D6	039	Factors influencing unwillingness in private forestry in humid south of Nigeria	Mac-Anthony Onyema	Nigeria	1734
D6	040	Efficient and effective control of bark beetle outbreaks in community forest of Oaxaca, Mexico	Adrian Poloni	United States	3039
D6	041	Forest research institutions and Caçador Model Forest: integrating local knowledge and scientific approaches to enhance rural livelihoods in Southern Brazil	Maria Augusta Rosot	Brazil	1890
D6	042	Promoting community forestry in a REDD+ context: a global analysis of small-scale forestry enabling environments in 44 developing countries	Olivia Sanchez Badini	Canada	3468
D6	043	The Komet Programme-a public-private partnership in forest protection	Ulrika Widman	Sweden	2703
D6	044	Anchor forests and the Tribal Forest Protection Act: Eastern Washington pilot project	Jay O'Laughlin	United States	1404
D6	045	Exploring opportunities for participatory wildlife management at the Bia Biosphere Reserve in western Ghana	Emmanuel Danquah	Ghana	2577
D6	046	Manning the front lines of biodiversity conservation: developing competency standards for protected areas management in the Philippines	Floribel Paras	Philippines	3210
D6	047	Co-management approach to protect the protected areas: realistic or naive?	Md. Nazmus Sadath	Bangladesh	3742
D6	048	Valuation of ecotourism potentials of Olumo Rock, Abeokuta, Nigeria using travel-cost model approach	Oluyinka Akintunde	Nigeria	611
D6	049	Stakeholders' perception as support for forest landscape planning in Ciliwung Watershed, Indonesia	Iis Alviya	Indonesia	3780
D6	050	Ecosystem services and protected areas: contribution of Pendjari National Park to Benin economy	Abdelaziz Lawani	Benin	2385
D6	051	Páramos como ecosistemas en transformación: Análisis multi-temporal de las percepciones acerca de la transformación de áreas de páramos en proceso de delimitación. Colombia	Connie Paola Lopez Gomez	Colombia	3467

D6	052	Valuing recreation for New Zealand's planted forests: moving beyond traditional timber economics towards achieving multi-purpose forests	Stefania Pizzirani	New Zealand	2341
D6	053	NP Risnjak- visitor vulnerability on "Leska" educational path and suggestions to avoid unfortunate outcome	Fran Poštenjak	Croatia	1551
D6	054	Merging gaps between forest conservation and agricultural production in protected areas: case study of Southern Bakundu in Cameroon	Emmanuel Suka	Cameroon	19
D6	055	Development of a trail auditing tool for trails at the wildland-urban interface	Elise Gatti	United States	3527
D6	056	Multistakeholder approach for managing conflicts and developing shared vision on community-based forest management in Nepal	Madhu Ghimire	Nepal	1438
D6	057	Alaska natives, local knowledge and climate change	Linda Kruger	United States	2288
D6	058	Desired forest futures of forest sector stakeholders in Sweden	Annika Nordin	Sweden	3257
D6	059	Traditional conservation practices and plant biodiversity potential of sacred groves in Ghana	Lord Ameyaw	United States	2228
D6	060	Species diversity and management techniques of Village Common Forests: a case study from Bandarban, Bangladesh	Md. Mohitul Hossain	Germany	2617
D6	061	Contribution of tribal women in biodiversity conservation and ecosystem restoration in the Bandarban Hill District of Bangladesh	Mohammed Mohiuddin	Bangladesh	1454
D6	062	The values of traditional knowledge and practices of nipa production to sustainable forest management in Cortes, Bohol, Philippines	Floribel Paras	Philippines	3259
D6	063	Traditional knowledge is trivial for managing mountain natural resources: a case study from the Eastern Himalaya	Somidh Saha	Germany	3348
D6	064	Shifting cultivation: traditional ecological knowledge of the Dayak people in East Borneo Indonesia	Martha Ekawati Siahaya	Indonesia	1318
D6	065	Impact of falling culture and indigenous knowledge on forest conservation in South West Cameroon	Emmanuel Suka	Cameroon	18
D6	066	Mapping a full cycle of swidden cultivation in Laos	Shinya Takeda	Japan	2441
D6	067	The vital role of stallholder initiatives in forest restoration and reforestation: the case of Cameroon	Richard Eba'a Atyi	Cameroon	1345
D6	068	Crop diversity of upland farms in Apayao Province	David Rodolfo	Philippines	406
D6	069	Rural people's perception of forest resources conservation in Ekiti State, Nigeria	Oluwayemisi Grace E. Arowosoge	Nigeria	2650
D6	070	Socio-economic and cultural aspects of forest transition in Kuningan District, West Java, Indonesia	Ellyn Kathalina Damayanti	Indonesia	844
D6	071	Underlying causes of forest transitions in Indonesia	Ellyn Kathalina Damayanti	Indonesia	2425
D6	072	Gender difference in forest management: temporal and cross-cultural perspective in aboriginal communities in India and Canada	Monika Singh	Canada	3721
D6	073	The role of forests, fallows and fisheries in household income generation and flood shock coping in the Peruvian Amazon floodplain	Jamie Cotta	Denmark	1928
D6	074	Smallholder land-use management in Bosawás Biosphere Reserve, Nicaragua's Agricultural Frontier	Lisa Hansen	Canada	2081
D6	075	The role of south Brazilian traditional community forests (Faxinais) in Atlantic forest conservation	Rosemeri Moro	Brazil	3585
D6	076	Strengthening sustainable forest management in the Colombian Amazon oriented by in situ wood transformation	César Polanco	Colombia	3445
D6	077	New roles of indigenous peoples as productive actors linked to the forest sector of Bolivia	Walter Benjamín Rivera Coria	Bolivia	243

D6	078	One methodology, two realities: partnering with indigenous peoples in the Peruvian Amazon	Andrea Vasquez	Canada	3528
D6	079	Preparing forestry students for the labour market outside targeted sectors	Desiana Barianti Ahlberg	Sweden	3882
D6	080	Comprehensive curriculum revision 101	Steve Bullard	United States	2867
D6	081	Integrating forestry capstone curriculums: preparing today's students to be tomorrow's forest managers through education in sustainability and certification	Tamara Cushing	United States	3362
D6	082	The value of graduate undergraduate mentorship programs in academia	Joseph Hulbert	United States	3539
D6	083	Higher education and capacity development for sustainability and clean technologies - experiences from Mozambique	Roope Husgafvel	Finland	1810
D6	084	Present situation of forest education include forestry, environment and outdoor activities in Japan	Mariko Inoue	Japan	1173
D6	085	International masters in wood energy: an EU project for developing higher education in the bioenergy sector	Enrico Marchi	Italy	1232
D6	086	Undergraduate enrollments in forestry and related areas of natural resources in the U.S. with respect to gender and race/ethnicity	Terry Sharik	United States	2374
D6	087	Best practices for enhancing communication skills of forestry majors in U.S. institutions of higher learning	Andrew J Storer	United States	3127
D6	088	Integrating social science research class into the forestry curriculum: a case study of Forestry Engineering Program in Colombia	Liz Villarraga	Colombia	521
D6	089	Forestry higher education facing social and economic changes	Michał Zasada	Poland	2955
D6	090	Social sciences in forestry curricula – experiences at the University of Freiburg, Germany, over twenty years	Siegfried Lewark	Germany	1303
D6	091	Pedagogy of Place Institute	Linda Kruger	United States	2285
D6	092	Pest scene investigators: a citizen science-based effort to improve forest health in Oregon	Paul Oester	United States	463
D6	093	Uneven-aged management in a mixed-conifer forest in northeast Oregon: a case study with an innovative educational approach	Paul Oester	United States	464
D6	094	Forest culture in the neotropics: what is it? why is it needed?	Roger Villalobos	Costa Rica	1311
D6	095	Bird song diversity influences young people's appreciation of urban landscapes	Marcus Hedblom	Sweden	1200
D6	096	Perceived personal safety in urban parks—through the eyes of urban park users of Kuala Lumpur	Sreetheran Maruthaveeran	Malaysia	2515
D6	097	Does participation in non-profit urban tree-planting programs improve neighborhoods? Examining the impact of collective action on neighborhood residents	Shannon Lea Watkins	United States	3149
D6	098	Tourism activities and biodiversity conservation within protected areas in West Africa	Fifanou Vodouhe	Benin	3433
D6	099	The role of dryforests for livelihood resilience: experience from the pastoral and agro-pastoral production systems in the drylands of Ethiopia	Adefris Worku Gizaw	Ethiopia	199
D6	100	Decision-support tools for sustainable rural development: the case of the alpine area of Como Lake, Italy	Salvatore Martire	Finland	2787
D6	101	Assessing cultural ecosystem services and their association with other ecosystem services in research forest in the western Cascade Mountains, of Washington, USA	Lord Ameyaw	United States	3596
D6	102	Multi-level policy dialogues and actions for REDD+ social safeguards: observations from a global comparative study on REDD+	Pamela Jagger	United States	3229

D6	103	Too safe to survive: going overboard on free and prior informed consent	Promode Kant	India	1453
D6	104	Ensuring social safeguards: forest use rights of local communities and participatory process of Lombok KPH REDD+ feasibility study in Indonesia	Sitti Latifah	Indonesia	2853
D6	105	Distribution of potential REDD+ benefits from agricultural lands in forests and forest-savanna transition zones of Ghana	Kwame Antwi Oduro	Ghana	3238
D6	106	Relevance of REDD initiatives for local communities in a low biomass forest. Case of tapia woodland, Central part of Madagascar	Harifidy Rakoto Ratsimba	Madagascar	961
D6	107	AgriCarb: an option for rural development in Gabon	Carmen M. Schmid	Austria	3800
D6	108	Impacts of natural forest landslides in a rural community of Morretes, PR-Brazil	Maria Augusta Rosot	Brazil	2356
D6	109	Tool development for analysing forest owners' strategies to manage risks and adapt to climate change	Åsa Gerger Swartling	Sweden	2854
D6	110	Linking mitigation and adaptation: learning from the First Indonesian Forestry A/R CDM – community based project between Korea and Indonesia	Ulfah J. Siregar	Indonesia	2492
D6	111	Building climate resilience communities by integrating community practices into the local planning process in Nepal	Dharam Raj Uprety	Nepal	808
D6	112	Prospects of strengthening social forestry in the coastal areas through introducing mangrove species at Shyamnagar Upazila in Satkhira District, Bangladesh	Md. Nazmus Sadath	Bangladesh	2446
D6	113	Local community initiative in preserving the sustainability of mangrove forest ecosystem at Kalitoko, Mayalibit, Raja Ampat, West Papua - Indonesia	Binsar Liem Sihotang	Indonesia	719
D6	114	Linking quantitative projections and qualitative scenario methods for modeling ecosystem services from forest landscapes	Gintautas Mozgeris	Lithuania	1947
D6	115	Evaluation of the management of two community forests in the Eastern Region Cameroon (ASDEBYM and CODECBOM) under the FLEGT	Ghislain Aime Fomou Nyamsi	Cameroon	3370
D6	116	Beyond individual plant yield: integrating diverse socio-environmental factors to estimate commercial production of an Amazonian non-timber forest product	Andrea Alechandre	Brazil	3608
D6	117	Tropical Hardwood Tree Improvement and Regeneration Center: strategies for creating a new collaborative research and extension partnership	Faith Inman-Narahari	United States	2267
D6	118	Small-scale private forests provide increased structural diversity and carbon storage in Germany's Swabian Alb biosphere reserve	Tobias Plieninger	Denmark	864
D6	119	Survival analysis in plantations of Araucaria angustifolia (parana pine) derived from seedlings and seeds	Maria Augusta Rosot	Brazil	1846
D6	120	Conservation of high economic value endangered species through participatory cultivation model	Sri Suharti	Indonesia	439
D6	121	General health condition in forest species of three parks in Mexico City: crown condition	Alejandra Zaragoza-Hernandez	Mexico	26
D6	122	A comparative analysis of global stakeholders' perceptions of the governance quality of the CDM and REDD+	Tek Maraseni	Australia	149
D6	123	Research and experimental center design as a tool for technology propagation for DLDD	Khaulenbek Akhmadi	Mongolia	2796
D6	124	Updated identification and evaluation of species produced by Barreirinha Municipal Nursery Garden in Curitiba, Paraná, Brasil	Daniela Biondi	Brazil	2373
D6	125	Project Floresta-Escola: an interaction between elementary school students and the forest	Daniela Biondi	Brazil	3321

D6	126	Mapping boundaries of community conserved areas: institutional and operational challenges	Swati Chaliha	India	3206
D6	127	Promoting co-benefits of ecotourism as a complementary strategy for sustainable Gunung Halimun Salak National Park management	Meti Ekayani	Indonesia	1509
D6	128	The effect of the deforestation rate on human activities in Central Africa: CoForTips project	Pauline Gillet	Belgium	2822
D6	129	A study on forestry and related students' cognition, attitude and behavior toward biodiversity in Taiwan	Ming-Yuan Huang	China-Taipei	3736
D6	130	Willingness of local communities to participate in REDD+ activities: a case study in communities in forest and forest savannah transition zones in Ghana	Winnie Efua Eshun Kofie	Ghana	2386
D6	131	Environmental and economic impact of mangrove deforestation -case study of Vadamradchy East, Sri Lanka	Sasikumar Kumarasamy	Norway	3829
D6	132	Addressing climate change adaptation and mitigation through community-based forest management in Nepal	Ram Prasad Lamsal	Nepal	1342
D6	133	Community perspectives for a cacao-based agroforestry development in Camalig, Albay Province in the Philippines: an application of the q-methodology	Floribel Paras	Philippines	3288
D6	134	Management of regeneration on hurricane-affected forests and its implications for the development of indigenous communities in the North-Atlantic Region, Nicaragua	John Sánchez Correa	Colombia	139
D6	135	Eradicating an invasive species: Landowner perceptions of impacts to ecosystem services	Anna Santo	United States	3243
D6	136	Principal agent in tree mortgage system on traditional agroforestry management in Moluccas Indonesia	Sri Suharti	Indonesia	930

## D7

D7	001	Rehabilitation strategies and ecotourism development for mined-out and waste dump areas in Bagacay, Hinabangan, Western Samar, Philippines	Angelito Exconde	Philippines	645
D7	002	Effects of overstory species diversity and composition on pest damage to high value species and understory ant diversity in Ghana	Paul P. Bosu	Ghana	3454
D7	003	Mycorrhizal Communities in imperata cylindrica invaded and non-invaded commercial Pinus taeda stands	Adam Trautwig	United States	2238
D7	004	Forest fire danger changes for China mainland in past 30 years	Xiaorui Tian	China	1319
D7	005	Potential impacts of climate change on fire socioeconomic vulnerability in the Mediterranean area	Armando González-Cabán	United States	3836
D7	006	Drought effects on forest health and growth in the western part of the Eurasian steppe region	Ionel Popa	Romania	1702
D7	007	Damages risk assessment of Norway spruce forests with different site and stands characteristics: towards sustainability assessment and sustainable management	Povilas Žemaitis	Lithuania	2765
D7	008	Cephalcia arvensis defoliation on Norway spruce: a case study analysis by tree-rings and stable isotopes approach	Andrea Battisti	Italy	3025
D7	009	Siberian pine mortality in southern Siberian Mountains	Viacheslav Kharuk	Russian Federation	2522
D7	010	Cinnamomum osmophloeum leaf oils act as antifungal agents for wood rot fungus Phellinus noxius	Sen-Sung Cheng	China-Taipei	418
D7	011	Chemical treatments to sanitize Phytophthora ramorum colonized timber material and mitigate the risk of accidental sudden oak death dissemination	Joseph Hulbert	United States	3529

D7	012	Responses of urban forest to environmental stress	Zhouli Liu	China	1666
D7	013	Impact of nitrogen fertilizer factory pollution on ground vegetation of pine forests Lithuania	Vitas Marozas	Lithuania	1446
D7	014	Effects of air pollution and climate change on forest growth in Southern Carpathians (Retezat and Bucegi-Piatra Craiului Mountains)	Stefan Neagu	Romania	1159
D7	015	Ozone stomatal flux-based critical levels translated into real-world forest impacts	Alessandra De Marco	Italy	666
D7	016	Effects of elevated ozone on the injury, growth and photosynthesis of ten woody species widespread in Beijing	Zhaozhong Feng	China	1125
D7	017	Evidence of widespread ozone-induced visible injury on plants in Beijing	Zhaozhong Feng	China	1570
D7	018	Photosynthesis and growth response of <i>Metasequoia glyptostroboides</i> seedlings to elevated O <sub>3</sub>	Zhaozhong Feng	China	1573
D7	019	Stomatal ozone flux-response relationship for visible injury and net photosynthesis in poplar trees treated with or without EDU	Elena Paoletti	Italy	1177
D7	020	Ozone fluxes and epidemiology of ozone injury to forests	Elena Paoletti	Italy	1171
D7	021	Ozone-induced differences in phenology and antioxidants of poplar trees treated and untreated with ethylenediurea (EDU)	Elena Paoletti	Italy	1175
D7	022	BVOC emission from silver birch under ozone and nitrogen stress	Elena Paoletti	Italy	2068
D7	023	Ecophysiological responses of beech ( <i>Fagus crenata</i> ) stressed by ozone exposure and/or water shortage	Hideyuki Shimizu	Japan	2851
D7	024	Nitrogen deposition and critical loads for Sierra Nevada forests: a comparison of measurement techniques and ecosystem responses	Carolyn Hunsaker	United States	3879
D7	025	Reassessing critical load calculations by ecosystem feedback	Martin Lorenz	Germany	1870
D7	026	Conserving plant diversity of Central European oligotrophic forest habitats requires goal-oriented management of nutrient cycles	Patrick Pyttel	Germany	2934
D7	027	Emerging insect pest and disease in <i>Cedrela odorata</i> plantations in Ghana	Mary Apetorgbor	Ghana	2878
D7	028	<i>Phytophthora plurivora</i> , a new species causing collar rot on <i>Alnus glutinosa</i> in Spain	Julio Javier Diez-Casero	Spain	2161
D7	029	The good and the bad: trade-offs between disease resistance and symbionts in loblolly pine	Lori Eckhardt	United States	2223
D7	030	Interactive effects of white pine needle damage and climate change on forest health and carbon-water dynamics across the Northeastern US.	Cameron McIntire	United States	2892
D7	031	Effects of tree species biodiversity on foliar fungal pathogen regulation: understanding the spread of the ash dieback pathogen, <i>Hymenoscyphus pseudoalbidus</i>	Diem Nguyen	Sweden	2488
D7	032	Report of <i>Chrysosporthe cubensis</i> Bruner Gryzenhout & M. J. Wingf. in plantations of <i>Eucalyptus pellita</i> in the Colombian Orinoquia region	Olga Pinzon	Colombia	3622
D7	033	<i>Quambalaria</i> : new reports from four continents, including a new species from Australia	Michael Wingfield	South Africa	2616
D7	034	Improving mass rearing techniques for <i>Cleruchoides noackae</i> (Hymenoptera: Mymaridae)	Leonardo Barbosa	Brazil	2174
D7	035	First releases of <i>Selitrichodes neseri</i> , a new biological control agent for the eucalyptus gall wasp, <i>Leptocybe invasa</i>	Brett Hurley	South Africa	2661
D7	036	Climatic change and insect outbreaks in Canada's boreal forests	Jean-Noel Candau	Canada	3731
D7	037	To know a bark beetle. Ecophysiological implications for mathematical modeling of bark beetle population dynamics	Petr Dolezal	Czech Republic	2111
D7	038	The role of drought and stand density in Jeffrey pine susceptibility to the Jeffrey pine beetle	Nancy Grulke	United States	462

D7	039	Climate change and silvicultural practices promoted the emergence of a novel pest of poplar stands	Francois Lieutier	France	3825
D7	040	Infestation patterns of <i>Phoracantha semipunctata</i> (Coleoptera: Cerambycidae) corresponding with a drought-induced dieback event in native host trees in southwestern Australia	George Matusick	United States	2367
D7	041	Trophic interactions between vertebrate insectivores and a climate-driven expanding forest moth	Herve Jactel	France	1877
D7	042	Evaluation of mortality in natural stands of <i>Pinus oocarpa</i> in Nicaragua	Tessa Bauman	United States	2093
D7	043	Population genetics reveals the origin of the <i>Coryphodema tristis</i> host expansion to <i>Eucalyptus nitens</i> in South Africa	Jeffrey Garnas	South Africa	1493
D7	044	Impacts of variation in resource quality for larvae of the European woodwasp, <i>Sirex noctilio</i> , in South African <i>Pinus patula</i> plantations	Jeffrey Garnas	South Africa	1497
D7	045	Characterizing Great Basin bristlecone pine tree chemistry	Curtis Gray	United States	1479
D7	046	The genetic diversity of the deodar weevil, <i>Pissodes nemorensis</i> (Coleoptera: Curculionidae), in its introduced range in South Africa	Brett Hurley	South Africa	2679
D7	047	Global patterns of diversity of the <i>Sirex</i> - <i>Amylostereum</i> - <i>Deladenus</i> symbionts and their implications for control	Brett Hurley	South Africa	2694
D7	048	Patterns and processes affecting stem borers in subtropical eucalypt plantations	Simon Lawson	Australia	2655
D7	049	<i>Sirex noctilio</i> host searching behavior: use of reliable infochemicals emitted by fungal symbiont	Andres Martinez	Argentina	3499
D7	050	Diversity of the parasitic nematode <i>Deladenus siricidicola</i> and its relevance as a biological control agent	Bernard Slippers	South Africa	2530
D7	051	Interacting disturbances in mixed-conifer forests of the US: effect of bark beetles and wildfires on forest trajectories	Camille Stevens-Rumann	United States	805
D7	052	Collaboration in managing the threat of <i>Sirex noctilio</i> – the South African experience	Sally Upfold	South Africa	2615
D7	053	<i>Pinus taeda</i> roots represent a suitable host substrate for developing <i>Hylastes</i> spp. of bark beetles in Alabama, US	Tessa Bauman	United States	2060
D7	054	Variation in susceptibility of native Scottish Scots pine populations to infection by <i>Dothistroma septosporum</i>	Stuart Fraser	United Kingdom	3088
D7	055	Optimal control strategies of forest pathogens in a heterogeneous landscape: a French case study	Claudio Petucco	Luxembourg	1986
D7	056	Insect problems: a challenge for the reforestation in the Colombian Orinoquia region	Olga Patricia Pinzón Florian	Colombia	3694
D7	057	Evaluating North American endophytic fungi for biological control of a coadapted pathogen <i>Dothistroma</i> needle blight in <i>Pinus</i> sp.	Mary Ridout	United States	824
D7	058	Assessing the impacts of <i>Imperata cylindrica</i> (L.) Beauv on root-feeding bark beetle populations associated with southern pine decline	Adam Trautwig	United States	2057
D7	059	An economic comparison of prevention strategies against forest pathogens	Marielle Brunette	France	343
D7	060	FT-IR spectroscopy identifies coast live oak resistant to <i>Phytophthora ramorum</i> before infection	Anna Conrad	United States	959
D7	061	A socioeconomic assessment of the impact of the red palm mite on the Nariva Swamp of Trinidad and Tobago	Marc Garcia	Trinidad and Tobago	3648
D7	062	A mobile application and citizen science to monitor incidence and severity of marri ( <i>Corymbia calophylla</i> ) <i>Quambalaria coyrecup</i> cankers in Australia	Giles Hardy	Australia	1677
D7	063	Life history of the walnut twig beetle, <i>Pityophthorus juglandis</i> , in California and Utah	Paul Dallara	United States	3834

D7	064	Variation in resistance of <i>Pinus taeda</i> families against root infecting fungi	Lori Eckhardt	United States	2035
D7	065	Thinning and fertilization effects on the populations of <i>Hylastes</i> species and associated ophiostomatoid fungal species in <i>Pinus taeda</i> stands	Lori Eckhardt	United States	2122
D7	066	Taxonomy and population biology of <i>Grosmania huntii</i> sensu lato	Lori Eckhardt	United States	2162
D7	067	Interactions between <i>Matsucoccus macrocitrices</i> , fungal pathogens, and eastern white pine dieback in the southern Appalachians	Kamal Gandhi	United States	1531
D7	068	Role of phoretic mites in the transmission of tree pathogens	Richard Hofstetter	United States	1117
D7	069	Genetic diversity and population structure of an ambrosia beetle-vectored fungus ( <i>Raffaelea quercus-mongolicae</i> ) associated with oak mortality in Korea	Mee-Sook Kim	Republic of Korea	2323
D7	070	Complementary roles of bark beetle and associated fungi in overwhelming conifer defenses	Paal Krokene	Norway	3809
D7	071	Xylem dysfunction caused by Japanese oak wilt pathogen <i>Raffaelea quercivora</i> and its hyphal distribution	Yukiko Takahashi	Japan	2710
D7	072	Hyphal growth of <i>Raffaelea quercivora</i> within inoculated living and gamma-ray-sterilized seedlings of two Japanese and three American oak species	Masato Torii	Japan	1107
D7	073	Pathogenicity of three <i>Raffaelea</i> spp. isolates collected in northern Thailand against <i>Quercus crispula</i> seedlings	Masato Torii	Japan	2407
D7	074	Modelling stomatal ozone deposition in Mediterranean annual pastures using a multilayer-multispecies model	Rocío de la Macarena Alonso del Amo	Spain	3056
D7	075	Mapping large forest fire susceptibility using MODIS in Washington and Oregon	Zhiqiang Yang	United States	3722
D7	076	Natural occurrence and pathogenicity of <i>Metarhizium anisopliae</i> obtained from Peninsular Malaysia forest soils against <i>Atteva sciodoxa</i> larvae	Mohd Farid Ahmad	Malaysia	2100
D7	077	Forestry pests and diseases diagnosis in Costa Rica	Marcela Arguedas	Costa Rica	825
D7	078	The impact of soil humidity and climatic conditions on Scots pine ( <i>Pinus sylvestris</i> L.) damages in Lithuania	Gediminas Capkauskas	Lithuania	2101
D7	079	New records of insects associated with seedlings of some forest trees in Sabah, Malaysia	Y. C. Arthur Chung	Malaysia	564
D7	080	Biotic and abiotic factors associated with large scale die-off of a <i>Eucalyptus</i> clone in Zululand, South Africa	Izette Greyling	South Africa	847
D7	081	Host colonization behavior of the walnut twig beetle, <i>Pityophthorus juglandis</i> (Coleoptera: Scolytidae): implications for the worldwide cultivation of walnut trees	Stacy Hishinuma	United States	3771
D7	082	Eastern hemlock-dominated forest ecosystems of northeastern Ohio and possible changes with the impending infestation by the Hemlock Woolly Adelgid	David Hix	United States	2860
D7	083	High economic damages due to rot pathogen <i>Heterobasidion annosum</i> s.l. in close-to-nature managed Norway spruce forests in the Italian Alps	Nicola La Porta	Italy	3598
D7	084	Updated list of Scolytid species occurring in commercial tree plantations in Uruguay	Gonzalo Martinez	Uruguay	1223
D7	085	Seasonal dynamics of the bronze bug <i>Thaumastocoris peregrinus</i> on <i>Eucalyptus</i> spp. plantations after four years of monitoring	Gonzalo Martinez	Uruguay	1913
D7	086	Life cycle, survivorship, and control of an insect pest, <i>Trachys yanoi</i> (Buprestidae, Coleoptera)	Masashi Ohsawa	Japan	605

D7	087	Invasiveness of <i>Uromycladium tepperianum</i> on <i>Falcataria moluccana</i> affected by pyroclastic cloud from Merapi Volcano, Yogyakarta, Indonesia	Sri Rahayu	Indonesia	775
D7	088	Insect pest problems of Indian sandalwood ( <i>Santalum album</i> Linn.) in the current scenario of its cultivation and the possible management practices	Sundararaj Ramachandran	India	92
D7	089	Record of two new insect pests on Indian rosewood <i>Dalbergia latifolia</i> Roxb	Sundararaj Ramachandran	India	1348
D7	090	Natural enemy recruitment to the Asian chestnut gall wasp, <i>Dryocosmus kuriphilus</i> , a highly invasive pest of chestnut, <i>Castanea</i> spp., worldwide	Lynne Rieske-Kinney	United States	3473
D7	091	The anatomical properties of gall gus on <i>Falcataria moluccana</i> coppice tree caused by gall rust fungus <i>Uromycladium tepperianum</i> in Cangkringan, Yogyakarta	Shofi Rukhama	Indonesia	1709
D7	092	<i>Physokermes inopinatus</i> , a new forest pest due to changing climate?	Olle Anderbrant	Sweden	2807
D7	093	Monitoring air, water and insect-borne invasive forest pathogens in Sweden	Johanna Boberg	Sweden	2830
D7	094	Neonectria canker on true fir in western USA	Gary Chastagner	United States	2387
D7	095	Monitoring of <i>Sesia apiformis</i> infestations in poplar plantations at different spatial scales	Julio Javier Diez-Casero	Spain	2620
D7	096	Dead stands from the space: experiences with synergized multi-date medium resolution imagery to describe damages caused by European bark beetle	Hooman Latifi	Germany	443
D7	097	Detection and epidemiology of invasive fungal pathogens by real time quantitative PCR	Nicola Luchi	Italy	1957
D7	098	Monitoring bark and ambrosia beetles in commercial forestry in Uruguay	Gonzalo Martinez	Uruguay	1036
D7	099	<i>Mycosphaerella</i> leaf disease and its impact on <i>Eucalyptus</i> plantations in Uruguay	Carlos Pérez	Uruguay	2158
D7	100	The Swiss needle cast foliage disease epidemic on the Northwestern coast of the US	Dave Shaw	United States	3291
D7	101	Trees outside forest (TOF) strongly impact habitat connectivity for forest insects	Jérôme Rousselet	France	2239
D7	102	Two new ophiostomatoid species isolated from soil on snouts of feral hogs damaging pine roots in Georgia, USA	Lori Eckhardt	United States	2017
D7	103	Linking phylogeographic history, niche divergence and biological invasion risks. The case of North American <i>Dendroctonus</i> bark beetles	Martin Godefroid	France	2533
D7	104	Advances in the knowledge of eucalyptus gall insects in Uruguay: current status and future prospects	Carolina Jorge	Uruguay	2123
D7	105	Modelling forest insect distributions in Europe under climate change scenarios	Päivi Lyytikäinen-Saarenmaa	Finland	3316
D7	106	Climate change-induced shift in voltinism of eastern larch beetle, <i>Dendroctonus simplex</i> , associated with increased tree-killing behavior	Fraser McKee	United States	3701
D7	107	Flight activity, life history, and host selection behavior of the walnut twig beetle in its native range in the southwestern United States	Corwin Parker	United States	3820
D7	108	Colonization dynamics of mountain pine beetle in eastern and western pines: Implications to range expansion	Derek Rosenberger	United States	3635
D7	109	Googling forest pests - use of Google as a monitoring tool for delimiting the distributional range of forest pests	Jérôme Rousselet	France	2258
D7	110	Climate alters interactions among bark beetles and symbionts potentially altering geographic range	Diana Six	United States	3086

D7	111	Global homogenization of forestry insect pests - a case study of <i>Leptocybe invasa</i>	Bernard Slippers	South Africa	2121
D7	112	Allee effects and the establishment of exotic invasive bark beetles	Eckehard Brockerhoff	New Zealand	1545
D7	113	<i>Megastigmus</i> parasitism of North American Cupressaceae	Jean-Noel Candau	Canada	3754
D7	114	Nurseries as pathways for <i>Phytophthoras</i> to enter the Turkish forests	Tugba Dogmus-Lehtijarvi	Turkey	2486
D7	115	The use of EDDMapS to monitor the range extension of two invasive insect species in Hungary	Katalin Tuba	Hungary	3768
D7	116	Paper mulberry invasion in Ghana	Paul P. Bosu	Ghana	3482
D7	117	Status of forest tree diseases in Turkey	Tugba Dogmus-Lehtijarvi	Turkey	2484
D7	118	Winter moth: biological control and population dynamics in the northeastern United States	Joseph Elkinton	United States	3339
D7	119	Insect frugivores and their impact on the regeneration of mangrove species in West Coast of India	Remadevi O.K.	India	2432
D7	120	Nursery pest management of <i>Phytolyma lata</i> Walker (Scott) attack on Iroko ( <i>Milicia excelsa</i> Welw C. C. Berg) seedlings	Samuel Olajuyigbe	Nigeria	1801
D7	121	Status of the invasive spiraling whitefly <i>Aleurodicus dispersus</i> Russell (Hemiptera: Aleyrodidae) in India along with new host records	Sundararaj Ramachandran	India	1455
D7	122	Common foliar endophyte <i>Hormonema</i> sp. suppresses seedling emergence of host species <i>Pinus ponderosa</i>	Mary Ridout	United States	819
D7	123	Population structure and local adaptation of the pine cone weevil <i>Pissodes validirostris</i> (Coleoptera, Curculionidae): disentangle the role of the host-plant from the geography	Géraldine Roux	France	2959
D7	124	Digestion in the spruce bark beetle ( <i>Ips typographus</i> (L.)). Cellulases present	Kristyna Stefkova	Czech Republic	3163
D7	125	A simple non-destructive method for detecting heart rot in standing trees using impact resonance frequency	Hiroshi Suyama	Japan	753
D7	126	Field evaluation of <i>Metarhizium anisopliae</i> formulations for management of <i>Ailanthus defoliator</i> , <i>Eligma narcissus</i> Cramer	Sasidharan T.O.	India	665
D7	127	Critical Thermal Limits for the Southern Spread of the Gypsy Moth	Kristine Grayson	USA	3852

**D8**

D8	001	Mammal trade for zootherapeutic and mythic purposes in Benin (West Africa): capitalizing species involved, provision sources and implications for conservation	Chabi Djagoun	Benin	730
D8	002	Conservation of wildlife outside protected areas in community forests in Nepal	Madhu Ghimire	Nepal	1440
D8	003	Stable carbon isotope analysis of the diets of West African bovinds in Pendjari Biosphere Reserve (Northern Benin)	Chabi Djagoun	Benin	728
D8	004	Evaluation of the efficacy of pepper-grease fence to prevent elephant crop raiding on farms around Kakum National Park , Ghana	Edward D. Wiafe	Ghana	1470
D8	005	How to make burning of Chocolate Hills of Bohol, Philippines carbon neutral?	Nathaniel Bantayan	Philippines	55
D8	006	Assessment of management effectiveness of six National Forests in Brazil	Antonio Batista	Brazil	2103
D8	007	Assessing the trail condition and environmental factors of the Kumano Pilgrimage routes in the Kii Mountains, Japan	Shiwei Gou	Japan	1674

D8	008	Seed producer candidate tree selection of <i>Bertholletia excelsa</i> H. B. K. in degraded areas and forest fragments, Peru Southeast Amazon	Germán Correa	Peru	3765
D8	009	The roles of protected areas to biodiversity conservation and carbon storage: case study of two developing countries	Victor Adekunle	Nigeria	1696
D8	010	Integrating data at multiple scales to assess national synergies between forest carbon and biodiversity in Colombia	Dolors Armenteras	Colombia	2938
D8	011	Evapotranspiration (ET) as an ecosystem service: why we should care about precipitation recycling	David Ellison	Sweden	2202
D8	012	Does biodiversity make a difference? Evolutionary diversity indicators of forest ecosystem function across broad regions	Kevin Potter	United States	708
D8	013	Can capturing global ecosystem service values reduce poverty?	Bruno Salomon Ramamonjisoa	Madagascar	2950
D8	014	Biotic homogenization and differentiation of the flora within man-made and near-natural habitats across urban green spaces in Shenzhen, China	Chongfeng Gong	United States	3285
D8	015	Landscape of vulnerability: forest cover change and fragmentation in Istanbul, Turkey	Zerrin Inan	Turkey	2595
D8	016	Relationships between vegetation, tree canopy composition and soil in canopy gaps in dry pine <i>Pinus sylvestris</i> stands	Ilze Jankovska	Latvia	2110
D8	017	Quantifying carbon reduction services by urban landscape trees in Korea	Hyun-Kil Jo	Republic of Korea	1120
D8	018	Tree census and diversity issues of urban forest of Chandigarh India – an update	Ravinder Kohli	India	1286
D8	019	Maintenance of urban forest biodiversity of Boa Vista, North Amazon, Brazil	Everaldo Lima Neto	Brazil	3486
D8	020	Ecological role of forests fragments in Antananarivo urban area	Harifidy Rakoto Ratsimba	Madagascar	2594
D8	021	Spatial and temporal change of litterfall in the Nanjenshan Lowland Rain Forest, Taiwan	Chia-Ho Kuo	China-Taipei	276
D8	022	Building resilience from the bottom up: the soil's role in regulating forest health in British Columbia, Canada	Anya Reid	Canada	2235
D8	023	Tree species, decay class, ecosite classification and dead wood decomposition rates in the mixedwood boreal forest of Canada	Linhao Wu	China	3512
D8	024	Designing innovative silvicultural best practices to increase multi-taxa biodiversity in Natura 2000 priority habitats (9210* and 9220*) Apennine beech forests	Anna Barbati	Italy	1715
D8	025	Performance and potential of landscape level biodiversity conservation for climate change adaptation and mitigation in Nepal	Ram Prasad Lamsal	Nepal	1343
D8	026	Forest planners' perception of future landscape trajectories - A case study in a French forested mountainous region	Sandra Luque	France	3211
D8	027	Application of cost-benefit analysis to estimate the value of the protection function of forests against rockfall	Sylvain Dupire	France	2840
D8	028	Biodiversity conservation on private lands: a comparative study of the USA and Europe	Daowei Zhang	United States	1692
D8	029	Investigating the photosynthesis rate of selected framework species for carbon sequestration in restored forest in Thailand	Kanlayarat Jantawong	Thailand	1530
D8	030	Trial of one year containerized seedlings for recovering tide-water control forest destroyed by tsunami	Yukihito Ochiai	Japan	1372
D8	031	The recovery of forest understory in new forests on former agricultural lands – planted versus naturally regenerated stands	Tea Tullus	Estonia	1533

D8	032	Tree diversity and soil nutrient studies of logged-over forest in Peninsular Malaysia	Mohd Nazip Suratman	Malaysia	1433
D8	033	Temperature effects on tree and birds richness in a managed forest for timber in East Amazonia (Brazil)	Miguel Angel Quimbayo Cardona	Colombia	3485
D8	034	Forest structure and biodiversity of managed tropical rainforest for timber in East Amazonia (Brazil)	Miguel Angel Quimbayo Cardona	Colombia	3496
D8	035	Tree species diversity and abundance as indicators of understory diversity and abundance in French mountain forests: variations in ecological space	Frédéric Gosselin	France	1992
D8	036	Seasonal changes in understory composition on Mt. Joongwang, Korea	Pil Sun Park	Republic of Korea	1655
D8	037	Carbon and nitrogen storage in monoculture and mixed plantation stands of nitrogen-fixing tree species in subtropical China	Zuomin Shi	China	987
D8	038	Evaluation of broad leaf tree diversity in artificial forests at the landscape level	Yozo Yamada	Japan	1447
D8	039	Validation of a landscape-scale habitat suitability model and map for the Oregon slender salamander	Deanna Olson	United States	1274
D8	040	Saproxyllic Diptera biodiversity and intensive biomass harvesting, what are the implications of a damaged deadwood profile?	Robert Jon Deady	Canada	3466
D8	041	Coarse woody debris characteristics: a case study in a 9-ha old-growth cold-temperate coniferous forest plot from Great Hing'an Mountains, Northeastern China	Hui-Yan Gu	China	3653
D8	042	Restoring ecological legacies in boreal Sweden: a saproxyllic beetles perspective	Ruaridh Hägglund	Sweden	2911
D8	044	Arthropods and flooding affect microbial communities in dead wood	Michael Ulyshen	United States	1066
D8	045	Comparative analysis of different dead woods from old growth and managed Scots pine forests	Parvathy Venugopal	Finland	2675
D8	046	Methods for quantifying root dynamics for forest carbon studies-a review	Shalom Daniel Addo-Danso	Canada	1518
D8	047	Soil respiration across different scales and successional time scales in boreal mixedwood forests	Oluwabunmi Akande	Canada	3607
D8	048	Foliage and root contribution to SOC pools in Utah forest soils.	Antra Boca	United States	3397
D8	049	Spatial distribution of root biomass of Pinus Massoniana plantation in Three Gorges Reservoir Area, China	Ruimei Cheng	China	1009
D8	050	Estimating fine root biomass of Pinus densiflora using soil core sampling and minirhizotron techniques	SeungHyun Han	Republic of Korea	1587
D8	051	Different allocation patterns of 18 chemical elements in leaves, branches and different root branch orders across 18 species in Gurbantünggüt Desert in China	Zeqing Ma	China	3188
D8	052	Behaviour of roots of savanna species in the Pantanal wetlands, Brazil	Suzana Salis	Brazil	3146
D8	053	Free Air Humidity Manipulation (FAHM) experiment in Estonia provides new knowledge of climate change effects on Northern forests	Arvo Tullus	Estonia	2104
D8	054	Radiocesium contamination in Satoyama forests in Kashiwa city, suburb of the Tokyo metropolitan area	Kenji Fukuda	Japan	2419
D8	055	Seasonal change of cesium 137 in different age needles and male flowers of Japanese cedar (Cryptomeria japonica) in Fukushima	Tsutomu Kanasashi	Japan	2458
D8	056	Radiocesium inventory of forested land in Japan just before Fukushima Daiichi Nuclear Power Plant accident	Satoru Miura	Japan	1422
D8	057	Predominant factor in the depth profile in forest soil of radiocesium, released by the Fukushima Daiichi Nuclear Power Plant Accident	Yoshito Sasaki	Japan	1749

D8	058	Acquisition of radioactive cesium in the stems of trees in Japan	Tsutomu Takano	Japan	1137
D8	059	Impact of forest vegetation on long term recycling of radionuclides at polluted sites	Yves Thiry	France	423
D8	060	Transport of Cs in Japanese bamboo - perspective on decontamination of radiocesium from bamboo forests	Mitsutoshi Umemura	Japan	2332
D8	061	Transportation of radiocesium from forest to agricultural fields	Hirohisa Yoshida	Japan	2283
D8	062	Radioactive contamination of aquatic animals in stream impacted by the Fukushima nuclear power plant accident	Mayumi Yoshimura	Japan	983
D8	063	Accumulation of Cs-137 by higher fungi after the accident on the Chernobyl NPP	Nataliia Zarubina	Ukraine	1231
D8	064	Carrying out of remediation of forest soils with use of fruit bodies of the higher fungi	Nataliia Zarubina	Ukraine	1547
D8	065	Scenarios of future climate for the Camagüey province, Cuba. Possible influence on the forest plantations of Mediterranean distribution	Lorge Acosta	Cuba	478
D8	066	Sex-related, growth-climate association of Araucaria angustifolia in subtropical planted forests in Argentina	Stella Bogino	Argentina	659
D8	067	Opportunities for climate change mitigation through afforestation and reforestation of degraded lands in the sub-Saharan Africa	Tolulope Daramola	Nigeria	28
D8	068	Vegetation change in Boundou Natural Community Reserve, Region of Tambacounda/Senegal from 1974 to 2010	Faye Laurice Codou	Senegal	1252
D8	069	Variation of FMA fire danger index due climate change in Paraná State, Brazil, in the period 2010 to 2100	Antonio Batista	Brazil	447
D8	070	Evaluation of the climate influence in the forest fire occurrences in the Lichinga district, northern of Mozambique	Antonio Batista	Brazil	634
D8	071	Characterization of fine fuels in grass-woody steppe in Paraná State, Brazil	Antonio Batista	Brazil	2981
D8	072	The season, severity, and frequency of prescribed fire shaping the community dynamics of heathland shrub species	Matthew Chick	Australia	1566
D8	073	Vegetation greenness and nebulosity in Central Africa	Valery Gond	France	1042
D8	074	The chain of climate change, forest fires, runoff and erosion: key processes, mitigation prospects, and information needs	Lee MacDonald	United States	3760
D8	075	Historic forest fires as influenced by climate, vegetation, and man in boreal Scandinavia	Jorund Rolstad	Norway	2496
D8	076	Drought-induced canopy collapse triggers increased fuel loadings: implications for fire behaviour in a Mediterranean-type eucalyptus forest	Katinka Ruthrof	Australia	2424
D8	077	Weather radar: an efficient tool for forest fire detection	Ernandes Saraiva	Brazil	2005
D8	078	Potential vegetation dynamics under climate change in a semi-arid ecosystem in the Western United States	Rupesh Shrestha	United States	3180
D8	079	Diversity, composition and distribution: how fire influences the shrubby understory both now and in the future	Helen Vickers	Australia	1827
D8	080	The reconstruction of the fire behaviors and its effects in the Melaleuca Peat Forest Wildfire, Nakorn Sri Thamarat, Thailand	Kobsak Wanthongchai	Thailand	1629
D8	081	Caloric values of species utilized in the composition of fuel breaks of Brazil	Antonio Batista	Brazil	1263
D8	082	Mastication effects on fuels, plants, and soils in four western U.S. ecosystems: trends with time-since-treatment	Michael Battaglia	United States	2095
D8	083	Quantifying management priorities in urban interfaces threatened by wildfires	Mario Elia	Italy	426

D8	084	Spatial analysis of forest fire and burnt area in the Northwest of Madagascar: role in forest management and biodiversity conservation	Harifidy Rakoto Ratsimba	Madagascar	967
D8	085	Investigation of emissions from heated essential-oil-rich fuels	Fengjun Zhao	China	271
D8	086	Influencing factors on early vegetation restoration in burned area of <i>Pinus pumila</i> – larch forest	Fengjun Zhao	China	273
D8	087	Wood anatomy and dendroclimatological potential of trees of the dry tropical forests of Colombia	Ana Briceño	Colombia	732
D8	088	Climatic effects on teak growth in Northern Thailand	Pichit Lumyai	Thailand	2498
D8	089	Climate change impacts on forests and biodiversity in Western Himalaya of Nepal	Dhananjaya Lamichhane	Nepal	496
D8	090	The impact of a changing climate on net primary production of Mediterranean forests in southwest Western Australia	George Matusick	United States	1777
D8	091	Simulating the dependence of aspen net primary productivity on redistributed snow	Ben Soderquist	United States	2071
D8	092	The spatial extent of peatland as a response to climatic and topographic factors	Jogeir N. Stokland	Norway	2586
D8	093	Temperature and UV-B radiation affect bud phenology in <i>Populus tremula</i>	Christian Bianchi Strømme	Norway	2760
D8	094	Rainbow water and influence of terrestrial evapotranspiration on downwind rainfall patterns: emerging scientific evidence and complex geopolitics	Meine van Noordwijk	Indonesia	3471
D8	095	A matter of scale? Predicting the distribution of shrub species at the local or landscape level using a national dataset	Helen Vickers	Australia	1831
D8	096	Changes in dimensions and zones occupied by native species of the Southern Rain Forest in Brazil due to global climate change	Marcos Silveira Wrege	Brazil	2713
D8	097	Estimation of uncertainty for carbon emission factors by major species in Korea	Jae Soo Bae	Republic of Korea	1160
D8	098	Dendrometric indicators of understory vegetation along ecological gradients: do nonlinear models outperform linear ones?	Frédéric Gosselin	France	1052
D8	099	Estimating uncertainty for measurements of long-term climate impacts on forested ecosystems across the continent	Jeffrey Taylor	United States	2901
D8	100	Structural and compositional patterns in forest communities in the Intermountain West	Marcella Windmuller-Campione	United States	1064
D8	101	Biomass and carbon stores estimated in 2011 and 1934 at Priest River Experimental Forest, northern Idaho, USA	Liang Wei	United States	3869
D8	102	Carbon flux of down woody materials in forests of the eastern United States	Christopher Woodall	United States	125
D8	103	Larch forest in northeastern China: carbon sink capacity and soil importance	Wenjie Wang	China	1864
D8	104	Adaptive forest management – the key for forest adaptation to climate change?	Andreas Bolte	Germany	2783
D8	105	Adaptive water-oriented forest management using BIOME-BGC in Mediterranean Aleppo pine plantations	Alberto García Prats	Spain	1911
D8	106	Forest adaptation to climate change in Iran	Mostafa Jafari	Iran	338
D8	107	Dieback of evergreen coniferous forests due to climate change in Korea and their management options for adaptation	Jong Hwan Lim	Republic of Korea	2440
D8	108	Forest vulnerability to climate change in Iran	Mostafa Jafari	Iran	337
D8	109	Adapting forest ecosystems in Kailash Sacred Landscape of Hindu Kush Himalayas for sustained flow of ecosystem services	Rajan Kotru	Nepal	2051

D8	110	Sustainable Wetlands Adaptation and Mitigation Program (SWAMP)	Randall Kolka	United States	436
D8	111	Development of capacity building program in Thailand and Myanmar for combating desertification, land degradation and drought	Ho Sang Kang	Republic of Korea	767
D8	112	Collaborative research to combat desertification in arid and semi-arid areas	Hoduck Kang	Republic of Korea	813
D8	113	The species diversity of the steppes and the Sahara desert: central and southern Tunisia	Myeong Ja Kwak	Republic of Korea	2390
D8	114	Effects of plug cell trays, soil components and shading rates for seed germination and growth of <i>Hippophae rhamnoides</i>	Songhee Lee	Republic of Korea	2678
D8	115	Dynamic variation of the rainfall infiltration in the deep soil of the drifting sand in main deserts (lands) of China	Wenbin Yang	China	919
D8	116	Long-term variation of coefficients of peak discharge in a small watershed, in association with forest restoration and succession on denuded hills	Mie Gomyo	Japan	759
D8	117	Mitigating effects on run-off chemistry after final felling using forest buffers	Lars Högbom	Sweden	2753
D8	118	The Mica Creek Project: A comprehensive assessment of environmental effects of contemporary harvest practices in the interior Pacific Northwest, USA	Timothy Link	United States	907
D8	119	Water volume and sediment impacts of forest-based biomass site preparation and planting	Jami Nettles	United States	3117
D8	120	Responses of vegetation activity and water balance to changing climates in sub-alpine large-scale watershed of south-east Tibetan plateau	Pengsen Sun	China	400
D8	121	Examining drivers of long-term trends in evapotranspiration in forested small catchments in the northeastern USA	Matthew Vadeboncoeur	United States	2286
D8	122	Effects of wildfire on storm hydrographs	Joseph Wagenbrenner	United States	3488
D8	123	Long-term changes in climate, forest vegetation, and streamflow in the Priest River Experimental Forest, northern Idaho	Liang Wei	United States	3469
D8	124	A quantitative analysis of hydrological variability associated with afforestation of degraded croplands in South China	Pengtao Yu	China	1606
D8	125	The influence of thinning on tree-water relations in an Aleppo pine forest in Valencia, Spain	Antonio D Del Campo	Spain	1995
D8	126	Eddy-covariance-based estimates of carbon balance in two tropical seasonal forests in Thailand	Sapit Diloksumpun	Thailand	2344
D8	127	Relevance of pedotopographical indicators in the assessment of spatial distributions of soil depth and soil water resources under forest stands	Francois Ridremont	Belgium	143
D8	128	Relevance of Lidar canopy and relief indicators in the assessment of spatial distributions soil water resources under forest stands	Francois Ridremont	Belgium	144
D8	129	A comparative study on evapotranspiration of the same trees in urban forests and individual tree using Lysimeter method	Jun Teshirogi	Japan	2690
D8	130	Climate signals derived from day-to-day analysis: climate sensitivity of <i>Picea abies</i> in Northern Italy (Trentino – Eastern Alps)	Roberto Tognetti	Italy	1074
D8	131	PES: the watershed services of tropical forest	Ismariah Ahmad	Malaysia	1748
D8	132	Spatial characteristics of physicochemical parameters of a reservoir adjoined by degraded watershed forest	Adejoke Akinyele	Nigeria	90
D8	133	Forests and the hydrological regime: what can we tell policy-makers about how changing tree cover influences runoff	Kevin Bishop	United States	3223

D8	134	Model-based assessment of land-use / land-cover change on water quality and economic outcomes in an agricultural watershed in north-central Portugal	Daniel Hawtree	Germany	2863
D8	135	Water erosion vulnerability of upland watersheds under different forest covers in the Chittagong Hill Tracts, Bangladesh	Md. Mohitul Hossain	Germany	507
D8	136	Flood generating areas: how much is land use/cover responsible?	Latif Kalin	United States	2251
D8	137	Short-term variability of the spring and stream water chemical composition in catchment with different antropopressure (Carpathian, southern Poland)	Stanisław Małek	Poland	3430
D8	138	Interaction on land use changes to hydrological characteristics of Mae Klong Head Watershed, western Thailand	Dokrak Marod	Thailand	2877
D8	139	Quantification of water related ecosystem services in watershed planning	Betül Uygur	Turkey	1525
D8	140	The impact of forest vegetation change on water yield in the subalpine region of southwestern China	Yuandong Zhang	China	290
D8	141	Interception loss, throughfall and stemflow in Tamaulipan Thornscrub at species level, Northeastern Mexico	Israel Cantu Silva	Mexico	414
D8	142	Priority areas for water recharge in temperate forest ecosystems in Mexico	Patricia Hernández-de la Rosa	Mexico	2262
D8	143	The effect of plant cover on alimentation areas on spring water chemistry in South of Poland	Stanisław Małek	Poland	2115
D8	144	Effects of historic forest disturbance on water quality and flow in the Interior Western US	Marek Matyjasik	United States	3883
D8	145	Towards optimized buffer zones - digital terrain indices as a tool for predicting the most sensitive areas	Anneli Ågren	Sweden	1736
D8	146	Environmental fragility of the Iguaçú River Watershed, Paraná, Brazil	Ana Paula Dalla Corte	Brazil	1047
D8	147	Restoring the eco-hydrological function of the forest on a small karst island: case study on Nusa Penida Island, Bali (Indonesia)	Budi Hadi Narendra	Indonesia	979
D8	148	Enabling environmental excellance in Alberta through Lidar derived wet areas mapping	Barry White	Canada	3103
D8	149	The role of poplar plantations on biodiversity in riparian landscapes	Julio Javier Diez-Casero	Spain	2148
D8	150	Site conditions of grey mangrove ( <i>Avicennia marina</i> ) at Nayband National Marine Park	Esmael Kouhgardi	Iran	616
D8	151	Insect plant relationships and the role of insects in mangrove conservation	Remadevi O.K.	India	3177
D8	152	Ecosystem response 20 years after intensive forest harvesting for bioenergy in <i>Betula papyrifera</i> stands in Central Newfoundland: a multidisciplinary approach	André Arsenault	Canada	3193
D8	153	Removing forest harvesting residuals: effects on biodiversity and species composition in Norwegian forests	Tonje Økland	Norway	2735
D8	154	Effectiveness of compensation for habitat loss at intensified forestry by creation of dead wood	Jörgen Rudolphi	Sweden	1914
D8	155	Short-term impact of whole tree harvest at thinning on cation dynamics in a Japanese cedar forest ecosystem	Tsuyoshi Yamada	Japan	2542
D8	156	Life cycle evaluation of forest sector greenhouse gas emissions sensitivity to changes in forest management in Maine (USA)	Thomas Buchholz	United States	3290
D8	157	Bioenergy Production and Soil Sustainability in the Pacific Northwest USA	Rob Harrison	United States	2030
D8	158	The carbon footprint of forestry in East Norway: a life cycle analysis	Holger Lange	Norway	1784

D8	159	Impact of whole-tree harvesting on water quality and quantity from drained peatland forests in Finland	Liisa Ukonmaanaho	Finland	1885
D8	160	A sustainability assessment of wood-energy-supply-chains based on the method of a life-cycle-assessment	Martin Brunsmeier	Germany	2137
D8	161	Life cycle carbon and economic assessment of biochar-based bioenergy production in Ontario, Canada	Krish Homagain	Canada	171
D8	162	Ethnobotany and structure of natural stands of plant toothbrush species in Southern and Central part of Benin	Jean Didier Akpona	Benin	741
D8	163	Density and regeneration of <i>Carapa guianensis</i> Aublet. in floodplain forests of the Amazon estuary in Amapá State, Brazil	Ana Cláudia Lira-Guedes	Brazil	2890
D8	164	Operational efficiency of the containerized seedlings planting machine	Yukihito Ochiai	Japan	682
D8	165	Enhanced accumulation of Hg in aquatic biota: an effect from forestry and landuse?	Staffan Åkerblom	Sweden	2875
D8	166	Studying deep root dynamics with disaggregation modelling using SIMILE: fine root dynamics for an east central Amazonian moist tropical forest	Elemer Briceño	Costa Rica	2231
D8	167	Environmental responses and biophysical controls over transpiration by stands/trees subject to urban, suburban and semi-arid environmental conditions	Lixin Chen	China	2958
D8	168	Stand transpiration estimated by sap flow measurements in a mixed broadleaved forest, western Japan	Chen-Wei Chiu	Japan	2375
D8	169	Effects of forestry on mercury runoff in catchment-scale studies in Sweden	Karin Eklöf	United States	2817
D8	170	Fate and transport of mercury in watersheds: Hot-spots and hot-moments in Pennsylvanian watersheds	Karin Eklöf	United States	2879
D8	171	Establishment of hydrometeorological stations in national power corporation-managed reservations	Angelito Exconde	Philippines	647
D8	172	Estimating and extracting the optimal parameters of random walk model for debris flow hazard mapping	Changwoo Lee	Republic of Korea	3615
D8	173	Forest vs. oil palm: the differences in plant water use	Alexander Roell	Germany	1355
D8	174	Hydro-climatic variation and its interactions with landscape units in the Brazilian Pantanal, South America	Márcia Toffani Simão Soares	Brazil	2761
D8	175	Fluvial water quality and forest cover in southern Brazil	Marcos Silveira Wrege	Brazil	2157
D8	176	Structure and floristic composition of the cloud forest on Cocos Island National Park	Luis Guillermo Acosta Vargas	Costa Rica	3508
D8	177	Assessment of tree species diversity and growth analysis of trees species in Igbo-Olodumare, Ondo State, Nigeria.	Aladesanmi Daniel Agbelade	Nigeria	1383
D8	178	Relation between soil type and potential of regeneration in vegetation pattern of Sudanian zone	Emeline P.S. Assede	Benin	173
D8	179	Island size, isolation, and forest ground beetle (Coleoptera: Carabidae) diversity on the fire-prone landscape of Lac La Ronge	Aaron Bell	Canada	2898
D8	180	Flowering and fruiting phenology and floral visitation of four native tree species in the remnant moist Afromontane forest of Wondo Genet, south central Ethiopia	Mamo Kebede Beshawored	Finland	1332
D8	181	Phenological evaluation of five commercial forest species of ecological importance in the forests of the Department of Tolima, Colombia	Jeimy Lorena Bonilla Vargas	Colombia	326
D8	182	Response of small individuals of hardwood species to surface fires in western Chaco region, Argentina	Sandra Bravo	Argentina	3497

D8	183	Understory, ferns and lianas as indicators of the conservation status in remnants of Brazilian Atlantic Rain Forest	Eliana Cardoso-Leite	Brazil	2705
D8	184	Community characteristics and species diversity of <i>Castanopsis fargesii</i> community in Three Gorges Reservoir Area in China	Ruimei Cheng	China	1110
D8	185	Insect diversity and conservation of Nurod Urod Forest Reserve in Sabah, Malaysia	Y. C. Arthur Chung	Malaysia	563
D8	186	Response of ground-beetle (Carabidae) assemblages to harvest and wildfire in lodgepole pine forests of western Alberta, Canada	Vincent Del Bel Belluz	Canada	3151
D8	187	How green are forest fragments inserted into tropical agricultural landscapes? Implications for ecosystem services provisioning	Silvio Ferraz	Brazil	1250
D8	188	Long- and short-term hydrogeomorphic processes alters the spatial variability of soil carbon and nutrient accumulations in headwater catchments of Japan	Takashi Gomi	Japan	2447
D8	189	Invasive North American beaver ( <i>Castor canadensis</i> ) habitat selection and impact in Tierra del Fuego, Argentina	Jonathan Henn	Argentina	818
D8	190	Fungal succession after fire in <i>Cistus ladanifer</i> L. ecosystems	María Hernández-Rodríguez	Spain	2637
D8	191	Fungal production after fire in <i>Pinus pinaster</i> stands using classificatory models	María Hernández-Rodríguez	Spain	2646
D8	192	Debarking of trees by deer are affected by deer density, tree size, species palatability, and maximum snow depth	Hayato Iijima	Japan	2406
D8	193	Evaluating vegetation complexity at different site condition of subtropical forest of Okinawa Island Japan	Noor Jemali	Japan	1630
D8	195	Epiphytes on <i>Pinus mugo</i> introduced around 1850 from the Alps to Danish coastal dune systems	Ib Johnsen	Denmark	936
D8	196	Spiders as indicators to evaluate the changes of a <i>Pinus taeda</i> plantation in a grassland biodiversity in Uruguay	Carolina Jorge	Uruguay	2320
D8	197	Influence of forest management strategies and environmental conditions on epigeic arthropod biodiversity	Claudio La Rocca	Canada	3667
D8	198	Forest succession stagnation in southern Brazil forests – the role of bamboos	Andre Lacerda	Brazil	1904
D8	199	Fine woody debris (FWD) and biodiversity in managed forests: effects of the spatial distribution of FWD on invertebrates, small vertebrates, fungi, and plants	Melanie J. McCavour	Canada	2169
D8	200	Interspecific tree competition and functionality in tropical dry forest environments in the Alto Magdalena region, Colombia, South America	Omar Melo Cruz	Colombia	151
D8	201	The role of landscape connectivity on terrestrial mammal conservation in a fragmented tropical rainforest	Sergio Nicasio	Mexico	2365
D8	202	Effect of woody and shrub plants with different patch size on selected soil chemical properties in semi-arid lands	Mehmed Said Özçelik	Turkey	1793
D8	203	Species and ecosystem diversity at Sacred Mountain National Park for habitat conservation in Marawi City, Philippines	Nelson Manguiat Pampolina	Philippines	3798
D8	204	Small scale distribution in ground-dwelling arthropods reveals big picture patterns	Jaime Pinzon	Canada	2322
D8	205	Termite richness in <i>Pinus caribaea</i> Muell. plantations in the Colombian Orinoquia	Olga Pinzon	Colombia	3558
D8	206	Ground beetles (Coleoptera, Carabidae) assemblage in forests plantations of the Colombian Orinoquia	Olga Pinzon	Colombia	3594
D8	207	Ecophysiology of seedling banks of tree species in contrasting environments of tropical rainforests in the Columbian Chocó Bioregion	Nathaly Rodríguez Santos	Colombia	220

D8	208	Distribution of woodland key habitats in Norwegian landscapes.	Magne Saetersdal	Norway	937
D8	209	Dynamic forest of tree species in a fragment of mata atlantica rainforest	Rita Sampaio	Brazil	3655
D8	210	Evaluation of soil anti-erodibility Eucalyptus grandis forest land	Keyin Sheng	China	2339
D8	211	Which factors can explain changes in the distribution range of <i>Mimusops andongensis</i> Hiern in Benin?	Koupamba Gisèle Sinasson Sanni	Benin	1834
D8	212	Floral biodiversity with special emphasis on forest dieback in Dothalugala, Knuckles Forest Range, Sri Lanka	Bandumala Suduhakuruge	Sri Lanka	639
D8	213	Spatial distribution and demographic structure of the critically endangered Dipterocarpaceae in fragmented habitat in Malaysia	Mohd Nazip Suratman	Malaysia	2096
D8	214	Dynamics of physicochemical parameters during secondary succession of forest in the Cataniapo river basin, Amazonas state, Venezuela	Pedro Villa	Venezuela	2225
D8	215	The species and functional diversity variation along secondary succession of tropical lowland rain forest on Hainan Island, China	Runguo Zang	China	223
D8	216	Impacts of increasingly intensive removal of forest biomass on the biodiversity of leaf litter invertebrates	Timothy Work	Canada	3578
D8	217	Biomass and carbon sequestration of selected natural mangrove forests in the Philippines	Jose Alan Castillo	Philippines	1600
D8	218	Study on tropical Sudanian area major agroforestry landscape pattern involvement in carbon sequestration balance in Togo	Fousseni Folega	Togo	189
D8	219	Soil carbon storage in different species dominance of Sarawak Mangrove Forest, Malaysia	Seca Gandaseca	Malaysia	227
D8	220	Frost pocket effect results in severe canopy damage in a Mediterranean-type forest in southwestern Australia	George Matusick	Australia	2362
D8	221	Knowing the past to anticipate the future: soil charcoal as a proxy to model the evolution of tropical forests	Julie Morin-Rivat	Belgium	2046
D8	222	The influence of forest tree mixture on the potential of carbon storage in Hyrcanian forest	Maryam Salehi	Iran	415
D8	223	Influences of meteorological variables on the diametric growth of <i>Araucaria angustifolia</i> (Bertol.) O. Kuntze in Southern Brazilian Highlands	Carlos Sanquetta	Brazil	1050
D8	224	Spatiotemporal distribution of rainfall at NTU Experimental Forest for climate change in central Taiwan	Chiang Wei	China-Taipei	2739
D8	225	Determination of soil carbon sequestration by using humic content in pure and mixed stands of beech in Kheyroud forest/ Iran	Ghavamudin Zahedi Amiri	Iran	417
D8	226	Changes in carbon density for three old-growth forests on Changbai Mountain, Northeast China	Li Zhou	China	208
D8	227	Potassium availability in smectitic soils under <i>Gmelina arborea</i> and <i>Pachira quinata</i> plantations of tropical dry forest in North Colombia	Martha C. Henao	Colombia	2512
D8	228	Spatial data mining application in forest fire assessment in tropical peat areas	Ahmad Nuruddin	Indonesia	861
D8	229	Effects of tree species and mixture on soil C sequestration and greenhouse gases emissions in subtropical plantations	Hui Wang	China	411
D8	230	Spatial heterogeneity of soil available nutrients in black willow plantation in Gonghe Basin, Qinghai-Tibet Plateau	Ya Juan Zhu	China	1578
D8	231	The assessment techniques of desert ecosystem services in China	Hao Guo	China	2305
D8	232	Where will forest loss occur? Identifying attractors of forest loss in temperate ecosystems of south-central Chile	Adison Altamirano	Chile	2741

D9					
D9	001	Developing an integrated REDD+ policy package to effectively address deforestation in Indonesia	Manahan Parlindungan Saragih	Indonesia	2957
D9	002	Response in forest policy as a result of reduced risk of stream salinity associated with timber harvesting in a changing climate	Geoff Stoneman	Australia	64
D9	003	Formulating a proposal for a strategy to prevent and control fires in protected areas by means of governance criteria	Walter Benjamín Rivera Coria	Bolivia	248
D9	004	Current status and potentialities for forest certification in Vietnam	Hai Hoang	Japan	2349
D9	005	Emerging role of jurisprudence in shaping forest management in India	Monika Singh	Canada	2276
D9	006	Discourse strategy and action option: the natural reserve and peasants under the “fishing and grazing ban” policy	Yiwen Zhang	China	3028
D9	007	Collaborative forest governance of a community forest in western Canada: what is the role of social learning?	Felicitas Egunyu	Canada	2992
D9	008	Capacity development needs assessments for improved governance of community forestry	Martin Greijmans	Thailand	1235
D9	009	Demonstrating for community forestry: addressing the fundamental challenges of sustainable forest management in Asia?	Martin Greijmans	Thailand	2565
D9	010	Analysis of community forestry on rural household economics in the mid-hills of Nepal	Dhananjaya Lamichhane	Nepal	494
D9	011	Behind the scenes – revealing true volume of wood production and markets in a developing economy - case Tanzania	Anne Arvola	Finland	1667
D9	012	Preferences of new forest owners in Serbia	Mersudin Avdibegovic	Bosnia and Herzegovina	2478
D9	013	Small-scale and community forestry: policies behind planting trees movement in Kuningan District, West Java, Indonesia	Ellyn Kathalina Damayanti	Indonesia	1705
D9	014	SWOT analysis of the non-state forest sector in Slovakia	Zuzana Sarvasova	Slovakia	460
D9	015	Efficiency in development cooperation: the experience of the Ibero-American Model Forest Network and its model forests	Ronnie De Camino	Costa Rica	1409
D9	016	Rural livelihood, voluntary partnership agreements and social safeguards in Ghana	Christian Pilegaard Hansen	Denmark	1163
D9	017	Local community participation in forest management in Lombok, Indonesia	In-Ae Kim	Republic of Korea	3543
D9	018	Restoring nature: combining ‘new’ and ‘old’ policy instruments in Swedish forests	Katarina Eckerberg	Sweden	1507
D9	019	Multifunctional and integrated forest management in Italy: policy failures and possible solutions	Alessandro Leonardi	Italy	2647
D9	020	Human impact on the land cover in the area surrounded by the centres of past mining	Katarina Merganicova	Slovakia	2598
D9	021	Legacies of historical land use on present forest structure in mixed beech-silver fir forests in Northern Apennines	Renzo Motta	Italy	2600
D9	022	Participatory investigation of the interaction between <i>Sclerocarya birrea</i> and intercrops in Kilosa District, Tanzania	Pilly Kagosi	Tanzania	1917
D9	023	Paradigm shift of forest management of Bangladesh from production to service oriented forest	M. Al-Amin	Bangladesh	140
D9	024	Diversification of pathways for forest transition in China – based on province-level panel data	Ming Liang	China	2899
D9	025	Performance of joint community patrolling at Lawachara National Park, Bangladesh	Md. Nazmus Sadath	Bangladesh	2443
D9	026	Chilean forest SME projection	Hans Grosse	Chile	2882

D9	027	Alternative pathways to sustainability – a framework for comparative forest policy analysis	Karin Beland Lindahl	Sweden	2535
D9	028	The analysis of forest governance and social capital: theoretical and methodological links, gaps and overlaps	Riccardo Da Re	Italy	2582
D9	029	Brazilian forest governance: trends, and obstacles, a proposal to be implemented	Vitor Afonso Hoeflich	Brazil	2312
D9	030	Forest governance: a study on perception of actors involved in the forest management actions in the State Paraná (Brazil)	Vitor Afonso Hoeflich	Brazil	2826
D9	031	International influences on national forest policy: analyzing stakeholder coalitions and their argumentation in the revision of Finnish Forest Act	Pia Katila	Finland	2696
D9	032	Complexity of forest tenure issues and China's collective forest tenure reform	Hexing Long	China	671
D9	033	Examining the impact of governance on the effectiveness of forest protected areas: a systematic review of the evidence	Bijana Macura	Italy	2085
D9	034	Forest policy re-mix: is history bound to repeat itself in the selection and implementation of forest policies and instruments across Latin America?	Kathleen McGinley	United States	3845
D9	035	The Atlántida Platform: a civil-society effort promoting good governance in the Honduran forestry sector	Mirian Molina	Honduras	980
D9	036	State of the principles of good forest governance in Paraguay	Maria Laura Quevedo Fernandez	Paraguay	323
D9	037	Trans-Atlantic governance of sustainable solid wood bioenergy supply chains	CT Smith	Canada	3054
D9	038	Challenges to multi-level sustainability governance of forest bioenergy and impacts for production and trade – global stakeholder views and experiences	Inge Stupak	Denmark	1848
D9	039	Linking science and policy: changing policy maker behavior through action research in forest value chains	Herry Purnomo	Indonesia	1617
D9	040	How ideas, interests and institutions may block or further policy integration. An evaluation of the forest and agricultural sectors in Ghana	Bas Arts	Netherlands	484
D9	041	Forest management in the long-term: participatory scenario evidence from Slovakia	Yvonne Brodrechtova	Slovakia	1623
D9	042	Overview of participatory forestry in China	Jinlong Liu	China	670
D9	043	New national forest policy of Russian Federation: basis for forest sector problems solution	Victor G. Sanaev	Russian Federation	2066
D9	044	Administration and management of state and non-state forests in Romania: one law, two perspectives	Ioan Vasile Abrudan	Romania	3263
D9	045	Legal aspects of non-wood forest products in Western Balkan	Mersudin Avdibegovic	Bosnia and Herzegovina	1765
D9	046	The Kaldor-Hicks Improvement Study on social welfare of state-owned forest areas families under the logging ban of China	Yukun Cao	China	688
D9	047	Reaching out: the role of Argentine Model Forests in the implementation of the federal forest policy	Monica Gabay	Argentina	3299
D9	048	New legislation innovating for natural & planted forest in Iran	Mohammad Masood Ghilichkhani	Iran	361
D9	049	Present and future legal framework of environmental services in Argentina	Clara Minaverri	Argentina	747
D9	050	Maintaining forestry archives for the future	Gillian Petrokofsky	United Kingdom	1936

D9	051	Community wood energy handbook and computer app	Dennis R Becker	United States	453
D9	052	Participatory approach potentials in adoption of agronomic, land and water management technologies in semi arid areas of Tanzania	Pilly Kagosi	Tanzania	1974
D9	053	Managing knowledge in a research organisation: the case of Kenya Forestry Research Institute	Sheila Mbiru	Kenya	2402
D9	054	IUFRO and global forest decimal classification - status and future	Jarmo Saarikko	Finland	1350
D9	055	Network "Forest Culture" in Austria. A new approach to put international agreements into practice for the benefit of local people	Elisabeth Johann	Austria	3065
D9	056	Integrated management of forest goods and ecosystem services to achieve sustainability in forest management (study of mountainous Zagros forest of Iran)	Jalal Henareh Khalyani	Iran	1456
D9	057	Economic instruments to enhance multi-functional forest management of Zagros forests in west of Iran	Jalal Henareh Khalyani	Iran	2643
D9	058	Wildfire economics: historical challenges and future directions for estimating ecosystem service values of fuels management in western U.S. forests	Yeonsu Kim	United States	3461
D9	059	Balancing biomass and biodiversity in protected areas, the Triglav National Park case study	Aleš Poljanec	Slovenia	3273
D9	060	Interrogating safeguards for jurisdictional REDD+: a study of overseas jurisdictional REDD+ offsets in California's Global Warming Solutions Act	Elizabeth Blanchard	United States	2939
D9	061	Deforestation causes in the Huila department of Colombia (A jurisdictional REDD+ approach)	Maria Becerra	Colombia	437
D9	062	Analyzing direct and underlying drivers of deforestation and forest degradation for REDD+ in Cameroon: methodology development and pilot test	Sophia Carodenuo	Germany	573
D9	063	Discount options as a financial instrument supporting REDD+	Andrey Krasovskii	Austria	1925
D9	064	Addressing the drivers of deforestation: exploring synergies between REDD+ and forest policy	Michael Obersteiner	Austria	3450
D9	065	Asymmetric communication between media and stakeholders and its influences to the ineffectiveness of forest fire risk management in Indonesia	Meti Ekayani	Indonesia	1501
D9	066	Adaptation to climate change through community forestry programs – Case studies in vulnerable uplands of the Philippines	Marcin Jarzebski	Japan	2885
D9	067	Sustainability of slash pine forest stands in the southern United States under climate change	Andres Susaeta	United States	1091
D9	068	The value of adaptation to climate change for European forestry	Rasoul Yousefpour	Germany	2991
D9	069	Fully mobilizing forest potential in the Kyoto Process: on potential future convergence across the REDD+ and LULUCF frameworks	David Ellison	Sweden	2821
D9	070	An investigation into the interactions between climate change initiatives in Ghana	Patrick Opoku	Germany	802
D9	071	Cost-benefit analysis of producing and refining cellulosic ethanol from <i>Pennisetum purpureum</i>	Ming-Yuan Huang	China-Taipei	3724
D9	072	Sustainability impact assessment for local bioenergy supply chains' development: the case of the Como Lake area, Italy	Salvatore Martire	Finland	2660
D9	073	Forest, climate mitigation and choice of policy means - how well suited are various bioenergy policies for combating climate change?	Hanne K. Sjølie	Norway	1176
D9	074	Mill capacity to utilize logging residues for bioenergy production in the Southern United States	Raju Pokharel	United States	1989

D9	075	Remuneration of land in forest investment analysis	Vitor Afonso Hoeflich	Brazil	3152
D9	076	Relevant aspects of valuation of land in investment analysis	Vitor Afonso Hoeflich	Brazil	3168
D9	077	Industry perspectives on wood as a structural green building material	Alyson Wade	United States	3431
D9	078	Brazilian national forestry production chain identification based on the 2005 IBGE input-output matrix	Vitor Afonso Hoeflich	Brazil	2201
D9	079	Long-term structural drivers of sawnwood consumption in Europe	Elias Hurmekoski	Finland	1952
D9	080	Development of marketing activities in production of logs in Serbia	Mersudin Avdibegovic	Bosnia and Herzegovina	1739
D9	081	VPA on forest law enforcement governance and trade between Republic of Indonesia and European Union: who gains the benefits?	Dodik Ridho Nurrochmat	Indonesia	1498
D9	082	Conditions at the forestry contractors market in Slovakia	Hubert Palus	Slovakia	1688
D9	083	Wood flow analysis in the Slovak forest industry	Hubert Palus	Slovakia	1750
D9	084	Non-timber forest products income contribution to households economy in Xing'An Mountains forest area	Hongge Zhu	China	1605
D9	085	Is certification contributing to sustainable forest management in British Columbia? A forest practices board perspective	Darlene Oman	Canada	1275
D9	086	Assessment of motivation and attitudes of forest industry companies towards forest certification in North-Western Russia	Maxim Trishkin	Finland	3277
D9	087	The potential of legal timber trade policies to expand demand for US wood products in the Chinese re-exports sector	Ziyi Lu	United States	2384
D9	088	Impact of timber legality policies on US wood importers and their business practices	Benjamin Roe	United States	3812
D9	089	How can forest governance approaches under FLEGT VPA and REDD+ be helpful for each other?	Yitagesu Tekle Tegegne	Finland	2784
D9	090	Integrated ecological and socioeconomic evaluation of valwood agroforestry in Germany and China and its comparative analysis	Shuirong Wu	China	3559
D9	091	Competition for biomass in a declining pulp and paper market with evolving renewable energy policy	Gregory S. Latta	United States	1879
D9	092	Evaluating additionality and leakage issues from voluntary participation in forest carbon offset programs	Gregory S. Latta	United States	1883
D9	093	On the economics of forest carbon: renewable and carbon neutral but not emissions free	Jussi Lintunen	Finland	2716
D9	094	An international examination of tax and accounting rules and the impact on forest land ownership	Tamara Cushing	United States	3355
D9	095	Local team leadership for sustainable development: the case of the model forests of the Ibero-American Network	Ronnie De Camino	Costa Rica	1416
D9	096	Identifying potential sources of conflict in different types of intervention to community land and forests	Martin Greijmans	Thailand	2781
D9	097	Discussion of House Project Bill 30/2011 for Brazilian Forest Code and changes on permanent preservation areas in the Basin of Rio Pardo	Manoela Lopes	Brazil	2818
D9	098	Participation of women in forestry activities: the case of women an invisible workforce in Ecuador	Pablo Pacheco	Indonesia	3634
D9	099	Comparison between Western and Eastern historical views of sustainability (Nachhaltigkeit) principles of forest use	Masami Shiba	Japan	1368
D9	100	The cost of desertification in China: A literature review	Leilei Cheng	China	1716

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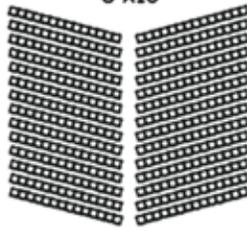


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*Section #6*  
**TRADE EXHIBITION**

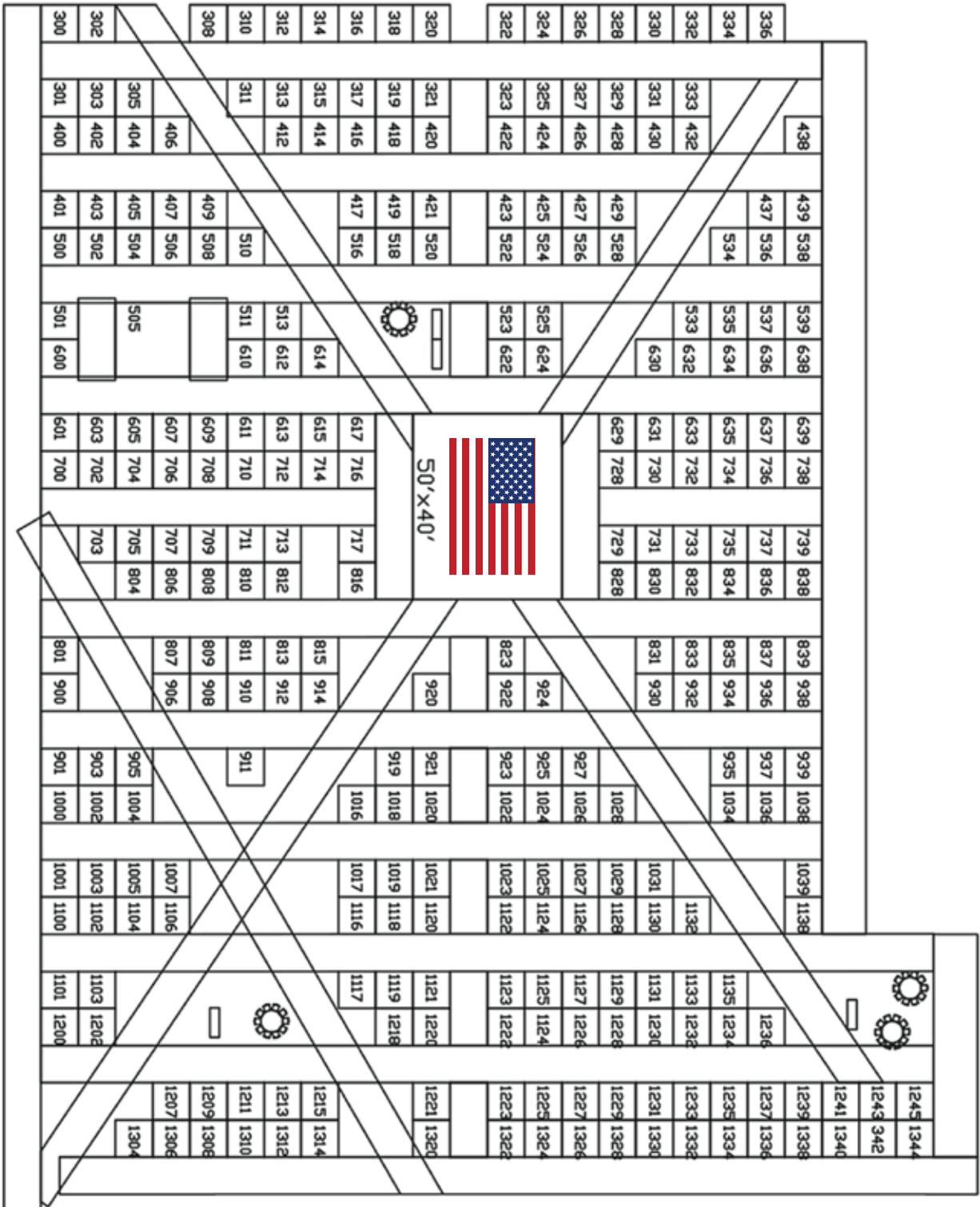
# Trade Exhibit Floor

STAGE  
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CAREER FAIR BOOTHS

CAREER FAIR BOOTHS



ENTRANCE

## Exhibitor Listing

Organization Name	Booth Number(s)
Aervoe Industries, Inc.	412
AllPoints GIS	1221,1320
American Forest Management Inc.	806
American Forests	406
ArborGen	1120
Arborjet	932
Association of British Columbia Forest Professionals	631
Baton Rouge: 2015 SAF Convention	1122
Ben Meadows	1000,1002
Bioersity International	417
Birmingham Institute of Forest Research	534
Cal Poly State University - NRES	525
Campbell Scientific	516
CATIE/ RIABM	922
Center for International Forestry Research	1103,1202
Chinese Academy of Forestry	901
Colorado State Forest Service	108
Construction Safety Products	414
CSIRO Publishing	612
D.R. systems inc.	1117
Decagon Devices Inc.	501
Designers and Forests	437
Eagle Digital Imaging Inc	914
ECI - Environmental Consultants Inc.	102
Electronic Data Solutions	801
Elsevier BV	712
Esri	807, 809, 811, 813, 900, 906, 908, 910, 912
F4 Tech	810 ,812
Finite Carbon	1211
Foothills Research Institute (FRI)	1123
Forest Biometrics Research Institute	1007
Forest History Society	703
Forest Metrix	905
Forest Practices Board	630

Organization Name	Booth Number(s)
Forest Stewardship Council US	425
Forestry and Forest Products Research Institute/REDD	1104
Forestry Suppliers	601, 700
Future Forests	523
Geographic Business Solutions	815
Globalstar	526
Haglof Sweden	919, 1016
Host Country: United States Forests	1500
Hub International Insurance Brokers	633
International Forestry Students' Association	311, 313, 315
International Tropical Timber Organization	1135
International Wood Culture Society	429, 526, 528
Intertribal Timber Council	924
IUFRO - Special Upcoming Events	1022, 1024,1026
Jiffy	1034
Joint Fire Science Program	1220
Juniper Systems, Inc	617
Korea Forest Research Institute	923, 925
Korea Forest Service	921
Laser Technology Inc.	823
LI-COR Biosciences	600
Lim Geomatics Inc.	808
Mason, Bruce and Girard, Inc.	935
METI, Inc	401
Michigan Technological University	624
Minnesota Department of Natural Resources	122
Mississippi State University	421
Montreal Process	716
NASA Science Mission Directorate	505, 507, 604, 606
National Association of State Foresters	1018
National Museum of Forest Service History	615
National Wild Turkey Federation	1004
Natural Resources Canada	1023
NCP Coatings Inc.	520
Nelson Paint Company	920

Organization Name	Booth Number(s)
New Forests: Forest Carbon Partners	1106
NFPA - National Fire Protection Association	713
North Carolina State University	614
North Point Geographic Solutions	709
Northern Arizona University, School of Forestry	528
Omics Publishing Group	1028
Opti-Sciences Inc.	605, 607
Oregon State University	100, 1215, 1314
Peace Corps	1322
Phos-Chek (ICL Performance Products LP)	816
Plum Creek	120
PP Systems	500
Purdue University	903
RECOFTC - The Center for People and Forests	522
Regional Forest Research Networks (APAFRI, CATIE, FORNESSA, NEAFF)	611
RELASKOP-TECHNIK	702
Remsoft Inc.	804
Routledge / Taylor & Francis	1019, 1021
SAF Foresters' Fund & Science Fund	317, 319, 321, 416, 418, 420
Simosol Oy	717
Society of American Foresters	303, 305, 402 404
Soil Science Society of America	1218
Spectral Evolution	1223
Spectrum Technologies Inc	927
Springer	1001, 1003
Stephen F. Austin State University	1100
Sustainable Forestry Initiative, Inc.	1102
Swedish University of Agricultural Sciences	513
Tajfun USA	711
TD Bank Group	323, 422
The Davey Tree Co.	118
The Finnish Forest Research Institute (Metla)	510

Organization Name	Booth Number(s)
Trimble Navigation Ltd.	911, 1010
Union of Concerned Scientists	1213
University of Arkansas at Monticello	1138
University of British Columbia, Faculty of Forestry	629
University of Idaho	1207, 1209
University of Maine	533
University of Montana	1222
University of Washington	423
US Department of Agriculture - Research, Education and Economics Mission Area	405, 407, 504, 506
USDA Forest Service - Forest Health Technology Enterprise Team	831
USDA Forest Service - Forest Inventory and Analysis	828
USDA Forest Service - National Library	1017
USDA Forest Service - Remote Sensing Applications Center	830
USDA Forest Service - Research and Development	833, 835
USDI Bureau of Land Management	301, 400
Utah Department of Natural Resources	1029, 1031, 1130, 1128, 1132
Utah State University, Quinney College of Natural Resources	518
Virginia Tech	432
Waveland Press, Inc.	705
WERC	707
West Virginia University	419
Western Aspen Alliance - Utah State University	714
Western Forestry Leadership Coalition	1020
Weyerhaeuser Company	124
World Agroforestry Centre (ICRAF)	1101, 1200
World Wood Day Foundation	1116
Yale School of Forestry & Environmental Studies	622

# Exhibitor Directory

## A

<b>Aervoe Industries, Inc.</b>	<b>Booth 412</b>
1100 Mark Circle P.O. Box 485 Gardnerville, Nevada 89410 United States	775-783-3100 www.aervoe.com
Manufacturer of tree marking paints.	

<b>AllPoints GIS</b>	<b>Booth(s) 1221, 1320</b>
PO Box 12520 Denver, Colorado 80212 United States	303-324-2955 www.allpointsgis.com
Need help leveraging ArcGIS? We provide ArcGIS training and support to forestry and natural resource management customers nationwide.	

<b>American Forest Management Inc.</b>	<b>Booth 806</b>
2401 Whitehall Park Dr Ste 1100 Charlotte, North Carolina 28273 United States	704-527-6780 www.amforem.biz
AFM currently manages over 5 million acres of privately owned timberland. With 250 employees operating from 45 offices located in 17 states, AFM's team of professionals is focused on meeting client needs by providing a complete range of forestry services.	

<b>American Forests</b>	<b>Booth 406</b>
1220 L Street, NW Suite 750 Washington, DC 20005 United States	202-370-4521 www.americanforests.org
American Forests protects and restores urban and wildland forests. Since 1990, the organization has restored thousands of damaged forest ecosystems, planting more than 45 million trees in all 50 states of the U.S. and in 44 countries.	

<b>ArborGen</b>	<b>Booth 1120</b>
PO Box 840001 Summerville, South Carolina 29484 United States	843-851-5722 www.arborgen.com
ArborGen is the largest global supplier of seedling products and a leading provider of improved genetics to the forest industry. For more information, please visit <a href="http://www.arborgen.com">www.arborgen.com</a> .	

<b>Arborjet</b>	<b>Booth 932</b>
99 Blueberry Hill Rd Woburn, Massachusetts 01801 United States	781-935-9070 www.arborjet.com

Arborjet exists for the purpose of protecting the Urban Forest against invasive pests in a way that is the most effective possible while dramatically reducing adverse environmental impact. We offer a methodology, as well as a broad range of Fungicides, Pesticides and Micronutrients that provide exceptional pest control while limiting environmental exposure.

<b>Association of British Columbia Forest Professionals</b>	<b>Booth 631</b>
330-321 Water Street Vancouver, British Columbia V68 1B8 Canada	604-331-2323 www.abcfp.ca

The ABCFP is responsible for registering and regulating British Columbia's forest professionals. We are the largest professional forestry association in Canada and the first to include forest technologists.

## B

<b>Baton Rouge 2015 SAF Convention</b>	<b>Booth 1122</b>
359 Third St Baton Rouge, Louisiana 70801 United States	225-382-3587 www.visitbatonrouge.com
Visit us to learn about the location of the 2015 SAF National Convention.	

<b>Ben Meadows</b>	<b>Booth 1002, 1000</b>
401 S Wright Rd Janesville, Wisconsin 53546 United States	608-757-4837 www.benmeadows.com
Since 1956, Ben Meadows has supplied foresters, surveyors, wildland firefighters and natural resource professionals with essential, high-quality gear. Learn more at <a href="http://benmeadows.com">benmeadows.com</a> .	

<b>Bioversity International</b>	<b>Booth 417</b>
Via dei Tre Denari, 472/a Maccarese, Rome 57 Italy	+39-06-6118-292 www.bioversityinternational.org/
Bioversity International, a member of the CGIAR Consortium, carries out research for development on agricultural and forest biodiversity, particularly genetic diversity of species that are important to people in "developing" countries.	

**Birmingham Institute of Forest Research****Booth 534**

University of Birmingham Edgbaston  
Birmingham, West Midlands B 15 2TT  
United Kingdom  
[www.birmingham.ac.uk/bifor](http://www.birmingham.ac.uk/bifor)

C

**Cal Poly State University - NRES****Booth 525**

NRES 180-209  
San Luis Obispo, California 93407,  
United States  
805-756-2702  
[nres.calpoly.edu](http://nres.calpoly.edu)

Offering accredited degrees with a "Learn By Doing" approach, successfully demonstrated through educational excellence, stewardship, and leadership in forestry, environmental management, earth sciences, natural resources and soil science. Please stop by our booth for further information including our FSC-certified school forest, Swanton Pacific Ranch.

**Campbell Scientific****Booth 516**

815 W 1800 N  
Logan, Utah 84321  
United States  
435-227-9000  
[www.campbellsci.com](http://www.campbellsci.com)

We specialize in rugged, low-power monitoring systems and have solutions ranging from simple temperature measurements to more complex eddy covariance systems. Campbell Scientific – When Measurements Matter.

**CATIE/RIABM****Booth 922**

CATIE 7170  
Cartago, Turrialba 30501  
Costa Rica  
506-2558-2318  
[www.bosquesmodelo.net](http://www.bosquesmodelo.net)

**Center for International Forestry Research (CIFOR)****Booth(s) 1103,1202**

Jalan CIFOR, Situ Gede, Bogor Barat  
Bogor, West Java 16115  
Indonesia  
+62-251-8622-622  
[www.cifor.org](http://www.cifor.org)

CIFOR advances human well-being, environmental conservation and equity by conducting research to help shape policies and practices that affect forests in developing countries. CIFOR is a member of the CGIAR Consortium. Our headquarters are in Bogor, Indonesia, with offices in Asia, Africa and Latin America.

**Chinese Academy of Forestry****Booth 901**

No.1 Dongxiaofu, Xiangshan Road,  
Haidian District, Beijing 100091  
China  
+86-10-62889091  
[en.caf.ac.cn](http://en.caf.ac.cn)

Chinese Academy of Forestry is a comprehensive research institution that provides scientific and technical supports for the overall forestry development situation and key forestry programs.

**Colorado State Forest Service****Booth 108**

5060 Campus Delivery  
Ft. Collins, Colorado 80523  
United States  
970-491-7293  
[csfs.colostate.edu](http://csfs.colostate.edu)

The mission of the Colorado State Forest Service is to achieve stewardship of Colorado's diverse forest environments for the benefit of present and future generations.

**Construction Safety Products****Booth 414**

359 Mt. Zion Road  
Shreveport, LA 71106  
United States  
318-688-6483  
[www.cspforestry.com](http://www.cspforestry.com)

Construction Safety is an industry leader as a stocking supplier of forestry supplies at a competitive price. We ship same day in most cases.

**CSIRO Publishing****Booth 612**

22883 Quicksilver Dr  
Sterling, Virginia 20166  
United States  
703-887-6133  
[www.styluspub.com](http://www.styluspub.com)

CABI is a not-for-profit international organization that improves people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment. CSIRO PUBLISHING operates as an independent science and technology publisher with a global reputation for quality products and services. CABI and CSIRO books are distributed in North America by Stylus Publishing.

D

**D.R. Systems Inc.****Booth 1117**

202-2520 Bowen Road  
Nanaimo, British Columbia V9T 3L3  
Canada  
250-760-1070  
[www.drsystemsinc.com](http://www.drsystemsinc.com)

**Decagon Devices Inc.****Booth 501**

2365 NE Hopkins Ct  
Pullman, Washington 99163  
United States  
509-332-2756  
[www.decagon.com](http://www.decagon.com)

Decagon Devices, Inc. manufactures environmental sensors. Whether you're measuring canopy LAI, stomatal conductance, microclimate conditions or soil water we have instruments for you.

**Designers and Forests****Booth 437**

6 Byrant Place  
Fredonia, New York 14063  
United States  
716-679-5384  
[www.designersandforests.us](http://www.designersandforests.us)

Project devoted to interdisciplinary research and creative problem solving.

## E

**Eagle Digital Imaging Inc. Booth 914**

435 NW 5th Street  
Corvallis, Oregon 97330  
United States

541-754-9310

Vertically integrated solutions provider of remote sensing data and analysis services. Forestry services include acquisition of digital color, CIR and stereo images in resolutions from 1 inch to 2 foot plus a wide range of image based stand analyses including competing vegetation maps and trees per acre.

**ECI - Environmental Consultants Inc. Booth 102**

520 Business Park Circle  
Stoughton, Wisconsin 53589  
United States

608-877-1170  
www.eci-consulting.com

ECI & Western ECI is a provider of vegetation management consulting services to the national utility companies. ECI's staff has professionals with expertise in arboriculture, forestry, horticulture, biology, and related areas. Our services include program analysis and planning, research, professional services, and software systems.

**Electronic Data Solutions Booth 801**

154 1st Ave W  
PO Box 31  
Jerome, Idaho 83338  
United States

208-324-8006  
www.elecddata.com

Elecddata provides geospatial data collection solutions for a variety of forestry and natural resources applications including log scaling, timber cruising, vegetation studies, and inventory.

**Elsevier BV Booth 712**

Radarweg 2g  
Amsterdam 1043NX  
Netherlands

+31-20-485-3003  
www.elsevier.com

**Esri Booth(s) 813, 912, 811, 910, 809, 908, 807, 906, 900**

380 New York St  
Redlands, California 92373  
United States

909-793-2853  
www.esri.com

Esri is a GIS software company that helps foresters and land managers meet the needs of their forests, the demands of society, and the pressures of economic efficiency. GIS technology profoundly and positively impacts the way land managers, timber managers, and more manage timber resources. Land managers increasingly turn to GIS for analytic and visualization tools for analyzing complex situations and make better-informed decisions. GIS is becoming the foundation for new decision support tools used in all business processes of integrated forest management.

## F

**F4 Tech Booth(s) 812, 810**

3059 Highland Oaks Terrace  
Tallahassee, Florida 32301  
United States

850-309-3940  
www.thinkf4.com

Founded in 1998 in Tallahassee, FL, F4 Tech is a worldwide leader in forest inventory technology. It is pioneering best practices, technology, education and outreach in the forest industry, www.thinkF4.com.

**Faculty of Forestry, University of British Columbia Booth 629**

2005-2424 Main Mall  
University of British Columbia  
Vancouver, British Columbia V6T 1Z4  
United States

604-822-6316  
www.forestry.ubc.ca

**Finite Carbon Booth 1211**

2225 Grampian Blvd.  
Williamsport, Pennsylvania 17701  
United States

570-321-9090  
www.finitecarbon.com

America's leading developer of forest carbon offsets. Combining unparalleled project development experience with extensive carbon market knowledge, our in-house team of forest carbon experts offers a single-source solution for creating and monetizing carbon offsets and the most comprehensive forest carbon project development and commercialization service in the US.

**Foothills Research Institute (FRI) Booth 1123**

Box 6330  
1176 Switzer Drive  
Hinton, Alberta T7V1X6  
Canada

780-865-8329  
www.foothillsri.ca

fRI is a unique community of partners joined by a common concern for the welfare of the land, its resources, and the people who value and use them. fRI connects managers and researchers to effectively collaborate in developing innovative science for land and resource management. fRI also reports research results to its partners, government agencies and the public.

### Forest Biometrics Research Institute Booth 1007

4033 SW Canyon Road  
Portland, Oregon 97221  
United States

406-649-0040  
[www.forestbiometrics.com](http://www.forestbiometrics.com)

The Forest Biometrics Research Institute (FBRI) is a non-profit forestry research and support services corporation specializing in inventory, growth, silviculture and sustained yield planning. FBRI provides methods, software, tutorials and workshop for managing a working forest. FBRI maintains one of the largest and most diverse research databases behind its regional libraries for species-specific volume, site, growth and mortality parameters. Over 80 organizations (private, tribal, public) use FBRI software and methods to manage in excess of 8 million acres of working forests.

### Forest History Society Booth 703

701 William Vickers Ave  
Durham, NC 27701  
United States

919-682-9319  
[www.foresthistory.org](http://www.foresthistory.org)

The Forest History Society preserves and helps people use the documents of forest and conservation history. Seek out information for your presentations, reports, land management, and genealogy.

### Forest Metrix Booth 905

4396 Route 132  
Thetford Center, Vermont 05075  
United States

802-785-4307  
[www.forestmetrix.com](http://www.forestmetrix.com)

Forest Metrix is a comprehensive timber inventory, analysis, and reporting platform for iPads, iPhones, and Windows 8 devices. The product is custom built for every user.

### Forest Practices Board Booth 630

PO Box 9905 Stn Prov Govt  
Victoria, British Columbia V8W 9R1  
Canada

250-213-4700  
<http://www.fpb.gov.bc.ca/>

The BC Forest Practices Board is an arms-length agency providing independent oversight of industry and government forest practices and legislation in British Columbia.

### Forest Stewardship Council US Booth 425

212 Third Avenue North, Suite 445  
Minneapolis, Minnesota 55401  
United States

612-353-4511  
[www.fsc.org](http://www.fsc.org)

The Forest Stewardship Council mission is to promote environmentally sound, socially beneficial and economically prosperous management of the world's forests. Our vision is that we can meet our current needs for forest products without compromising the health of the world's forests for future generations.

### Foresters' Fund & Science Fund Booth(s) 321, 420, 319, 418, 317, 416

5400 Grosvenor Lane  
Bethesda, Maryland 20814  
United States

Foresters' Fund assists local SAF units in promoting education to enhance public understanding of the role of professional foresters in forest resource management, conducting forest policy activities, and strengthening state societies, divisions, and chapters in achieving the mission of the Society.

### Forestry and Forest Products Research Institute/REDD Booth 1104

1 Matsunosato  
Tsukuba, Ibaraki 3058687  
Japan

+81-29-829-8327  
[www.ffpri.affrc.go.jp/en](http://www.ffpri.affrc.go.jp/en)

### Forestry Suppliers Booth(s) 601, 700

205 W. Rankin Street  
Jackson, Mississippi 39201  
United States

601-354-3565  
[www.forestry-suppliers.com](http://www.forestry-suppliers.com)

See the latest forestry cruising, silviculture and fire protection equipment; GPS, engineering and mapping instruments; first aid and safety equipment.

### Future Forests Booth 523

Swedish University of  
Agricultural Sciences  
Skogsmarksgrand  
Umea Vasterbotten 90183  
Sweden

+46-72-710-3944  
[www.slu.se/futureforests](http://www.slu.se/futureforests)

## G

### Geographic Business Solutions Booth 815

Level 3 45 Mt Wellington Hwy  
Mount Wellington, Auckland 1060  
New Zealand

+64-9-570-3875  
[www.gbs.co.nz](http://www.gbs.co.nz)

Geographic Business Solutions (GBS) is an Esri Gold Partner specializing in the custom development of Esri solutions for desktop, sever, ArcGIS Online and mobile. GBS has developed CHPS - Cable Harvest Planning Solution - an ArcGIS for Desktop extension for cable yarding payload analysis.

### Globalstar Booth 526

300 Holiday Square Blvd  
Covington, LA 70433  
United States

985-335-1570  
[www.globalstar.com](http://www.globalstar.com)

Globalstar is the leading provider of mobile satellite voice and data services, offering these services to governmental, commercial and recreational users in more than 120 countries around the world. Globalstar's products include mobile and fixed satellite telephones, simplex and duplex satellite data modems and flexible service packages.

## H

**Haglof Sweden Booth(s) 919, 1016**

Box 28  
Klockargatan 8 +46-620-255-80  
Langsele 882 21 www.haglofsweden.com  
Sweden

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**Host Country: United States Forests Booth 1500**

Consortium of US Forest Stakeholders

The Host Country booth is a multi-stakeholder effort intended to share information about US Forests. Each break and lunch will focus on a different theme - come by often to learn about different aspects of our research and management activities.

**Hub International Insurance Brokers Booth 633**

400-4350 Still Creek Drive  
Burnaby, BC V5C 0G5  
Canada Insurance brokers. 604-269-1888  
www.hubprofessional.com

**International Forestry Students' Association Booth(s) 311, 313, 315**

Tennenbacherstrasse 4  
Freiburg im, Breisgau D-79 106  
Germany 604-442-2044  
www.ifsa.net

IFSA is a student-run global network for students in forest sciences with around 3000 members in 75 member associations in over 54 countries.

**International Tropical Timber Organization (ITTO) Booth 613**

International Organizations Center,  
5th floor Pacifico Yokohama  
1-1-1 Minato-Mirai Nishi-Ku  
Yokohama, Kanagawa  
Japan +81-45-223-1110  
www.itto.int

Our main goal is to promote sustainable forest management throughout the tropics, and we do this by financing projects related to sustainable forest management in areas such as reforestation, forest industry, economics, markets and statistics, as well as in other thematic areas such as mitigation against climate change, environmental services, community forest management, etc.

**International Wood Culture Society Booth 528**

2-40-1 Kurokami  
Chuo-ku +81-96-342-2653  
Kunamoto 8608555 www.iwcs.com  
Japan

IWCS is a non-profit, non-governmental, international network of wood enthusiasts, dedicated to the research, education and promotion of wood culture.

**International Wood Culture Society Booth(s) 429, 526**

2549 Eastbluff Dr. #307  
Newport Beach, California 92660  
United States 714-785-5518  
www.iwcs.com

A non-profit international organization dedicated to the research, education and promotion of wood culture and promotion of World Wood Day.

**Intertribal Timber Council Booth 924**

1112 NE 21st Avenue  
Suite 4 503-282-4296  
Portland, Oregon 97232 www.itcnet.org  
United States

Established in 1976, the Intertribal Timber Council is a non-profit nation-wide consortium of over 60 tribes, dedicated to improving Indian forest and natural resources.

**IUFRO Regional Partner Networks (APAFRI, CATIE, FORNESSA, NEAFF) Booth 611****Upcoming IUFRO Events Booth(s) 1026, 1024, 1022**

## J

**Jiffy Booth 1034**

5401 Baumhart Road  
Suite B 800-323-1047  
Lorain, Ohio 44053 www.jiffygroup.com  
United States

Providing growers with the highest quality growing media, media containers, and other supporting products or services which enhance the successful propagation or cultivation of plants. Achieving this through continuous innovation and consistent compliance to high standards of quality and environmental awareness.

**Joint Fire Sciences Program****Booth 1220**

1472 Campus Delivery  
Colorado State University  
Fort Collins, CO 80523  
United States

970-491-2991  
[www.firescience.gov](http://www.firescience.gov)

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**Juniper Systems, Inc.****Booth 617**

1132 W 1700 W  
Logan, Utah 84321  
United States

435-753-1881  
[www.junipersys.com](http://www.junipersys.com)

**K****Korea Forest Research Institute****Booth(s) 925, 923**

57 Heogiro, Dongdaemun-gu  
Seoul 130-712  
Republic of Korea

+82-2-961-2573  
[www.kfri.go.kr](http://www.kfri.go.kr)

Korea Forest Research Institute(KFRI) is a national forest research institute aimed at increasing foresters incomes, promoting green welfare and satisfying all the Korean people through the benefits of forest. Over the years, KFRI has played a significant role in developing forest science in Korea. In particular, in 2012, we celebrated our 90th anniversary with a brand-new vision of 'With the review of the past, we can solve the problems of the present and prepare for the future', reaffirming our commitment and preparing for another leap forward.

**Korea Forest Service****Booth 921**

Government Complex-Daejeon  
Bldg.1  
189 Cheongsa-ro, Seo-gu  
Daejeon 302-701  
Republic of Korea

+82-42-481-4127  
[www.wildfire2015.kr](http://www.wildfire2015.kr)  
([www.forest.go.kr](http://www.forest.go.kr))

The Korea Forest Service(KFS) is one of central administrative organizations of the Korean government in charge of managing forest lands. It is responsible to conserve healthy forest ecosystem and to create rich and sustainable forests. With a prompt and efficient prevention-control-restoration system of wildland fire management, KFS is designated as the host organization of the 6th International Wildland Fire Conference in 2015.

**L****Laser Technology Inc.****Booth 823**

6912 S Quintin St  
Centennial, Colorado 80112  
United States

303-649-1000  
[www.lasertech.com](http://www.lasertech.com)

Timber cruisers can now measure tree heights and monitor slope grades with unparalleled ease. Surveying jobs such as sale boundaries and stem mapping becomes almost effortless. Measuring chip volumes can be done without having to occupy the stockpile. LTI offers a full range of powerful, compact lasers and forestry tools with features perfectly tailored for gathering field data. Our lasers can penetrate dense brush as if it weren't even there and our Criterion RD 1000 provides a direct read-out of heights and diameters and can also be used as a slope-corrected Basal Area scope for variable plot cruising.

**LI-COR Biosciences****Booth 600**

4647 Superior St  
Lincoln, Nebraska 68504  
United States

402-467-0742  
[www.licor.com/env](http://www.licor.com/env)

LI-COR Biosciences manufactures instrumentation for the biological and environmental sciences, including radiation sensors, infrared gas analyzers, data loggers, light meters, leaf area meters, and meteorological measurement systems.

**Lim Geomatics Inc.****Booth 808**

PO Box 30030 Greenbank North PO  
Ottawa, Ontario K2H1A3  
Canada

613-686-5735  
[www.limgeomatics.com](http://www.limgeomatics.com)

Lim Geomatics Inc. is an Esri business partner and develops industry leading and award winning web-, desktop- and mobile-based GIS applications for the forest industry.

**M****Mason, Bruce and Girard, Inc.****Booth 935**

707 SW Washington Street  
Suite 1300  
Portland, Oregon 97205  
United States

503-224-3445  
[www.masonbruce.com](http://www.masonbruce.com)

Natural resources consulting firm providing services nationally and internationally in forestry, geospatial, wetlands, wildlife, and environmental regulatory compliance.

**METI, Inc.****Booth 401**

8600 Boeing Dr.  
El Paso, Texas 79925  
United States

915-772-4975  
[www.meticorp.com](http://www.meticorp.com)

**Michigan Technological University****Booth 624**1400 Townsend Dr  
Houghton, Michigan 49931  
United States906-487-2417  
[www.mtu.edu](http://www.mtu.edu)

Michigan Tech offers degrees in forestry, ecology, and biotechnology. MS and PhDs are offered alongside professional degrees focused on GIS, policy, business, and engineering.

**Minnesota Department of Natural Resources****Booth 122**1201 E Highway 2  
Grand Rapids, MN 55744  
United States218-999-7839  
[www.dnr.state.mn.us](http://www.dnr.state.mn.us)**Mississippi State University****Booth 421**Mailstop 9681  
Mississippi State  
Mississippi 39762  
United States662-325-4611  
[www.cfr.msstate.edu](http://www.cfr.msstate.edu)

Mississippi State University's Department of Forestry offers a fully online Master of Science degree. Realize the power of combining career and education!! Visit booth 421.

**Montreal Process****Booth 716**1400 Independence Avenue, SW  
Washington, District of Columbia 20050  
United States202-205-1521  
[www.montrealprocess.org](http://www.montrealprocess.org)

The Montreal Process Working Group was formed in 1994 as a bold, intergovernmental response to the pressing need for sustainable forest management. Member countries continue to make a voluntary commitment to work alongside each other to further the sustainable management of their forests and to create a pathway for collaboration and capacity building.

**N****NASA Science Mission Directorate****Booth(s) 507, 606, 505, 604**1 NASA-Ames Research Center  
Moffett Field, California 94035-0001  
United States301-614-5560  
[science.nasa.gov/earth-science/](http://science.nasa.gov/earth-science/)

NASA conducts and sponsors research / applications on land surfaces, the biosphere, solid Earth, atmosphere, and oceans. Share in the spirit of Earth exploration and understanding through NASA's eyes.

**National Association of State Foresters****Booth 1018**444 N Capitol St NW  
Suite 540  
Washington, District of Columbia  
20001  
United States202-624-5417  
[www.stateforesters.org](http://www.stateforesters.org)

The National Association of State Foresters (NASF) is composed of the directors of state and territorial forestry agencies and the District of Columbia. NASF seeks to advance sustainable forestry, conservation, and protection of forest lands and their associated resources. Learn more at [www.stateforesters.org](http://www.stateforesters.org).

**National Museum of Forest Service History****Booth 615**PO Box 2772  
Missoula, Montana 58906  
United States406-51-6374  
[www.nmfs-history.net](http://www.nmfs-history.net)

Preserving the legacy of Forest & Grassland Conservation - Understanding the People and Events that have shaped our history and culture.

**National Wild Turkey Federation****Booth 1004**770 Augusta Road  
Edgefield, South Carolina 29824  
United States803-637-3106  
[www.nwtf.org](http://www.nwtf.org)

The NWTF – a national nonprofit organization – is the leader in upland wildlife habitat conservation in North America. The NWTF is dedicated to the conservation of the wild turkey and the preservation of our hunting heritage.

**Natural Resources Canada****Booth 1023**580 Booth Street, 15th Floor  
Ottawa, Ontario K1A 0E4  
Canada613-947-4556  
[www.nrcan-rncan.gc.ca](http://www.nrcan-rncan.gc.ca)

Federal Government

**NCP Coatings Inc.****Booth 520**225 Fort Street  
Niles, Michigan 49120  
United States269-683-3377  
[www.ncpcoatings.com](http://www.ncpcoatings.com)

Manufacturer of high quality, long lasting forestry paint since 1948.

**Nelson Paint Company****Booth 920**PO Box 2040  
1 Nelson Drive  
Kingsford, Michigan 49802  
United States906-774-5567 ext. 145  
[www.nelsonpaint.com](http://www.nelsonpaint.com)

Forestry/industrial/paintballs

**New Forests: Forest Carbon Partners****Booth 1106**

275 Battery Street  
Suite 510  
San Francisco, California 94111  
United States

415-321-3304  
www.forestcarbonpartners.com

Forest Carbon Partners, an investment fund managed by New Forests, finances and develops forest carbon offset projects for the California carbon market.

**NFPA****Booth 713**

1 Batterymarch Park  
Quincy, Massachusetts 02169  
United States

617-984-7444  
www.nfpa.org

NFPA's Firewise program teaches people how to adapt to living with wildfire and encourages neighbors to work together to help reduce their risk. www.firewise.org

**North Carolina State University****Booth 614**

Department of Forestry and  
Environmental Resources  
Campus Box 8008  
Raleigh, North Carolina 27695-8008  
United States

919-513-7368  
cnr.ncsu.edu/fer

NC State's Department of Forestry and Environmental Resources is a recognized leader of education in forestry, natural resources, fisheries, wildlife, and conservation biology. We prepare a diverse student body of undergraduates and graduates for rewarding careers.

**North Point Geographic Solutions****Booth 709**

394 S. Lake Avenue  
Suite 400  
Duluth, Minnesota 55804  
United States

218-720-6747  
www.northpointsgis.com

At North Point Geographic Solutions (NPGS) we specialize in Geographic Information Systems (GIS) Tools and Services for Forestry Management, including our customizable "SmartFor" Forestry Management Application. NPGS also provides GIS Web Application Development and Custom Tools for City, County, State and Local Government; Custom GIS Data Management and Development; GIS Analysis for Business; GIS Consulting; GIS Training; Plat Book Production and Recreational Cartography.

**Northern Arizona University, School of Forestry****Booth 528**

PO Box 15018  
200 E. Pine Knoll, Room 116  
Flagstaff, Arizona 86011  
United States

928-523-3031  
nau.edu/cefns/forestry

Elevate your education at the Northern Arizona University School of Forestry! Information on Certificates, BSF, MS, MF, and PhD programs. NAU T-shirts for sale.

**O****Omics Publishing Group****Booth 1028**

2360 Corporate Circle  
Suite 400  
Henderson, Nevada 89074  
United States

888-843-8160  
www.omicsgroup.com

**Opti-Sciences Inc.****Booth(s) 607, 605**

8 Winn Ave  
Hudson, New Hampshire 03051  
United States

603-883-4400  
www.optisci.com

Conifer chlorophyll content meters, research chlorophyll fluorometers, research gas-exchange instrumentation, soil respiration measurement, Soil CO<sub>2</sub> flux, plant stress measurement, and integrated solutions.

**Oregon State University****Booth(s) 1215, 1314, 100**

College of Forestry  
140 Peavy Hall  
Corvallis, Oregon 97330  
United States

540-737-6458  
www.forestry.oregonstate.edu

Founded in 1906, OSU's College of Forestry is a world-renowned teaching and research center, offering a complete range of graduate and undergraduate degrees sharply focused on forest landscapes.

**P****Peace Corps****Booth 1322**

1111 20th St, NW  
ODNO, 6th Floor  
Washington, District of Columbia 20526  
United States

202-692-1035  
www.peacecorps.gov

Peace Corps service is a life-defining leadership experience. Volunteers serve in over 70 countries and live, learn, and work with a community overseas for 27 months. They become leaders in grassroots efforts to protect and conserve the environment, engaging in projects that establish forest conservation plans and help promote alternative energy practices, integrate environmental curricula in schools, and promote alternative energy practices. They also collaborate with various organizations to promote environmental awareness activities such as wastewater management, recycling, environmental youth clubs, and park management.

**Phos-Chek (ICL Performance Products LP)****Booth 816**

19755 Morgan Lane  
Frenchtown, Montana 59834  
United States

406-626-5743  
www.phos-chek.com

Phos-Chek long-term fire retardants, Class A & B foams, and water enhancing gel are the world's leading chemical solutions for managing wildland, industrial and municipal fires. We work with fire management agencies globally to provide safe and effective firefighting chemicals. Class A and B foams make water more effective. Phos-Chek Flash 21 is a fuel-gelling agent for ground and helicopter torches. Phos-Chek AquaGel-K and Insul-8 Gel are water thickeners. Long-Term retardants (dry powder or liquid concentrates) for aerial or ground application.

### Plum Creek Booth 120

500 12th Avenue West  
PO Box 1990  
Columbia Falls, Montana 55912  
United States

406-892-6316  
www.plumcreek.com

Plum Creek is among the largest and most geographically diverse private landowners in the U.S. We operate wood products mills in the Northwest and manage our working forests and lands using sustainable practices. Our employees create shareholder value, serve as stewards of the environment, make wood products for everyday use, and build strong communities.

### PP Systems Booth 500

110 Haverhill Rd  
Suite 301  
Amesbury, Massachusetts 01913  
United States

ppsystems.com

Come see our CIRAS-3 system for measurement of photosynthesis, chlorophyll fluorescence, soil/canopy CO<sub>2</sub>. We will display our latest CO<sub>2</sub>/H<sub>2</sub>O analyzers, & vegetation reflectance instruments. We are also distributor for Hansatech Instruments (chlorophyll fluorometers & oxygen electrodes); Skye Instruments (light sensors); Gill Instruments (anemometers & weather stations); & bbe Moldaenke (algae).

### Purdue University Booth 903

715 W State Street  
West Lafayette, Indiana 47907  
United States

765-494-3631  
www.ag.purdue.edu/fnr

Purdue University Department of Forestry and Natural Resources and the Hardwood Tree Improvement and Regeneration Center, in partnership with the USDA Forest Service, Northern Research Station.

## R

### RECOFTC - The Center for People and Forests Booth 522

P.O. Box 1111, Kasetsart Post Office  
Bangkok 10903  
Thailand

662-940-5700  
www.recoftc.org

RECOFTC – The Center for People and Forests is an international non-profit capacity development organization with a vision of local communities actively managing forests in Asia and the Pacific to ensure optimal social, economic, and environmental benefits.

### RELASKOP-TECHNIK Booth 702

Gaisbergstrasse 11 a  
Salzberg 5020  
Austria

www.relaskop.at

Relaskop-Technik Vertriebsges.m.b.H. is the sole manufacturer of the Spiegel-Relaskop®, the universal hand held forestry measuring instrument that has proved invaluable in woodland all over the world both for measuring individual trees and for the inventory of entire stands by Angle Count Sampling (variable plot cruising).

### Remsoft Inc. Booth 804

160-77 Westmoreland St  
Fredericton, New Brunswick E3B 6Z3  
Canada

506-450-1511  
www.remsoft.com

For over 20 years, Remsoft has been providing optimization technology that enables organizations to maximize the performance and value of their assets. Through advanced analytics, optimization modeling and spatial planning technology, Remsoft simplifies complex, high-variable decisions to fuel long-term sustainability.

### Routledge / Taylor & Francis Booth(s) 1021, 1019

711 3rd Avenue, 8th Floor  
New York, NY 10017  
United States

212-216-7825  
www.routledge.com

Routledge is the leading global publisher in the inter-disciplinary field of Environment & Sustainability. Taylor & Francis publishes a growing, wide-ranging and high calibre journals portfolio in Plant Sciences. Taylor & Francis is at the forefront of the publishing landscape for researchers who seek to further their disciplines with their work.

## S

### Simosol Oy Booth 717

Rautatietori 4  
Riihimäki, Finland 11130  
Finland

+358-44-0405859  
www.iptim.com

Simosol Oy is a privately held company from Finland specializing in decision support software (DSS) development for forest resource management. The client base of the company consists of forest industry companies and public sector forestry organizations in Finland, and forest consulting companies delivering services internationally.

**Society of American Foresters** Booth(s) 305, 404, 303, 402

5400 Grosvenor Lane  
Bethesda, MD 20814  
United States

866-897-8720 ext. 100  
www.eforester.org

Thriving forests. Essential resources. Strong communities. We set the standard in forest management, bringing science, best practice, and the best people together to actively shape the future of the profession. A national scientific and educational organization, SAF represents the forestry and natural resources profession in the United States. Founded in 1900 by Gifford Pinchot, it is the largest professional society for forestry professionals in the world.

**Soil Science Society of America** Booth 1218

5585 Guilford Road  
Madison, Wisconsin 53711  
United States

608-273-8080  
www.soils.org

SSSA fosters the transfer of knowledge, to sustain global soils, by providing information about soils in relation to environmental quality, ecosystem sustainability, bioremediation, and wise land use. Visit our booth to learn about the Forest, Range, and Wildland Soils Division and the International Year of Soils (2015).

**Spectral Evolution** Booth 1223

1 Canal Street  
Unit: B1  
Lawrence, Massachusetts 01840  
United States

978-208-5878  
www.spectralevolution.com

SPECTRAL EVOLUTION is a leading manufacturer of field portable and laboratory spectroradiometers, spectrometers, and spectrophotometers for applications including remote sensing, environmental and climate research, vegetative studies, water body research, forestry and canopy studies, and more. EZ-ID software allows you to identify samples by matching to a known spectral library, or create your own custom library.

**Spectrum Technologies Inc.** Booth 927

3600 Thayer Ct  
Aurora, Illinois 60504  
United States

800-248-8873  
www.specmeters.com

Spectrum Technologies offers a full line of accurate, affordable equipment to measure and record soil moisture, light, meteorological conditions, plant health, and soil quality.

**Springer** Booth(s) 1003, 1001

233 Spring Street  
New York, NY 10013  
United States

212-460-1600  
www.springer.com

**Stephen F. Austin State University** Booth 1100

PO Box 6107  
Nacogdoches, Texas 75962-6109  
United States

936-468-3304  
www.sfasu.edu

SFA's Arthur Temple College of Forestry and Agriculture enhances the health and vitality of forests and natural resources through excellence in research, teaching, and service.

**Sustainable Forestry Initiative, Inc.** Booth 1102

2121 K Street NW  
Suite 750  
Washington, District of Columbia 20037  
United States

202-596-3455  
www.sfiprogram.org

The Sustainable Forestry Initiative® (SFI®) program is an independent, non-profit, organization with a science-based, internationally recognized forest management standard for North America. The SFI program is based on the premise that responsible environmental behavior and sound business decisions can coexist to the benefit of communities, customers and the environment, today and for future generations. Learn more at sfiprogram.org

**Swedish University of Agricultural Sciences** Booth 513

Skogsmarksgrand  
Umea, Vasterbotten S90183  
Sweden

+46-90-786-8211  
www.slu.se

SLU develops the understanding and sustainable use and management of biological natural resources. This is achieved by research, education and environmental monitoring and assessment, in collaboration with the surrounding community.

**T**
**Tajfun USA** Booth 711

731 James St Suite 225  
Syracuse, New York 13203  
United States

315-439-2733  
www.tajfun.com

Tajfun USA: A trustworthy solution and customer orientated company which provides state of the art forestry solutions – electronic digital caliper with the best software to support your work in the forest.

**TD Bank Group** Booth 323, 422

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55 King Street West, Toronto-  
Dominion Centre  
Toronto, Ontario M5K 1A2  
Canada

www.tdbank.com

<b>The Davey Tree Co.</b>	<b>Booth 118</b>
1500 N Mantua St Kent, Ohio 44240 United States	330-310-3413 www.davey.com
The Davey Tree Expert Company is the Nation's oldest and largest full service Tree Care Company with over 7500 employees and 120 offices throughout North America, starting in 1880. Employee-owned and having four distinctive service lines; Utility Line Clearance, Davey Resource Group, Residential/Commercial Tree Care and Commercial Grounds Maintenance. Davey needs career minded individuals who enjoy working outdoors utilizing the latest technology.	

<b>The Finnish Forest Research Institute (Metla)</b>	<b>Booth 510</b>
PO Box 18 Vantaa, Uusimaa FI-01301 Finland	+358-50-391-2270 www.metla.fi
The Finnish Forest Research Institute (Metla) is a public research organization established in 1917 to develop solutions to the challenges posed by forests and forestry in one of the most forested countries of the world.	

<b>Trimble Navigation Ltd.</b>	<b>Booth(s) 911, 1010</b>
345 SW Avery Ave Corvallis, Oregon 97333 United States	541-768-2679 www.trimble.com/forestry
Trimble applies technology to make field and mobile workers in businesses and government significantly more productive, providing solutions for surveying, construction, agriculture, fleet and asset management, public safety and mapping. Trimble uses wireless technologies to deliver the solution to the user and to ensure a tight coupling of the field and the back office. Founded in 1978, based in Sunnyvale, Calif.	

## U

<b>Union of Concerned Scientists</b>	<b>Booth 1213</b>
1800 K St NW Suite 800 Washington, District of Columbia 20006 United States	571-354-9654 www.ucsusa.org
UCS is the leading science-based nonprofit working for a healthy environment and a safer world.	

<b>University of Arkansas at Monticello</b>	<b>Booth 1138</b>
PO Box 3468 Monticello, Arkansas 71656 United States	870-460-1149 www.uamont.edu

<b>University of Idaho</b>	<b>Booth(s) 1209, 1207</b>
Forest, Rangeland, and Fire Sciences 875 Perimeter Drive MS 1133 Moscow, Idaho 83844-1133 United States	208-885-2737 www.uidaho.edu/cnr/frfs
Preparing leaders through hands-on training and relevant research experience is where the Department of Forest, Rangeland, and Fire Sciences excels. Our faculty is invested in national and international research, benefiting students at all levels. Our forest nursery, experimental forest, wilderness research station and other facilities provide the tools and experiences our students and faculty need to be the best in the west.	

<b>University of Maine</b>	<b>Booth 533</b>
School of Forest Resources 5755 Nutting Hall, Rm. 201 Orono, Maine 04469-5755 United States	207-581-2841 www.forest.umaine.edu
We provide undergraduate and graduate educational experiences and generate new knowledge to improve the use of forest resources to sustainably meet societal needs.	

<b>University of Montana</b>	<b>Booth 1222</b>
32 Campus Drive Missoula, MT 59812	406-243-6650 www.umontana.edu

<b>University of Washington</b>	<b>Booth 423</b>
217 Anderson Hall UW Mailbox 352100 Seattle, Washington 98195 United States	206-543-7081 www.cfr.washington.edu

<b>US Department of Agriculture - Research, Education and Economics</b>	<b>Booth(s) 407, 506, 405, 504</b>
1400 Independence Ave SW Washington, District of Columbia 20250 United States	202-720-1592 www.ree.usda.gov

<b>USDA Forest Service - Remote Sensing Applications Center</b>	<b>Booth 830</b>
2222 W 2300 S Salt Lake City, Utah 84119 United States	801-975-3826 www.fs.fed.us
The Remote Sensing Applications Center (RSAC) provides national remote sensing assistance to the USDA Forest Service units toward improved monitoring and mapping of natural resources.	

**USDA Forest Service  
Research & Development** **Booth 835**

1601 N Kent St 400 RPC Rosslyn  
Arlington, Virginia 22209  
United States

703-605-5178  
[www.fs.fed.us/research](http://www.fs.fed.us/research)

The USFS is the Congress host and has a mission is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.

**USDA Forest Service -  
National Library** **Booth 1017**

National Forest Service Library  
240 W Prospect Rd  
Fort Collins, Colorado 80526  
United States

970-498-1310  
[usfs.vtls.com/cgi-bin/usfs/chameleon](http://usfs.vtls.com/cgi-bin/usfs/chameleon)

The National Forest Service Library provides high quality scientific and technical information services to USDA Forest Service employees. The Library also provides research assistance for customers needing information from the USDA Forest Service. In addition to the main library, we have two specialty libraries providing technical assistance in forest products and tropical forestry.

**USDA Forest Service Forest  
Inventory and Analysis** **Booth 828**

8831 Rymer Way  
Owings, Maryland 20736  
United States

[www.fs.fed.us](http://www.fs.fed.us)

The USFS is the Congress host and has a mission is to sustain the health, diversity, and productivity of the Nation's forests and grasslands to meet the needs of present and future generations.

**USDA Forest Service-  
Forest Health Technology  
Enterprise Team** **Booth 831**

2150 Centre Ave  
Bldg. A Suite 331  
Fort Collins, Colorado 80528  
United States

970-295-5840  
[www.fs.fed.us/foresthealth/technology](http://www.fs.fed.us/foresthealth/technology)

The Forest Health Technology Enterprise Team was created by the Deputy Chief for State and Private Forestry in February 1995 to develop and deliver forest health technology services to field personnel in public and private organizations in support of the Forest Service's land ethic, to "promote the sustainability of ecosystems by ensuring their health, diversity, and productivity."

**USDI Bureau of Land  
Management** **Booth(s) 301, 400**

1849 C St. NW, Room 2134 LM  
Washington, DC 20240  
United States

303-236-0681  
[www.blm.gov](http://www.blm.gov)

BLM, under its multiple-use mandate, manages 245 million acres, or 40 percent of all land managed by the Federal government. Fifty-eight million acres are forests or woodlands.

**Utah Department of Natural  
Resources** **Booth(s) 1132,1031,  
1130,1029,1128**

1594 6 North Temple  
Suite 3710  
Salt Lake City, Utah 84114-5610  
United States

801-538-7326  
[www.utah.gov](http://www.utah.gov)

The Utah Department of Natural Resources, and particularly the Division of Forestry, Fire & State Lands, welcomes all IUFRO attendees. Enjoy your stay in Utah!

**Utah State University  
Quinney College of Natural  
Resources** **Booth 518**

5230 Old Main Hill  
Logan, Utah 84322-5230  
United States

435-797-4056  
[www.cnr.usu.edu](http://www.cnr.usu.edu)

**V**
**Virginia Tech** **Booth 432**

Dept. of Forest Resources & Env Cons  
313 Cheatham Hall  
Blacksburg, Virginia 24061  
United States

540-231-5483  
[www.vt.edu](http://www.vt.edu)

**W**
**Waveland Press, Inc.** **Booth 705**

4180 IL Route 83  
Suite 101  
Long Grove, Illinois 60047  
United States

847-634-0081  
[www.waveland.com](http://www.waveland.com)

Waveland Press publishes reasonably priced undergraduate textbooks for a variety of courses in forestry, natural resources, and related subjects. Please visit [www.waveland.com](http://www.waveland.com) for a complete list of available titles. Stop by booth 705 to speak with our forestry editor about your classroom needs or textbook projects.

**Wood Education and  
Resource Center** **Booth 707**

180 Canfield Rd  
Morgantown, West Virginia 26505  
United States

304-285-1588  
[www.na.fs.fed.us/werc](http://www.na.fs.fed.us/werc)

We collaborate with States, other Federal agencies, tribes, landowners, and other partners to protect, conserve, and manage forests and community trees across the 20 Northeastern and Midwestern States and the District of Columbia. We provide leadership, technical support, sound science, and financial assistance to help ensure that our forests and trees continue to provide clean water, forest products, wildlife habitat, recreation, and other benefits for present and future generations.

**West Virginia University Booth 419**

322 Percival Hall  
Morgantown, West Virginia 26506  
United States

304-293-0049  
www.wvu.edu

**Western Aspen Alliance Booth 714**

Utah State University  
5230 Old Main Hill  
Logan, Utah 84322  
United States

www.western-aspen-alliance.org

The Western Aspen Alliance facilitates cooperative research and disseminates state-of-the-science aspen information to interested managers, researchers, the public, and other entities.

**Western Forestry Leadership Coalition Booth 1020**

2850 Youngfield, 4th Floor  
Lakewood, Colorado 80215  
United States

303-445-4365  
www.wflcweb.org

The Western Forestry Leadership Coalition (WFLC) is a State and Federal government partnership. This partnership creates a clear voice on western forestry, to promote science-based forest management that serves the values of society and ensures the health and sustainability of western forests.

**Weyerhaeuser Company Booth 124**

PO Box 1060  
810 Whittington Ave.  
Hot Springs, AR 71902  
United States

501-624-8192  
weyerhaeuser.com

We are one of the world's largest private owners of timberlands and manage these on a sustainable basis in compliance with internationally recognized forestry standards. We are also one of the largest manufacturers of wood and specialty cellulose fibers products. Our company is a real estate investment trust. We are committed to operate as a sustainable company and are listed on the Dow Jones World Sustainability Index. We operate with world class safety results, understand and address the needs of the communities in which we operate, and present ourselves transparently.

**World Agroforestry Centre (ICRAF) Booth(s) 1101, 1200**

PO Box 30677  
UN Avenue  
Nairobi, Kenya 00100 GPO  
Kenya

+254-20-7224000  
www.worldagroforestry.org

The World Agroforestry Centre (ICRAF) is one of the 15 Centres of the CGIAR Consortium, and is headquartered in Nairobi, Kenya. Our mission is to generate science-based knowledge about the diverse roles that trees play in agricultural landscapes, and to use its research to advance policies and practices, and their implementation that benefit the poor and the environment.

**World Wood Day Foundation Booth 1116**

2549 Eastbluff Dr. #307  
Newport, California 92620  
United States

www.worldwoodday.org

World Wood Day Foundation advocates and annually celebrates World Wood Day on March 21st to raise public awareness of wood as an eco-friendly material and encouraging academic research and responsible wood usage for a sustainable future.

**Y****Yale School of Forestry & Environmental Studies Booth 622**

195 Prospect St  
New Haven, Connecticut 06511  
United States

203-432-5983  
www.yale.edu

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**Your Forest Resource**

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**Over 30 tree species in Libraries**

**Visit us in Exhibit Hall booth # 1007**

*Section #7*  
**CONNECT WITH US**

## Connect With US

We want to engage people from around the world and inform them on what is happening at #IUFRO2014 and we are enlisting you to help!

What can you do?

- Help create the discussion. Share content from the IUFRO2014 Blog with your networks and comment on the postings.
- On Facebook? Join the IUFRO2014 Facebook group and share our postings, and join in on the discussions.
- Are you a tweeter? Follow @iufro2014, tweet live from the Congress and use our hashtags!
- Taking photos? Add your photos to Flickr with the tag IUFRO2014 and join our Flickr group! Or, post them to our Facebook page - or tweet them to us.

When tweeting about the Congress, use the official hashtag - #IUFRO2014.

In addition, we recommend you use the following hashtags if you are tweeting about a specific theme.

- Forests for People - #Frst4Ppl
- Forest Biodiversity and Ecosystem Services -#FrstBioDiv
- Forests and Climate Change - #FrstCC
- Forest and Water Interactions - #FrstH2O
- Forest Biomass and Bioenergy - #FrstEnergy
- Forests and Forest Products for a Greener Future - #Frst4Future
- Forest Health in a Changing World- #FrstHealth

### Congress Newsletter

Each day, the Congress will produce a newsletter with highlights from the previous day and previews of what is to come. Hard copies of the newsletter will be available on a limited basis in the morning refreshment break areas. The newsletter will also be available for download on the Congress website, using the Congress app, or by scanning the daily newsletter QR code.

### Congress Survey

On Friday and Saturday of the Congress, volunteers will be seeking your input on the Congress. Each host seeks to improve upon attendee's experiences to ensure World Congresses are a great success. The survey will also be available for you to take using the Congress app, at any time.

## Links



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*Section #8*  
**BLANK NOTES**











*Section #9*  
**REFERENCE & SAF/CIF SCHEDULE**

# 2014 SAF National Convention and CIF/IFC AGM & Conference Schedule at a Glance

## Wednesday, October 8

08:00 - 17:00	SAF Committee and Affiliate Meetings
17:30 - 20:00	Opening Welcome Reception: Exhibit Hall and Posters Open
19:00 - 22:00	International Quiz Night

## Thursday, October 9

07:00 - 08:00	SAF Fellows Breakfast
08:00 - 17:00	Registration Open
08:30 - 10:30	Joint Plenary: Knowledge Discovery, Synthesis, and Application at the Forest Science–Management Interface
10:30 - 11:00	Break in Exhibit Hall
10:00 - 17:30	Exhibits and Posters Open
11:00 - 12:00	Plenary Panel: Knowledge Discovery, Synthesis, and Application at the Forest Science–Management Interface
12:00 - 13:30	Lunch available in Exhibit Hall
12:00 - 13:30	Poster Symposia
12:00 - 13:30	David Haskell, <i>The Forest Unseen: A Year's Watch in Nature</i> , Book Signing
12:00 - 16:00	Technological Innovations Demonstrations
13:30 - 15:00	Scientific & Technical Concurrent Sessions
15:00 - 16:00	Break in Exhibit Hall
15:00 - 16:00	Poster Symposia
16:00 - 17:30	Scientific & Technical Concurrent Sessions
17:30 - 18:30	SAF National Student Congress
17:30 - 18:30	SAF Working Group Meetings
18:00 - 19:00	SAF Diversity Reception
19:00 - 21:00	University Alumni Receptions

## Friday, October 10

06:30 - 07:45	Foresters' Forum (including SAF Business Meeting) – ticketed event
06:30 - 07:45	CIF/IFC Annual General Meeting

08:00 - 17:00	Registration Open
08:00 - 10:00	Plenary - Data and Models and Maps, Oh My!: Communicating Science in an Uncertain World
08:00 - 16:00	Technological Innovations Demonstrations
10:00 - 10:30	Break in Exhibit Hall
10:00 - 17:30	Exhibits and Posters Open
10:30 - 12:00	Scientific and Technical Concurrent Sessions
12:00 - 13:30	Lunch available in Exhibit Hall
12:00 - 13:30	Poster Symposia
13:00 - 16:00	Career Fair
13:30 - 15:00	Scientific and Technical Concurrent Sessions
15:00 - 16:00	Break in Exhibit Hall
15:00 - 16:00	Poster Symposia
16:00 - 17:30	Scientific and Technical Concurrent Sessions
17:30 - 18:30	Student Executive Committee
17:30 - 18:30	SAF Working Group Meetings
18:00 - 19:00	CIF/IFC President's Reception – ticketed event
19:00 - 21:30	CIF/IFC Awards Banquet – ticketed event

## Saturday, October 11

06:30 - 07:45	Breakfast with the Leaders – ticketed event
08:00 - 12:00	Registration Open
08:00 - 10:00	Plenary - Applying Continuous Improvement to Forest Science-Management Partnerships
10:00 - 14:00	Exhibits and Posters Open
10:00 - 10:30	Break in Exhibit Hall
10:30 - 12:00	Scientific and Technical Concurrent Sessions
12:00 - 13:30	Lunch available in Exhibit Hall
12:00 - 13:30	Poster Symposia
13:30 - 15:00	Scientific and Technical Concurrent Sessions
15:00 - 15:30	Break
15:30 - 17:00	Scientific and Technical Concurrent Sessions
14:00 - 18:00	Poster Break-Down
14:00 - 22:00	Exhibit Hall Break-Down

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	Id	Length [ft.]	Diameter [in.] Estim.	Grade	Doyle
Red maple	5.	16	10.5	#1	618
	4.	16	13.1	PALLET	Form class
	3.	16	16.5	#1	78
	2.	16	20.7	PRIME	
	1.	16	26	VENEER	
	Total length	48			

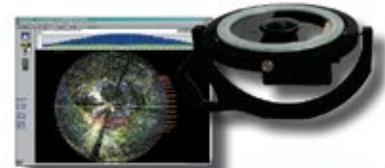
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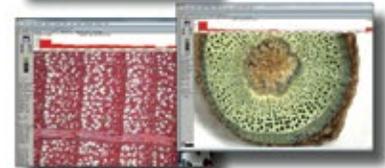
### WinSCANOPY™

- Canopy structure and Solar radiation
- Plant canopy health/stress (NDVI)
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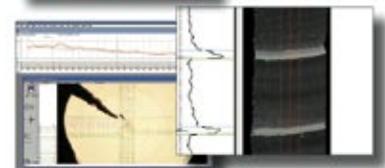
### WinCELL™

- Wood-cell structure parameters over annual rings
- Analysis of one or more rings per image
- Data computed on yearly basis in a format compatible with WinDENDRO™



### WinDENDRO™

- Tree rings from disks, cores, X-ray films and digital X-ray systems
- Cross-dating graphic, correlation functions, detrending,...
- Wood density and earlywood/latewood boundary



### WinFOLIA™

- Leaf morphology
- Leaf shape (Fractals), aspect ratio and form coefficient
- Healthy, diseased and pest damage areas



### WinSEEDLE™

- Seed and needle morphology
- Counts and classification of seeds and needles
- Healthy, diseased and pest damage areas



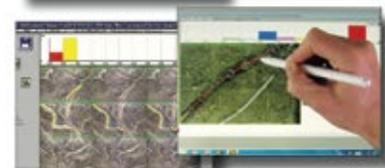
### WinRHIZO™

- Washed root morphology, topology, link, and architecture
- Automatic analysis of Arabidopsis seedlings
- Healthy, diseased and pest damage areas



### WinRHIZO™ Tron

- Morphology, architecture and topology of roots growing in soil
- Roots must be traced manually with a mouse or by touching the screen of a tablet computer



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