

# IUFRO Annual Report 2018

*International Union of Forest Research Organizations - Union Internationale des Instituts de  
Recherches Forestières - Internationaler Verband Forstlicher Forschungsanstalten -  
Unión Internacional de Organizaciones de Investigación Forestal*



Interconnecting  
Forests, Science and People

# Foreword

By Mike Wingfield, IUFRO President

For IUFRO, the past year felt ‘sandwiched’ between two major events. These being our 125th Anniversary Congress held in Freiburg in 2017 and our now rapidly approaching World Congress 2019. While we did not host a major international meeting during 2018, IUFRO once again had a very active year in terms of smaller meetings such as those representing Working Parties and Research Groups with 77 meetings held in many different parts of the world.

At the time of our Board Meeting hosted by Oregon State University in September, I made the point that this was by far our most important Board meeting of the IUFRO 2014-2019 Board Term. Here I was specifically referring to the fact that this was the meeting where we needed to elect members of the IUFRO Board that will represent and lead the Union for the five years starting after our 2019 World Congress. We also needed to decide on the host country for our World Congress 2024. The outcome of these important decisions is already well known to most readers of this report but I will share them with you here.

A fundamentally important decision relating to the operating processes of IUFRO was made during our Oregon 2018 Board Meeting. This was to request our International Council (IC) to approve the Board’s recommendations relating to the 2019-2024 leadership as well as the 2024 World Congress host country. In the past, this decision had been ratified by the IC only at the time of the World Congress. I am grateful to our IC for agreeing to an electronic vote that enabled us to announce the names of the members of the 2019-2024 Board including the fact that Dr. John Parrotta will serve as the next IUFRO President; also that our 2024 World Congress will be held in Stockholm, Sweden. Having these decisions made in advance of our 2019 World Congress in Curitiba, Brazil means that incoming Board Members will have the opportunity to prepare more effectively for their new roles. Likewise, our colleagues in Sweden are able to promote the 2024 World Congress at the 2019 World Congress.

Amongst the many highlights of the past year was the launch of the latest Global Forest Expert Panels’ (GFEP) report on Forest and Water Interactions. This comprehensive scientific assessment was released in July at the United Nations High-Level Political Forum (HLPF) on Sustainable Development in New York. Amongst the many important outcomes of the report is clear evidence that the role of forests in the water cycle is at least as important as their role in the carbon cycle in the face of climate change. I am delighted to report that the important work of IUFRO in the field of forest landscape restoration (FLR) has continued to be actively pursued during 2018. In addition to a highly successful regional FLR knowledge-sharing workshop in Sri Lanka, IUFRO participated actively and had impressive visibility in the Global Landscapes Forum (GLF) 2018 held in Bonn, Germany.

Another major opportunity to promote collaboration with partners arose when the World Bank’s Programme on Forests



IUFRO President Mike Wingfield

(PROFOR) agreed to jointly organize with us an Expert Workshop on “Understanding climate impacts of forest fire and the role of restoration as a forest-smart solution”. This Expert Workshop was the first direct collaborative venture between PROFOR and IUFRO. A summary note arising from this important event was prepared to be published in early 2019.

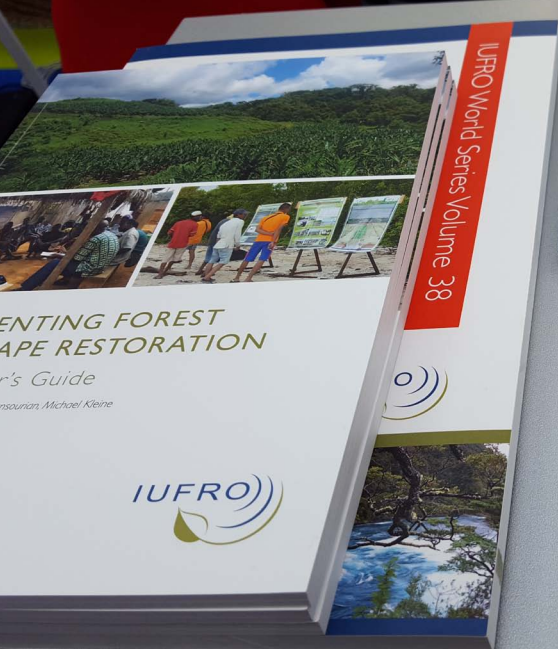
I am proud to report that the IUFRO-EFI Young Scientists Initiative (YSI) has gained further momentum. This joint initiative with the European Forest Institute (EFI) was launched at our 125th Anniversary Congress in 2017 and has already provided five early career scientists from Armenia, Korea, Madagascar, India and Cameroon with grants for short scientific visits in 2018. These visits have provided a unique opportunity for the young scientists to visit a European forest research organization

and conduct collaborative scientific work with a mentor from a selected host organization. I am confident that this mentorship initiative will grow in the future to support greater numbers of young forest researchers. In this regard, we are actively seeking new sponsors to support similar initiatives.

The IUFRO Headquarters office in Vienna continues to serve our Union actively and impressively. I remain most grateful to Executive Director Alexander Buck and his staff for their commitment and support, not only for my office but that of all of the many IUFRO Units. In this regard and following the recommendations of an independent review conducted in 2017, the position of a Thematic Networking Manager was introduced at IUFRO Headquarters in order to increase the quality of its services to members.

An important issue that affects IUFRO business that has emerged during the past year is the new General Data Protection Regulation (GDPR) of the European Union that came into effect on 25 May 2018. The GDPR applies to ‘personal data’, which includes any information relating to an identifiable person. As a legal entity registered in the EU, IUFRO is obliged to comply with the requirements of the GDPR. Since IUFRO, as a global networking organization, stores and processes personal data, I would like to appeal to you to support the work of Headquarters by consenting, where appropriate, to this storage and processing of your data. This will ensure that IUFRO Headquarters is able to continue to provide our entire network with the services that we have enjoyed in the past.

As I think is clear from this brief report as well as from my various other means of communication, 2018 was another very productive year for IUFRO. There are many details that I have not been able to include in this short report and I thus refer you to our full Annual Report for 2018 published on our website under the ‘publications’ banner. In closing, allow me to take this opportunity to thank all our donors, partners, supporters and stakeholders for their contributions that have a huge impact on the well-being of forests and forestry globally. It has been a great pleasure for me to be able to lead our remarkable network and I am grateful to the many thousands of forest researchers all over the world that make **IUFRO THE GLOBAL NETWORK FOR FOREST SCIENCE COLLABORATION.**



IUFRO Publications.  
Photo by IUFRO

Members of the IUFRO Board during field trip organized as part of the 2018 Board Meeting in Corvallis, Oregon, USA. Photo provided by Mike Wingfield

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## Note:

All texts in this Annual Report have either been provided by IUFRO officeholders or have been taken from IUFRO conference websites and reports. Full information and unabridged reports from IUFRO Units are available on the corresponding Unit webpages.

The abbreviations RG and WP refer to Research Group and Working Party, respectively; TF refers to Task Force.

Please note that in the IUFRO context the term “to sponsor/co-sponsor” a meeting does not imply any financial assistance. It means that it complies with the IUFRO criteria for sponsoring meetings, that IUFRO officeholders are prominently involved in the meeting and that IUFRO supports the promotion of the event through its media.

# Looking Ahead

John Parrotta and Björn Hånell,  
IUFRO Vice-Presidents

The most conspicuous landscape feature in view from our 2019 Outlook Tower is the 25th IUFRO World Congress which will be held from 29 September to 5 October in the beautiful city of Curitiba, in the southern Brazilian state of Paraná. With this great event IUFRO will reach yet another milestone in its 127-year history: the first time the World Congress is held in Latin America. And what better place than in Brazil, the country renowned for its cultural richness and the greatest biodiversity of flora and fauna on the planet.



Forests in southern Brazil. Photo by Sandra Luque, IRSTEA

The Congress is expected to draw thousands of scientists to Curitiba, lured by the spectacular diversity of Brazil's natural forests, from the vast region of the Amazon to the Atlantic Forests of the southeast, its extensive planted forests supporting a thriving forest products industry, and Brazil's long tradition of excellence in forest-related research. A significant proportion of the over 700 IUFRO Officeholders in the permanent Divisions and temporary Task Forces will be there, together with scientists from several related research fields. The participants will certainly not be disappointed, given the excellent preparations for the Congress by the host country and the IUFRO members involved in organizing this Congress, co-led by the Brazilian Forest Service (SFB) and the Brazilian Agricultural Research Corporation (EMBRAPA). The Congress Organizing Committee, co-chaired by Yeda Maria Malheiros de Oliveira (EMBRAPA) and Joberto Veloso de Freitas (SFB), have been hard at work since before the 2014 Congress to ensure that this event will stand out as an important landmark in forest science and as an unforgettable networking opportunity for all participants.

The Congress theme "Forest Research and Cooperation for Sustainable Development" emphasizes the importance of forests and forest science in addressing the broader challenges facing society. During the Congress it is expected that the role of forest conservation, the management of natural and planted forests, and forest landscape restoration will feature prominently. The reason for this is their relevance to many of the Sustainable Development Goals, including those related to clean water and sanitation, poverty reduction, food security, affordable and clean energy, and sustainable cities. These topics have been the focus of considerable global research collaboration in recent years. This includes IUFRO's Divisions, Task Forces, Special Programs and Projects, and IUFRO-led Initiatives such as the Global Forest Expert Panels (a joint initiative of the Collaborative Partnership on Forests CPF). Such work is part of a long-term trend in IUFRO activities of reaching out to and establishing greater collaboration with scientists from disciplines outside the boundaries of forest science. IUFRO's outreach efforts also include engagement with the general public, communities and policymakers at the global level to facilitate and enable science-based decisions.

The scientific core of the Congress, developed primarily by the Congress Scientific Committee (CSC) in collaboration with IUFRO Officeholders, and led by Jerry Vanclay, contains five

broad themes - Forests for People; Forests and Climate Change; Forests and Forest Products for a Greener Future; Biodiversity, Ecosystem Services and Biological Invasions; and Forests, Soil and Water Interactions. It will include daily plenary sessions, 19 supplementary sessions, and approximately 200 technical and poster sessions. The unprecedented response to the CSC's open call for session proposals, and subsequent record-breaking response to the call for abstracts (over 4000 submitted), created a level of competition that will likely ensure a scientific program of outstanding value.

The Curitiba Congress also provides an opportunity for IUFRO to gather its internal forces. IUFRO's highest decision-making body - the International Council, formed by representatives from IUFRO's 126 member countries - will meet during the Congress to discuss important issues for the future, including an updated Strategy for the 2019-2024 period.

Further, the Congress will serve as a hub to attract new scientists for IUFRO Officeholder positions in Research Groups and Working Parties, with a special emphasis on recruiting more women to serve as Officeholders. A mentor-mentee program, initiated by the International Forestry Students' Association (IFSA), will be implemented with IUFRO in Curitiba. The Curitiba Congress will be vital in this process - and strengthen IUFRO's role in

***interconnecting forests, science and people!***

Congress website: <http://www.iufro2019.com/>

# Silviculture - Division 1

**Coordinator:** Jens Peter Skovsgaard, Sweden

**Deputy Coordinators:**

Kevin L. O'Hara, U.S.A.

Khosro Sagheb-Talebi, Iran

Pil Sun Park, Korea (Rep)

*IUFRO Division 1 Silviculture includes 8 Research Groups and 20 Working Parties and is structured as follows:*

*RG 1.01.00 : Temperate and boreal silviculture (13 WPs)*

*RG 1.02.00 : Tropical and subtropical silviculture (6 WPs)*

*RG 1.03.00 : Short-rotation forestry (1 WP)*

*RG 1.04.00 : Agroforestry*

*RG 1.05.00 : Uneven-aged silviculture*

*RG 1.06.00 : Restoration of degraded sites*

*RG 1.07.00 : Silviculture and management of threatened and endangered tree species*

*RG 1.08.00 : Silviculture for production of edible fruits*

*RG 1.09.00 : Ecology and silviculture of mixed forests*

## Cooperation and policy processes

The science, development and dissemination of silviculture and restoration practices for boreal, temperate and tropical forests are gaining importance and there is an increasing focus on global change issues. During 2018, IUFRO's Division 1 Silviculture intensified its cooperation with units in other IUFRO Divisions and with other international and national organizations. The many mutual activities with IUFRO's Task Forces "Forest Adaptation and Restoration under Global Change" and "Sustainable Planted Forests for a Greener Future" are exemplary.

## Meetings, workshops, conferences and publications

During 2018, Division 1 Silviculture was involved in organizing a dozen conferences, meetings, workshops and other events, and from these originated about a dozen publications. Many events were hosted in Asia.

One outstanding example was the "International Workshop on Nursery, Silviculture, Forest Restoration and Sustainable Management in Central and Northeast Asia". The workshop was held in Tashkent, Uzbekistan, and aimed to promote sustainable management of dryland forest ecosystems based on restoration techniques developed for economically significant, native species. The workshop brought together scientists, foresters and policy makers from several countries and contributed substantially to promoting regional development in forestry as well as international science cooperation.

Other outstanding examples were the very successful international conferences on beech in Italy and on eucalypt in France. Both conferences were very productive and attracted great interest. As usual, the workshops and conferences included field tours to visit forest research plots and forest areas of scientific or international interest. This provided good venues to discuss the implementation of forefront forest research in forestry practice and the use of forest research for guiding forest policy processes.



*Even-aged silviculture for oak in century-long rotation. Bregentved Estate, Denmark. Photo by Palle Madsen*

## Expert missions

In addition to these activities some officeholders in Working Party 1.01.06 Ecology and Silviculture of Oak were invited as IUFRO representatives on scientific missions to China and India to meet with high-ranking policy and forestry officials to discuss oak silviculture and forest restoration based on oak. The missions were successful contributions to regional development as well as to the promotion of IUFRO.

## New Unit

In 2018 the new Research Group 1.09.00 Ecology and Silviculture of Mixed Forests was established.

## Meetings in 2018

<https://www.iufro.org/events/calendar/2018/>

9-13 April

Beijing & Ordos, China

1.01.13

### **International Workshop on Forest Landscape Restoration and Resilience to Climate Change in Northeast Asia**

23-25 July

Rhineland, Wisconsin, U.S.A.

1.03.00, 2.08.04

### **WOODY CROPS 2018 - International Short Rotation Woody Crops Conference**

3-7 September

Ulaanbaatar, Mongolia

1.01.13

### **2018 International Workshop on Lessons Learnt from Long-term Forest Research and Future Cooperation among Northeast Asian Countries**

13-14 September

Corvallis, Oregon, U.S.A.

1.06.00, TF on Forest Adaptation and Restoration under Global Change, TF on Forests, Soil and Water Interactions, 8.01.07

### **Forests Landscapes in Times of Changing Climate and Water Resources**

17-21 September

Montpellier, France

1.02.01, 2.08.03, TF Forest Biomass Network  
**Managing Eucalypt Plantations under Global Changes**

18-21 September  
Viterbo, Italy  
1.01.07

**11th International Beech Symposium: Natural and Managed Beech Forests as Reference Ecosystems for the Sustainable Management of Forest Resources and the Conservation of Biodiversity**

15-19 October  
Tashkent, Uzbekistan  
1.01.13

**Nursery, Silviculture, Forest Restoration and Sustainable Management in Central and Northeast Asia**

23-27 October  
Beijing, China  
1.01.13  
**Forest Plantation and Land Degradation Neutrality in Drylands**

23-27 October  
Beijing, China

1.01.13  
**Roles of Research Institute and University on Forest Plantation and Landscape Restoration in Asia**

8-10 November  
Kathmandu, Nepal

1.04.00  
**First South Asian Conference on Forestry / Agroforestry Research**

12-18 November  
Valdivia, Chile  
1.05.00

**11th IUFRO Workshop on Uneven-aged Silviculture: Challenges for Increasing Adaptability**

27-30 November  
Lucknow, India  
1.01.06

**Satellite Session on "Ecology and Silviculture of Sub-tropical and Tropical Oaks under Global Change" during the Sixth International Conference on Plants & Environmental Pollution (ICPEP-6)**

## Physiology and Genetics - Division 2

**Coordinator:** Yousry A. El-Kassaby, Canada

**Deputy Coordinators:**

Janice Cook, Canada

Santiago C. González-Martínez, France

Dario Grattapaglia, Brazil

*Division 2 includes 5 Research Groups and 29 Working Parties, which are organized as follows:*

*RG 2.01.00: Physiology (6 WPs)*

*RG 2.02.00: Conifer breeding and genetic resources (8 WPs)*

*RG 2.02.00: Genetics (6 WPs)*

*RG 2.08.00: Hardwood improvement, culture and genetic resources (6 WPs)*

*RG 2.09.00: Tree seed, physiology and biotechnology (3 WPs)*

It gives me great sense of duty and pride to submit my last Annual Report after serving as a Division Coordinator for two consecutive terms. I would like to take this opportunity to welcome and introduce the Division's new Coordinator, Dr. Santiago C. González-Martínez (France) and Deputy Coordinator, Dr. Ilga Porth (Canada) and wish them productive and prosperous tenures.

During Dr. González-Martínez's tenure it is anticipated that there will be some major changes in Division 2 because the majority of officeholders have reached their term limit, an excellent opportunity for new faces and better geographic representation and gender balance.

17 September, Montpellier, France  
**Managing Eucalypt Plantations under Global Changes**  
2.08.03/1.02.01/ TF Forest Biomass Network

Eucalypt plantations cover approximately 25 million hectares worldwide and are expanding rapidly to provide the raw material for wood, paper, and biofuel products as well as large amounts of firewood and charcoal for domestic uses. The first session focused on the ecosystem services provided by eucalypt plantations. The second session dealt with the strategy to face abiotic changes and highlighted the need for inter-disciplinary studies to adapt eucalypt plantations to climate changes. The potential of geno-



*Participants of the Montpellier post-conference tour in front of a 19-month-old coppice close to Castelnaudary (France) on 21 September 2018. Photo by Luo Jianzhong (China Eucalypt Research Centre)*

mics and clonal composites to increase the tolerance of eucalypt plantations to abiotic stresses was pointed out.

The last session focused on the strategy to face biotic stresses. The expanding frontiers of Eucalyptus pests shown in a keynote presentation highlighted that biotic stresses are the most striking threat to the sustainability of Eucalyptus plantations. Advances in molecular techniques to understand pest introductions and pest complexes were presented as well as a state of the art of biocontrol strategies in different contexts. Multiscale remote sensing of plant pathogens appeared as a promising tool for the management of Eucalyptus plantations.

In conclusion, the conference pointed out the need of interdisciplinary research and international collaboration to adapt the management of Eucalyptus plantations to rapid abiotic changes and expanding frontiers of Eucalyptus pests. Promising advances in molecular techniques as well as in remote sensing and modelling will contribute to improving the management practices in a context of global changes.

10-15 September  
Coimbra, Portugal  
2.09.02

### **Clonal Trees in the Bioeconomy Age: Opportunities and Challenges**

Forests are a considerable source of biomass, wood and other products. Their rational management is therefore a key component of the “green economy” on the way towards a more efficient and sustainable use of resources. Forest regeneration is mostly achieved through seed-based propagation of wild or improved varieties. However, seed production is a critical and long process that can be severely impacted by environmental stresses, especially those associated with climate change. Efficient and flexible reproduction strategies based on clonal propagation may therefore become more essential for plantation forestry and conservation of genetic resources.



*Study tour to the National Forest of Buçaco, Luso, Portugal.  
Photo by J.-F. Trontin*

21-23 June  
Kranjska Gora, Slovenia  
2.04.11

### **Alpine Forest Genomics**

AForGeN (Alpine Forest Genomics Network) is a network of scientists from Europe and the U.S. who share an interest in the genomic resources of high mountain forests. The aim of the group is an intensive exchange of information and the development of a cross-border research network for the study of adaptation processes in alpine forest ecosystems. Traditionally AForGeN meetings are organized in high mountain areas. In 2018 the meeting was held in the Slovenian Alps, in the region of Kranjska Gora. Around 40 scientists from 12 countries participated and presented their latest research on alpine tree species.

### **Meetings in 2018**

<https://www.iufro.org/events/calendar/2018/>

12 January  
San Diego, California, U.S.A.  
2.04.10

### **Forest Tree Genomics**

21-23 June  
Kranjska Gora, Slovenia  
2.04.11

### **Alpine Forest Genomics**

23-25 July  
Rhineland, Wisconsin, U.S.A.  
2.08.04, 1.03.00

### **Woody Crops 2018 - International Short Rotation Woody Crops Conference**

10-15 September  
Laxenburg, Austria  
2.09.02

### **5th 2.09.02 Working Party Conference - Clonal Trees in the Bioeconomy Age: Opportunities and Challenges**

17-21 September  
Montpellier, France  
2.08.03, 1.02.01, TF Forest Biomass Network  
**Managing Eucalypt Plantations under Global Changes**

1-5 November  
Novi Sad, Serbia  
2.08.04, 2.00.00  
**15th International Phytotechnology Conference**

28 October - 4 November  
Buenos Aires, Argentina  
2.08.04

### **7th International Poplar Symposium - New Bioeconomies: Exploring the Potential Role of Salicaceae**

# Forest Operations Engineering and Management - Division 3

**Coordinator:** Woodam Chung, U.S.A.  
**Deputy Coordinator:** Ola Lindroos, Sweden

IUFRO Division 3 consists of eight Research Groups and five Working Parties, each headed by a coordinator and one or more deputies. Our research spans all aspects of forest operations, from forest nursery management and forest restoration to timber production and forest products supply chain. As a product of our scientific research, we develop and deliver science, innovations and solutions for economically, socially and environmentally sustainable forest management practices.

- RG 3.01.00: Harvesting and transportation engineering (3 WPs)*
- RG 3.02.00: Stand establishment and treatment*
- RG 3.03.00: Forest ergonomics*
- RG 3.04.00: Forest operations management (2 WPs)*
- RG 3.05.00: Forest operations ecology*
- RG 3.06.00: Forest operations in mountainous conditions*
- RG 3.07.00: Forest operations in the tropics*
- RG 3.08.00: Small-scale forestry*

## Sustainable Forest Operations – our new focus

Division 3 promotes the new forestry concept of sustainable forest operations (SFO). We take an integrated approach to assessing performance of forest operations for economic, environmental and social sustainability. SFO encompasses a broad set of technologies, methods, systems and practices applied to forest operations planning, implementation and monitoring. We highlight the role of wood as a renewable and environmentally-friendly material, and focus on wood utilization efficiency, forest waste management and worker safety. More on SFO is found in the article: Marchi, E.; Chung, W.; Visser, R.; Abbas, D.; Nordfjell, T.; Mederski, P.S.; McEwan, A.; Brink, M.; Laschi, A. 2018. Sustainable Forest Operations (SFO): A new paradigm in a changing world and climate. *Sci. Total Environ.* 634, 1385–1397.

## Innovations in Timber Harvesting Systems

Division 3 scientists are actively involved in the development of new technologies in timber harvesting to improve worker safety, cost-effectiveness and environment protection. Tele-operated and semi-autonomous machines are continuously researched and developed for forestry applications. While control of forest machines on difficult forest terrain is challenging, computer-assisted motion control and semi-automation technologies are solving issues for the logging industry. These advanced technologies are continually sought for their potential to solve ongoing problems of worker safety, productivity, declining employment and environmental impacts.

## IUFRO Division 3 Podcast

Sixteen podcast episodes have been published since its launch in 2015, featuring world-class research scientists, IUFRO Office-holders, and PhD students in Forest Engineering. This year we added two podcast episodes on the Steep Slope Initiative laun-



Council on Forest Engineering (COFE)  
Annual Meeting participants examine  
an in-woods chipper in Virginia, USA.  
Photo by Chad Bolding

ched by FPInnovations, Canada's non-profit forest research institute. The Initiative aimed to encourage collaboration around new steep slope harvesting technology among forest industry, equipment manufacturers, regulators and other stakeholders.

## Meetings in 2018

<https://www.iufro.org/events/calendar/2018/>

Division 3 organized and sponsored six international conferences in 2018. Beginning in April, we successfully attracted more than 180 participants from over 20 different countries to the 6th Forest Engineering Conferences, held in New Zealand (Chair: Rien Visser, Coordinator of 3.01.03). Sponsored by Division 3, FEC is generally held every three years, and is a truly international forest engineering conference event for researchers and practitioners.

16-19 April, Rotorua, New Zealand  
3.00.00

**6th International Forest Engineering Conference: Quenching our thirst for new knowledge**

11-13 June, Vaasa, Finland  
3.08.00

**IUFRO 3.08.00 Small-scale Forestry Conference 2018 "Transformations Towards a New Era in Small Scale Forestry"**

20-22 June, Belgrade, Serbia  
3.02.00

**4th International Conference on Reforestation Challenges**

15-18 July, Williamsburg, Virginia, U.S.A.  
3.00.00

**The 41st Council on Forest Engineering Annual Meeting: Revolutionary Traditions, Innovative Industries**

24-27 September, Madrid, Spain  
3.00.00

**FORMEC 2018 Improved Forest Mechanisation: Mobilizing natural resources and preventing wildfires**

21-26 October, Zagreb, Croatia  
3.00.00, 5.00.00

**International Scientific Conference on "Current Position and Perspectives of Forestry and Wood Technology in the 21st Century"**



# Forest Assessment, Modelling and Management - Division 4

**Coordinator:** Jean-Luc Peyron, France

**Deputy Coordinators:**

Ronald E. McRoberts, U.S.A.

Jerry Vanclay, Australia

Lidija Zadnik-Stirn, Slovenia

*This Division is comprised of 5 Research Groups with 26 Working Parties:*

*RG 4.01.00: Forest mensuration and modelling (6 WPs)*

*RG 4.02.00: Forest resources inventory and monitoring (7 WPs)*

*RG 4.03.00: Informatics, modelling and statistics (3 WPs)*

*RG 4.04.00: Forest management planning (6 WPs)*

*RG 4.05.00: Managerial economics and accounting (4 WPs)*

This Division includes: studies of growth and yield (including mensuration); forest resource inventory (collection and analysis of resource data); forest management planning and managerial economics; remote sensing; management sciences of forest enterprises; statistical methods, mathematics and computer technology.

10-12 May, Zagreb, Croatia

4.05.00, 4.05.01, 4.05.02, 4.05.03

**Sustainable Forest Management for the Future - The Role of Managerial Economics and Accounting**



*Study tour to Plitvice Lakes National Park.  
Photo by Goran Vincenc, Croatian Forests Ltd.*

The conference was aimed at forest researchers and practitioners engaged in managerial, social and environmental forest economics and accounting, forest ecosystem services as well as scientists, experts, researchers and practitioner working in the area of forestry and land-use, forest and natural resource policy and decision support makers, land-use planners, stakeholders, researchers and specialists of related fields.

6-8 June, Solsona and Barcelona, Spain

4.04.04, 4.04.07

**Communicating Risks in Decision Support Systems:  
From basic research to advanced decision support tools**

Risk analysis is an emerging field of research and relatively new in forestry. The international conference on 6-8 June 2018 in Solsona and Barcelona, Spain, focused on presenting models, methods and decision support systems that might be used by public administrators, forest owners and industry for forest management planning in a context of risk and uncertainty. Risk analysis is still poorly developed in the field of forestry and there is a huge demand to integrate, analyse, and manage risk and uncertainty in complex forestry systems. Learning from successful examples in other areas and fields may be helpful if approaches and methods are adapted carefully.

28-31 August, Nantou, China-Taipei

4.02.02

**International Symposium of SFEM2018/IUFRO 4.02.02: Combining Multiple Inventory Techniques and Management Science to Preserve the Forest Ecosystem for Future Generations**

The 2018 joint symposium of Sustainable Forest Ecosystem Management (SFEM) and multipurpose inventory was the tenth in a series of annual meetings of SFEM, which are iteratively organized by the forest societies based in Korea, Japan, and China-Taipei. The next meeting in this series will be held in Sapporo, Hokkaido, Japan in 2019. The symposium aimed to showcase multiple inventory techniques and management science methods to preserve the forest ecosystem for future generations. At the meeting, awards were given to young scientists to encourage them to get involved in innovative research for the sustainability of forest resources and forest dependent communities.

25-27 September, Stellenbosch, South Africa

4.01.00, 4.02.07, 4.03.00, 4.04.02, 5.01.04

**New Frontiers in Forecasting Forests**

The ability to accurately predict future forest growth and structure, and the yields and quality of diverse products from these forests, is an essential part of forest management. With changes in global climate patterns, rapid genetic gains in commercial forest sectors around the world and the serious risks posed internationally by pests and diseases, forecasting how forests will develop is increasingly challenging. New innovations in statistical modelling techniques, as well as significant advances in process-based modelling approaches are leading, however, to major improvements in modelling success.

## Meetings in 2018

<https://www.iufro.org/events/calendar/2018/>

10-12 May

Zagreb, Croatia

4.05.00, 4.05.01, 4.05.02, 4.05.03

**Sustainable Forest Management for the Future - The Role of Managerial Economics and Accounting**

6-8 June

Solsona and Barcelona, Spain

4.04.04, 4.04.07

**Communicating Risks in Decision Support Systems: From basic research to advanced decision support tools**

28-31 August,

Nantou, China-Taipei

4.02.02

**International Symposium of SFEM2018/IUFRO 4.02.02: Combining Multiple Inventory Techniques and Management Science to Preserve the Forest Ecosystem for Future Generations**

17-19 September

Prague, Czech Republic

4.04.00

**Landscape Management: From Data to Decision**

25-27 September

Stellenbosch, South Africa

4.01.00, 4.02.07, 4.03.00, 4.04.02, 5.01.04

**New Frontiers in Forecasting Forests 2018**

28-30 October

Blacksburg, Virginia, U.S.A.

4.01.00

**Forest Biometrics and Modeling Research: Past Successes, Current Challenges and Future Prospects**

## Forest Products - Division 5

**Coordinator:** Pekka Saranpää, Finland

**Deputy Coordinators:**

Jamie Barbour, U.S.A.

Franka Brüchert, Germany

Roger Meder, Australia

Andrew Wong, Malaysia

Division 5 has 10 Research Groups including 26 Working Parties that address all aspects from wood raw material properties and processing to marketing and sustainability.

*RG 5.01.00: Wood and fibre quality (5 WPs)*

*RG 5.03.00: Wood protection (5 WPs)*

*RG 5.04.00: Wood processing (4 WPs)*

*RG 5.05.00: Composites and reconstituted products*

*RG5.06.00: Properties and utilization of plantation wood (2 WPs)*

*RG 5.07.00: Biorefinery (2 WPs)*

*RG 5.10.00: Forest products marketing and business management*

*RG 5.11.00: Non-wood forest products (4 WPs)*

*RG 5.12.00: Sustainable utilization of forest products (2 WPs)*

*RG 5.15.00: Forest products culture (2 WPs)*

Sustainable use of biomass, future wood based products and biorefining, life cycle analysis, and cascade use of wood are among the key issues in the field of forest products research. Forest products culture and traditional use of wood promote visibility of the Division 5 and IUFRO to wider audiences than the scientific community and decision makers. The 2018 World Wood Day (WWD) was commemorated on 21 March 2018 in Siem Reap, Cambodia, coinciding with the UN International Day of Forests. It was organized in collaboration with the new IUFRO Forest Products Culture Research Group. Both Andrew Wong representing Division 5 and Howard Rosen (RG 5.15 Forest Products Culture) gave opening ceremony addresses.

### Webinar series on logistics and manufacturing

WP 5.04.13 Industrial Engineering, Operations Analysis and Logistics organized and delivered a **webinar series** during spring 2018 on topics impacting manufacturing of forest products. The series included webinars on Lean Logistics, Statistical Process Control, Wood Procurement, Production Management in Forest-Based Industries and Tooling Issues in Wood-Based Manufacturing. The group recommends to other research parties at IUFRO to organize more of these type of events. There are many advantages of using online teaching tools that are not fully exploited.

Field trial of novel chemically modified wood for tropics. Photo by Andrew Wong



### Advances in models predicting future forests and sustainable forestry

The **New Frontiers in Forecasting Forests** (NFFF) conference was supported by several units in IUFRO Division 4 as well as by WP 5.01.04 Wood Quality Modelling. The ability to accurately predict future forest growth and structure, and the yields and quality of diverse products from these forests, is an essential part of forest management. With changes in global climate patterns, rapid genetic gains in commercial forest sectors

## 木材无损检测国际学术研讨会

International Technical Workshop on "New Advances in Nondestructive Evaluation of Wood"



Photo Beijing Forestry University

18-25 March  
Siem Reap, Cambodia  
5.15.00

**World Wood Day VI**

29 April - 3 May  
Johannesburg, South Africa  
5.03.00

**IRG49 - IRG-WP Scientific Conference**

8-9 May  
Beijing, China  
5.01.09  
**Technical Workshop: New Advances in Nondestructive Evaluation of Wood**

around the world and the serious risks posed internationally by pests and diseases, forecasting how forests will develop has become increasingly challenging. Innovations in statistical modelling techniques, as well as significant advances in process-based modelling approaches are leading, however, to major improvements in modelling success.

The **International Workshop for Certified Forest Products and Sustainable Forestry** held in Beijing provided a forum for researchers, forest owners and managers who were interested in forest certification, life cycle assessment, economic contribution of forest products, ecosystem services and markets and sustainable forestry. It was sponsored by RG 5.12.00 Sustainable Utilization of Forest Products.

### Processing Technologies for the Forest and Biobased Industries

The **5th International Conference PTF BBI** was supported by RG 5.04 and RG 5.05 Wood Processing and Composites and Reconstituted Products. Current themes regarding cascading use of wood integrated in circular economy, implementation of industry 4.0, data acquisition and lean management, nanotechnology and 3D printing were introduced. Topics included value chain in bio-economy and biomass utilization, product development and new adhesives for the wood industry, wood modification processes and wood-based composites and emissions of wood products.

### Wood Protection

The **49th Annual Conference of The International Research Group on Wood Protection** had a one-day special joint RG 5.03 - IRG session entitled "Innovations and challenges in wood protection against termites and wood beetles". Papers presented were about innovative wood preservation, wood durability, climate change impacts of spread of invasive wood pests, wood pest ecology, distribution and new records of pest infestations and integrated wood pest control strategies. IUFRO President Mike Wingfield was an invited keynoter addressing diseases of planted forests.

### Meetings in 2018

<https://www.iufro.org/events/calendar/2018/>

6 February - 15 May  
online, U.S.A.  
5.04.13

**2018 Spring Webinar Series of IUFRO Working Party 5.04.13 - Industrial engineering, operations analysis and logistics**

**10**

17 May  
Vienna, Austria  
5.04.13

**Operations Management in Wood Products Industries**

6-8 June  
Zagreb, Croatia  
5.00.00

**International Scientific and Expert Conference: Natural Resources, Green Technologies and Sustainable Development - 3 GREEN 2018**

11-15 September  
Chisinau, Moldova  
5.12.00

**18th International Symposium on Legal Aspects of European Forest Sustainable Development and Wildlife: Skills and Vocational Training**

20-21 September  
Freising/Munich, Germany  
5.04.00 and 5.05.00

**5th International Conference on Processing Technologies for the Forest and Bio-based Products Industries**

25-27 September  
Stellenbosch, South Africa  
5.01.04

**New Frontiers in Forecasting Forests 2018**

27-29 September  
Sofia, Bulgaria  
5.00.00

**9th Scientific Conference: Innovations in Forest Industry and Engineering Design - INNO 2018**

18-19 October  
Zagreb, Croatia  
5.00.00

**Int'l Scientific Conference on Current Position and Perspectives of Forestry and Wood Technology in the 21st Century**

23-27 October  
Beijing, China  
5.06.02

**TEAKNET-IUFRO Partner Event in the 4th International Congress on Planted Forests: Planted Forests – A Solution for Green Development**

29-31 October  
Makassar, Indonesia  
5.05.00

**14th Pacific Rim Bio-Based Composites Symposium (BIOCOMP2018)**

30 October - 1 November  
Beijing, China  
5.12.00

**International Workshop for Certified Forest Products and Sustainable Forestry**

11 November  
Nagoya, Japan  
5.00.00

**Joint convention between Society of Wood Science and Technology (SWST) and the Japan Wood Research Society (JWRS): Era of Sustainable World - Tradition and Innovation for Wood Science and Technology**

## Social Aspects of Forests and Forestry - Division 6

**Coordinator:** Tuija Sievänen, Finland

**Deputy Coordinators:**

Cecil C. Konijnendijk van den Bosch, Sweden/Canada

Teresa Cristina Magro, Brazil

Taylor Stein, U.S.A.

*Division 6 comprises 10 Research Groups and 2 Working Parties:*

*RG 6.01.00: Forest recreation*

*RG 6.02.00: Landscape planning and management*

*RG 6.03.00: Nature-based tourism*

*RG 6.04.00: Nature conservation and protected areas*

*RG 6.05.00: Forest ethics*

*RG 6.06.00: Forest, trees and human health and wellbeing*

*RG 6.07.00: Urban forestry*

*RG 6.08.00: Gender and forestry (2 WPs)*

*RG 6.09.00: Forest education*

*RG 6.10.00: Rural development*

### Research topics

Research focusing on the social aspects of forestry is increasingly important in many countries all over the world. Gender issues in forestry, rural development and urban forestry are topical issues which are strongly represented and enhanced within Division 6. Wellbeing and health benefits from forests are gaining importance and societies are now looking at them as the key outputs of forest resources, particularly in developed, highly urbanized countries. There is a continuous research interest in these topics, which nowadays are studied in good partnership of forest scientists, social scientists, and scientists from the medical sector and the food sector. The studies

concern multiple aspects: physical and mental health benefits as well as new pharmacological, cosmetic and food products.

Multipurpose forest management has become a mainstream policy and practice in many countries. In the future other ecosystem services will receive more attention than productive services. Cultural and protection services are important both for communities and individuals. Cultural and social ecosystem services are relevant particularly to urban populations, which are not connected to forests through their jobs, livelihoods or everyday life.

Forest is seen as the environment of leisure time and a destination of visit or travel. Research on nature-based recreation and tourism, and related landscape issues, are well established research fields in many countries in Europe and Northern America, and increasingly in Asian countries. Work conducted by scientists in Division 6 contributes greatly to improving tools and knowledge for multipurpose forest management, which is also one of the key methods and practices to adjust forest use with many environmental problems such as climate change and biodiversity reduction.

### Events and other activities

In 2018 Research Groups and Working Parties were involved in many events and activities, and they were also busy proposing sessions for the IUFRO World Congress 2019. More than 10 accepted sessions are closely related to Division 6 topics.

**RG 6.01. Forest recreation.** The RG network is a key platform for present collaborations in projects, such as:

- 1) Involvement in helping Forest Europe with improvements of the pan-European indicator 6.10 Recreation in Forests;
- 2) The EU Horizon2020 project DIABOLO, with a focus on inclusion/improvement of social/outdoor recreation variables in National Forest Inventories – NFIs.
- 3) SNS-EFINORD network/project on how European NFI data can be utilized in the urban forest context in order to monitor recreational use in urban forest areas.



*Participants of the Forestry and Environment Cluster at ICTSD, Yogyakarta, Indonesia, 2018. Photo by Wiyono*

**RG 6.02 Landscape planning and management.** The major activity of the RG was running the Journal of Outdoor Recreation and Tourism (an initiative of IUFRO Division 6). The **Tourism Naturally Conference** was organized in May 2018 in Zell am See – Kaprun, Austria, by Colorado State University and BOKU, with the RG as a partner.

**RG 6.03 Nature tourism** continued to examine nature-based tourism's relationship with forest management in the world's forests. The focus of the group is to improve the ability of natural resource planners and managers to integrate tourism into the management of natural resources through improved understanding of the complex role humans have with the environment.

Although the group did not formally sponsor a conference or symposium, members participated in natural resource related topics in a wide range of IUFRO and international meetings. Members are involved in organizing and presenting at meetings throughout the world. In particular, RG officeholders participated in the *2018 International Symposium on Society and Resource Management (ISSRM)* held on 17-21 June in Salt Lake City, Utah, U.S.A., as well as the *9th International Conference on Monitoring and Management of Visitors in Recreational and Protected Areas (MMV)* held in Bordeaux, France, on 28-31 August.

Research projects are being conducted throughout the world to define and measure the benefits associated with nature-based tourism and improve the management of natural areas to minimize the costs of tourism. Many of these projects are integrated among IUFRO research organizations. For instance, several IUFRO organizations in the U.S. have partnered on a national research project *Outdoor Recreation, Parks and Other Green Environments: Understanding Human and Community Benefits and Mechanisms*.

**RG 6.04 Nature conservation and protected areas** was actively involved in the preparations of the upcoming IUFRO World Congress in Brazil.

**RG 6.06 Forest, trees and human health and wellbeing** was organizing/co-organizing different conferences and conference sessions which will be held in 2019, however none of them was held in 2018. The World Conference *Forests for Public Health* will take place in Athens in May 2019. This RG is organizing three sessions at the upcoming IUFRO World Congress 2019.

**RG 6.07 Urban forestry** co-organized the **21st European Forum on Urban Forestry (EFUF <http://efuf.org/>)** conference in May 2018 in Helsinki. There were close to 100 delegates from about 25 countries. EFUF 2019 will be held in Cologne, Germany. Several group members were also active on the scientific committee and as speakers in the *UN FAO's World Forum on Urban Forests (<https://www.wfuf2018.com/>)* in Mantova, Italy, November 28 – December 1, 2018. Various group members also worked on developing and releasing versions of *i-Tree Eco for Mexico and Europe* in 2018. *i-Tree Eco (<https://www.itreetools.org>)* is a free tool that allows users to assess ecosystem services and values from their local urban forest.

**RG 6.08 Gender and forestry.** Related to the construction of gender and forests concepts through processes of gender mainstreaming, power politics has become a much discussed

topic. Together with 9.05.01, the RG has invited empirical and conceptual papers on/around the production and conceptualisation of masculinity, and femininity, in relation to increasing or decreasing investment in forestry at the local and/or regional levels. In 2018, several events took place.

The RG organized a **Gender Session at the IUFRO 3.08.00 Small-scale Forestry Conference** in Vaasa, Finland (11-13 June). The RG also represented IUFRO in the panel organized as a part of the *73rd Session of the UN General Assembly* in September 2018. A seminar at SLU, Umeå, Sweden on 12 October organized film screening and discussions with the filmmaker Purabi Bose on the *Indigenous voices amplified in 'Landing Together'* film series. WP 6.08.02 co-organized the conference **Independent for 100 Years** together with the Polish Association of Women Forestry 22-23 November 2018 (<http://kobietylasu.com/>), and represented IUFRO with a presentation on "Kobiety w nauce leśnej" (*Women in forestry science*).



WP 6.08.02 members at the conference 'Independent for 100 Years', Sekocin Stary, Poland. Photo provided by Wiesława Nowacka

**RG 6.09 Forest education** continued its active participation in various activities, most of which were related to the Joint IUFRO–IFSA Task Force on Forest Education (JTF) - see also the report of the Joint Task Force in this Annual Report. The highlights of RG 6.09 are related to the JTF project Global Outlook on Forest Education (GOFE), the UN Forum on Forests (UNFF) Background Paper on Forest Education, and the Global Competition on Best Practices in Forest Education.

In 2018 the RG provided a background paper draft "Background Analytical Study. Forests, peaceful and inclusive societies, reduced inequality, education, and inclusive institutions at all levels" for the UN Forum on Forest 2019. Other events and activities include the *2nd Webinar of the Educators' Forum* online, 15 February 2018; the **5th Meeting of Asia Pacific Forestry Education Coordination Mechanism**, March 28 in Beijing, China; *12th Biennial Conference on University Education in Natural Resources*; hosted by Austin State University, Nacogdoches, Texas, U.S.A., 8-10 March 2018; and **SILVA Network Annual Conference: Quality Management and Accreditation** for study programmes in forest sciences and related disciplines, Castel-franco, Veneto, Italy, 27-29 June 2018.

**RG 6.10 Rural development** was involved in the International Conference on Technology for Sustainable Development (ICTSD) 2018, 12-13 October, Yogyakarta-Indonesia. RG was also active in proposing sessions for the IUFRO World Congress.

## A selection of reports, activities and other outcomes from Division 6 in 2018:

McCullough, B., Bergsgard, N.A., Collins, A., Muhar, A. & Tyrväinen, L. *The impact of sport and outdoor recreation (Friluftsliv) on the natural environment*. The Swedish foundation of strategic environmental research (MISTRA). 48 p. <https://www.mistra.org/wp-content/uploads/2018/06/Sport-and-outdoor-recreation-background-paper-2018-1.pdf>

Øian, H., Fredman, P., Sandell, K., Sæþórsdóttir, A.D., Tyrväinen, L. Jensen, F.S. 2018. *Tourism, nature and sustainability: A review of policy instruments in the Nordic countries*. Nordic Council of Ministers, TemaNord, 2018:534, Copenhagen, 99 p.

Nobuhiko, T. eds. 2018 Special Issue: *Forest Management for the Globalization of Nature-based Tourism*. Shinrinkagaku (Forest Science). 82 5-28 (in Japanese)

Johansson, M., Johansson, K. and Andersson, E. 2018 *#Metoo in the Swedish forest sector: testimonies from harassed women on sexualised forms of male control*. Scand J of For Research. Volume 33, 2018 - Issue 5

Gebrehiwot, M., Elbakitze, M. and Lidestav, G. 2018. *Gender relations in changing agroforestry homegardens in rural Ethiopia*. Journal of Rural Studies 61 (2018) 197-205.

Two films focus on gender issues in India produced by Purabi Bose. Each film is about 20 minutes long and multilingual with English subtitles. The trailer of the films are available at: <https://landingtogether.weebly.com/> in the website category *Films*.

## Forest Health - Division 7

**Coordinator:** Ekehard Brockerhoff, New Zealand

**Deputy Coordinators:**

Elena Paoletti, Italy

Tod Ramsfield, Canada

Andrew Liebhold, U.S.A.

*Division 7 deals with topics that are all concerned with forest and tree health, and the causes of interactions between air pollution and climate change, tree pathogens, and tree-feeding insects. It is comprised of 3 Research Groups with 31 Working Parties:*

RG 7.01.00: *Impacts of air pollution and climate change on forest ecosystems (8 WPs)*

RG 7.02.00: *Pathology (11 WPs)*

RG 7.03.00: *Entomology (12 WPs)*

### RG 7.01 Impacts of air pollution and climate change on forest ecosystems

Among the 2018 highlights were the **“International Conference on Ozone and Plant Ecosystems”** (of RG 7.01, WP 7.01.02 and WP 7.01.05) in May 2018 in Florence, Italy, and a **Session at the General Assembly of the European Geosciences Union** in April 2018 in Vienna, Austria, organized by WP 7.01.03.

In addition, RG 7.01 participated in the International Conference **“Forest Science for a Sustainable Forestry and Human Wellbeing in a Changing World”** in Bucarest, Romania, in September 2018. The conference focused on forest research including the impacts of air pollution, climate change, biotic and abiotic stressors on forest resources status, among others. The Research Group also participated in the International Conference on **“Adaptive Management for Forested Landscapes in Transformation”** organized by IUFRO RG 8.00 in Posadas, Argentina, in October 2018.



*International Conference on Ozone and Plant Ecosystems. Presenting the ongoing experiments in the FACE facility at CNR (Sesto Fiorentino) during the study tour. Photo credits: Barbara Moura and Lorenzo Bussotti*

### Research Group 7.02 – Forest Pathology

The ‘Vascular Wilt Diseases’ Working Party 7.02.03 has a new coordinator, Alberto Santini, Italy, and deputies, Irene Barnes, South Africa, and Louis Bernier, Canada. They will be holding a joint meeting with WP 7.02.02 ‘Foliage, shoot and stem diseases’ in Italy in May 2019. WP 7.02.13 – **Forest Health in Southern Hemisphere Commercial Plantations** held its inaugural and very successful meeting in Punta del Este, Uruguay, in March 2018. Working Party 7.02.01 ‘Root and Stem Rots’ joined forces with the LIFE+ project for a conference in Uppsala and Visby, Sweden, from 26 August to 1 September 2018. A total of 80 participants from 23 countries were hosted by SLU. The proceedings from the meeting are available at the conference website <https://www.slu.se/iufro-rots2018>.

Tod Ramsfield, Beccy Ganley and Julio Diez Casero produced a RG 7.02 newsletter in December 2018 that was circulated on the Forpath listserver and is available on the website of RG 7.02 at: <https://www.iufro.org/fileadmin/material/science/divisions/div7/70200/nl70200-181212.pdf>

### Research Group 7.03 - Forest Entomology

Working Parties in the Entomology Research Group organized three successful conferences since January 2018. WP 7.03.02 co-organized the **7th International Symposium of Cecidology: Ecology and Evolution of Gall-inducing Arthropods** that took place in China-Taipei in March 2018.

The **6th International Workshop on the Genetics of Tree-Parasite Interactions - Tree Resistance to Insects and Diseases: Putting Promise into Practice** took place in August 2018 in Mt. Sterling, Ohio, USA. This was a joint meeting of WPs 7.03.11 & 2.02.15. WP 7.03.04 "Diseases and Insects in Forest Nurseries" organized a meeting in October 2018 in Kuşadası, Turkey.

### Publications produced with input of Division 7

A special issue of the 'Forestry Chronicle' (Volume 94(2)) was published in April 2018 with conference papers of the Meeting of WP 7.02.02 – 'Foliage, Shoot and Stem Diseases of Forest Trees' (7-11 May 2017, Niagara Falls, Ontario, Canada).

A special issue of the journal 'Biodiversity and Conservation' was produced on the topic of 'Forest biodiversity and ecosystem services' which included a number of papers that covered forest health issues. This was a project of the IUFRO Task Force 'Contribution of Biodiversity to Ecosystem Services in Managed Forests'. The special issue was coordinated by Ecki Brockerhoff, Hervé Jactel and Ian Thompson.

For contents, including a review and synthesis paper, see: <https://link.springer.com/journal/10531/26/13/page/1>

### Meetings in 2018

<https://www.iufro.org/events/calendar/2018/>

3-8 March  
Nantou County, China-Taipei  
7.03.02

**7th International Symposium of Cecidology: Ecology and evolution of gall-inducing arthropods**

21-23 March  
Punta del Este, Uruguay  
7.02.13

**Forest Health in Southern Hemisphere Commercial Plantations**

10 April  
Vienna, Austria  
7.01.03

**Session at the General Assembly of the European Geosciences Union (EGU) 2018: Role of biomass in a sustainable bio-economy: significant developments and impact on land use, climate and environmental services**

21-25 May  
Florence, Italy  
7.01.00, 7.01.02, 7.01.05

**International Conference on Ozone and Plant Ecosystems**

6-8 June  
Zagreb, Croatia  
5.00.00, 7.01.00, 7.01.03, 7.01.05, 9.00.00

**International Conference: Natural Resources, Green Technologies and Sustainable Development - 3 GREEN 2018**

5-10 August  
Mt. Sterling, Ohio, U.S.A.

2.02.15, 7.03.11, Task Force Forests and Biological Invasions  
**6th International Workshop on the Genetics of Tree-Parasite Interactions - Tree Resistance to Insects and Diseases: Putting Promise into Practice**

26 August - 1 September  
Uppsala, Sweden  
7.02.01

**Root and Stem Rots Conference**

18-21 September  
Bucharest, Romania  
7.01.01

**Forest Science for a Sustainable Forestry and Human Well-being in a Changing World**

21-26 October  
Kuşadası, Turkey  
7.03.04

**Diseases and Insects in Forest Nurseries Working Party Meeting**

*IUFRO Root and Stem Rots meeting with the group gathered at/on a harvester demonstrating stump treatment in practice in a forest near the lake Mälaren east of Stockholm, Sweden. Photo by Jonas Rönnberg*



# Forest Environment - Division 8

**Coordinator:** Sandra Luque, France

**Deputy Coordinator:**

Jean-Michel Carnus, France

Shirong Liu, China

Alexia Stokes, France

*Division 8 concerns research on forest ecosystems, landscape ecology, forest biodiversity including ecosystem services, eco-hydrology and natural disturbances. Currently, it includes 3 Research Groups and 20 Working Parties with a total number of 56 Officeholders.*

*RG 8.01.00: Forest ecosystem functions (7 WPs)*

*RG 8.02.00: Forest biodiversity (8 WPs)*

*RG 8.03.00: Natural hazards and risk management (5 WPs)*

Division 8 organized and contributed to a series of key conferences and symposiums during 2018 in different regions of the world around main themes related to biodiversity & ecosystem services; soil & water and planted forests.

In preparation of the IUFRO World Congress 2019 in Curitiba, Brazil, a series of important events took place in Latin America. One of them was the conference on **Adaptive Management for Forested Landscapes in Transformation** (Posadas, Misiones, Argentina), organized by INTA, Argentina and supported by the Government of Misiones. The event was declared to be of provincial importance and this declaration was handed over by government authorities to IUFRO officers in the closing ceremony. The conference addressed issues arising from the transformation of forests in response to the pressures of globalization and ecological degradation. The event, provided a platform for discussion of the importance of biodiversity as an essential component to human well-being.

In Valdivia, Chile, the **Latin American Congress on Forests and Water** and the **V IUFRO Conference on Forests and Water in a Changing Environment** took place as a joint meeting. This event strengthened links between dynamic developments in Latin American forests and a global community studying environmental change, forests, and water. It provided a forum for experts on forest hydrology, watershed ecosystem management, ecohydrology, climate, and environmental change.

In Shenyang, China, the focus was placed on “Developing Protective Forests, Promoting the Construction of Ecological Civilization” at the **International Conference on Protective Forests to Commemorate the 40th Anniversary of the Three-North Afforestation Program**. A very timely and thought-provoking topic for scientists, practitioners, policy-makers, and students working on protective forests.

In Quebec City, Canada, the **International Symposium on Forest Soils** took place. With more than 200 participants of varied ages and experience levels (undergraduate and graduate students through old guard/retirees/living legends) this was one of the largest and most diverse events in the history of these symposia since 1958.



*Oak tree at Risø campus, Roskilde, which is monitored for movement in the wind. Masts are instrumented with sonic anemometers to measure the flow in front of and behind the tree. Photo by Barry Gardiner*

The workshop of 8.03.06 on **Tree Motion and Wind Measurement** in Roskilde, Denmark, aimed to compare techniques and to teach researchers good practice in the measurement of tree movement and wind loading, and in the measurement of the wind in and above forests. Simultaneous measurement of tree movement and wind flow is essential for understanding the complex interaction of tree motion and wind within and above canopies, or around individual trees and tree groups.

## Meetings in 2018

<https://www.iufro.org/events/calendar/2018/>

23-25 April  
Roskilde, Denmark  
8.03.06

### Tree Motion and Wind Measurement Workshop

10-16 June  
Quebec City, Quebec, Canada  
8.01.03

### North American Forest Soils Conference – International Symposium on Forest Soils

6 July  
Guiyang City, Guizhou Province, China  
8.00.00

### Joint Forum of Forest City and Green Sharing (FFCGS) during the Eco Forum Global Annual Conference

1-5 August  
Shenyang, China  
8.00.00

### 2018 International Conference on Protective Forests commemorating the 40th Anniversary of Three-North Afforestation Program (ICPF2018)



11-15 September  
Chisinau, Moldova  
5.12.00, 8.02.05, 9.06.00

**18th International Symposium on Legal Aspects of European Forest Sustainable Development and Wildlife: Skills and Vocational Training**

13-14 September  
Corvallis, Oregon, U.S.A.

TF Forest Adaptation and Restoration under Global Change, TF Forests, Soil and Water Interactions, 8.01.07, 1.06.00  
**Forests Landscapes in Times of Changing Climate and Water Resources**

5-9 November  
Valdivia, Chile

8.00.00, TF Sustainable Planted Forests for a Greener Future, 8.01.07

**5th International Conference on Forests and Water 2018**

29-30 November  
Bogotá, Colombia  
8.01.02

**II Colombian Symposium of Landscape Ecology//II Simposio Nacional de Ecología del Paisaje - Interconectando sociedad y ciencia para conservar y construir paisajes integrales**



*Group photo Posadas Conference, provided by Sandra Luque*

1-5 October  
Posadas, Misiones, Argentina  
8.00.00

**Adaptive Management for Forested Landscapes in Transformation**

8 October  
Innsbruck, Austria  
8.03.02

**Integral engineering solutions: from protection forest to temporary measures; Session during the International Snow Science Workshop**

16-18 October  
Xi'an, China  
TF Forests, Soil and Water Interactions, 8.01.07

**Session on forests and hydrological processes at the International Symposium of Ecohydrology and Water Security: Opportunities & Challenges from Developing Countries**

23-27 October  
Beijing, China  
TF Sustainable Planted Forests for a Greener Future, 8.00.00  
**4th International Congress on Planted Forests: Planted Forests – A Solution for Green Development**

23-27 October  
Beijing, China  
TF Sustainable Planted Forests for a Greener Future, 8.01.07  
**Planted forests and their role in water quality and quantity dynamics across the landscape; Session at the 4th International Congress on Planted Forests**

**Division 8 also contributed to major scientific events in 2018:**

29 November - 1 December  
Mantova, Italy  
**World Forum on Urban Forests**

21-23 March  
Nagoya, Japan  
**Symposium organization at the 8th EAFFES International Congress: Urban Landscape Pattern, Green Infrastructure & Ecosystem Services**

**Workshops on Future Implications on Forest Landscape Ecology in China:**  
28 October, Beijing, China, a general roadmap was developed  
7 December, Shanghai, China, a draft outline for the final report was discussed

15-19 October  
San Sebastián, Spain  
**ESP EU 2018 (Ecosystem Services Partnership)**

5 June  
Breitenwang, Austria  
**Alpine Convention - 7th Water Conference in the Alps**

29-30 November 2018  
Bogotá, Colombia  
**II Simposio Nacional de Ecología del Paisaje**

## Related Publications

Open Source Special Issue: International Journal of Biodiversity Science, Ecosystem Services & Management (Taylor & Francis) - *Ecosystem services supporting integrative natural resource management*.

Editorial article (WP 8.01.02): Christine Fürst; Sandra Luque; Davide Geneletti. "Nexus thinking – How ecosystem services (ES) can contribute to enhance the cross-scale and cross-sectoral coherence between land use, spatial planning and policy making".

Special Issue: Ecological Engineering, Volume 109, Part B, December 2017, Pages 141-144. 4th International Conference on soil bio- and eco-engineering (SBEE2016) 'The Use of Vegetation to Improve Slope Stability.' Editorial article. Thomas Hubble Samantha Clarke, Alexia Stokes, Chris Phillips

Special Feature: Methods in Ecology and Evolution MEE (8.01.02 Working Party) 'Improving Biodiversity Monitoring Using Satellite Remote Sensing'.

Special issue in the journal *Climate* on "Social-Ecological Systems, Climate and Global Change Impacts", based on the Halle conference in 2017 and edited by Christine Fürst. Papers started being published in 2018.

HUMUSICA PROJECT (presentation, meetings, results): Special Issue of Applied Soil Ecology under publication (74 articles: short reviews, field tools, examples of classification, new researches...).

New (May 2018): *Humusica: Soil biodiversity and global change*. Augusto Zanello, Judith Ascher-Jenull, Jean-François Ponge, Cristian Bolzonella, Damien Banas, Maria De Nobili, Silvia Fusaro, Luca Sella, Raffaello Giannini. *Bulletin of Geography. Physical Geography Series*, No. 14 (2018): 15–36.

J. Papež (Hidrotehnik, Slovenia), M. Ribnikar (MOP, Slovenia), M. Jelen (MOP, Slovenia) – *50 Shades of Green Infrastructure - Experiences from Slovenia*.

# Forest Policy and Economics - Division 9

## Coordinator:

Daniela Kleinschmit, Germany

## Deputy Coordinators:

Mercy Afua Adutwumwaa Derkyi, Ghana

Jurij Begus, Slovenia

*The Division comprises 6 Research Groups with a total of 25 Working Parties:*

*RG 9.01.00: Information and communication (6 WPs)*

*RG 9.02.00: Forest sector analysis*

*RG 9.03.00: Forest history and traditional knowledge (6 WPs)*

*RG 9.04.00: Forest resource economics (4 WPs)*

*RG 9.05.00: Forest policy and governance (8 WPs)*

*RG 9.06.00: Forest law and environmental legislation (1 WP)*

It is at the heart of Division 9 to understand and explain steering mechanisms for sustainable forest management and its effects on society. Since the United Nations Conference on Environment and Development (UNCED) of Rio 1992 criteria and indicators (C&I) have emerged as a tool in promoting sustainable forest management. Timely, after 25 years of C&I, one focus of the Division has been on their effects. Based on the analysis of eleven C&I processes with more than 170 countries involved, results of WP 9.01.05 show a significant positive impact though the level of implementation varies across countries and regions.

For many years the role and forms of integration and participation of different actors has already been a major research subject of Division 9 covered by different units, e.g. those focusing on Traditional Knowledge, Forest Governance or Forest Information. The importance of engaging local communities and stakeholders to increase the successful adoption of new technologies has been highlighted at a meeting held in Christchurch, New Zealand, organized by the WP on Extension and Knowledge Exchange and hosted by Scion the Crown Research



9.01.03 conference in Christchurch, New Zealand  
Photo by Eduardo Cartes Rodriguez

Institute. The meeting covered issues like teaching forest nursery workers about the use of water and nutrients. The relevance of integrating and orchestrating different actors in forest policy making has also been the subject of a special issue and a review published in the journal *Forest Policy and Economics*.

Another highlight of Division 9 activities was the **International Conference on African Forest-related Policies and Politics** in Yaoundé, Cameroon. The conference was organized by RG 9.05.00 and the newly established WP 9.05.09 on African Politics and Governance together with the University of Göttingen in Germany and the University of Dschang in Cameroon, and attracted more than 150 participants from 27 countries. The conference is the first in a planned series of African conferences aiming to advance cutting edge knowledge on formal and informal processes of forest-related policies and politics in Africa.

One outcome of the conference is the planned special issue on “Forestland Policy and Politics in Africa”.

### Meetings in 2018

<http://www.iufro.org/events/calendar/2018/>

5-7 September

Sheffield, UK

9.03.00

#### European Wood Pastures - Past, Present and Future

9-14 September

Christchurch, New Zealand

9.01.03

#### The Importance of Engaging Local Communities and Stakeholders to Increase Successful Adoption of New Technologies

11-15 September

Chisinau, Republic of Moldova

9.06.00, 5.12.00 & 8.02.05

#### 18th International Symposium on Legal Aspects of European Forest Sustainable Development and Wildlife: Skills and Vocational Training

24-27 September

Yaoundé, Cameroon

9.05.00 & 9.05.09

#### African Forest-related Policies and Politics

4-7 December

St. Georgen am Längsee, Austria

9.03.01, 9.03.02

#### European Forests – Our Cultural Heritage

### Publications

#### 9.01.05

Ahimin, A. O., Mikissa, J. B., Johnson, S., N’Guessan Kouamé, F., & Kamanzi, K. (2018): *Implementing Principles, Criteria and Indicators for Sustainable Forest Management in Gabon*. Journal of Sustainable Forestry, July 2018, pp.1–8. DOI: 10.1080/10549811.2018.1497994

Jafari, M. (2018): *Forest rest or applying sustainable forest management criteria and indicators*. Iran Nature 3(1), pp. 10-15. DOI: 10.22092/irn.2018.116110

Linser, S., Wolfslehner, B., Asmar, F., Bridge, S.R.J., Gritten, D., Guadalupe, V., Jafari, M., Johnson, S., Laclau, P. & Robertson, G.: *25 Years of Criteria and Indicators for SFM: Why some intergovernmental C&I Processes flourished while others faded*. Forests 2018, 9(9), 515; <https://doi.org/10.3390/f9090515>

Linser, S., Wolfslehner, B., Bridge, S.R.J., Gritten, D., Johnson, S., Payn, T., Prins, K., Raši, R. & Robertson, G.: *25 Years of Criteria and Indicators for Sustainable Forest Management: How Intergovernmental C&I Processes Have Made a Difference*. Forests 2018, 9(9), 578; <https://doi.org/10.3390/f9090578>

#### 9.05.00

Nurrochmat, D.R., Astuti, E.W., Giessen, L. & Maryudi, A.: *Forest policy and governance: Analyses in the environmental social sciences; a special issue resulting from the international and multi-disciplinary scientific conference in Bogor, Indonesia; 4-6 October 2016, published in Forest Policy and Economics Volume 91, 1-116.*

## Task Force on Forest Adaptation and Restoration under Global Change

**Coordinator:** Andreas Bolte, Germany

**Deputy Coordinators:**

Mercy Afua Adutwumwaa Derkyi,  
Ghana

Palle Madsen, Denmark

John Stanturf, U.S.A.

Forest adaptation and restoration is one of the key strategies for securing forest integrity, vitality and productivity under ongoing changes of climatic and societal conditions worldwide. With this Task Force, we want to compile and improve globally available knowledge on how to achieve an optimal adaptation status of forest and forests landscapes. Our Adaptive Measure (AM) approach (1) considers all actions that increase adaptive capacity of forests and forest land, (2) combines Adaptive Forest Management (AFM) concepts on stand-scale with Forest Landscape Restoration (FLR)



concepts on landscape scale, (3) links national and trans-national policies, as well as trans-disciplinary expertise in various fields, and (4) integrates experts and research activities among various IUFRO sections. The conceptual pathway of the Task Force pursues the following three objectives: identifying knowledge gaps, comparing existing activities and techniques, and elaborating best practice approaches.

In 2018 we continued with the multilingual online survey on forest adaptation and restoration (Weblink: <http://gdi.thuenen.de/wo/limesurvey/index.php/883655?lang=en>, 13 languages available to date).

*Excursion to the “old growth” stand at McDonald Forest, Corvallis (OR, U.S.A)  
Copyright: Andreas Bolte*

The database includes about 130 complete responses from five continents with increasing information from tropical and sub-tropical regions. The major outcomes of the Task Force will be published within the topical collection "Forest Adaptation and Restoration under Global Change" in *Annals of Forest Science* (IF 2017: 2.357). Up to now, two articles have been published, and six papers are under review.

### Activities in 2018

#### Workshops and sessions

*International Knowledge Sharing Workshop on Best Practices for Implementing Forest Landscape Restoration in South Asia*, Chilaw, Sri Lanka, 15 to 17 August 2018. (an activity in support of the Bonn Challenge)

Collaborative workshop with the TF Forest, Soil and Water Interaction: *Forests Landscapes in Times of Changing Climate and Water Resources*, Corvallis (U.S.A.) 13 - 14 September 2018

Session at the 4th International Congress on Planted Forests - *New Generation Plantations for Natural Climate Solutions* in Beijing, 23 to 27 October 2018

Successful submission of a sub-pleinary session proposal on *Forest Adaptation and Restoration under Global Change* at the IUFRO World Congress in Curitiba, Brazil, in October 2019

### Publications

Adhikari, S., Baral, H. and Nitschke, C. 2018. *Adaptation to climate change in Panchase mountain ecological regions of Nepal*. *Environments* 5, 42. <https://doi.org/10.3390/environments5030042>

Chakraborty, A., Saha, S., Sachdeva, K., Joschi, P.K. 2018. *Vulnerability of forests in the Himalayan region to climate change impacts and anthropogenic disturbances: a systematic review*. *Regional Environmental Change* 18, 6: 1783-1799. <https://doi.org/10.1007/s10113-018-1309-7>

Silva, L.N., Freer-Smith, P. & Madsen, P. 2018. *Production, restoration, mitigation: a new generation of plantations*. *New Forests*. Online: <https://doi.org/10.1007/s11056-018-9644-6>

Spathelf P., Stanturf, J., Kleine, M., Jandl, R., Chiatante, D., Bolte, A. 2018. *Adaptive measures: integrating adaptive forest management and forest landscape restoration*. *Annals of Forest Science* 75, 55. <https://doi.org/10.1007/s13595-018-0736-4>

Stanturf, J.A., Madsen, P., Sagheb-Talebi, K., Hansen, O.K. 2018. *Transformational restoration: novel ecosystems in Denmark*, *Plant Biosystems* 152, 3: 536-546, <https://doi.org/10.1080/11263504.2018.1435586>

*How to plant a trillion trees*. *Nature* 560, 542-544, 2018. doi: 10.1038/d41586-018-06031-x. <https://www.nature.com/articles/d41586-018-06031-x>

## Task Force on Sustainable Planted Forests for a Greener Future

**Coordinator:** Christophe Orazio, France

**Deputy Coordinators:** Peter Freer-Smith, United Kingdom

Tim Payn, New Zealand

Margarida Tomé, Portugal

### Objective and rationale

Reflecting increased pressure on forest resources induced by the emergence of bioeconomy, the Task Force focusses on key issues related to the intensification of planted forest production in order to meet the increasing need for forest products from a growing population, but doing this in a sustainable way and facing the changing global environment (Sustainable Intensification).

#### Overall outcomes of the Task Force are:

- 1) An enduring network for international and pan-IUFRO scientific collaboration based on the Task Force theme;
- 2) An improved interface between IUFRO science activities and wider society (through WWF and Future Earth and FAO) and other stakeholder organizations; and the preparation of a major event involving all types of actors engaging in the topic of planted forest; the 4th International Congress on Planted Forest.

The group has been working well and achieved most its commitments so far. The EFI regional office (EFIATLANTIC)

acting as secretariat unit has turned into an EFI facility dedicated to planted forests (EFIPLANT) favoring synergies with the Task Force and multi-stakeholder engagement. The 2018



Polycyclic mixed plantation  
5 year old in Veneto (Italy)  
Photo by Paolo Mori

*International Congress on Planted Forests* in China was a great success with more than 700 attendees and benefited IUFRO's goals.

The main driver to support coordination with other divisions and Task Forces is to involve representatives from many IUFRO Divisions and Working Parties in the Task Force and its activities.

#### Involvement of IUFRO Divisions and Task Force members

One of the activities relevant for increasing multidisciplinary among Divisions is the organization of joint events and publications as was done with the Task Force on Biodiversity and the event on afforestation.

During the past period, we were glad to welcome a couple of new members from Helsinki University, BOKU University, and from CIRAD.

#### Publications in 2018

*Production, restoration, mitigation: a new generation of plantations*. Silva, L.N., Freer-Smith, P. & Madsen, P. New Forests (2018). <https://doi.org/10.1007/s11056-018-9644-6>

Monteiro Alves, A., Almeida, M. H., Goes, A. 2018. *Plantações Florestais*. ISAPRESS. 322pg

2018 Free Web APP for design and management of polycyclic mixed plantations. <https://www.inbiowood.eu/webapp/>

#### Events in 2018

##### NGP ENCOUNTERS

October; China, Guangxi, organized back-to-back with the Planted Forests Congress

##### 4th International Congress on Planted Forest

October; China; sponsors FAO, NGP, EFI  
Thanks to our Chinese colleagues, the event was a huge success with more than 700 attendees. Most of the Task Force members were involved in the scientific committee.

**Field Dialogue on Tree Plantations in the Landscape**, 29 October 2018 - 2 November 2018, Rotorua, New Zealand, a joint event of The Forests Dialogue and WWF's New Generation Plantations (<https://theforestdialogue.org/dialogue/field-dialogue-tree-plantations-landscape-new-zealand>). This was a highly successful event involving a number of Task Force partners and 46 registered participants. The focus was on opportunities for sustainable intensification and intensification of NZ's planted forests, the role of Maori, NZ's Indigenous People, in forestry, and planted forests role in NZ's response to climate change. The co-chairs' report was launched in February (<https://theforestdialogue.org/publications>). Findings from the dialogue will inform future activities of the Task Force and other initiatives

**2018 Reforestation Challenges Conference**, June, Belgrade, Serbia. A total of 54 participants representing 22 countries attended this Conference and used the opportunity to gather and present results and relate experiences from research areas relevant to reforestation. A strong focus was placed on the topic of climate change and assisted migration, with many points made on the genetic resources availability and the key role of nurseries.

'**Eucalyptus 2018**' conference (Managing Eucalyptus plantations under global changes, <https://eucalyptus2018.cirad.fr/>), 17-21 September 2018, Montpellier, France. A total of 218 participants from 33 countries attended. A post-conference tour in southern France showed some frost-resistant eucalypt plantations. Book of abstracts: <http://agritrop.cirad.fr/589039/>

#### Networking

Preparation of a RISE (Research and Innovation Staff Exchange) project on best practices for risk management in planted forests, to submit in March 2019.

As an outcome of the IUFRO Congress on Planted Forests, a joint NGP/IUFRO working group was created to co-develop the framework of a joint Research Program.

## Task Force on Monitoring Global Tree Mortality Patterns and Trends

**Coordinator:** Henrik Hartmann, Germany

**Deputy Coordinators:** Aster Gebrekirstos Afwork, Kenya  
Nadine Rühr, Germany  
Tanja Sanders, Germany  
Bernhard Schuldt, Germany

Reports of climate change-induced tree mortality and forest decline increase globally, yet there is no consensus on the spatial extent and future trends. These knowledge gaps highlight the need for a global monitoring network of tree mortality, integrating existing organizations of global forest research. The new IUFRO Task Force 'Monitoring Global Tree Mortality Patterns and Trends' established in autumn 2018 fills this gap

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by integrating existing data from field surveys and remote sensing. In the next two years the Task Force will aim to host a series of workshops that bring together scientists from multiple research areas, including physiological mechanisms of mortality, forest inventory, remote sensing, and modeling.



**MONITORING OF  
GLOBAL TREE MORTALITY**

IUFRO Task Force

# Joint IUFRO-IFSA Task Force of Forest Education

**Coordinators:** Sandra Rodríguez Pineros, Mexico  
Khalil Walji, Germany

**Deputy Coordinators:** Mika Rekola, Finland  
Ashley Lehto, Germany

The Joint IUFRO-IFSA Task Force on Forest Education is an interdisciplinary cooperation aiming to increase awareness of the importance of education in the forestry sector and related areas. Non-governmental organizations, researchers, and students are working together in the pilot actions of the Task Force to establish the basis for a change in forest education in the future. The IUFRO President's Office, based at the Forestry and Agriculture Biotechnology Institute, University of Pretoria, South Africa, supported the activities of the Joint IUFRO-IFSA Task Force on Forest Education (JTF).

## Global Outlook on Forest Education (GOFE)

The objective of the global research project is to produce a science-based report on forest education issues related to higher education. Within the research project successes and failures of forest curricula are analyzed worldwide and a comprehensive gap analysis will help to recommend future possibilities of learning methods and approaches. Three students from Africa recently initiated their protocol to conduct the research; the calendar for activities marks March 2019 to finish the first data collection. A blog <https://foresteducation.wordpress.com/> has been installed to enhance the communication between all participants. Based on previous results from GOFE we feel that the implementation of the GOFE project is timely, relevant and that the more countries are involved the better.

## Student trainings offered by the Joint Task Force

The increasing demand for benefits and services of forest ecosystems requires new knowledge and competencies of future forest professionals. Although there have been changes in forest curricula around the world, gaps are still existing and need to be filled. Objectives of the Joint Task Force pilot trainings are to provide opportunities for students to increase knowledge on forest related topics to solve current and future challenges with regard to forest conservation and management and to acquire state-of-the-art knowledge on forest-related issues. The development of trainings was supported with the generous grant of the President's office. The trainings follow a pre-designed framework and format including up-to-date innovative and modern teaching methods and techniques. The aim of the pilot actions is to educate forestry students on topics that are not traditionally included in the forestry curricula, such as forest governance and writing research and grant proposals.

IUFRO Officeholders and IFSA students offered courses on Sustainable Forest Management (SFM), Human and Wildlife Conflict (HWC) and Entrepreneurship at:

- NARM 2018, the annual IFSA North African Regional Meeting in June in Nigeria
- 18th International Symposium on Legal Aspects of European Forest Sustainable Development and Wildlife: Skills and Vocational Training, Moldova, 11-15 September
- Courses jointly organized with REFORESTAMOS, México, Universidad Autónoma de Chihuahua and IUFRO WG 6.09

- IUFRO Division 8.01.02 Conference on Adaptive Management for Forested Landscapes in Transformation, held in Misiones, Argentina, from 1-5 October 2018

## Forest Education Directory and Interactive Tool

A major product of the Joint IUFRO-IFSA Task Force on Forest Education, a forestry education directory, was produced in partnership with the Global Forest Information Service (GFIS) in 2016: <https://www.gfis.net/content/education>. This tool, which provides quick access to over 1200 forestry-related university programs (BSc, MSc, and PhD) at more than 400 institutions worldwide, is intended to enhance forestry students' mobility and to promote forestry education activities online.

In 2018, a new web design was launched and the Task Force participation on the education platform was remarkable with consistent feedback and updates on user experience and interactivity as well as the new page design coming from the IFSA Forest Education Commission, the IFSA network at large. Feedback was collected, organized and communicated by the TF members to the GFIS coordinator Eero Mikola. Further, a collaboration with the University of British Columbia, and specifically Dr. John Innes saw us be able to include 110 new online courses, modules and tools that can be accessed at no cost for students and the forest sciences community at large.

## Global Competition on Best Practices in Forest Education

In November 2018, the Global Competition on Best Practices in Forest Education was launched by the Joint Task Force together with the University of Helsinki with HY+, and in collaboration with the Food and Agriculture Organization of the United Nations (FAO). It aimed to raise awareness about education in the context of sustainably managed forests. The outcome would be announced on 21 March 2019, the International Day of Forests.

Find a full report and more details about the JTF activities at: <https://www.iufro.org/science/task-forces/forest-education/>

**Global Competition on Best Practices in Forest Education**

*The future of forests is in your classroom today*

Deadline for submission of best practices is January 18 2019

Joint IUFRO-IFSA Task Force on Forest Education

UNIVERSITY OF HELSINKI | IUFRO | INTERNATIONAL FORESTRY STUDENTS' ASSOCIATION | HY+ CENTRE FOR CONTINUING EDUCATION

# Task Force on Resources for the Future: Transformation in Forest Use

**Coordinator:** John Innes, Canada

**Deputy Coordinator:** William Nikolakis, Canada

The Resources for the Future Task Force is preparing its book, entitled the *Wicked Problem of Forest Policy*, for publication with Cambridge University Press in 2019. The book presents chapters on wicked problems in forest policy and the ways these have been addressed (or are being addressed). The contributors are drawn from the Task Force and from other experts on forest

policy. The book reflects the importance of forest policy for encouraging (and limiting) innovation in forestry.

The Resources for the Future Task Force will also hold a Sub-plenary session at the XXV IUFRO World Congress on *Solving Wicked Forest Policy Problems: Lessons from Practice*. The session falls under the theme of *Forests for People*, and presents insights from practice on solving wicked problems by presenters from across the world.

## Task Force on Climate Change and Forest Health

**Coordinator:** Elena Paoletti, Italy

**Deputy Coordinator:** Andrzej Bytnerowicz, U.S.A.

Eckehard Brockerhoff, New Zealand

Marcus Lindner, Finland

### Overview

Climate change is one of the most challenging issues for global forests. This Task Force has been working to improve our understanding of the processes regulating the interactions between forests and climate in order to address how forest ecosystems can be made more resilient against climate change. The multi-faceted aspects of these interactions pivot around forest health, with focus on nitrogen and ozone pollution, insect attacks, increased temperature and drought, and the carbon balance. The TF is divided into three pillars (Effects, Adaptation, Mitigation). Each pillar is divided into modules, with one leader and several members. More than 70 members from all over the world have been collaborating with the TF. The main aim of each module was the publication of at least one authoritative paper.

Find out more about the modules here: <https://www.iufro.org/science/task-forces/climate-change-forest-health/members/>

### Activities

The TF organized three events in 2018: a TF meeting at the **GREEN2018** conference in Zagreb, Croatia 5-7 June, 2018; a meeting with TF members at the International Conference on **Sustainable Forestry in a Changing World** in Bucharest, Romania, 18-21 September, 2018; and a TF session at the IUFRO conference on **Adaptive Management for Forested Landscapes in Transformation** on 1-8 October, 2018 in Posadas Misiones, Argentina. A session proposal for COP24 in Katowice, Poland was not approved. In addition, the TF worked towards preparing a session proposal for the IUFRO World Congress in Curitiba, Brazil.

A IUFRO Spotlight (No 60) was released in 2018, based on the TF module A3 dedicated to the development of a new concept of sustainable forest operation as a critical support to any action of sustainable forest management

The TF website was regularly updated, see <https://www.iufro.org/science/task-forces/climate-change-forest-health/>

## Task Force Forests, Soil and Water Interactions

**Coordinator:** Xiaohua (Adam) Wei, Canada

The Task Force on Forests, Soil and Water Interactions conducted various activities in 2018, among which the development of a **GFEP (Global Forest Expert Panels) report on forests and water**, and organization of the **5th IUFRO International Conference on Forests and Water** in Chile were the most important. The GFEP report entitled "Forest and Water on a Changing Planet: Vulnerability, Adaptation and Governance Opportunities. IUFRO World Series 38" was released in July. Irena Creed (GFEP co-chair, TF member) and other TF members (Kevin Bishop, Steve McNulty, David Ellison, Adam Wei, Juan Blanco, Richard Harper and Mark Gush) made critical contributions to this report.

TF Meeting participants at Oregon State University, Corvallis OR, U.S.A. Photo by Andreas Bolte



The **5th IUFRO International Conference on Forests and Water in a Changing Environment** was successfully held in Chile, November 5-9, 2018, jointly with the *Second Latin American Conference on Forests and Water*. The conference brought together 183 professionals and students from 35 countries representing academia, industry, government agencies, and local organizations. Our TF member, Kevin Bishop was co-chair of this conference. Adam Wei (8.01.07; Task Force Coordinator) introduced IUFRO at the opening ceremony. In addition to those two activities, the TF played an important role in various other activities which are listed in this report. Finally, the TF recruited 6 new members, with a total of 144 publications from 19 TF members.

#### Other activities

**GFEP report and the Stockholm Forest and Water Champions meeting:** Irena Creed represented the TF by attending the second Forest and Water Champions meeting, 28 August, 2018 in Stockholm. *Read also the GFEP annual report below.*

**International Conference on Ecohydrology** in Beijing, China  
Our TF members (Brenda Baillie and Adam Wei), along with Dean Meason and Mingfang Zhang organized a session “Plan-

ted forests and their role in water quality and quantity dynamics across the landscape” at the 4th International Congress on Planted Forests (October 23-27, 2018, Beijing, China).

**A joint IUFRO meeting between TF Forest and Adaptation and Restoration Under Global Change and TF Forests, Soil and Water Interactions** was held in Corvallis, OR, U.S.A., 13-14 September 2018. The meeting title was *Forests Landscapes in Times of Changing Climate and Water Resources*. Several members from our TF including Shirong Liu, Adam Wei and Jami Nettles provided presentations at this joint meeting.

**Session proposals for the XXV IUFRO Congress in 2019 in Brazil:** Two session proposals have been submitted for the 2019 IUFRO Congress. They are *Hydrological Effects of Climate and Forest Interactions* by Adam Wei (Canada), Shirong Liu (China), Steve McNulty (USA), Yusuf Serengil (Turkey), and *Forest Management Practices and the Responses of Soil Carbon, Water, Nutrients and Their Interactions* by Shirong Liu, Scott Chang, Junwei Luan and Adam Wei. Those two proposals were jointly developed between our TF and other TFs or IUFRO Divisions. Both proposals have been accepted by the scientific committee.

## Global Forest Expert Panels (GFEP)

**Coordinator:** Christoph Wildburger, Austria

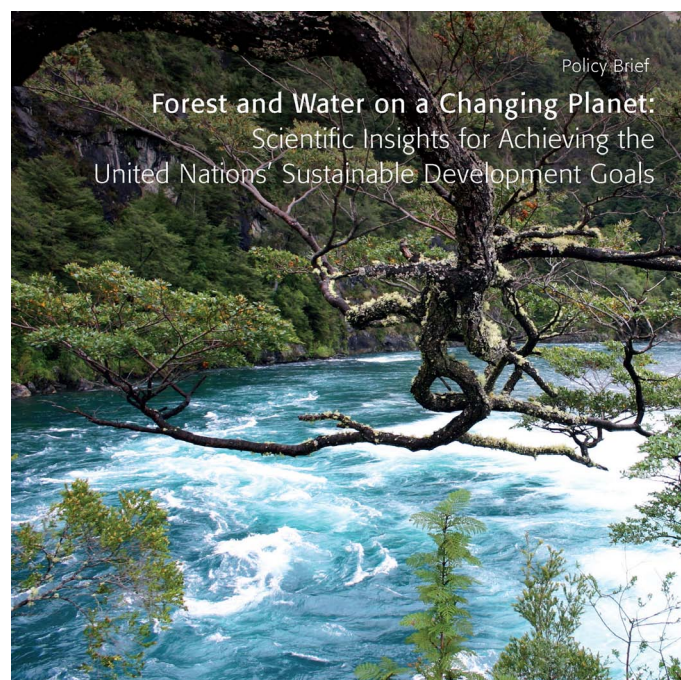
**Project Manager:** Andre Purret, Estonia

The Global Forest Expert Panels (GFEP) is a joint initiative of the Collaborative Partnership on Forests (CPF), led and coordinated by IUFRO. Its mission is to support intergovernmental processes related to forests and trees by assessing available scientific information in a comprehensive, interdisciplinary, objective, open and transparent way. By producing independent scientific reports on key issues of high concern, the GFEP initiative supports more informed decision-making at the global level. Based on the work of thematic Expert Panels involving internationally recognized leading scientists, GFEP provides peer-reviewed scientific assessment reports to international forest-related forums and policy processes.

To date, six scientific assessments have been completed (Adaptation of Forests and People to Climate Change; International Forest Governance; Biodiversity, Forest Management, and REDD+; Forest and Food Security; Illegal Logging and Related Timber Trade; Forests and Water). All of them received considerable international media attention and had significant impacts on international policies. The outcomes of GFEP assessments have served as background information for discussions, briefing documents for negotiators as well as guidance for strategic policy development. GFEP reports have been used as comprehensive, interdisciplinary and scientifically sound information source for scientists and communicators, and as teaching materials for universities.

GFEP website: <https://www.iufro.org/science/gfep>

The latest assessment, which focused on forest and water relations, was finalized by the GFEP Expert Panel on Forests and Water in 2018. After a busy year 2017, the year 2018 started



GFEP Policy Brief: Forest and Water on a Changing Planet

off with the Panel's 3rd and last meeting in Vienna, Austria, in mid-January 2018. At the meeting, hosted by the Austrian Federal Ministry for Sustainability and Tourism (BMNT), the Panel convened to discuss the finalization of the assessment report and its chapters. On the sidelines of the meeting, IUFRO, in collaboration with the International Forestry Students' Association's Local Committee in Austria (IFSA LC BOKU), organized an informal meeting and knowledge exchange between the GFEP Panel Members, scientists and students. The event was kindly hosted by the University of Natural Resources and Life Sciences, Vienna (BOKU).



The author teams responsible for individual chapters turned in their final drafts by mid-February. The draft report then went through a double blind peer and expert review process. Based on the review comments Coordinating Lead Authors revised their chapters by mid-April 2018. The final editing of the assessment report and policy brief took place until 7 May 2018. Consequently, the graphic design of the publications was finalized by early June. The assessment reports and policy briefs were then printed and shipped to New York for their official launch at a side event during the United Nations' (UN) High-Level Political Forum on Sustainable Development (HLPF 2018).

One of the outreach activities before the official launch took place during the 13th session of the UN Forum on Forests (UNFF-13), held in May 2018 at UN Headquarters in New York. Members of the GFEP Expert Panel on Forests and Water were invited to the "Panel Discussion on the Contribution of Forests to the Achievement of the SDGs and Transformation towards Sustainable and Resilient Societies". Furthermore, a Coordinating Lead Author of the GFEP had been tasked by the UNFF secretariat to produce a background study on the topic of "forests and water", mainly based on the GFEP report, which was presented to the UNFF-13.

Further visibility was given to the GFEP study through presentations at the Expert Group Meeting (EGM) on "Sustainable Development Goal 15: Progress and Prospects" on 14-15 May 2018 and a pre-HLPF event on forests entitled "Forest-based Transformation towards Sustainable and Resilient Societies: Lessons Learned and Success Stories" on 8 July 2018, both of which were held at UN Headquarters in New York.

The official launch of the GFEP assessment report "**Forest and Water on a Changing Planet: Vulnerability, Adaptation and Governance Opportunities**" (published as IUFRO World Series 38) and the accompanying Policy Brief took place on 10 July 2018 at a side event during the UN High-Level Political Forum on Sustainable Development (HLPF 2018) at UN Headquarters in New York. The event was officially hosted by the Permanent Mission of Austria to the UN and co-hosted by IUFRO, plus partners from the governments of Finland and Brazil. In addition to the two GFEP co-chairs, Professor Irena Creed and Professor Meine van Noordwijk, and the IUFRO-GFEP team, the list of speakers included high-level representatives from the Permanent Mission of Austria to the UN, the UNFF Secretariat/UN DESA, the Ministry of Agriculture and Forestry of Finland and the Freshwater Unit of UN Environment/UN-Water (Summary report by IISD). The side event was followed by a press briefing at the UN on 11 July.

A week later, during the 24th Session of the FAO Committee on Forestry (COFO 24) and 6th World Forest Week (16-20 July 2018, FAO Headquarters in Rome, Italy), the study was presented during the high-level session "Forest and Water on a Changing Planet: Redefining the Narrative". The session, co-hosted by IUFRO and FAO, under the auspices of the CPF, included high-level speakers from the FAO Forestry Department, the Forestry Department in the Austrian Federal Ministry for Sustainability and Tourism (BMNT), CGIAR FTA, and the Iranian ministry responsible for forests (Summary by FAO).



*From left to right: Christoph Wildburger/GFEP Coordinator, Irena Creed and Meine van Noordwijk/Panel co-chairs, Alexander Buck/ED IUFRO, presenting the new report at UN HLPF2018 in New York (Photo IUFRO)*

The report and its launch, including an IUFRO press release in six languages, received significant media coverage around the world. The coverage included articles by IISD Reporting Services, for example, Mongabay, Jakarta Post, Himalayan Times, Canada's National Observer, SciDev.Net, Yale360, Saturday Star, Australian Associated Press, ESI Africa, Europa Press and many others. Several GFEP Panel Members were interviewed both in television and radio. The GFEP experts promoted and presented the study in a large number of conferences (e.g. at the 4th International Conference on Water Resource and Environment, WRE 2018; World Water Week 2018; IBFRA18 conference; ESP Europe 2018 Regional Conference; the 2018 International Symposium of Ecohydrology and Water Security, ISEWS; 2018 Arctic assembly; II Congreso Latinoamericano Bosques y Agua/V IUFRO Conference on Forests and Water in a Changing Environment etc.). A full list of media coverage and outreach activities can be accessed at: <https://www.iufro.org/science/gfep/forests-and-water-panel/report/>

In total, 50 scientific experts from more than 20 countries contributed to the GFEP assessment on Forests and Water. Funding for the assessment was provided by the Ministry of Foreign Affairs of Finland (MFA), the United States Forest Service (USFS), the Austrian Federal Ministry of Sustainability and Tourism (BMNT) and the World Bank Group/PROFOR. Special thanks go to the member organizations of the Collaborative Partnership on Forests (CPF) for their in-kind contributions and overall guidance. Particular thanks to the Food and Agriculture Organization of the United Nations (FAO), the University of Cambridge and the University of Leeds for hosting expert meetings.

Following the launch and finalization of the GFEP assessment on Forests and Water, the GFEP coordination team conducted background research on the potential themes for the next global scientific assessment to be undertaken by the GFEP initiative in 2019-2020. Based on the feedback gathered from IUFRO management, consultations held with stakeholders and donors, and suggestions received from the members of the Collaborative Partnership on Forests (CPF), the GFEP team will select the topic for the seventh global assessment in early January 2019. Depending on the time of endorsement by the CPF, the next scientific assessment will officially kick off with a Scoping Meeting in spring 2019.

# Special Programme for Development of Capacities (IUFRO-SPDC)

**Coordinator:** Michael Kleine, Austria

In the year 2018 IUFRO-SPDC concentrated on thematic networking activities through the organization of various workshops as well as on the scientist assistance program in support of IUFRO scientific meetings and conferences. In addition, IUFRO-SPDC incorporated the Young Scientist Initiative (YSI) as fourth component into the portfolio of SPDC's services to the forest science community.

## Thematic Networking

A **Global Expert Workshop on Forest Fire and Climate Change** was commissioned by the Program on Forests (PROFOR), a multi-donor partnership led by the World Bank, and was organized by IUFRO-SPDC under the thematic lead of IUFRO's Working Party on "Forest Fires". The three-day workshop, which took place in Vienna, Austria on 2-4 July 2018, brought together 32 scientists and governmental experts from around the globe as well as World Bank representatives to discuss the complex forest fire-climate change-landscape restoration nexus.



*Fire workshop participants, Vienna, Austria. Photo by Eva Schimpf/IUFRO*

Besides the classical fields of expertise in fire management, the invited scientists also represented a diverse array of specializations including meteorology and climate change science, land use planning, global fire monitoring, remote sensing, vegetation modeling, hydrology, sociology, and policy sciences. Apart from providing the knowledge needed for national governments to design their response strategies, the initiative also sought to help the World Bank devise appropriate investment policies in supporting disaster risk management and pathways towards more sustainable land uses. In this way, the initiative also contributed to achieving the Sustainable Development Goals, particularly SDGs 13 (Climate Action), 15 (Life on Land) and 6 (Clean Water and Sanitation).

The results of the workshop and outcome of follow-up discussions among the participating fire experts were summarised and would be published as IUFRO Occasional Paper 32 - Global Fire Challenges in a Warming World in 2019.

A **Knowledge-sharing Workshop on Best Practices for Implementing Forest Landscape Restoration in South Asia** was held in Chilaw, Sri Lanka, 15-17 August 2018. A total of 60 participants from five South Asian countries attended the work-

shop. Partners contributing to this workshop included relevant governmental and non-governmental institutions in Bangladesh, India, Nepal, Pakistan and Sri Lanka as well as international expert organizations of the Global Partnership on Forest and Landscape Restoration (GPFLR) such as FAO, IUCN and Tropenbos International.

The Workshop concentrated on sharing and discussing lessons from current state-of-the-art scientific and technical knowledge on FLR both at global and regional scales, and providing feedback into national and global FLR policy initiatives such as the Bonn Challenge process.

The three-day programme included presentation sessions with audience Q&A and discussions on diverse FLR-related issues ranging from landscape governance and enabling policy environment to planning and implementation approaches, technical methods of restoration operations to financing, monitoring and evaluation of FLR on the ground. In addition, the workshop also consisted of an information market displaying methods and tools for FLR implementation, poster sessions for presen-



*Knowledge sharing workshop Sri Lanka. Photo by Janice Burns/IUFRO*

ting and discussing case studies on FLR in different socio-economic and ecological settings, as well as a one-day field trip to FLR sites in the Puttlam District of Sri Lanka.

The results of the workshop (<https://www.iufro.org/science/special/spdc/netw/flr/ks-ws/kshw-sri-lanka/>) included a set of recommendations on how best to address implementation aspects of FLR in the South Asian region.

A Discussion Forum titled **Don't ignore drylands: Restoring the forests of Continental Asia** was organized by IUFRO-SPDC at the Global Landscapes Forum in Bonn, Germany, from 1 to 2 December 2018 in cooperation with the National Institute of Forest Science, Republic of Korea (NIFoS) and the Center for International Forestry Research (CIFOR). Collaborating partners in this event included the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU), The World Bank and the International Union for Conservation of Nature and Natural Resources (IUCN).

Climate variability and natural hazards are features of the Continental Asia region and the future is projected to become warmer and more arid with more intense rainfall events. Seismic

hazards present the greatest risk, alone or in combination with meteorological hazards that produce landslides, mudflows, and glacial lake outburst floods. Most of the rivers are regulated and historically water allocation decisions in the region have favored hydropower and agriculture (which consumes 90% of the water), without regard for other uses. Overgrazing, fire, illegal logging, and exploitive harvesting of non-timber forest products have reduced forest cover and degraded the remaining forests. Forests near settlements, mining sites, riparian forests, and forests on slopes require urgent attention. Severe degradation around the shrinking Aral Sea, where past irrigation caused shallow saline groundwater tables leading to agricultural abandonment, represents a critical need and challenge. Large expanses of desert require afforestation of shrub and low trees adapted to harsh soil conditions to ameliorate conditions and halt expansion.



Discussion forum at GLF. Photo by GLF

Countries in the Caucasus and Central Asia region pledged restoration of over 2.5 million hectares of forest landscape under the Bonn Challenge by 2030 as well as adopted the Astana Resolution, committing the region to go beyond 2.5 million ha, and strengthen partnerships and regional cooperation to this end.

Against this background, the discussion forum was organized as a moderated dialogue, revolving around the ways and means to implement forest landscape restoration on the ground and moving from policy commitments to practical implementation on the ground. The session aimed at four countries in the region (Iran, Kazakhstan, Kyrgyzstan, and Mongolia) for discussing their specific forest landscape restoration (FLR) implementation issues. The results of the discussion forum including key messages derived from the dialogue of experts have been published

in a summary report and can be downloaded from the IUFRO-SPDC website at: <https://www.iufro.org/science/special/spdc/netw/flr/ks-ws/discforum18/>

#### IUFRO-SPDC Scientist Assistance Program 2018

Like in the previous years, IUFRO-SPDC enabled scientists from economically disadvantaged countries in Africa, Asia, Latin America and Eastern Europe to participate in IUFRO scientific meetings and conferences through funding. This activity included meetings of IUFRO Divisions 1, 2, 3, 4, 5 and 9, the International Boreal Forest Research Association, IUFRO-SPDC, as well as two IUFRO Task Forces, namely TF on “Forest and Water Interactions” and on “Forest Restoration under Global Change”. In 2018, IUFRO-SPDC could sponsor a total of 100 scientists from economically disadvantaged countries, of which 22 were women.

#### Young Scientists’ Initiative (YSI)

YSI is a new collaboration between IUFRO and the European Forest Institute, formally established in early 2018, to make mobility grants and opportunities available to early career scientists from Africa, Asia and Latin America. Broadly, the initiative aims to provide future forestry professionals and leaders in the forestry sector with international experience to better equip them to address future global challenges and identify, create and fully utilise emerging opportunities. In a first step, during the year 2018 five grants to support short scientific visits (SSV), each to a different European forest-related institution, were provided. More information on this initiative including calls for application is available at:

<https://www.iufro.org/science/special/spdc/ysi/>

#### Support by Donors

IUFRO-SPDC would like to thank the following donors for their generous support provided throughout the year 2018: the Austrian Federal Ministry of Sustainability and Tourism (BMNT), the Austrian Federal Forest Research Centre (BFW), the Forestry and Agriculture Biotechnology Institute (FABI), South Africa, the German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety (BMU), the Global Environment Facility (GEF), the Ministry of Foreign Affairs of Finland (MFA), the Republic of Korea’s National Institute of Forest Science (NI-FoS), the US Forest Service, the Von Thünen Institute, Germany, and The World Bank Group/PROFOR. Without the generous support from these organizations in cash and kind IUFRO-SPDC would not have been able to support the global forest science community to this extent.

## Global Forest Information Service

**Coordinator:** Eero Mikkola, Finland

2018 was a positive year for the Global Forest Information Service, a CPF joint initiative led by IUFRO. **The whole website was renewed in terms of layout, functionality and security** at <https://www.gfis.net/>. GFIS also saw a settled increase in the number of users, information providers and content on the website. **Over 395 partner organizations now contribute information** to the gateway, with around 200,000 publications, news, videos, events and job vacancies available on the portal. In addition to an increase in partners, GFIS saw an **increase in social media network growth**, and consistent traffic throughout

the year. Over 8500 individuals and organizations follow GFIS on Twitter, bringing an increase in interactions and expansion of reach. In addition, an increasing number of organizations utilizing GFIS as information source when developing their newsletters, and web-based papers was noted. One major goal for 2018 was to attract an **increase in forest-education content** onto GFIS as a portal for students that was achieved quite well - the education database currently includes over 1250 programs and 120 online courses from 315+ institutions. **The Global Forest Information Service is thankful to its partners and 2018 sponsors:** the United States Forest Service, and the Austrian Federal Ministry of Sustainability and Tourism (BMNT).

# Special Project World Forests, Society and Environment (IUFRO-WFSE)

**Coordinator:** Pia Katila, Finland

WFSE is an open, global network of scientists and experts. WFSE supports sustainable development, livelihoods, and inclusive growth, and the related policy processes by drawing out important lessons learned and recommendations through collating, critically analyzing, and synthesizing existing scientific knowledge on topics of international relevance in the forest, society and environment interface and by undertaking new research to fill in crucial gaps in existing knowledge. WFSE addresses these topics in a cross-sectoral, holistic and interdisciplinary fashion encouraging innovative approaches and anticipating future developments that will influence forest-related development at different scales, from local to global. WFSE produces science-based, future-oriented, policy-relevant information. It publishes scientific publications and policy and information briefs.

The WFSE network includes eleven international research and development organizations and universities: CATIE (Tropical Agricultural Research and Higher Education Center), CIAS (Center for Southeast Asian and Integrated Area Studies, Kyoto University), CIFOR (Center for International Forestry Research), CIRAD (Centre de coopération internationale en recherche agronomique pour le développement), EFI (European Forest Institute), FAO (Food and Agriculture Organization of the United Nations), Luke (Natural Resources Institute Finland), Renmin University of China, Thünen Institute of International Forestry and Forest Economics, University of Florida, VITRI (Viikki Tropical Resources Institute, University of Helsinki). The network builds on the collaboration of about one hundred scientists and practitioners many of which come from outside the partner organizations. WFSE is coordinated at the Natural Resources Institute Finland (Luke).

In 2018 WFSE activities concentrated on the interactions among forests and Sustainable Development Goals (SDGs). The SDGs and their targets form a complex, integrated system with clear sectoral emphases but also strong interlinkages among goals and targets. However, the goals do not explicitly address these interlinkages, nor the synergies and trade-offs among different targets. In many instances, efforts to advance one target can directly or indirectly contribute to the advancement of other targets. In other instances, progressive measures for one target can hinder the achievement of others. This complexity and interlinkages motivated WFSE to initiate in late 2017 a systematic scientific assessment of potential and anticipated impacts of efforts to achieve the SDGs on forests and related socio-economic systems, the important interconnections and interlinkages among the SDGs from the point of view of forests and people, and the contextual conditions that determine how SDGs are implemented and prioritized.

The development of the assessment started by inviting a core group of renowned scientists, the lead authors, to address



Lead authors and editors of the new WFSE publication at a workshop at FAO, Rome, March 2018. Photo provided by Pia Katila

these issues from the point of view of each of the SDGs. They were further tasked to form an international team of authors to collaborate in developing the SDG chapters. Altogether 120 authors contribute to the development of this assessment. The editors are Pia Katila, Carol J. Pierce Colfer, Wil de Jong, Pablo Pacheco and Georg Winkel. Furthermore, 38 scientists and experts contributed importantly to the development of this assessment through the peer review process. The resulting publication will be published by Cambridge University Press as an open access book titled *Sustainable Development Goals: Their Impacts on Forests and People*. The publication will be launched at IUFRO World Congress in Curitiba, Brazil 29 September–5 October 2019.

In the course of the development of this book WFSE organized two large workshops that brought together the lead authors of the SDG chapters and the editors of the book.

## **FAO-WFSE workshop, 6-7 March 2018 in Rome**

The FAO-WFSE Workshop “Sustainable Development Goals: Their impacts on forests and people” was organized at FAO Headquarters in Rome 6-7 March 2018. The event brought together the lead authors and editors of the publication and colleagues from FAO to discuss the forests and SDGs interactions. The two-day workshop focused especially on the potential and likely impacts of the SDGs and their implementation on forests and related socio-economic systems.

## **WFSE workshop, 25-26 September 2018 in Alghero, Sardinia**

The second workshop for the lead authors and editors was organized in conjunction with the European Forest Institute’s Annual Conference and Scientific Seminar in Sardinia. This workshop concentrated on the main findings from the SDG chapters and the contextual conditions that influence how the SDGs are taken up and prioritized.

**Editorial meeting, 17-19 December 2018 at University of Florida**

The editors of this publication convened for three days at the University of Florida, Gainesville, U.S.A., to develop and discuss the findings and conclusions of the book.

**Presentation of preliminary results**

Carol Colfer (CIFOR and the Southeast Asia Program of Cornell University), one of the editors of the new book, presented preliminary results from the new publication in the *EFI Scientific Seminar Forests: Interconnecting Sustainable Development Goals to Action* in Sardinia 27 September 2018. Her presentation titled *Sustainable development goals: Their impacts on forest and people* can be viewed at:

<https://www.youtube.com/watch?v=bjD8qQ5xBQM&feature=youtu.be&t=2h31m4s>

**New article on community and smallholder forestry and SDGs**

The article titled *Community Forestry and the Sustainable Development Goals: A Two Way Street* analyses the contributions of

community and smallholder forestry (CSF) to achieving the sustainable development goals (SDGs). The analysis suggests that there is a significant opportunity to explore win-win options for efforts to support CSF and contribute to SDGs, but also for efforts to pursue the SDGs and targets that favor CSF, which will in turn boost the contribution of CSF to the SDGs.

de Jong, W., Pokorny, B., Katila, P., Galloway, G. and Pacheco, P. 2018. *Community Forestry and the Sustainable Development Goals: A Two Way Street*. *Forests* 9(6): 331; <https://doi.org/10.3390/f9060331>

**WFSE Newsletter 2018**

The WFSE Newsletter shares the latest news and information about the special project’s activities with IUFRO officeholders, member organizations, WFSE partners, donors and the members of the WFSE-network from research organizations and universities around the world. It is available at:

<http://www.iufro.org/science/special/wfse/>

**IUFRO Represented in the Regions**

**Officeholders (OF), Member Organizations (MO) and Meetings (MT) per Region**

Region	OF	MO	MT
Europe	333	217	33
Northern America	176	125	10
Latin America	49	60	6
Africa	35	66	3
Asia	129	132	25
Oceania	30	25	0
<b>Total</b>	<b>752</b>	<b>625</b>	<b>77</b>

**IUFRO Scientific Structure**

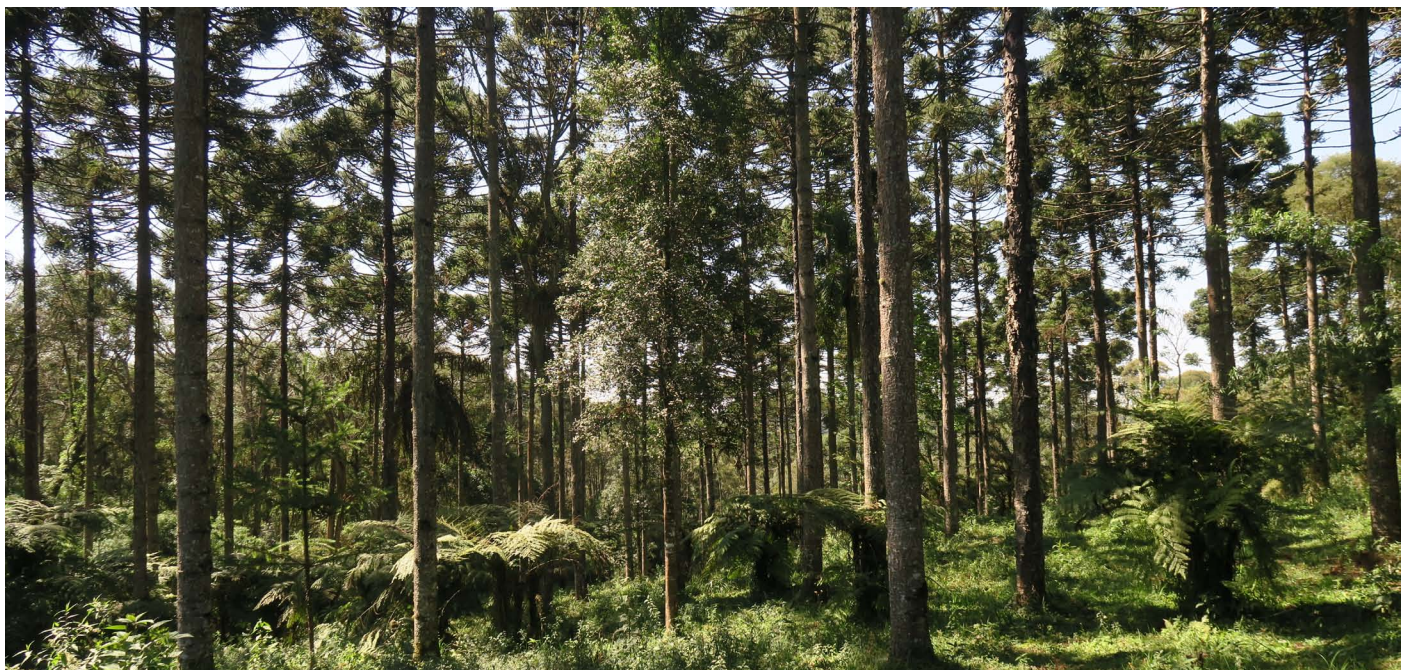
- 9 Divisions with 252 Research Units (*Research Groups and Working Parties*)
- 9 Task Forces (interdisciplinary)
- 5 Special Programmes, Projects and IUFRO-led Initiatives

For details: <https://www.iufro.org/science/>

**IUFRO Management and Administration**

- International Council
- Board and Board Committees
- IUFRO Headquarters

For details: <https://www.iufro.org/who-is-who/>



Paraná pines in Curitiba, Brazil. Photo by Erich Schaitza, IUFRO2019 World Congress Organizing Committee.

# New Members in 2018

## Member Organizations

### BELGIUM

Membership no. 1030.00.00  
Katholieke Universiteit Leuven  
Departement Aard- en Omgevingswetenschappen  
Afdeling Bos, Natuur en Landschap  
Celestijnenlaan 200E / Box 2411 3001  
LEUVEN

### BENIN

Membership no. 1027.00.00  
Universite de Parkou  
Laboratoire d'Ecologie, de Botanique et de Biologie Végétale  
(LEB)  
03 BP 125  
PARKOU

### BRAZIL

Membership no. 1029.00.00  
Universidade de Brasília  
Faculdade de Tecnologia  
Departamento de Engenharia Florestal  
Campus Universitário Darcy Ribeiro  
70910-900 BRASILIA

### CHILE

Membership no. 0439.00.00 (reinstated)  
Universidad de Concepción  
Facultad de Ciencias Forestales  
Victoria 631 / Casilla 160-C, Correo 3  
CONCEPCIÓN

### GERMANY

Membership no. 1025.00.00  
Max-Planck-Institut für Biogeochemie  
Hans-Knöll Str. 10  
07745 JENA

### INDONESIA

Membership no. 1024.00.00  
Forestry Faculty  
Hasanuddin University  
Gedung Fakultas Kehutanan UNHAS  
Jalan Perintis Kemerdekaan KM 10  
MAKASSAR 90245

### KOREA (REP)

Membership no. 1026.00.00  
KASWC - Korean Association of Soil and Water Conservation  
2nd Floor, 64 Jegi-ro 38gil, Dongdaemun-gu  
SEOUL 02488

### SPAIN

Membership no. 1028.00.00  
Fundación Centro de Servicios y Promoción Forestal y de su  
Industria (Cesefor)  
Pol. Industrial las Casas C/c parcela 4  
42005 SORIA

## Associated Members

### BRAZIL

Membership no. 878  
Schumacher Mauro  
Universidade Federal de Santa Maria  
Departamento de Ciencias Florestais  
Av. Roraima, 1000  
SANTA MARIA RIO GRANDE DO SUL 97105-900

### EGYPT

Membership no. 877  
Soliman Atef  
Gatef  
Eltrobegy st., 11291  
CAIRO

### GERMANY

Membership no. 876  
Saha Somidh  
Karlsruher Institut für Technologie (KIT)  
Institut für Technikfolgenabschätzung und Systemanalyse  
(ITAS)  
Postfach 3640  
76021 KARLSRUHE

### JAPAN

Membership no. 879  
Higashihara Takashi  
Graduate School of Education  
Joetsu University of Education  
1, Yamayashiki-machi  
JOETSU NIIGATA 943-8512

### NICARAGUA

Membership no. 873  
Cornejo Ivania Andrea  
2da casa a mano izq.  
Delicias del Volga 1.5 cuadras al norte.  
MANAGUA 12005

### NIGERIA

Membership no. 880  
Olajide Joseph Alaba  
BlackCamel Energy Ltd.  
60, Agbegilere Compound, Isale Ijagba  
SAGAMU OGUN STATE

### SWITZERLAND

Membership no. 875  
Ellison David  
Ellison Consulting  
Weinberghöhe 29  
6340 BAAR

### URUGUAY

Membership no. 874  
Ibanez Ojeda Claudia Marcela  
Universidad de la República  
Campus Interinstitucional, ruta 5 km  
386500 TACUAREMBO

# Finances

Note: The figures given below are the final figures after auditing.

## IUFRO Balance - as of 31 December 2018 in Euro

ASSETS		TOTAL	EQUITY and LIABILITIES		TOTAL
<b>A. Fixed Assets</b>			<b>A. Equity</b>		
I.	Intangible property	1,511	I.	Capital as per 31 Dec 2017	558,015
II.	Tangible assets	9,214	II.	Profit actual 2018	60,313
III.	Financial assets	427,623			
	<b>Total</b>	<b>438,349</b>			<b>618,328</b>
<b>B. Current Assets</b>			<b>B. Accruals</b>		<b>159,092</b>
I.	Accounts receivable	38,782	<b>C. Liabilities</b>		<b>551,119</b>
II.	Other receivables	22,050	<b>D. Deferred income and credits</b>		<b>0</b>
III.	Cash on hand and in banks	829,163			
	<b>Total</b>	<b>889,995</b>			
C.	Prepaid Expenses	195			
<b>TOTAL ASSETS</b>		<b><u>1,328,538</u></b>	<b>TOTAL LIABILITIES and EQUITY</b>		<b><u>1,328,538</u></b>

## IUFRO International Union of Forest Research Organizations - UNION Profit and Loss - Overview 31 December 2018 in Euro

Capital 31 Dec 2017 558,015

### INCOME 2018:

Membership Fees (received)	267,625
Publications	240
Donations for budget year 2018	1,287,461
Other income / refunds	24,034
Interest/profit from financial result (bank)	5,409

**TOTAL INCOME 1,584,769**

### EXPENDITURE 2018:

Salaries and contracts	-862,255
Contributions for third organizations	-3,665
Office equipment and maintenance	-22,155
Printing, postage and PR activities	-80,487
Travel	-68,348
Organization of meetings, travel support, SAP	-361,772
Legal expenses, accounting	-49,135
Equipment (depreciation), operating costs, insurances	-18,521
Bank charges, currency differences	15,062
Others	-73,180

**TOTAL EXPENDITURE -1,524,456**

**Profit for the year 2018 60,313**

**Capital 31 Dec 2018 618,328**




Please note that the donations include the rest-balances of the year 2017, but exclude the accruals of revenue into the year 2019.

## Sponsorships

### Grants and in-kind contributions to IUFRO in 2018

IUFRO is most grateful to all its donors for their generous contributions!

#### Sponsorship categories:

Gold:	more than EUR 100,000	
Silver:	from EUR 50,000 to 100,000	
Bronze:	from EUR 25,000 to 49,999	

Note: All figures in the table below are given in Euro. These are the final figures before auditing.



IUFRO2019 World Congress sponsorship portfolio:  
<http://iufro2019.com/sponsorship/>

### Sponsorships actually received in 2018 in the various cost centers in Euro (Grants and in-kind contributions)

Grantors/Contributors	In-kind contributions <sup>1</sup>	TOTAL
Austrian Federal Ministry for Sustainability and Tourism & BFW	154,864	669,463.85
Ministry of Foreign Affairs (MFA), Finland	0	400,000.00
US Forest Service, U.S.A.	0	175,897.00
National Institute of Forest Science (NIFoS), Korea	0	174,516.00
Natural Resources Institute, Finland (LUKE)	140,255	140,255.00
Contribution World Bank	0	125,962.00
Federal Environment Ministry (BMU), Germany	0	35,000.00
Contribution FABI	0	30,000.00
Contribution IUCN	0	21,913.00
Contribution EFI	0	20,000.00
Contribution CIFOR	0	2,000.00

<sup>1</sup>These are non-cash contributions such as staff time and office facilities.



## IUFRO Board

### IUFRO Senior Officeholders:

*President:* Mike Wingfield, South Africa  
*Vice-President Divisions:* Björn Hånell, Sweden  
*Vice-President Task Forces, Special Programmes, Projects and IUFRO-led Initiatives:* John Parrotta, U.S.A.  
*Immediate Past President:* Niels Elers Koch, Denmark

### Division Coordinators:

Division 1: Jens Peter Skovsgaard, Sweden  
Division 2: Yousry El-Kassaby, Canada  
Division 3: Woodam Chung, U.S.A.  
Division 4: Jean-Luc Peyron, France  
Division 5: Pekka Saranpää, Finland  
Division 6: Tuija Sievänen, Finland  
Division 7: Eckehard Brockerhoff, New Zealand  
Division 8: Sandra Luque, France  
Division 9: Daniela Kleinschmit, Germany

### President's Nominees:

John Innes, Canada  
Shirong Liu, China  
Ben Chikamai, Kenya  
Jung-Hwan Park, Republic of Korea  
Manuel Guariguata, Venezuela/Peru

### IUFRO Executive Director:

Alexander Buck, Austria

### IUFRO Headquarters Host Country Representative:

Maria Patek, Austria

### Task Force (TF) Coordinators:

*TF Forests, Soil and Water Interactions:*  
Xiaohua (Adam) Wei, U.S.A.  
*TF Forest Biomass Network:*  
Maliwan Haruthaithanasan, Thailand  
*TF Resources for the Future: Transformation in Forest Use:*  
John Innes, Canada  
*TF Sustainable Planted Forests for a Greener Future:*  
Christophe Orazio, France  
*TF Forest Adaptation and Restoration under Global Change:*  
Andreas Bolte, Germany  
*TF Climate Change and Forest Health:* Elena Paoletti, Italy  
*TF Forests and Biological Invasions:* Andrew Liebhold, U.S.A.  
*Joint IUFRO-IFSA Task Force on Forest Education:*  
Sandra Rodríguez-Pineros, IUFRO/Mexico  
Khalil Walji, IFSA/UN-FAO  
*Monitoring Global Tree Mortality Patterns and Trends:*  
Henrik Hartmann, Germany

### Special Programmes, Projects and Initiatives:

*IUFRO Special Programme for Development of Capacities (IUFRO-SPDC):* Michael Kleine, Austria  
*IUFRO World Forests, Society and Environment (IUFRO-WFSE):* Pia Katila, Finland  
*Global Forest Information Service (GFIS):*  
Eero Mikkola, Finland  
*CPF Global Forest Expert Panels (GFEP):*  
Christoph Wildburger, Austria

### XXV IUFRO World Congress Organizing Committee (COC) Chairs:

Joberto Veloso de Freitas and Yeda Maria Malheiros de Oliveira, Brazil

### XXV IUFRO World Congress Scientific Committee (CSC) Chair:

Jerry Vanclay, Australia

### FAO Representative:

Hiroto Mitsugi, Japan/Italy

## IUFRO Headquarters (Vienna)

*Executive Director:* Alexander Buck, Austria  
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*Junior Professional Officer (IUFRO-EFI YSI):*  
Daniel Boehnke, South Africa

## IUFRO Honours and Awards

### Certificate of Appreciation (CoA)

Fredrik Ingemarson, Sweden  
Woodam Chung, U.S.A.

## IUFRO Headquarters Publications 2018

- World Series Vol. 37 - Ancient Woodlands and Trees: A Guide for Landscape Planners and Forest Managers
- World Series Vol. 38 - Forest and Water on a Changing Planet: Vulnerability, Adaptation and Governance Opportunities. A Global Assessment Report
- Occasional Paper 32 - Global Fire Challenges in a Warming World
- IUFRO News Issues 1-12 (3 double issues), 2018
- 7 Scientific Summaries related to IUFRO News
- 6 IUFRO Spotlight issues
- IUFRO Annual Report 2017

## Editorial

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Short report at: <https://www.iufro.org/publications/annual-report/>

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## Mission

IUFRO advances research excellence and knowledge sharing, and fosters development of science-based solutions to forest-related challenges for the benefit of forests and people worldwide.

