

Adaptation Processes in Alpine Forest Trees

Report from the AForGeN2019 meeting provided by IUFRO Working Party 2.04.11 – Alpine Forest Genomics
<https://www.iufro.org/science/divisions/division-2/20000/20400/20411/>

Founded in 2011, AForGeN (Alpine Forest Genomics Network) constitutes the conceptional framework of IUFRO WP 2.04.11. The aim of the network is to develop an intensive cross-border research network to study adaptation processes in alpine forest trees. AForGeN traditionally organizes annual meetings in one of the high-mountain areas of the European countries. This year the meeting was held on 12–14 June in the French Alps, the region of Mont Ventoux. Scientists from nine European countries and from the United States participated and presented their latest achievements and research on genetics/genomics of alpine tree species.



Group photo by Santiago C. González-Martínez

The Meeting comprised one day of scientific sessions, a one-day field trip and a half-day business meeting that dealt with the future activities of the network including the Silver Fir Genome Project (SFGP), second phase. The scientific sessions started with an introductory talk by Bruno Fady (INRA), host and organizer of the meeting.

The first session on **Demography and Monitoring** started with a presentation on the evaluation of the fine scale genetic structure of silver fir populations across the species' distribution. First results of this study were presented one year earlier at the AForGeN2018, but this time the presentation focused on the analysis of cohorts and tested different spatial sampling schemes. The common work of 13 authors was presented by Enikő Major. The second talk by Marjana Westergren *et al.* referred to an empirical study on optimal sample size to be used in genetic monitoring analysis of populations. Barbara Fussi *et al.* reported about the first experiences in silver fir monitoring using SNP markers.

The second session on **Adaptations** started with the presentation of Santiago C. González-Martínez *et al.* describing a multi-scale approach in detecting selection in non-model tree species. The case study referred to *Taxus baccata* L., species with many declining mountain populations. The next presentation by Berthold Heinze *et al.* described the genomic evidence of some fatty acids present in *Abies alba* based on genomic comparison to other conifer species. Then Konstantin Krutovsky presented the results of his team on the selection of cold resistance clones in *Sequoia sempervirens* introduced to Germany.

Carlos Trujillo-Moya *et al.* provided the results of the study on RNA-sequencing and secondary metabolite analyses that revealed a putative defence-transcriptome in Norway spruce (*Picea abies*) against needle bladder rust infection (*Chrysomyxa rhododendrii*). The talks generated many questions from the audience and were followed by discussions.

The session continued with the topic of adaptation to drought. Christian Rellstab *et al.* reported a study on *Pinus cembra* about the species' high genomic vulnerability to climate warming. This species with long generation time provided evidence on how Alpine trees react to the climate warming. Eva M. Sehr *et al.* revealed aspects of drought stress tolerance by cross-species transcriptomics in European oaks.

The one-day scientific session ended with discussions on the silver fir genome project (SFGP) leading up to the strategic discussions planned for the third day of the meeting.

The next AForGeN meeting will be held in the Austrian Alps, in the "Zirbenland" region of Styria. Find more information on the web or directly contact network members:
<http://aforgen.org/>



**Scientific program online
in first week of August:**
<http://iufro2019.com/>

IUFRO landing page:
[https://www.iufro.org/
events/congresses/2019/](https://www.iufro.org/events/congresses/2019/)

2019 IUFRO Tree Biotechnology Conference

Report by Heather Coleman, Sofía Alejandra Valenzuela Aguila, Jonas Lafave, Carsten Külheim, Ying-Chung Jimmy Lin



Attendees of the 2019 Tree Biotechnology Meeting in Raleigh, NC.
Photo by Frederick Myburg

The 2019 IUFRO Tree Biotechnology Conference is the biennial meeting on genomics, molecular biology and biotechnology of forest trees, associated with IUFRO Working Party 2.04.06 (Molecular Biology of Forest Trees). <https://www.iufro.org/science/divisions/division-2/20000/20400/20406/>

This year's meeting "Forests, Technology and Society" was held in Raleigh, NC, USA on June 23-28 and was hosted by Drs Ross Whetten (North Carolina State University) and Zander Myburg (University of Pretoria). In addition to a robust scientific program, the meeting celebrated the career for Dr. Ron Sederoff, recent awardee of the Marcus Wallenberg Foundation Prize.

The conference covered eight topics over the course of five days:

- 1) Genome structure, function and evolution;
- 2) Big data in tree genomics and phenomics;
- 3) Transgenic technologies, genome editing, and *in vitro* culture;
- 4) Societal acceptance of tree biotechnology;
- 5) Genes, development and physiology;
- 6) Tree responses to climate change;
- 7) Tree populations, genetics, diversity and breeding; and
- 8) Biotechnology for biomaterials and bioeconomy.

In addition to the sessions, there was a Diversity and Inclusion Breakfast speaking to topics of increasing the participation of underrepresented groups, and there were two panels, one on Biotechnology and Society and one on Diversity and Inclusion.

The scientific presentations at the conference highlighted cutting-edge advancements in many facets of forest biotechnology research, including applications of genomic selection in forest genetics and breeding, tree physiology, stress response, molecular breeding, wood development, "omics" technologies, and the social and economic impacts of genetically modified (GM) trees. Scientific take home messages from the meeting include the

rise of phenotyping as more and more genotyping data become available; the advent of collaborative metadata analyses and integration of systems biology with climate and geographical data; and the challenges of genome editing with the understanding of the infinitesimal effect of alleles. Other take home messages include the importance of including local indigenous groups in the conversations around forest molecular biology, improving conversations around biotechnology with the public and increasing measures of diversity in our scientific community.

The conference attracted a mix of students, postdoctoral fellows, and scientists from academia and industry. In all, the conference was attended by 160 registered participants, representing 21 countries that participated in 28 invited lectures (including 8 'early-career' keynotes), 28 voluntary talks and over 70 poster presentations with 30 associated lightning talks. Support for the conference was drawn from a wide variety of Academia, Industry, and Government sources, and included financial support from several commercial genomic service providers.

Overall, the conference was a great success, providing an exceptional mix of science, social activities and field excursions in a relaxed and collegial atmosphere. More information about the meeting can be found at <https://www.treebiotech2019.org/>. The next meeting will be held in Harbin, China in 2021, hosted by Dr. Vincent Chiang and colleagues at the Northeast Forestry University.



**Science Meets
Stakeholders
Dialogue
SURVEY**

Engage, share your insights, be part of the discussion about how forests and forest products across the entire value chain can most effectively contribute to avoiding global warming! You are most welcome to do so already **by completing this survey by 31 August 2019:** <https://www.surveymonkey.com/r/iufro2019-stakeholder-predialogue-survey>

Population Dynamics and Integrated Management of Forest Insects

Report by Andrea Battisti, Coordinator of IUFRO 7.03.06; Deepa Pureswaran, Deputy Coordinator of IUFRO 07.03.06; and Jean-Noel Candau, Coordinator of 7.03.07

A joint meeting of IUFRO Working Parties [7.03.06](#) Integrated management of forest defoliating insects, and [7.03.07](#) Population dynamics of forest insects, was held on 8-11 July 2019 in Quebec, Canada.

The meeting, which was attended by 35 experts representing 10 countries, was kindly hosted and supported by the Canadian Forest Service, Ministère des Forêts, de la Faune et des parcs, Québec, Université de Québec à Chicoutimi, and the Literary and Historical Society of Quebec.

The meeting consisted of four sessions with oral communications that concerned a number of model species and one session of poster presentations. The sessions focused on:

- Ecology and population dynamics (with 3 sub-sessions and a total of 11 talks)
- Climate impacts (with 2 sub-sessions and a total of 7 talks)
- Invasive species with a total of 6 talks
- Forest insect management (with 2 sub-sessions and a total of 10 talks)

The model species considered were: spruce budworm (*Choristoneura fumiferana*) with 14 talks, bark and wood borers with 9 talks, processionary moths (*Thaumetopoea* spp.) with 7 talks, tent caterpillars (*Malacosoma* spp.) and other defoliating insects with 5 talks.

In the course of a study tour to Valcartier Research Station (visit of T-FACE) and Forêt d'Enseignement et de Recherche Simoncouche, participants saw, among other things, fir forest attacked by the spruce budworm *Choristoneura fumiferana* and a climate change experiment site.

The meeting ended with a group discussion on forest pest management practices in different countries under



Spruce budworm mating at Simoncouche
Photo by Andrea Battisti

challenges of climate change and invasive species. The outcome of the discussion will be synthesized in a paper open to the contribution of all the participants, which will be eventually considered for submission in a scientific journal.

The next meeting of 07.03.07 will be held in Prague Czech Republic 15-18 September, 2020 under the title 'Biological invasions in forests: trade, ecology and management' jointly with WP 7.03.12 - Alien Invasive Species and International Trade and 8.02.04 - Ecology of alien invasives.

The next meeting of 07.03.06 will be held in Italy in 2021 jointly with 07.03.14 Entomological research in Mediterranean forest ecosystems, MEDINSECT.

Forests in Science, Practice and Education - 100th Anniversary of the Faculty of Forestry in Warsaw

Report by Piotr Paschalis-Jakubowicz, IUFRO International Council Representative for Poland, Marek Sławski and Kamil Bielak, Chair and member of Conference Organizing Committee, respectively
Meeting website: <http://100years.wl.sggw.pl/>

The international scientific Conference "Forests in Science, Practice and Education" was organized on the occasion of the first centenary of the Faculty of Forestry at Warsaw University of Life Sciences – SGGW. The conference took place on 18-19 June, 2019 on the university campus in Warsaw, Poland. It was organized together with the research consortium Carbon Smart Forestry under Climate Change and EU H2020 CARE4C project <http://www.care4c.eu>. The meeting was held under the umbrella of the International Union of Forest Research Organizations (IUFRO, Division 1), the Ministry of Environment of the Republic of Poland and the General Directorate of the State Forests in Poland.

The conference attracted more than 110 participants from 10 countries and 3 continents (United States of America, South Africa, Belarus, Czech Republic, Germany, Italy,

Lithuania, Poland, Spain, Switzerland). Participants mainly came from the academic sector, but representatives of forest practice, non-government organizations and different levels of policymakers, including the Polish Vice-Minister of Environment, were also present.

The main aims of the conference were to:
(i) look at the path taken by forestry and forest education in the last 100 years,
(ii) assess the current state of forest science, education and management,
(iii) and discuss the future challenges for forest practice and science at local, regional and global scale under observed socio-environmental changes.

During the opening ceremony presentations were given by representatives of forest practice - Andrzej Konieczny –

General Director of State Forests (The State Forests in Poland in the face of climate change), and forest science - Stanisław Drozdowski (Faculty of Forestry in Warsaw: past, present and future).

To better address the conference aims and facilitate the discussion, the conference benefited from the extensive forestry knowledge imparted by three keynote speakers during the plenary session: Professor Eduardo Rojas-Briales (Polytechnic University of Valencia, Spain), Dr. Marcus Lindner (European Forest Institute Bonn, Germany), and Dr. John A. Parrotta (IUFRO Vice-President, USA).

A total of 45 speeches were delivered and more than 20 posters were presented within the six following sessions:

1. Forests use and engineering – challenges and societal expectations
2. Perspectives in forest education
3. Prospects of forest and biomass modeling
4. Forest products and services –planning and implementation
5. Silvicultural concepts across diverse climate zones and their implications for stand structure and dynamics
6. Biodiversity and conservation in forest ecosystems

Conclusions

Forests and forestry are faced with new challenges such as climate change and other threats to forest ecosystems, as well as the transformation of social expectations related to the development of societies. To meet these challenges it is necessary to activate scientific research using modern technologies and techniques in both natural and social sciences. Changes in forestry practice must prepare forests to new climatic conditions, preserve the natural heritage and fulfill human needs. It is extremely important to implement knowledge into forest practice through modern education, wisely using traditional as



*Participants of the study tour to Białowieża Forest during the conference Forests in Science, Practice and Education
Photo by M. Sławski*

well as modern media. Forest practitioners must go much more beyond traditional forest silviculture and manage natural resources in a broad sense including water, soil, biodiversity, and carbon resources. We also need to create more knowledge about the relevance of carbon in forests and in forestry to better contribute to a society of low carbon emissions. A summary of all presentations is provided in a Book of Abstracts: <http://100years.wl.sggw.pl/wp-content/uploads/2019/06/BoA.pdf>

Finally, during the post-conference trip, we spent a wonderful time (19-22 June) in the border area between Belarus and Poland, in Białowieża Forest, one of the most famous forests worldwide. During our trip we had the pleasure to visit both managed parts (Białowieża and Hajnówka Forest Districts) and unmanaged parts (Białowieża National Park) of Białowieża Forest.

The Joint IUFRO-IFSA Task Force on Forest Education Excelling at the SILVA Network Annual Conference

Report by Juliet Achieng Owour, Joint EFI-IFSA-IUFRO Capacity Development Project

Tharandt is a small picturesque town near Dresden, Germany, that hosts the oldest Academy of Forestry in Germany and was the venue for the SILVA Network Annual Conference from 19-21 June 2019. The theme of the conference was "Twenty years after the Bologna declaration-what are the challenges ahead for higher forest education?" The conference brought together educators, students and other relevant stakeholders to share their experiences on the lessons learnt, challenges faced and opportunities available for higher forest education. Some of the critical questions that the conference aimed to address included: examples of best practice approaches in higher forest education as well as what the future holds for higher forest education with regards to technology,

transnational and transcontinental cooperation, among other issues.

The joint IUFRO-IFSA Task Force on Forest Education was represented at the event by Mika Rekola who is the TF deputy coordinator and Juliet Owuor. Dr. Rekola hosted a pre-conference business session on global networking on forest education where he shared results of the co-creation survey he had carried out.

The report can be downloaded here: <https://foresteducation.wordpress.com/2019/06/18/forest-education-needs-more-networking-joint-silva-network-iufro-co-creation-survey/>

Mika Rekola (photo) also shared useful insights during his talk on the second day of the conference titled: "Developing university teachers' competences-evidence-based education in the discipline of natural resources"

Juliet Owuor gave an inspiring talk on innovative and promising practices



in forest education which was a case study from the best practices competition of the task force. The talk was relevant as stakeholders in forest education are trying to keep up with the evolution of teaching and learning methods which is motivated by the need for developing out of the box teaching methods.

Taking the Lead in Forest Education Discussions at the Global Landscape Forum, Bonn

Report by Juliet Achieng Owuor, Joint EFI-IFSA-IUFRO Capacity Development Project

The Sustainable Development Goal 4 on education has been receiving significant international attention recently. Tremendous emphasis has been on the role of quality education in sustainable development.

On 22-23 June 2019, the International Union of Forest Research Organizations (IUFRO) in collaboration with the International Forestry Students Association (IFSA) and Wageningen University and Research (WUR) held a learning café session titled 'Diving into the diversity of high-quality landscape education'. The session was one among the many that were taking place at the Global Landscapes Forum at the Maritim Hotel in Bonn, Germany. The event brought together stakeholders and audiences from across the globe to deliberate on the transformative role of rights and rights-based approaches for securing a more just, sustainable and prosperous future for all.

The one-hour learning café session in a cozy and relaxed atmosphere had dozens of participants who were keen on finding out about the contribution of the three organizations towards quality education related to landscapes. IUFRO was represented by Michael Kleine who elaborated on how to create a critical mass of Forest Landscape Restoration (FLR) facilitators. To this end, IUFRO regularly organises practical training for FLR facilitators with focus on best practices of implementing participatory projects on the ground using IUFRO's FLR practitioners' guide <https://www.iufro.org/science/special/spdc/netw/flr/flr/pract-guide/>.

IFSA was represented by Juliet Owuor who expounded on some activities in collaboration with the IUFRO-IFSA Joint Task Force on Forest Education. These included: the background study co-authored by Mika Rekola on *Forest*



IFSA representative expounding on the organization's activities

Education Needed in all Schools around the World, the global competition on best practices on forest education showcasing high degree of innovation and the evolution of teaching methods as well as the IFSA mentorship program as well as the mentorship guide.

James Mulkerins explained WUR's landscape governance training program and its involvement in the newly created Landscape Academy. The international program aims at equipping professionals with essential knowledge and skills that is needed to facilitate the necessary complex multi-stakeholder processes for shaping future more sustainable land uses.

The session ended with an interactive question and answer segment as well as collection of ideas on how to further address the needs in landscape education. We are grateful to Cora van Oosten from WUR for organizing the learning café.

For more details on the presentation, click here: <https://www.globallandscapesforum.org/presentation/young-foresters-shaping-a-world-that-appreciates-forests/>

The SDG-tenure Nexus in Forest Landscapes: Applying a Rights-based Approach

IUFRO WFSE-FAO-EFI-Luke joint event at Global Landscapes forum in Bonn Sunday 23 June 2019

How are tenure and rights included in the Sustainable Development Goals? What is the evidence on the links between rights/tenure and sustainable landscapes, and why has the progress on strengthening tenure rights of

local communities so low? What are the more promising approaches to strengthening the link? This session explored these questions through an introductory presentation and panel discussion. <https://www.iufro.org/science/special/wfse/wfse-news/#c28840>



to forest resources; they focus either on all land or specifically on agricultural land. Furthermore, the SDGs do not refer to the full 'bundle rights' that includes access, use, manage, exclude and alienate. The emphasis is on the security of rights, and while SDGs do not specify what constitutes tenure security the relevant SDG indicators encompass legal recognition and peoples' perceptions of tenure security. However, the latter can be misguided, due to for example lack of information on possible threats.

In the SDGs rights are not connected to land and resource governance issues such as participation and empowerment, accountable and just institutions and processes, although, these are addressed in other SDGs especially 5 on gender, 10 on inequality, and 16 on peace, justice and institutions. But the progress made in these SDGs would also need to encompass the institutions and processes affecting land tenure and the processes for clarifying and formalizing rights to land and resources.

The panel discussion focused on the evidence on the links between rights/tenure and sustainable landscapes and the challenges and most promising approaches to move forward. For decades efforts to establish, clarify and strengthen rights to land and resources have been central to improving rural livelihoods and advancing sustainable use of natural resources. However, progress has been slow and livelihood and resource impacts variable.

Find main messages here: <https://www.iufro.org/science/special/wfse/wfse-news/#c28840>

The SDGs call for equal access and rights to land and other productive resources. The introductory presentation noted that rural land rights are implicitly included in three SDGs: SDG 1, SDG 2 and SDG 5. However, tenure and rights are instrumental for moving forward with several other SDGs such as SDG 8 on employment and economic growth. They are also crucial for SDG 10 to reduce inequality within and among countries, SDG 14 to conserve and sustainably use coastal areas and mangrove forests and SDG 15 on protection and sustainable use of terrestrial ecosystems such as forests.

The indicators to track progress on the targets that address land and resource rights do not specifically address rights

Publications

Proceedings

<https://www.iufro.org/publications/proceedings/>

Book of Abstracts: "World Conference on Forests for Public Health", 8-11 May 2019, Athens, Greece

<https://www.iufro.org/publications/proceedings/proceedings-meetings-2019/#c28375>



Book of Abstracts: 22nd European Forum on Urban Forestry - Urban Forests: Full of Energy; Cologne, Germany; 22-25 May 2019.

<https://www.iufro.org/science/divisions/division-6/60000/60700/publications/>

Book of Abstracts: "Managing eucalyptus plantations under global changes"; 17-21 September 2018, Montpellier, France; IUFRO Units: 1.02.01, 2.08.03, Task Force Forest Biomass Network, Task Force on Sustainable Planted Forests for a Greener Future.

<https://www.iufro.org/publications/proceedings/proceedings-meetings-2018/#c27427>

Book of Abstracts: "Forests in Science, Practice and Education - Conference on the centenary of the Faculty of Forestry, Warsaw University of Life Sciences - SGGW"; 16-22 June 2019; Warsaw, Poland; IUFRO 1.00.00.

<https://www.iufro.org/publications/proceedings/proceedings-meetings-2019/#c28376>

Asia-Pacific Forest Sector Outlook Study III

The Study "Forest Futures: Sustainable Pathways for Forests, Landscapes and People in the Asia-Pacific Region" has been launched during the Asia Pacific Forestry Week that took place in Incheon, Republic of Korea from 18 to 21 June 2019.



Over the past two years a group of regional experts, coordinated by the FAO Regional Office for Asia Pacific undertook a strategic analysis and the development of scenarios to help policymakers and other actors understand the implications of a wide range of stress factors impacting forests and forestry in the Asia-Pacific region. Important stress factors identified –among others - include pressure from economic development, climate change, demographic shifts, and conflicts over tenure and land use. By highlighting various scenarios the study provides strategic options to policy makers and managers on how best to address the challenges ahead.

IUFRO has supported this study through Michael Kleine (Deputy Executive Director) serving on the Advisory Committee and providing recent forest- and tree-related scientific results from the global IUFRO network.

The publication is available online: <http://www.fao.org/documents/card/en/c/ca4627en>

Forests and Poverty in the Tropics

"Re-imagining forestry and wood business: Pathways to rural development, poverty alleviation and climate change mitigation in the tropics". By E.K. Sadanandan Nambiar, CSIRO Land and Water, Black Mountain, Canberra, Australia. Forest Ecology and Management:

<https://www.sciencedirect.com/science/article/pii/S0378112719306723?via%3Dihub>

Social innovation in the spotlight: Special Issue of Forest, Policy and Economics

A Special Issue of Forest Policy and Economics focusses on social innovation to increase the well-being of forest-dependent communities and promote sustainability in remote rural areas

This Special Issue, largely a product of the H2020 Social Innovation in Marginalised Rural Areas (SIMRA <http://www.simra-h2020.eu/>) project and its Thematic Session organised at the 125th Anniversary IUFRO Congress in 2017, is a contribution to advancing and exchanging scientific knowledge of social innovation in the context of forestry. It has been edited by Maria Nijnik, Laura Secco, David Miller and Mariana Melnykovich.

<https://www.sciencedirect.com/journal/forest-policy-and-economics/special-issue/10H9J184QXV>

Earth observation advancements in a changing world

AIT Series: Trends in earth observation; Volume 1 - Published in July 2019. Edited by Gherardo Chirici and Marco Gianinetto. Published on behalf of the Associazione Italiana di Telerilevamento (AIT), Via Lucca 50, 50142 Firenze, Italy. ISSN 2612-7148 / ISBN 978-88-944687-1-7 / DOI: 10.978.88944687/17. <https://aitonline.org/earth-observation-advancements-in-a-changing-world/>

Call for contributions to special issue of Forests

Deadline for manuscript submission: March 31, 2020

New Advances in Tree (Epi)Genomics and Implications for Breeding and Management

Stéphane Maury (University of Orléans, LBLGC, France) will serve as the Guest Editor for a Special Issue of the Open Access journal "Forests" (ISSN 1999-4907). For those who are interested in contributing to this Special Issue, further information is available at the Journal's dedicated webpage https://www.mdpi.com/journal/forests/special_issues/Tree_Genomics_Breeding

Contribute to Special Issue on Disturbance Management in Forest Ecosystems

Deadline for manuscript submissions: 30 April 2020

This special issue of the International Journal of Environmental Research and Public Health will address challenges regarding:

- (a) the characterization of disturbance regimes, namely, under scenarios of climate change;
- (b) the ecology and management of disturbance agents;
- (c) the assessment of the impacts of disturbances on the provision of ecosystem services;
- (d) the integration of concerns with disturbance agents in management planning; and
- (e) the development of regulatory frameworks and policy analysis to address concerns about the impact of disturbance agents on forested landscapes.

This special issue is sponsored by IUFRO Working Party 4.04.04—Sustainable Forest Management Scheduling. https://www.mdpi.com/journal/ijerph/special_issues/Disturb_Manag_For_Ecosyst

Teaknet Bulletin – July 2019

In this issue you will read a brief report of the ITTO Teak Mekong Project entitled "Enhancing the conservation and sustainable management of teak forests and legal and sustainable wood supply chains in the Greater Mekong Sub-region" launched at Bangkok, Thailand. You will also learn about a joint session of TEAKNET and the IUFRO Teakwood Working Party at XXV IUFRO World Congress.

<https://www.iufro.org/science/divisions/division-5/50000/50600/50602/publications/#c20880>

Bark Beetle Population Dynamics in the Anthropocene: Challenges and Solutions

By Peter H.W. Biedermann, Jörg Müller, Jean-Claude Grégoire, Axel Gruppe, Jonas Hagge, Almuth Hammerbacher, Richard W. Hofstetter, Dineshkumar Kandasamy, Miroslav Kolarik, Martin Kostovcik, Paal Krokene, Aurélien Sallé, Diana L. Six, Tabea Turrini, Dan Vanderpool, Michael J. Wingfield, Claus Bässler.

Bark beetles are currently causing unprecedented damage to European and North American forests. Their population dynamics rarely have been studied in a hypothesis-driven manner incorporating exogenous biotic variables. The authors propose a conceptual framework to reveal the drivers of bark beetle populations. This approach can be equally applied to other eruptive insect pests. <https://www.iufro.org/science/divisions/division-7/70000/70300/70305/publications/>

Forest Governance and Management Across Time

Developing a New Forest Social Contract, 1st Edition

[This book](#) explores historic and future outlooks as well as current tradeoffs and methods in forest governance and management. It emphasizes the generality and complexity with empirical data from Sweden and internationally.

By Erland Mårald, Camilla Sandstrom, Annika Nordin, and Others. Published by Routledge

Awards



Wangari Maathai "Forest Champions" Award

This year's Wangari Maathai "Forest Champions" Award ceremony will take place at on 30 September 2019 from 17:30-18:00 at the XXV IUFRO World Congress in Curitiba, Brazil! The selection process is currently underway.

About the award: <http://www.cpfweb.org/95257/en/>

ANDEF Prize for Yeda Oliveira: Congratulations!

The researcher of Embrapa Florestas Yeda Maria Malheiros de Oliveira received the ANDEF Innovation Award for Sustainability in Agriculture, in the Personality Category, edition 2019. Yeda de Oliveira holds a degree in Forestry Engineering from the Federal University of Paraná (1975), a Master's Degree in Forestry Engineering from the Federal University of Paraná (1980) and a PhD in Forestry Sciences

- University of Oxford (2000). She has been a researcher at Embrapa Florestas since 1978. In 1995 she took over the General Management of the Unit.

She has experience in Forest Resources and Forest Engineering, working mainly on the following topics: forest monitoring (management and inventory), forest planning, remote sensing, growth and production, simulation of growth and production and aerial surveys. It also acts in articulation and national and international cooperation. She is a member of the Sectorial Chamber of Planted Forests of the Ministry of Agriculture, Livestock and Supply. She is vice-president of the Organizing Committee of the XXV IUFRO World Congress.

Read here: <https://www.embrapa.br/en/busca-de-noticias/-/noticia/44254076/pesquisadora-da-embrapa-florestas-vence-premio-andef-na-categoria-personalidade>

Blue Sky Young Researchers & Innovation Award 2019 - Call for Applications!

Researchers carrying out projects in a wide range of activities relevant to forest-based science, products using forest-based raw materials, process improvements or other innovations throughout the value chain are invited to submit their application for the Blue Sky Young Researchers & Innovation Award Europe 2019 by 30 September 2019.

The award is about research and development; it is also about inspirational innovation for a sector moving towards revealing the bioeconomy potential. See the full call and eligibility criteria under:

http://www.cepi.org/blue_sky_awards_2019

Nominate your Candidate for The Marcus Wallenberg Prize!

The purpose of the Prize <https://mwp.org/> is to recognize, encourage and stimulate path-breaking scientific achievements which contribute significantly to broadening knowledge and to technical development within the fields of importance to forestry and forest industries.

Nominations are accepted via our internet-form below or by e-mail or mail, at any time of the year, and are considered by the Marcus Wallenberg Prize Selection Committee in a continuous process: <https://mwp.org/nominate/>

Positions

<https://www.iufro.org/discover/noticeboard/position-announcements/>

Graduate Research Assistantship - Bio-Based Adhesives for Wood-Based Composite and Products

Open until filled

One graduate research assistantship position for the M.S. or Ph.D. program is available in the Department of Sustainable Bioproducts at Mississippi State University. The successful candidate will be involved in the development of novel bio-based adhesives for wood-based composite and products.

Details: <https://www.iufro.org/fileadmin/material/discover/nb-msstate-kim-ms-phd-adhesives.doc>

PhD opportunity in Forest Ecology

Apply by 1 September 2019

Applications are invited for a funded 4-year PhD position in UNBC's Conservation Solutions Lab collaborating with the BC Ministry of Forests, Lands, Natural Resource Operations & Rural Development (FLNRORD)

Details: <https://www.iufro.org/fileadmin/material/discover/nb-unbc-phd-forest-ecology.doc>

PhD Programs

PhD Degree at Stellenbosch University

Closing date: End of September 2019

Applications are invited from candidates interested in pursuing a full-time PhD degree by research within the new Hans Merensky Chair in Advanced Modelling of Eucalyptus Wood Formation (EucXylo) at Stellenbosch University, based in Stellenbosch, South Africa.

Contact: David Drew, [drew\(at\)sun.ac.za](mailto:drew(at)sun.ac.za)

Details: <http://blogs.sun.ac.za/fmm/hmf-eucxylo/>

PhD study program: Perceptions and acceptance of the concept of bioeconomy and forest ecosystem services

Closing date: 31 August 2019

This PhD program is aimed at a better understanding of the perceptions of key stakeholders and consumers of forest-based bioeconomy and forest ecosystem services within the context of the EU Bioeconomy policy area. The selected student will start and finish PhD studies at the Technical University in Zvolen and will spend a considerable part of the study (at least 12 months) at the JRC premises in Ispra (Italy).

Details: <https://www.tuzvo.sk/sk/call-expression-interest-phd-studies-0>

IUFRO Meetings

Search our online calendar for a full list of meetings:

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

Find non-IUFRO meetings on the IUFRO Noticeboard:

<https://www.iufro.org/discover/noticeboard/>

Also search for forest-related events in GFIS at:

<https://www.gfis.net>

3-5 Sep 2019

First Africa-China Workshop on Forestland Governance, Investments and Sustainability

Yaoundé, Cameroon

IUFRO [9.05.09](https://www.iufro.org/)

Contact: Symphorien Ongolo, [songolo\(at\)uni-goettingen.de](mailto:songolo(at)uni-goettingen.de)

<https://www.iufro.org/science/divisions/division-9/90000/90500/90509/activities/>

4-6 Sep 2019

2nd International Symposium of Forest Engineering and Technologies (FETEC 2019): Human and Nature Oriented Forest Engineering

Tirana, Albania

IUFRO [3.01.00](https://www.iufro.org/)

Contact: Abdullah E. Akay, [abdullah.akay\(at\)btu.edu.tr](mailto:abdullah.akay(at)btu.edu.tr);

Hajri Haska, [hhaskaj\(at\)ubt.edu.al](mailto:hhaskaj(at)ubt.edu.al)

<http://ubt.edu.al/sq/fetec-2019-albania/>

29 Sep – 5 Oct 2019

XXV IUFRO World Congress
Curitiba, Brazil



The technical **program** will be online in the first week of August: <http://iufro2019.com/>

Read Congress **Spotlights** and other news articles here: <http://iufro2019.com/news/>

Also check the IUFRO Congress **landing page**: <https://www.iufro.org/events/congresses/2019/>

Participate in this **pre-Congress survey**: <https://www.surveymonkey.com/r/iufro2019-stakeholder-predialogue-survey>

Look out for **#IUFRO2019** on Twitter and **XXV IUFRO World Congress 2019** on Facebook!

26-28 Feb 2020

Governing and managing forests for multiple ecosystem services across the globe

Bonn, Germany

IUFRO [9.00.00](#), [9.05.07](#)

Contact: Silvia Abruscato, silvia.abruscato@efi.int
<https://www.slu.se/fes.governance-2020/>

9-13 Mar 2020

International IUFRO Symposium on Pine Wilt Disease

Orléans, France

IUFRO [7.02.10](#)

Contact: Christelle Robinet, christelle.robinet@inra.fr
<https://symposium.inra.fr/pwd2020/>

27-31 Jan 2020

Genetic data to the rescue - Managing forests sustainably in a changing world

Avignon, France

IUFRO [2.00.00](#), [2.02.13](#), [2.04.11](#)

Contact: Bruno Fady, bruno.fady@avignon.inra.fr
<http://www.gentree-h2020.eu/events/event/gentree-final-conference>

15-17 Apr 2020

3rd International Forest Policy Meeting

Copenhagen, Denmark

IUFRO [9.05.00](#), [9.05.04](#)

Contact: Jens Friis Lund, jens@ifro.ku.dk
<https://www.iufro.org/science/divisions/division-9/90000/90500/activities/>

4-8 May 2020

Air Pollution Threats to Plant Ecosystems

Paphos, Cyprus

IUFRO Research Group [7.01.00](#) and all its Working Parties

Contact: Pierre Sicard, pierre.sicard@arches-conseils.fr
<http://www.ozoneandplants2020.com/>

15-18 Sep 2020

Biological invasions in forests: trade, ecology and management

Prague, Czech Republic

IUFRO [7.03.07](#), [7.03.12](#), [8.02.04](#)

Contact: Andrew Liebhold, aliebhold@fs.fed.us
Rene Eschen, R.Eschen@cabi.org
<https://www.iufro.org/science/divisions/division-7/70000/70300/70312/>

22-24 Sep 2020

3rd IUFRO Acacia Conference 2020: Embracing Transformation for Sustainable Management of Industrial Forest Plantations

Bintulu, Sarawak, Malaysia

IUFRO [2.08.07](#)

Contact: Wickneswari Ratnam, wicki@ukm.edu.my
<https://www.iufro.org/science/divisions/division-2/20000/20800/20807/>

30 Sep – 2 Oct 2020

International Conference on Wood Adhesives

Portland, OR, United States

IUFRO [5.00.00](#), [5.04.07](#)

Contact: Fatima Charrier-El Bouhtoury, fatima.charrier@univ-pau.fr
<http://www.forestprod.org/woodadhesives/>

Other Meetings, Courses, Announcements

Starting 9 Sep 2019

Online course: MOOC on Landscape Ecology - 2nd Edition

Length: 14 weeks / Effort: 2-4 hours/week

Organizers: ETHx

Details: <https://www.edx.org/course/landscape-ecology-2>

18-20 Sep 2019

EFI Annual Conference 2019 and Scientific Seminar on plantation forests to native forests: delivering multiple ecosystem benefits in a changing climate

Aberdeen, UK

European Forest Institute

<https://www.efi.int/membership/ac/2019/programme1809>

26-27 Sep 2019

FAO/ EUSALP Conference on Protective Functions of Forests in a Changing Climate

Innsbruck, Austria

Organized by the Austrian Federal Ministry for Sustainability and Tourism and the FAO European Forestry Commission (EFC)

Contact: [wpmmw2019\(at\)bmnt.gv.at](mailto:wpmmw2019(at)bmnt.gv.at)

2-3 Oct 2019

2nd European i-Tree Conference

Malmö, Sweden

<https://www.tradkonsult.se/en/second-european-i-tree-conference/>

4-7 Nov 2019

Joint Session Forêt2019 and fifth European Forest Week (EFW): "Forests and the Circular Economy"

Geneva, Switzerland

Joint Session of the UNECE Committee on Forests and the Forest Industry (COFFI) and the FAO European Forestry Commission (EFC)

<http://www.fao.org/about/meetings/european-forest-week/en/>

19-20 Nov 2019

Adapting forests to climate change: methods, tools, and projects

Toulouse, France

European symposium on forest adaptation organized by the LIFE FORECCAsT project

<https://forest-climate-change-symposium.eu/>

United Nations Decade on Ecosystem Restoration: 2021-2030

There has never been a more urgent need to restore damaged ecosystems than now!

Visit the new website!

<http://www.decadeonrestoration.org>

A basic survey for the UN Decade is online here:

<https://www.globallandscapesforum.org/the-decade/ecosystem-and-restoration-decade-expectations/>