

New Insights into Root and Stem Rots

Report by Jonas Rönnerberg, Coordinator of [IUFRO Working Party 7.02.01 – Root and butt rots of forest trees](#)

Root and stem rots cause extensive damage and economic loss to trees globally. Eighty experts from 30 countries discussed this serious problem at the joint IUFRO Working Party 7.02.01 Root and Stem Rots & LIFE+ ELMIAS Ash and Elm Conference (IUFRO-LIFE) from 26 August to 1 September 2018 in Uppsala and Visby, Sweden.

The conference was hosted by the Swedish University of Agricultural Sciences (SLU) and attracted 80 participants from 23 countries. It was organized together with a LIFE+ project on elms, which turned out to be a good match that allowed participants to get the latest knowledge on root and stem rots as well as Dutch elm disease and related insects.

Meeting website: <https://www.slu.se/iufro-rots2018>

The research focus of IUFRO Working Party 7.02.01 is on subjects including control of diseases in forests and plantations but also on basic research such as genome sequencing, pathogen biology and mechanisms of host resistance. *Heterobasidion* spp. root rot on conifers was the first focus of the Working Party, but meanwhile the spectrum of diseases has become much more diversified to include all sorts of root rots and, since the previous meeting, also stem diseases of both conifer and hardwood species.

The conference addressed the following major issues:

a) Epidemiology: The native forest pathogen *H. annosum* in European forests may facilitate the invasion by the exotic *H. irregulare*, for example.

b) Taxonomy: Suggestion of a new North American *Heterobasidion* genome and the new provisional hybrid species *Heterobasidion irregularicis* from Alpine larch

c) Resistance: Resistance breeding against *Heterobasidion* spp. in Norway spruce, and resistance to *Heterobasidion* in different pines

d) Disease control: *Phytophthora plurivora* and other *Phytophthora* species, for example, infecting European beech and rhododendron in the United States, and protective agents for biocontrol of *Heterobasidion*

e) Ecology and biodiversity: Fungal community structure in Norway spruce trees, for example

Conclusions

The use of new molecular techniques has led to new insights into the epidemiology and taxonomy that can



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. Copyright Jonas Rönnerberg

bring forth refined measures to fight various diseases, especially *Heterobasidion* root rot. Many presentations seemed to confirm an increasing problem with root and stem rots possibly as a result of human activities, choice of tree species and climate change.

The next meeting is planned to be organized in Xalapa, Mexico, in 2021. After Mexico, FABI in South Africa has volunteered to organize the meeting in 2024. A Book of Abstracts is available here: <https://www.slu.se/globalassets/ew/org/inst/mykopat/konferens/heterobasidion/program--abstracts-august-23.pdf>

Job Opportunities for Junior Researchers

Submit applications by 15 October 2018

The European Forest Institute (EFI) is seeking two Junior Researchers - MSc graduates (forest-related) of all nationalities - to join its Resilience Programme, to conduct a global research and capacity-building project related to the future of employment and green jobs in the forest sector, in close collaboration with the International Forestry Students' Association (IFSA) and IUFRO. The positions will be based at EFI's Office in Bonn, Germany.

Contact: Andrew Male,
andrew.male(at)efi.int

Details: <https://bit.ly/2Ri9wyc>



Innovative Natural Resources Inventory Approaches

Report by Chinsu Lin, Deputy Coordinator of [IUFRO 4.02.02 Multipurpose inventories](#)

The 2018 joint symposium of Sustainable Forest Ecosystem Management (SFEM) and multipurpose inventory held in Sun Moon Lake, Nantou, China-Taipei, from August 28-31 was organized by the Taiwan Society of Forest Ecosystem Management (TWFEM), National Chiayi University, and National Ilan University. The symposium is 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.



Group photo by Yu Su

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.

Thirty-seven presentations covered the topics of forest growth and mensuration, climate change, geospatial technology and environmental monitoring, and forest management and policy. In this conference, researchers concluded that further studies should be undertaken to explore and develop possible benefits to the environment.

Major findings

(a) continuous measurement is important to estimate the effects of climate change on forest growth and species composition as well as to provide a data record in order to predict growth and forest yield,

(b) a combination of plot sampling, biomass growth estimation and economic evaluation enables us to select plantation species and rotation periods which might mitigate the effects of climate change,

(c) combining GIS and AHP enables us to incorporate environmental knowledge and experience into a zoning system for forested areas, and

(d) many techniques are available to evaluate the benefits of non-timber forest products including both traditional and novel methods.

Conclusions

Asian terrestrial ecosystems and forests show a variety of physical and biological features, and the methods that people rely on to maintain the forest are different across the forests in local and regional areas. Recently, the ability to use new technologies such as terrestrial and airborne lidar data, hyperspectral images and high spatial resolution UAV images to measure forest inventory has significantly increased.

Thus, a technical basis for the implementation of precision forestry has developed in the region. In addition, it should also be considered to combine some techniques such as mathematics and statistics, management science, and geospatial technologies in order to make better decisions on forest management regimes and forest policies so as to be able to pass on healthy forest ecosystems to future generations.

Meeting website:

<https://sites.google.com/view/sfem2018>

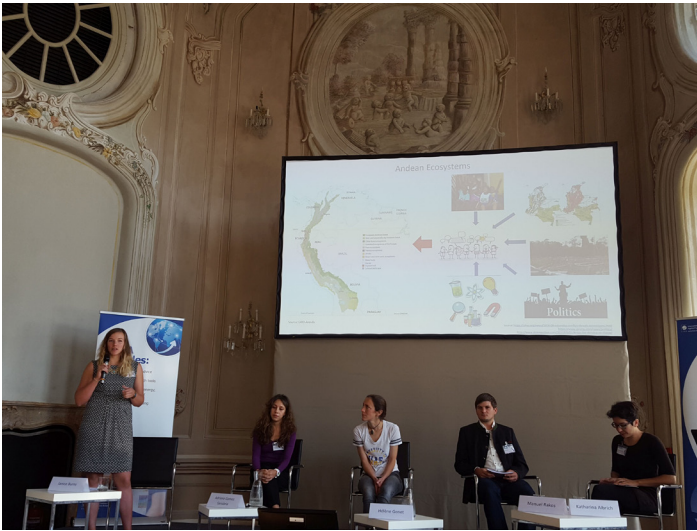
Cool Forests at Risk?

Report from the IBFRA18 Conference, 17-20 September 2018, Laxenburg, Austria
Conference website: <https://ibfra18.org/>

About 200 participants from 30 countries including Russia, China, the United States, Canada, Northern European countries, Japan and the host country Austria met in Laxenburg, south of Vienna, to discuss and raise awareness on the critical role that boreal and mountain ecosystems play for people, bioeconomy, and climate.

While tropical forests have been at the focus of international debates for many years now, boreal and mountain forests have received disproportionately low attention in many processes, but they are often facing equally dramatic challenges. Not only do they struggle with the effects of climate change, they are also often put at risk by unsustainable forest management practices.

However, boreal and mountain forests will play an important role in meeting future climate goals. Among other things, they are extensive carbon sinks, offer protection against natural hazards, store freshwater and



Session: Science Focus - Looking into the Future - Early Career Scientists (ECS)
From left to right: Janice Burns (IUFRO), Adriana Gomez-Sanabria (IIASA), H el ene Genet (University of Alaska, Fairbanks), Manuel Rakos (BOKU Vienna), Katharina Albrich (BOKU Vienna). (Photo IUFRO)

provide habitats for a wide range of species. And they are of substantial economic value; millions of people rely on the natural resources of these forests for their income and, consequently, their livelihoods.

At the conference leading scientists outlined the state of knowledge about the vital ecosystem functions and services of cool forests, identified risks, and proposed pathways to protect these forests. Together with early-career scientists they developed key messages for policymakers, the private sector, and civil society. In addition, a moderated science-stakeholder dialogue focused on the question as to how the scientific key findings can inform strategies and decisions by policy, industry, and civil society organizations.

The conference was hosted by the International Institute for Applied Systems Analysis (IIASA <http://www.iiasa.ac.at/>), in collaboration with the International Boreal Forest Research Association (IBFRA <http://ibfra.org/>), the Pan-Eurasian Experiment (PEEX <https://www.atm.helsinki.fi/peex/index.php>), and IUFRO.

IUFRO and FFPRI Strengthen Cooperation

The Forestry and Forest Products Research Institute Japan (FFPRI) and IUFRO entered into a Memorandum of Understanding in Vienna, Austria, on 30 August 2018. With this MoU the two partners reaffirm their commitment to continue and further strengthen their cooperation in the long term.

IUFRO and FFPRI share common strategic goals that include striving for quality and relevance of research activities and outputs as well as increasing communication, visibility and impact of research findings. With this MoU they aim to promote, among other things, the generation, dissemination and sharing of new and innovative forest-



FFPRI Director Haruo Sawada (left) and IUFRO ED Alexander Buck (Photo IUFRO)

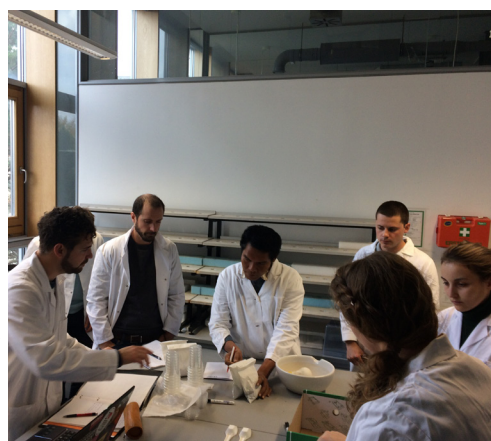
related information and knowledge as well as develop and implement joint projects and collaborative activities.

The MoU was signed by Haruo Sawada, Director of FFPRI, and Mike Wingfield, IUFRO President, in the witness of Takashi Masaki, Director of the Research Planning Division of FFPRI, and Alexander Buck, IUFRO Executive Director. Dr. Sawada and Dr. Masaki visited IUFRO Headquarters in the last week of August to discuss the MoU and its implementation. During their stay in Vienna they also seized the opportunity to visit the Austrian Research Centre for Forests (BFW), the International Institute for Applied Systems Analysis (IIASA), and the University of Natural Resources and Life Sciences (BOKU).

New Opportunity for Early-Career Scientists

The IUFRO-EFI Young Scientists Initiative (YSI) is the latest collaboration between IUFRO and the European Forest Institute (EFI) and will offer a limited number of grants for short scientific visits in 2019.

An opportunity for young scientists from Africa, Asia and Latin America to conduct collaborative research in Europe during 2019 is now available.



Young scientists at Vienna's BOKU University (Photo by IUFRO)

The YSI will entail a short scientific visit to be hosted by a European forest science organization where the grantee will work on a scientific collaboration with another European scientist.

IUFRO and EFI are offering EUR 5 000 per grantee and the application period will close on **the 31st of December 2018**.

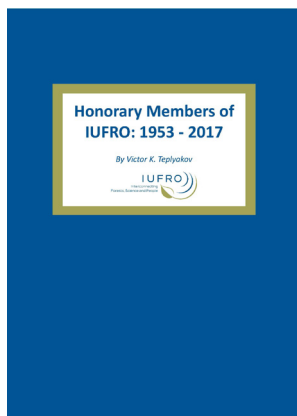
Applications and queries are to be sent to the Secretary of the Review Committee, Mr Daniel Boehnke: [boehnke\(at\)iufro.org](mailto:boehnke(at)iufro.org)

For more information please follow the link to the YSI homepage at <https://www.iufro.org/science/special/spdc/ysi/>

Publications

Honorary Members of IUFRO: 1953-2017

Tepljakov, Victor K. 2018. Vienna, IUFRO. 100 p.
ISBN: 978-3-902762-99-3



This booklet for the first time presents short biographical stories of the Honorary Members of the International Union of Forest Research Organizations (IUFRO) from the beginning of the establishment of this highest IUFRO Award in 1953. Their personal stories and professional careers also reflect how the discipline of forest research has evolved and under which social, economic and political conditions this has happened.

<https://www.iufro.org/publications/general-publications/article/2018/09/18/honorary-members-of-iufro-1953-2017/>

Two New Publications on Criteria and Indicators (C&I) for Sustainable Forest Management (SFM)

25 Years of Criteria and Indicators for SFM: Why some intergovernmental C&I processes flourished while others faded

<http://www.mdpi.com/1999-4907/9/9/515>

25 Years of Criteria and Indicators for SFM: How intergovernmental C&I processes have made a difference

<http://www.mdpi.com/1999-4907/9/9/578>

Thirteen experts from the [IUFRO Working Party 9.01.05](#) on *Research and development of indicators for SFM* have jointly elaborated two publications covering all C&I processes and regions worldwide. The highlights comprise:

- Eleven processes for forest-related C&I have been analysed.
- Up to 171 countries are members of these processes.
- We have found varying levels of implementation across countries and regions.
- Common achievements of the processes are presented.
- Success factors for C&I implementation are proposed.
- We have analyzed impacts of indicators from regional and international C&I processes.
- We have identified six major impacts that apply to the C&I efforts: (1) enhanced discourse and understanding of SFM; (2) shaped and focused engagement of science in SFM; (3) improved monitoring and reporting on SFM to facilitate transparency and evidence-based decision-making; (4) strengthened forest management practices; (5) facilitated assessment of progress towards SFM goals; and (6) improved forest-related dialog and communication.
- We have concluded that the 25-year history of C&I work in forestry has had significant positive impacts, though challenges do remain for the implementation of C&I and progress towards SFM.

Hot off the Press: Paper in Biological Invasions

A new paper has just been published in *Biological Invasions* on the use of botanic gardens to determine which pine species and other conifers are used as hosts by aphids, as a way of identifying tree species that would be attacked if a particular aphid invades the range of these tree species. Eckehard G. Brockerhoff, IUFRO Division 7 Coordinator, is one of the authors of this publication. <https://www.iufro.org/science/divisions/division-7/70000/noticeboard/>

Proceedings

IUFRO Joint Conference: **Genetics of Five-Needle Pines, Rusts of Forest Trees, and Strobosphere**, conference of IUFRO 2.02.15, 7.02.05 on 15-20 June 2014 in Fort Collins, Colorado, USA. Authors: Schoettle, Anna W.; Sniezko, Richard A.; Kliejunas, John T. (eds.); Proc. RMRS-P-76. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. Publication year: 2018. <https://www.iufro.org/publications/proceedings/proceedings-meetings-2014/#c27821>

International Symposium of SFEM2018/IUFRO 4.02.02 on 28-31 August 2018 in Nantou, China-Taipei: **Combining Multiple Inventory Techniques and Management Science to Preserve the Forest Ecosystem for Future Generations.**

<https://www.iufro.org/publications/proceedings/proceedings-meetings-2018/#c27426>

International Workshop on **Forest Landscape Restoration and Resilience to Climate Change in Northeast Asia**, IUFRO WP 1.01.13 and APAFRI Conference on 9-13 April 2018 in Beijing & Ordos, China. Authors: Ho Sang Kang, Miin Bang, Tae Hyung Kim (eds.)

<https://www.iufro.org/publications/proceedings/proceedings-meetings-2018/#c27422>

GFEP Forest and Water Conclusions Now Also in Spanish!

The conclusions chapter of the latest GFEP publication "Forest and Water on a Changing Planet: Vulnerability, Adaptation and Governance Opportunities. A Global Assessment Report." is now also available in Spanish at: <https://www.iufro.org/science/gfep/forests-and-water-panel/report/>

Call for Authors for SDG 13-Climate Change

There are to date no comprehensive publications addressing the SDGs in an integrated way. Therefore, the "Encyclopedia of the Sustainable Development Goals: Transforming the World We Want" is being produced by the World Sustainable Development Research and Transfer Centre and the Inter-University Sustainable Development Research Programme, being published by Springer.

The editorial team is calling for expressions of interest from colleagues working with climate change who may wish to support this project and may be interested to act as authors, writing chapters for Volume 13, which focuses on matters related to climate change. If you are interested, please contact Prof. Tony Wall: [t.wall\(at\)chester.ac.uk](mailto:t.wall(at)chester.ac.uk)

Fellowships and Scholarships

<https://www.iufro.org/discover/noticeboard/fellowshipsscholarshipsresearch-funding/>

Scholarships for International Course on Landscape Governance

Submit your application by 10 October 2018

During this two-week program (1-12 April 2019) you will look at your own work from an integrative landscape perspective, learn how to build bridges between the public and the private sector, and develop innovative governance mechanisms at the landscape level.

Details: <https://www.wur.nl/en/show/CDIcourse-landscape-governance-2019.htm>

2019 World Forest Institute International Fellowship Program

Submit your application by 15 October 2018

A 6-month professional development program is offered in Portland, Oregon, USA, that will allow participants to join weekly study tours around the Pacific Northwest and learn how natural resources are managed in this part of the world. Fellowships are open to any country, including U.S. citizens. Details: <https://www.worldforestry.org/institute/world-forest-institute/international-fellowship/>

Courses

<https://www.iufro.org/discover/noticeboard/university-courses-summer-schools-and-webinars/>

Free 5-week Online Course: Environmental Justice

This online course is open to everyone around the world. Teaching is available in Spanish and English. Understand how climate change, biodiversity loss and deforestation affect people, exploring justice in environment management. Organizers: Global Environmental Justice Group. Details: <https://www.futurelearn.com/courses/environmental-justice>

Positions

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

Postdoc Position on Sustainable Forest-based Bioeconomy

Submit your application by 14 October 2018

This postdoc position for the project 'ValueConnect' is one of twelve Tandem Forest Values post-doctoral projects, where universities or research institutes in Finland and Sweden have formulated research applications together, and in close cooperation will carry out a research project. The project 'ValueConnect' involves the Department of Forest Resource Management at SLU in Umeå, and the School of Forest Sciences at the University (UEF) in Joensuu. The employing institution will be SLU.

Details: <https://www.slu.se/en/about-slu/jobs-vacancies/?rmpage=job&rmjob=1327&rmlang=UK>

Tenure-track Faculty Position in Community Ecology

Submit your application by 15 October 2018

The Institute of Environmental Sciences and Evolution at the Faculty of Sciences of the Universidad Austral de Chile (UACH) in Valdivia invites applications for a tenure-track faculty position. The ideal applicants should have

a recognized expertise in community ecology and a background and research on quantitative methods applied to the analysis of ecological data.

Details: <https://www.uach.cl/trabaja-en-la-uach>
<https://www.uach.cl/uach/file/concurso742018-5b896354a760b.pdf>

Applications should be sent to <concursos(at)uach.cl> with a copy to <Inst.C.A.Ev(at)uach.cl> with "Código 742018" in the subject line.

Postdoctoral Researcher in Forest Ecosystem Services and Biodiversity

Submit your application by 15 October 2018

The Department of Biological and Environmental Sciences, University of Jyväskylä, Finland, is currently seeking to recruit staff to the position of Postdoctoral Researcher in Forest Ecosystem Services and Biodiversity, for a fixed 3-year term starting 1 January 2019 or as agreed. The postdoctoral researcher will work in the research group of Prof. Mikko Mönkkönen in the Biodiversa funded project *Scenarios for biodiversity and ecosystem services acknowledging health*.

Details: https://rekry.saima.fi/certiahome/open_job-view.html?did=5600&jc=12&id=00006127&lang=fi

Assistant or Associate Professor (Tenure-Track or Tenured) Industrial Ecology/Sustainability Engineering

Submit your application by 31 October 2018

The Department of Wood Science (Faculty of Forestry) at the University of British Columbia in Vancouver, Canada, invites applications for a tenure-track faculty position in the area of Industrial Ecology/Sustainability Engineering. Applicants must have demonstrated the clear potential to achieve excellence in research and teaching in the area of renewable resources and their sustainability.

Details: <http://www.forestry.ubc.ca/2018/09/assistant-or-associate-professor-tenure-track-or-tenured-industrial-ecology-sustainability-engineering/>

Graduate Research Assistant (PhD position)

Submit your application by 31 October 2018

One graduate research assistantship is available for a Doctor of Philosophy (PhD) student in the Department of Sustainable Bioproducts at Mississippi State University (MSU) in Starkville, MS, USA. The successful candidate will be involved in a multidisciplinary project in the field of timber engineering with a focus on performance evaluation of timber components and structures.

Details: <https://www.career.msstate.edu/>
https://www.iufro.org/download/file/29507/5545/nb-msu-GRA_AD_FINAL2018_003_doc/

Asia-Pacific Forestry Week 2019

APFW2019 will be held in Songdo Convencia Convention Center, Incheon, Republic of Korea on 17-21 June 2019, hosted by the Korea Forest Service

together with FAO. **Forests for peace and well-being** is the overall theme of APFW2019: bit.ly/APFW2019-FAO



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:

<http://www.gfis.net>

16-18 Oct 2018

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

Xi'an, China

IUFRO [8.01.07](#), [Task Force](#) on Forests, Soil and Water Interactions

Contact: Adam Xiaohua Wei, adam.wei(at)ubc.ca
Pengtao Yu, Email: yupt(at)caf.ac.cn

<https://www.iufro.org/science/task-forces/forests-soil-water/activities/>

23-27 Oct 2018

Planted forests and their role in water quality and quantity dynamics across the landscape; Session at the 4th International Congress on Planted Forests

Beijing, China

IUFRO [8.01.07](#), [Task Force](#) on Forests, Soil and Water Interactions

Contact: Adam Xiaohua Wei, adam.wei(at)ubc.ca
Shirong Liu, liusr(at)caf.ac.cn

<https://www.iufro.org/science/task-forces/forests-soil-water/activities/>

5-8 Nov 2018

II Congreso Latinoamericano Bosques y Agua V IUFRO Conference on Forests and Water in a Changing Environment

Valdivia, Chile

IUFRO [8.00.00](#), [8.01.07](#), TF [Forests, Soil and Water Int.](#) Members of the Global Forest Expert Panel (GFEP) on Forests and Water are actively involved in this meeting; GFEP co-chair Irena Creed will give a keynote presentation!

Contact: K. Bishop, kevin.bishop(at)slu.se;
forestsandwater2018(at)zentidos.cl

<http://forestsandwater2018.cl/>

21-23 Mar 2019

2019 WWD Symposium and 2nd IUFRO Forest Products Culture Research Group Colloquium

Austrian Open Air Museum Stuebing, near Graz, Austria

IUFRO [5.15.00](#), World Wood Culture Society, IAWA, IAWS

Contact: Michael Grabner, michael.grabner(at)boku.ac.at
Program Coordinator, symposium(at)worldwoodday.org

<http://www.worldwoodday.org/2019/symposium.php>

7-12 Apr 2019

Biomass in future energy and resource systems: impact on land use, climate and environmental services - Session at the General Assembly of the European Geosciences Union (EGU) 2019

Vienna, Austria

IUFRO [7.01.03](#), [1.03.01](#), [Task Force](#) Forest Biomass Network. <https://www.egu2019.eu/>

Contact: V. Bruckman, Viktor.Bruckman(at)oeaw.ac.at

6-10 May 2019

Joint Meeting of the IUFRO Working Parties Shoot, Foliage and Stem Diseases and Wilt Diseases

Figline Valdarno, Florence, Italy

IUFRO [7.02.02](#), [7.02.03](#)

Contact: Alberto Santini, alberto.santini(at)cnr.it

<https://www.iufro.org/science/divisions/division-7/70000/70200/70202/activities/>

13-17 May 2019

Biennial Research Group 7.01.00 Meeting: Harmonized Growth, Cleaner Environment and Sustainable Forests

Nanning, China

IUFRO [7.01.00](#) and Working Parties

Contact: Elena Paoletti, elena.paoletti(at)cnr.it

<http://iufro-nanning2019.csp.escience.cn/dct/page/1>

8-10 Jul 2019

Small-scale Forestry Conference 2019

Duluth, MN, United States

IUFRO [3.08.00](#)

Contact: Christoph Hartebrodt, Christoph.Hartebrodt(at)forst.bwl.de; <http://iufrossf.umn.edu/>

8-11 Jul 2019

Joint meeting of IUFRO Working Parties 7.03.06 and 7.03.07

Quebec, Canada

IUFRO [7.03.06](#), [7.03.07](#)

Contact: Andrea Battisti, andrea.battisti(at)unipd.it
Deepa Pureswaran, deepa.pureswaran(at)canada.ca

<https://www.iufro.org/science/divisions/division-7/70000/70300/70306/activities/>

16-20 Sep 2019

Recent Changes in Forest Insects and Pathogens Significance

Suceava, Romania

IUFRO [7.03.10](#)

Contact: Milos Knizek, knizek(at)vulhm.cz

<http://www.silvic.usv.ro/iufro-romania2019/>

19-23 Oct 2020

Acid Rain 2020: The Future Environment and Role of Multiple Air Pollutants, 10th International Conference on Acid Deposition

Niigata City, Japan

IUFRO [7.01.01](#), [7.01.03](#), [7.01.10](#)

Contact: Hiroyuki Sase, sase(at)acp.asia

<https://www.acidrain2020.org/>

Other Meetings

10-13 Dec 2018

Functional Ecology Conference 2018

Nancy, France

Organizers: INRA and partners

<https://journees.inra.fr/functionalecologyconference/>

1-5 Apr 2019

Sixth Mediterranean Forest Week

Brummana, Lebanon

Silva Mediterranea

Contact: C.Marchetta, Caterina.Marchetta(at)fao.org

<https://vi-med.forestweek.org/>