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Page 1

The Science under the Christmas Tree

An Interview with IUFRO's Christmas Trees Working Party Coordinators
https://www.iufro.org/science/divisions/division-2/20000/20200/20209/

Christmas trees have become a universal holiday season symbol. During the last 20 to 30 years, as the worldwide consumption of real Christmas trees has risen to exceed 80 million annually, the science and technology behind plantation Christmas tree production have also developed rapidly, particularly in Europe and North America.

IUFRO has a Working Party that provides a forum for the exchange of scientific research results among researchers, students, extension agents and extension specialists who work professionally with the Christmas tree industry.

The IUFRO Christmas Trees Working Party is currently coordinated by *Dr. Bert Cregg* of Michigan State University, USA, *Dr. Chloe Gendre (currently on leave)* of Club agroenvironnemental de l'Estrie, Canada, and *Dr. Inger Sundheim Fløistad* of the Norwegian Institute of Bioeconomy Research (NIBIO).

Q: Dr. Sundheim Fløistad and Dr. Cregg, do you usually have a real Christmas tree in your home and if so, how do you choose it?

Inger Sundheim Fløistad: Yes, we always have a real Christmas tree in our home. When our two sons were younger we usually visited a local choose-and-cut farm, and our boys selected and cut the tree. Now, we buy from a local grower selling Christmas trees close to where we live.

Bert Cregg: Yes, we have a real tree every year. I planted a block of 100 Fraser fir or *Abies fraseri* seedlings about 12 years ago. We gave most trees away to friends over the past few years but we kept a few that we still harvest for our own Christmas tree.

Q: With the Christmas Season drawing near, what is the latest trend in Christmas trees and how can science help to respond to such trends.

Bert Cregg: Improving grower efficiency and environmental sustainability are two key trends. We are working to help growers reduce their inputs, especially nitrogen fertilization. This reduces their input costs but also reduces the potential for nutrients to run-off into surface water or leach to groundwater.

Q: Many people are looking for the perfect Christmas tree in terms of size and symmetry. Can genetic selection or breeding cater for these needs?

Bert Cregg: Yes, depending on the species, tree improvement efforts are underway at various levels i.e., species selection,

Coning research: Michigan State University researchers are working to reduce precocious cone production in Fraser fir Christmas tree plantations. Photo by B. Cregg

provenance testing, progeny trials, for a range of traits including growth, tree form, and needle color. Some traits that are especially important for Christmas trees include date of budbreak - trees that break bud early are often subject to frost damage - and post-harvest needle retention. If a tree has good form and color but drops its needles all over the floor, the customer is going to be unhappy.

Q: The buzzword of our time is "sustainability". Are Christmas trees a sustainable product? Are the trees grown sustainably?

Inger Sundheim Fløistad: Locally produced Christmas trees are more sustainable than artificial plastic trees. All professional growers are to follow national regulations to ensure the real Christmas trees to be sustainable. After use, Christmas trees are also easily recyclable.

Q: How healthy are Christmas trees? Is there a need to treat them with lots of pesticides and herbicides?

Inger Sundheim Fløistad: For the Christmas tree growers, it is important to choose species and provenances adapted to the local conditions. Healthy trees are important for the growers. In Norway the growers have to follow regulations and the principle of integrated pest management aiming to reduce pesticide use and be clever in management strategies to reduce the risk.

Bert Cregg: In the U.S. we are also promoting integrated pest management (IPM). One of the key elements of IPM is scouting and only spraying pesticides when absolutely needed. In the past, growers often relied on broad spectrum insecticides; this killed the pest but also killed beneficial insects, and growers found themselves on a 'treadmill' of repeated spraying due to lack of natural control. Increasingly, they are realizing the best choice is often not to spray.

Q: One of the issues that consumers have with Christmas trees is their shedding of needles. What does research do to improve needle retention after harvesting?

Inger Sundheim Fløistad: After harvesting it is most important that the costumers treat the Christmas tree optimally. In Norway, lots of people still use Norway spruce for Christmas, even if the species shed needle faster compared to Abies sp. We have therefore studied post-harvest needle retention in several seed sources of this species.

Inger Sundheim Fløistad harvesting samples in late November. Photo provided by I. S. Fløistad

Q: How do you share your knowledge with Christmas tree growers? How long does it take until latest innovations are implemented on the ground?

Inger Sundheim Fløistad: We cooperate closely with the national Christmas tree growers association when developing research projects. In that way we try to ensure the research topic to be relevant. We also participate in meetings and field excursions for professional growers to ensure transfer of knowledge and innovations.

Bert Cregg: In the U.S., most Christmas tree researchers are at universities that are part of the Land-grant system, which means part of our assignment is extension and technology transfer. This is often done in collaboration with state Christmas tree associations. We use a variety of means of share research results including articles in grower magazines, meetings, field days, and increasingly on-line through webinars and videos. All the researchers in the U.S. conduct at least some of their research in on-farm trials with cooperating growers. This helps in terms of resources - it's hard for researchers to manage hectares of plantations -, but also ensures that the research is relevant and promotes rapid adaption.

Q: What is in your view the biggest knowledge gap in Christmas tree research?

Bert Cregg: A major issue for many U.S. producers is precocious coning in Fraser fir. This is the premium species for several of the main growing regions in the US. However, the trees produce dozens, sometimes hundreds, of cones that the growers must remove by hand. We have been conducting trials to understand the biology of coning in order to develop strategies to reduce coning, such as applying plant growth regulators. We are also exploring genetic selection for reduced or delayed coning.

Q: What is the general outlook for 2020 and beyond? Will the COVID-19 pandemic affect the Christmas tree industry?

Bert Cregg visits an organic Christmas tree plantation in Austria. Photo provided by B. Cregg

Bert Cregg: U.S. producers have started a self-funded promotion campaign to increase demand for real trees and the outlook is strong. COVID-19 presents challenges and opportunities. Growers have to be diligent to keep their employees and customers safe and healthy. Fortunately, most activities on a Christmas tree farm are outdoors and trees are usually grown on a 2m x 2m spacing, so they are perfect for social distancing! With travel restrictions in place, many people are focusing on home and holiday traditions, including real Christmas trees.

Thank you for this interview! Happy Holidays!

Photo by croisy on Pixabay

Pathways of Forest Bioeconomy: The Past, the Present and the Future of Forest Bioeconomy

Report by Anne Toppinen, University of Helsinki, Finland, Department of Forest Sciences, Coordinator of IUFRO Research Group 5.10.00 Forest products marketing and business management
https://www.iufro.org/science/divisions/division-5/50000/51000/activities/

This online conference of IUFRO Research Group 5.10.00 took place on 28 and 29 September 2020 and brought together 84 participants from 17 different countries. The meeting was kindly hosted and supported by the University of Helsinki and the Finnish Society of Forest Sciences (donor).

Meeting website: https://iufro-finland-2020.events/

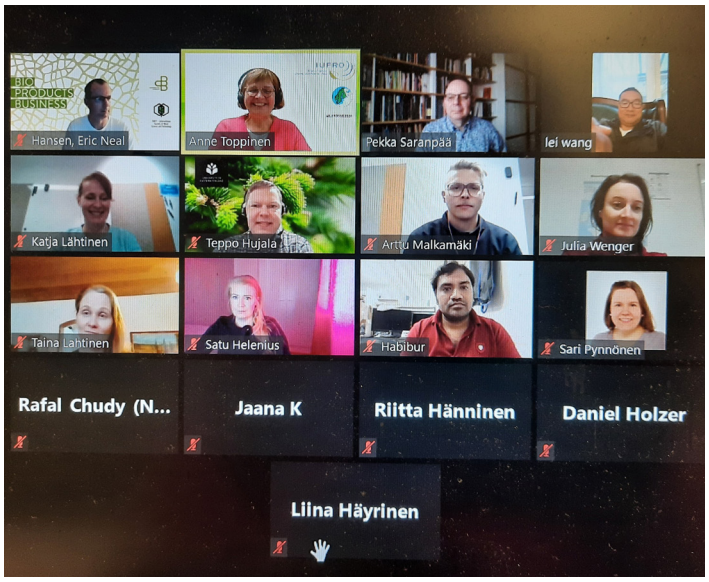
IUFRO Division 5 Coordinator *Pekka Saranpää* and Dean of Faculty *Ritva Toivonen* provided welcome and closing addresses. While the first keynote speaker, Professor *Eric Hansen* of Oregon State University, highlighted the "Past, present, and future of forest products marketing" (available on the meeting website), the second keynote speaker, Associate professor *Silja Korhonen-Sande* of the Norwegian University of Life Sciences, looked more closely at "The role of partnerships in building bioeconomy".

The five thematic sessions offered a total of 23 oral presentations and were well attended. They covered a diverse set of topical issues ranging from forest products markets to servitization, sustainable consumption, wooden multistory construction business and sustainability transition.

The main conclusions from the conference can be summed up as follows:

- Forest bioeconomy development is gaining ground across different continents, with repercussions of changing markets, industry renewal processes.
- Sustainability-driven competitiveness is shaping corporate sustainability agendas.
- Among the presentations regarding new forest-based business, the main focus was on the rise of wooden multistory construction, as highlighted in active participation from many countries (with special emphasis on the Nordic region).

With this fully online meeting free of charge, which was integrated into the Biennial Conference of the Scandinavian Society of Forest Economists (SSFE) on 29 and 30 September 2020, it was possible to reach a larger group of scientists, and also attract some industry and international organization representation.



IUFRO RG5.10.00 - Pathways to bioeconomy online conference, September 2020. Screenshot provided by Anne Toppinen

A fully online event was technically quite attractive and easy to organize and offered inclusive participation with minimal carbon footprint and travel costs, so we can explore this option in the future group meetings.

A printed and online proceedings booklet will be published jointly with SSFE and distributed to all interested participants.

A future meeting is envisaged to take place in the framework of an All Division 5 Conference in 2023, possibly combined with a special local one-day event of Research Group 5.10.00.

Forest Roads: Regional Perspectives from Around the World

Report by Kevin Lyons, Wes Lematta Professor of Forest Engineering, Oregon State University, USA Coordinator of IUFRO Working Party 3.01.02 - Road engineering and management
https://www.iufro.org/science/divisions/division-3/30000/30100/30102/

The seminar series, *Forest Roads: Regional perspectives from around the world*, is hosted by the IUFRO Working Party 3.01.02 Road Engineering and Management. This series provides regional perspectives on the design, construction, and management of forest road systems. The intent is to provide the participants with regional views of what forest roads are and the major factors affecting them.
Recordings of the presentations are available here:
https://www.iufro.org/science/divisions/division-3/30000/30100/30102/

Forest Roads in Western North America

The first seminar was presented on September 29, 2020 by *Dr. C. Kevin Lyons*, who focused on forest roads in western North America. Western North America is often viewed as having steep mountainous terrain; however, there is great variation in topography, geology, historic climate (glaciation) and current climate.

Variation in these regional factors can be seen in the different road construction methods used in this area. In coastal British Columbia it is common to use wood puncheon to support the excavator when constructing the subgrade, and to use a thicker layer of ballast (base course) that is either from fluvial deposits or pit run (not crushed) material from local quarries.

Fluvial deposits that are suitable for road surfacing are rare in coastal Oregon as are accessible rock deposits that are suitable for quarrying. Thus, in coastal Oregon roads are constructed when it is sufficiently dry to work the local soils into a smooth subgrade, which is then finished with a relatively thin layer of crushed rock if an all-weather road is required.

It is interesting to see in a region that shares many common attributes, that there are dramatic differences in forest road construction practices. The different road construction practices make sense when variation in the regional factors is taken into account. The presentation by *Dr. Lyons* reviews the variation in regional factors that affect forest road construction and considers local examples in British Columbia and Oregon.

Photo by Kevin Lyons

The second seminar in the series took place on 1 December 2020 and focused on Europe. A summary report will be published in a future issue of IUFRO News and the recording is available on the Working Party webpage: https://www.iufro.org/science/divisions/division-3/30000/30100/30102/

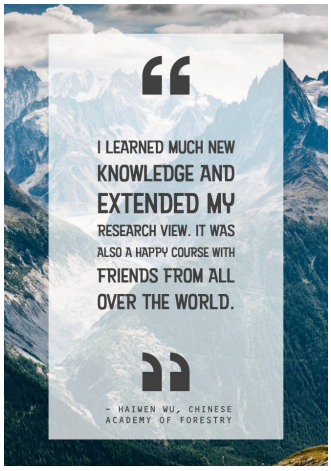
IUFRO-SPDC Strengthens Skills Needed in an Increasingly Complex World

Report by Ioana Grecu (IUFRO-SPDC) on the IUFRO Blog

The online course "**Systematic Evidence Evaluation on Forest Landscape Restoration"** was a collaboration between IUFRO's Special Programme for Development of Capacities (IUFRO-SPDC) and the University of Oxford in the UK, and took place from 12 to 16 October 2020: https://www.iufro.org/science/special/spdc/tw/online-course-systematic-evidence-evaluation/

The subject of systematic evidence has become increasingly important in the last decade. The world is becoming more and more complex, and this is asking for adequate policy making and smart management decisions. This course paves the way for methods of evidence evaluation that support and encourage appropriate and accurate policy decisions and actions that can be taken about forests and forest-related land use. During the course, participants were introduced to software and tools required for systematic reviews of forest-related science. The trainers combined lectures, videos, breakout sessions for group work, online quizzes and polls to create an interactive learning environment and develop the necessary skills and methods to support this goal, including framing answerable questions that address policy and practice concerns.

The demand for the course was high, but ultimately 40 applicants were accepted and divided into two sessions, one in the morning and one in the afternoon (GMT). The attendees consisted of early and mid-career scientists from economically disadvantaged countries in Africa, Asia and Latin America. Of course, all of them are working on research issues related to forest landscape restoration. The multitude of cultures brought diverse discussions and different perspectives on forest-related topics. All attendees were able to participate in the course for free, thanks to financial contributions from the US Forest Service.



The first IUFRO-SPDC online training turned out to be a success, and we are looking forward to offering more online opportunities in 2021! Participants sent a lot of positive feedback, as well as constructive suggestions for future courses. We congratulate them all for the successful and active participation!

IUFRO's support to forest science in economically disadvantaged countries is implemented via the IUFRO Special Programme for Development of Capacities: https://www.iufro.org/science/special/spdc/

Photo and quote by Haiwen WU, Chinese Academy of Forestry

Governance and Restoration of Forest Heritage Systems

Review of the UNISCAPE 2020 Conference, Florence, Italy, on 16 and 17 October 2020, **Special Session on Governance and Restoration of Forest Heritage Systems**, organized by IUFRO Research Group 9.03.00 *Forest History and Traditional Knowledge*
https://www.iufro.org/science/divisions/division-9/90000/90300/activities/
UNISCAPE 2020
https://www.uniscape.eu/uniscape2020-conference/

By Ian D. Rotherham, Sheffield Hallam University, UK, Coordinator of IUFRO Research Group 9.03.00 Forest history and traditional knowledge, and Mauro Agnoletti, University of Florence, Italy, conference organizer

As part of the celebrations for the twentieth anniversary of the European Landscape Convention, IUFRO Research Group 9.03.00 organized a special session to address issues of forest landscape heritage with partners across Europe, and from elsewhere around the world. The main organizers were ***Mauro Agnoletti*** and ***John Parrotta***, and together they assembled an excellent program of presentations and critical debate. IUFRO President John Parrotta moderated the session with the following presentations:

Ian D. Rotherham (Sheffield Hallam University, UK), on *'How Landscape History and Tradition Present Challenges for Present and Future Forest Management'*
Lars Östlund (Swedish University of Agricultural Sciences, Umeå), on *'Strategies to protect the ancient cultural forest landscapes in northern Europe – how to interpret seemingly natural old-growth forests with new methods'*
Elisabeth Johann (University of Natural Resources and Life Sciences Vienna, Austria), on *'Coppice forests: The re-introduction of traditional management systems in response to the decline of species and landscape and under the aspect of climate change'*
Tereza Blažková (Charles University & Labrys, Czech Republic), and Jiří Woitsch (Czech Academy of Sciences NGO, Czech Republic), on *'Different stories of mountain spruce forest heritage in the Bohemian Forest, Central Europe: Conflicting issues or a way for finding more effective management and protection policies?'*
Mónica Gabay (Ministry of Environment and Sustainable Development, Argentina) and Hugo Arce (need details), on *'Enhancing forest cultural values and traditional knowledge reproduction in San Pedro, Province of Misiones, Argentina'*
Christian Giardina (USDA Forest Service, Hawaii, USA) and Katie Kamelamela (Akaka Foundation for Tropical Forests, Hawaii, USA), on *'Revitalization of Cultural Values in Hawaii's Forested Landscapes through Consensus'*

Following the series of fascinating lectures with unifying themes of people, forests, landscapes, sustainability, heritage and history, there were in-depth questions and debates. The presentations will lead to a number of focused papers from the event.

Damage by contemporary forestry extraction, North Yorkshire, England. Photo by Ian Rotherham

Recurring themes to emerge included the importance of cultural heritage and its recognition, in conservation and sustainability, and the importance of cross-disciplinary or interdisciplinary research. Both tangible and intangible cultural heritage contribute immensely to knowledge and perceptions of 'landscape' but are often overlooked and easily lost. The conference raised issues and challenges in relation to this, whilst at the same time presenting examples of good practice in researching and commenting these phenomena.

The event brought together colleagues who have collaborated on these issues over many years and demonstrated that even in times of adversity and COVID lockdown, the barriers can still be broken down by a shared passion for landscape. Interest in the event was high with around 100 participants present throughout.

Four Operational Challenges to Landscape Restoration in Latin America

Report by René Zamora Cristales, World Resources Institute, USA, Coordinator of IUFRO Research Group 3.09.00 Sustainable Operations for Forest Landscape Restoration
https://www.iufro.org/science/divisions/division-3/30000/30900/activities/

On October 28, 2020 this online meeting, which was kindly hosted and supported by the World Resources Institute, Initiative 20x20, IUFRO, and the International Society of Tropical Foresters, gathered 220 participants joining from the following countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Germany, Guatemala, Honduras, Hungary, México, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Spain, United States of America.

Meeting website: https://initiative20x20.org/events/cuatro-retos-operacionales-para-escalar-la-restauracion-de-paisajes

Forest and Landscape Restoration (FLR) represents a nature-based solution to mitigating climate change. FLR is also an opportunity to reverse land degradation that contributes to land-use carbon emissions and affects a wide range of ecosystem services, including biodiversity. Countries around the globe have made important commitments to restore approximately 170 million hectares of degraded land by 2030. The magnitude of national commitments and the variety of interventions needed to restore lands require the implementation of sustainable forest operations that may differ from those used in production forestry. This webinar showcased innovative strategies to overcome four operational challenges for establishing, managing, and implementing restoration.

In the course of the meeting five experts from Guatemala, Chile, Peru, and the United States discussed strategies to overcome these four main operational challenges in landscape restoration:

- ***Challenge 1:*** **Seeds of the Future - Improving seedling production for restoration**
- ***Challenge 2:*** **Identifying operational aspects to consider when growing trees for restoration**
- ***Challenge 3:*** **restore resilience to wildfire under climate change**
- ***Challenge 4:*** **Bridging the gap between impact investment and technical, operational assistance for communities in Peru**

Conclusions can be summarized as follows:

- Successful implementation of FLR requires the development of cost-effective forest operations; the "how" is almost as important as the "why".
- There is a need to develop seed supply systems for native species and increase research and development in management.
- It is important to improve seedling production of native species and define the quality according to a wide variety of restoration objectives.

Using remote sensing and Collect Earth to monitor landscape restoration in Nicaragua. Photo by René Zamora Cristales, World Resources Institute

- Degraded lands usually mean degraded soils that need special attention and treatment to ensure trees' survival and development.
- Restoring forest structure is a crucial factor in reducing the intensity and mitigating/prevent wildfires.
- Aggregation of smallholders and communities and technical assistance are essential factors to increase impact investment in restoration and to ensure that successful operations are implemented

The organizers (Coordinator of Division 3.09.00 and Deputy Coordinators) will develop an outline of a review paper to discuss the challenges and strategies to implement restoration. This will be submitted to a peer-review forestry journal for consideration.

Seminar Kick-off Meeting: Global Forest Monitoring Using Satellite Data

Report by Henrik Hartmann, Max-Planck Institute for Biogeochemistry, Jena, Germany, and Nadine Ruehr, Institute of Meteorology and Climate Research at Germany's Karlsruhe Institute of Technology in Garmisch-Partenkirchen, Coordinator and Deputy Coordinator, respectively, of the IUFRO Task Force Monitoring Global Tree Mortality Patterns and Trends https://www.iufro.org/science/task-forces/tree-mortality-patterns/

The first in a series of online presentations concerning global tree mortality took place on 17 November 2020, bringing together 396 participants from 59 countries worldwide.

Meeting website:
https://www.tree-mortality.net/index.php/seminars/

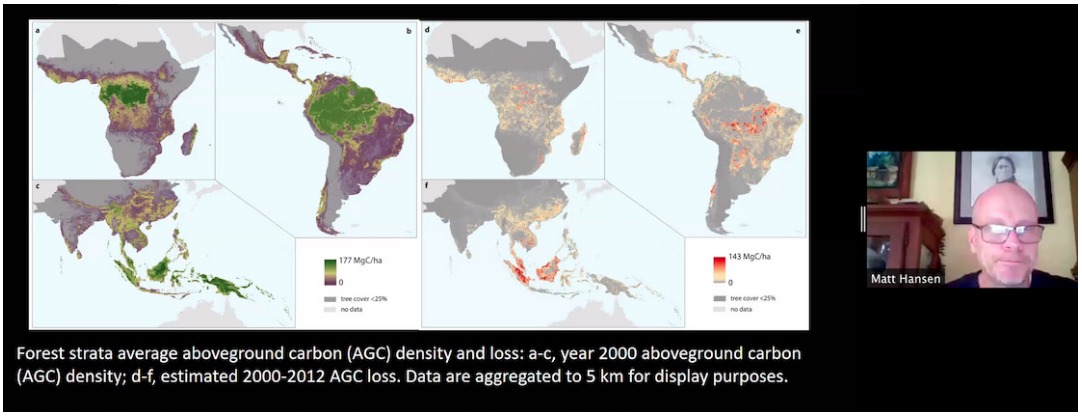
The seminar series was initiated by *Henrik Hartmann* who gave a brief introduction to the IUFRO Tree Mortality Task Force and the International Tree Morality Network.

The first speaker of the seminar series was Professor *Matt Hanson* from the University of Maryland. Matt Hanson is the organizer of the Global Forest Watch. His presentation entitled *"Global forest monitoring using satellite data"* gave deep insights into how to use satellite data to observe the state of the world's forests. Following the presentation a 30-minute discussion took place and all participants had the chance to ask questions to the speaker.

During his presentation Matt Hanson showed how forest dynamics can be assessed at the global scale using multi-source satellite imagery. He also addressed remaining challenges in detecting diffuse tree mortality using satellite data. But with future developments, such challenges (like resolution) might

be overcome allowing a more detailed assessment of the state of our forests in near-to-real time. Satellites are indispensable tools to monitor dynamics in forests globally and large-scale tree mortality, but they cannot substitute ground-based measurements yet.

This was the kick-off to a two-monthly webinar series. There will be more speakers addressing global tree mortality.



Matt Hansen presenting recent findings during the online seminar. Screenshot provided by Henrik Hartmann

This online seminar series is very attractive and inclusive as people from all over the world have the possibility to join live or stream the event later via the IUFRO YouTube channel: https://www.youtube.com/user/IUFRO

9th International Symposium: Forest and Sustainable Development

Report by Bogdan Strimbu, Oregon State University, USA, Deputy Coordinator of IUFRO Research Group 4.03.00 Uncertainty analysis, computational ecology, and decision support https://www.iufro.org/science/divisions/division-4/40000/40300/ *and Coordinator of IUFRO Working Party 4.03.02 Machine learning and computational ecology* https://www.iufro.org/science/divisions/division-4/40000/40300/40302/

A total of 125 participants from 26 countries on 6 continents joined online for the *9th International Symposium: Forest and Sustainable Development* on 16 and 17 October 2020, kindly hosted by the University of Transilvania, Brasov, Romania.
Meeting website: https://bit.ly/2JDHaiW

Streaming on: https://www.youtube.com/watch?v=oiFRBnX-oEEg&feature=emb_logo&ab_channel=MihaiDanielNita

The aim of the conference was to foster the exchange of ideas between scientists from different disciplines of forest sciences, to present the latest advances and stimulate future research on forestry and related fields. To accomplish this aim, the plenary talks and the thematic sessions covered a wide range of topics, from genetics and ecology to roads and modeling. Thus, the event was almost like a miniature world congress, with almost all facets of forest research covered, except the social aspects.

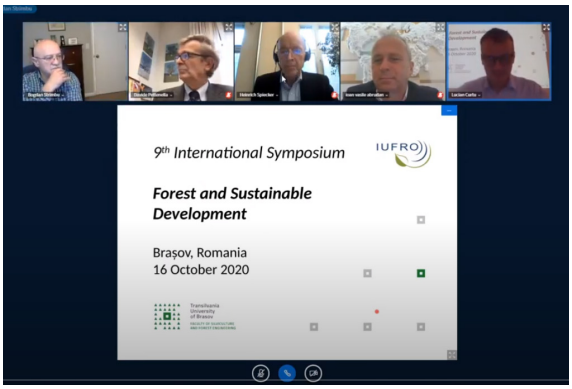
The conference had 5 thematic sessions:
1) Forest ecosystem management
2) Forest engineering

IUFRO presentation by Bogdan Strimbu (first from the left) on Youtube.com

3) Wildlife management
4) Geomatics
5) Informatics, modelling and statistics

The conference presented mostly study cases, with some studies working across continental boundaries (such as the presentation by the current president of the Society of American Forests, *Dr. Cushing*).

Besides study cases, several studies presented advances in forest modeling and inventory. Outcomes of the meeting shall be published in a Special Issue of *Forests*.



These symposia are biennial events and the 10th edition has thus been scheduled for 2022.

Introduction of the event by Dr. Curtu (first from teh right), the Dean of the Faculty of Silviculture and Forest Engineering, Transilvania University, Romania, on Youtube.com

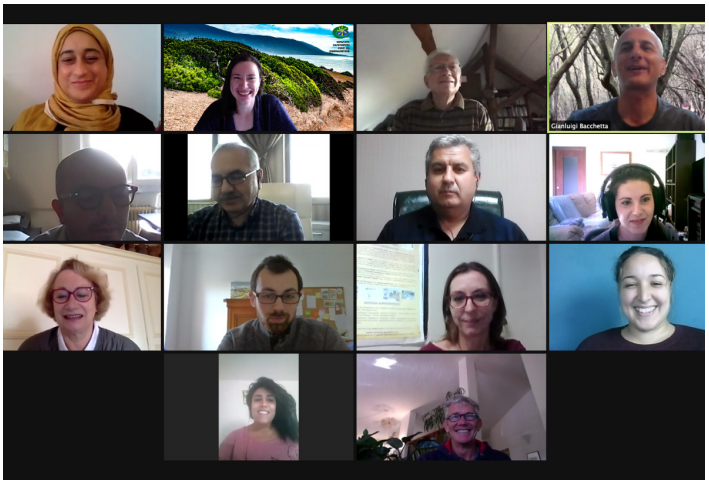
MEDLENTISK – the Next Steps

Report by Boutheina Stiti, Ministry of Agriculture, Water Resources and Fisheries, Tunisia, and Deputy Coordinator of IUFRO 4.05.01 - Managerial, social and environmental accounting
https://www.iufro.org/science/divisions/division-4/40000/40500/40501/

On 12 November, despite the second epidemic wave, the partners of the MEDLENTISK project, co-funded by the Erasmus+ programme of the European Union, met again in a video conference to exchange on current and future activities. *(Read the article in IUFRO News 10/2020, page 6:* Link)

The partners were able to review the progress made since the launch of the project in September 2020. Together, they set the date for the first event planned under the MEDLENTISK project in April 2021 in Chania, Greece. Hoping very much that this event can be held in person, it should enable the transmission of knowledge on the mastic tree, a forest resource established all around the Mediterranean, but used almost exclusively in Sardinia and the Maghreb.

To move forward on the drafting of the guide to good practices, Mrs. Faten MEZNI and Mrs. Boutheina STITI of INRGREF



Screenshot provided by B. Stiti

(IUFRO Member Organization), will prepare a draft summary of the guide to good practices. They will be supported in this task by the UNICA team (University of Cagliari, Italy).

For any questions, remarks or interest on the MEDLENTISK project, please feel free to contact *Boutheina Stiti* (stitibou(at)gmail.com), *Faten Mezni* (faten-mez(at)hotmail.com) and *Anaïs Loudières* (anais.loudieres(at)aifm.org).

News from IUFRO Headquarters

We are happy to welcome **Dikshya Devkota** as a new member of our team!

Dikshya Devkota joined the Global Forest Expert Panels Programme (GFEP) as a Project Manager on November 1, 2020 and has been working from her home office in the United States so far due to the Covid-19 restrictions. We are very much looking forward to meeting her in person in Vienna soon.

Dikshya recently completed her Master's (MSc) in Natural Resources and Environmental Sciences from the University of Illinois at Urbana Champaign, USA where her research focused on biodiversity conservation funding, conservation policy, and gender norms. She holds a Bachelor's (BSc) in Environmental Sciences from the University of East Anglia, UK.

Dikshya brings several years of experience working in environmental sectors at different universities, local NGOs, and international organizations. She has previously studied and worked in Nepal, Bhutan, UK, and USA. As a Project Manager at GFEP, *Dikshya* is responsible for the operational planning and implementation of GFEP projects and publications.

She follows *Lena Lackner*, who has left the IUFRO-GFEP team to take up a position in the Austrian Federal Ministry of Agriculture, Regions and Tourism. We wish Lena lots of success and happiness in her new job!

Dr. Richard Guldin Received Sir William Schlich Memorial Award

On October 29 *Dr. Richard Guldin* was presented this prestigious award of the Society of American Foresters (SAF) in recognition of his outstanding contributions to the field of forestry.

Dr. Guldin's leadership over many decades has had a significant impact in forest inventory, assessment and reporting processes within the United States and internationally. He has also been most actively and enthusiastically involved in IUFRO activities.

Read more in IUFRO News 7/8 of 2020, page 3:

https://www.iufro.org/publications/news/electronic-news/article/2020/09/01/iufro-news-vol-49-double-issue-78-june-2020/

Photo provided by Rich Guldin

Obituary: Dr. Maliwan Haruthaithanasan

IUFRO officeholder **Dr. Maliwan Haruthaithanasan**, director of Kasetsart Agricultural and Agro-industrial Product Improvement Institute (KAPI) of Kasetsart University, Bangkok, Thailand, passed away on 29 November 2020.

Dr. Haruthaithanasan was Deputy Coordinator (2014-2016) and Coordinator (2016-2019) of the IUFRO Task Force "Forest biomass network" and deputy coordinator of the IUFRO working party "Atmospheric deposition, soils and nutrient cycles". She was the key person behind the establishment of a regional forest biomass network, involving Thailand, Lao PDR, Myanmar, Cambodia, and Vietnam.

Her success was built on her openness and unique networking skills, that enabled her to think big, while not leaving the needs of local communities and marginalized groups behind. The international forestry community has lost a visionary mind, but perhaps more importantly, a great colleague, friend and mother. Her legacy will remain an inspiration for numerous young forest researchers.

Viktor Bruckman, Austrian Academy of Sciences, IUFRO officeholder, on behalf of the IUFRO community

Publications

Enabling Factors to Scale Up Forest Landscape Restoration: The Roles of Governance and Economics - Full Report with Case Studies

By Stephanie Mansourian, environmental consultant based in Switzerland, and Deputy Coordinator of the IUFRO Task Force on Transforming Forest Landscapes for Future Climates and Human Well-Being https://www.iufro.org/science/task-forces/transforming-forest-landscapes/

Published by WWF-Germany in November 2020

For this study, WWF and IUFRO have come together to push the forest restoration agenda forward using their combined scientific, policy and field implementation expertise. Both organizations have been exploring lessons learned in FLR (IUFRO FLR Snapshot and WWF FLR Field Experiences) to understand what works and what doesn't as a basis for informing future implementation.

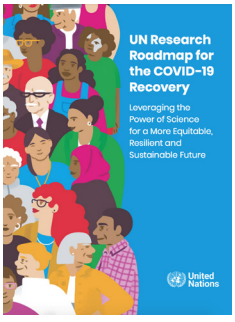
This study draws on 10 country case studies to identify opportunities and avenues for scaling up forest restoration, providing decision-makers with an overview of the many options available so that they can take the bold steps to make the changes required, at the pace required, to upscale FLR.

For download and further details, visit: https://www.iufro.org/news/article/2020/11/23/enabling-factors-to-scale-up-forest-landscape-restoration-1/

UN Research Roadmap for the COVID-19 Recovery

Leveraging the Power of Science for a More Equitable, Resilient and Sustainable Future

"The Roadmap is a commitment and a guide to make use of research to determine how COVID-19 socio-economic recovery efforts can be purposefully designed to stimulate equity, resilience, sustainability and progress towards the Sustainable Development Goals (SDGs)." https://www.un.org/en/coronavirus/communication-resources/un-research-roadmap-covid-19-recovery



Future Specialized Forestry Education for Africa

Paper by Professor A. B. Temu, Professor S. A. O. Chamshama and Professor A. D. Yaye

Website: https://www.iufro.org/science/divisions/division-6/60000/60900/publications/

This paper cross-examines Africa's state of forestry education with a focus on transformations that can fulfill our future needs.

Photo: Facebook Sokoine University of Agriculture

Major changes in African forestry education including expansion into several forestry-related degree programs are needed in order to address our future needs.

In this paper the authors envisage Agroforestry, Urban Forestry, Biodiversity Management, Forests and Livelihoods (including non-wood forest products and services), Wood Science and Technology as new degree programs that can be delivered by extending the duration of current programs to allow for specialization.

Rediscovering the Contributions of Forests and Trees to Transition Global Food Systems

Paper by James L. Chamberlain (Coordinator of the IUFRO Task Force Unlocking the Bioeconomy and Non-Timber Forest Products), Dietrich Darr and Kathrin Meinhold, published in Forests 2020. Find under Relevant Publications & References: https://www.iufro.org/science/task-forces/bioeconomy-and-non-timber-forest-products/publications/

Baobab fruit.
Photo by Nici Keil on Pixabay

The authors use examples of various plants, such as baobab, to explore ways forests and trees provide for food security and nutrition and illustrate elements of a framework to encourage integration of forests and trees. Forests and trees provide innovative opportunities and technological and logistical challenges to expand food systems and transition to a bioeconomy. This shift is essential to meet the expanding demand for secure and nutritious food, while conserving forest biodiversity.

A Framework to Evaluate Climate Effects on Forest Tree Diseases

A paper published in *Forest Pathology* 2020, 00:e12649, by Hennon, PE, Frankel, SJ, Woods, AJ, *et al*. Co-author *Susan Frankel* of the US Forest Service Pacific Southwest Research Station is Deputy Coordinator of IUFRO Working Party 7.02.09 *Phytophthora diseases on forest trees*: https://www.iufro.org/science/divisions/division-7/70000/70200/70209/publications/

Restoring Forests in Times of Contagion

Papers to Celebrate John Evelyn on the Occasion of his 400th Birthday
Edited by John Dargavel and Ben Wilkie

John Evelyn (1620-1706) was an English writer and author of the treatise *Sylva*, or *A Discourse of Forest-Trees* (1664). Editor *John Dargavel* served as IUFRO officeholder of Working Party 6.07.01 *Tropical forest history* between 1987 and 1995. https://www.environmentalhistory-au-nz.org/insights/restoring-forests-in-times-of-contagion/

CPF COVID-19 Response Now in French and Spanish

The *Collaborative Partnership on Forests* is offering the joint statement on the COVID response and more on a dedicated website also in French and Spanish:
French website: http://www.cpfweb.org/97404/fr/
French statement: http://www.cpfweb.org/50030-0ac56717b77d74ce65bbff3b550d69d9e.pdf
Spanish website: http://www.cpfweb.org/97404/es/
Spanish statement: http://www.cpfweb.org/50031-0e429da4a041e608d19a480514d974a0c.pdf

Newsletters

Latest News from IUFRO Division 4 - Forest Assessment, Modelling and Management

The second issue of the D4 newsletter introduces officeholders, informs about upcoming Division 4 meetings as well as scholarship and job opportunities, provides updates on latest publications and calls for papers, and much more. *Read here:* https://www.iufro.org/science/divisions/division-4/40000/publications/

Teaknet Bulletin

The latest issue of Teaknet Bulletin is available here: https://www.iufro.org/science/divisions/division-5/50000/50600/50602/publications/#c20880

Read about a recent webinar series, including, among others, a webinar by *Dr. Ernest Foli*, Principal Research Scientist from Forest Research Institute of Ghana on the topic *"Management models for incorporation of trees in farming systems in Ghana"*: https://www.youtube.com/watch?v=AM01C7ZHhvw

Also, please note the rescheduled 4thWorld Teak Conference in Accra, Ghana from 23 -26 August 2021!

Journals & Calls for Papers

Hot off the Press: Special Edition 2020 of IAWA Journal on Wood Identification

The special edition of IAWA Journal 2020: 41(4) on Wood Identification **"Advancing Wood Identification - Anatomical and Molecular Techniques"**, edited by *Yafang Yin* (Coordinator of IUFRO Research Group 5.16.00 - Wood identification), *Alex Wiedenhoeft* and *Lloyd Donaldson* was published on November 12, 2020. It contains 14 original papers and one review article emphasizing recent research development in wood identification.

For further details please visit the IAWA Journal: https://brill.com/view/journals/iawa/41/4/iawa.41.issue-4.xml

For ordering hard copies, please write to: iawa.financial.office(at)gmail.com

kconcha on Pixabay

The editing of this special issue is to leverage the success of the IAWA-IUFRO international symposium *"Challenges and opportunities for updating wood identification"* organized in May 2019 in Beijing, and to disseminate wood identification research advances. A big thank you to all colleagues from the 2019 IAWA-IUFRO international symposium and the contributors to this special issue of the IAWA Journal. *Find information on the symposium at:* https://www.iufro.org/science/divisions/division-5/50000/51600/

Open Access Publications in Forest Policy and Economics

The Editorial Team of Forest Policy and Economics, together with Elsevier, is pleased to present the collection of Open Access articles to their global readership under https://www.journals.elsevier.com/forest-policy-and-economics/open-access-articles
Please feel free to download and share the link widely!

Call: Analysis of Bio-Based Products for the Circular Economy

Submit manuscripts by 5 November 2021 to this special issue of *Energies* (ISSN 1996-1073) guest-edited by Professor *Dr. Richard Bergman* (Deputy Coordinator of IUFRO Research Group 5.12.00 - Sustainable utilization of forest products), USDA Forest Service Forest Products Laboratory.
Read here: https://www.mdpi.com/journal/energies/special_issues/Analysis_Bio_based_Products_Economy

Call: Forest Policy and Management Practices for the 21st Century

Special issue of *Sustainability* guest editors *Dr. Zuzana Dobsinska*, Technical University in Zvolen, Slovakia, and *Ms. Ivana Zivojinovic*, University of Natural Resources and Life Sciences, Vienna (BOKU), Austria, are **inviting you to submit papers**.
Details: https://bit.ly/3orqH0j

Call: New Paradigms in Forest Certification

Small-scale Forestry is pleased to announce the launch of a new special issue on *'New Paradigms in Forest Certification for Ensuring the Sustainability of Wood and Non-Wood Products in Developed and Developing Countries'*. The guest editor of the issue is *Dr. Puneet Dwivedi*, Associate Professor (Forest Sustainability), Warnell School of Forestry and Natural Resources, University of Georgia, USA, a Member Organization of IUFRO.

Please submit your abstract to Dr. Puneet Dwivedi via email **by 18 December 2020**: puneetd(at)uga.edu

For details, please visit: https://www.springer.com/journal/11842/updates/18533366

Call: Forest Operations on Sloping Land: Operating, Environmental and Safety Constraints

Special issue of *Forests* guest editors *Prof. Dr. Raffaele Cavalli* (Deputy Coordinator of IUFRO Research Group 3.06.00 - Forest operations in difficult terrain) Department of Land, Environment, Agriculture and Forestry TESAF, University of Padova, Padova, Italy, and *Dr. Andrew McEwan*, Forestry and Wood Technology, Nelson Mandela University, Port Elizabeth, South Africa, **invite you to submit articles by 1 May 2021.**
Details: https://www.mdpi.com/journal/forests/special_issues/forests_operations

Position Announcements

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

Director, Secretariat of the United Nations Forum on Forests
Institution: United Nations Forum on Forests Secretariat (UNFFS) in the Department of Economic and Social Affairs (DESA)
Duty station: New York, USA
Closing date: **24 December 2020**
Details: https://www.iufro.org/fileadmin/material/discover/nb-JO-141250_D2_UNFF.pdf

Lecturer - Master of Urban Forestry Leadership
Institutions: Department of Forest Resources Management, Faculty of Forestry, The University of British Columbia (UBC)
Duty station: Vancouver, BC, Canada
Closing date: **1 January 2021**
Details: https://ubc.wd10.myworkdayjobs.com/ubcfaculty-jobs/job/UBC-Vancouver-Campus/Lecturer---Master-of-Urban-Forestry-Leadership_JR207

Postdoctoral Researcher (m/f/d)
Research Training Group RTG 2123 Conservation of Forest Biodiversity in Multiple-use Landscapes of Central Europe (ConFoBi), University of Freiburg
Duty station: Freiburg, Germany
Closing date: **10 January 2021**
Details: https://uni-freiburg.de/university/jobs/00001327/

Assistant Professor of Forest Ecosystem Restoration
Institutions: School of Environment and Natural Resources, The Ohio State University
Duty station: Columbus, Ohio, USA
Closing date: **15 January 2021**
Details: https://www.jobsatosu.com/postings/104218

Assistant Professor in Indigenous Land and Natural Resources Governance
Institutions: Department of Forest Resources Management, Faculty of Forestry, The University of British Columbia (UBC)
Duty station: Vancouver, BC, Canada
Closing date: **15 January 2021**
Details: https://forestry.ubc.ca/career-opportunities/assistant-professor-in-indigenous-land-and-natural-resources-governance/

Assistant Professor of Environmental Governance and Business
Institutions: Department of Forest Resources Management, Faculty of Forestry, The University of British Columbia (UBC)
Duty station: Vancouver, BC, Canada
Closing date: **15 January 2021** (or until filled)
Details: https://forestry.ubc.ca/career-opportunities/assistant-professor-of-environmental-governance-and-business-cluster-hire/

Three Post-doctoral Positions at Forest Pathology Group (Uva-iuFOR, SP)
Institutions: Forest Pathology Group, Universidad de Valladolid
Duty station: Palencia, Spain
Closing date: **not indicated**
Details: https://bit.ly/2Js5zYJ

Research Associate (post-doc) - Oak Wilt
Institutions: The Sakalidis, McCullough and Cregg Labs at Michigan State University
Duty station: East Lansing, USA
Closing date: **open until filled**
Start date: February/March 2021
Details: https://careers.msu.edu/en-us/job/504086/research-associatefixed-term

Courses

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

MSU Forestry Non-credit Online Courses - Spring 2021
Michigan State University, Department of Forestry, is offering the following forestry non-credit online courses in spring, 11 January - 7 May 2021:
Human Dimensions of Forest Carbon Management / Human Dimensions of Forests / Measurement and Monitoring of Forest Carbon / Michigan's Forests / Natural Resource Policy
Contact <FOR.forestce(at)msu.edu> for questions!
Details: https://www.canr.msu.edu/for/continuing-education/

IUFRO Meetings

For a full list of meetings go to our online calendar at:
https://www.iufro.org/events/calendar/current/
Find non-IUFRO meetings on the IUFRO Noticeboard at:
https://www.iufro.org/discover/noticeboard/
Search forest-related events in GFIS at: https://www.gfis.net

9-11 Feb 2021 (NEW DATE)
IUFRO Small Scale Forestry Conference
Online, Ireland
IUFRO 3.08.00
Contact: Christoph Hartebrodt, Christoph.Hartebrodt(at)forst.bwl.de
https://www.iufro.org/science/divisions/division-3/30000/30800/activities/

17-18 Mar 2021
3rd International Forest Policy Meeting
Online, Germany
IUFRO 9.05.04
Contact: Jens Friis Lund, jens(at)ifro.ku.dk
http://www.forstpolitik-umweltpolitik.uni-freiburg.de/lehre/IFPM%203

22-24 Jun 2021 (NEW DATE)
3rd IUFRO Acacia Conference 2020: Embracing Transformation for Sustainable Management of Industrial Forest Plantations
Online and Bintulu, Sarawak, Malaysia
IUFRO 2.08.07
Contact: Wickneswari Ratnam, wicki(at)ukm.edu.my
https://iufroacacia2020.com

26 Jun – 1 Jul 2022 (NEW DATE)
Foliar, Shoot, Stem and Rust Diseases of Trees - Forest Diseases during Global Crises
Durham, New Hampshire, United States
IUFRO 7.02.02, 7.02.05
Contact: Salvatore Moricca, salvatore.moricca(at)unifi.it, Isabel Munck, isabel.munck(at)usda.gov
https://www.iufro.org/science/divisions/division-7/70000/70200/70202/activities/

Other Meetings

1 Jan - 31 Dec 2021
100 Years of Research in British Columbia, Canada
Organized by BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development
Contact: Francesco Cortini, Francesco.Cortini(at)gov.bc.ca
Watch: https://www.youtube.com/watch?v=-BMNpZMjVFA

14 Jan 2021
2021 Virtual Western Region COFE Seminar – Improving Forest Harvesting Operations
Online
https://westernforestry.org/upcoming-conferences/2021-virtual-western-region-cofe-seminar-improving-forest-harvesting-operations

24–28 May 2021
World Forestry Congress
Building a Green, Healthy and Resilient Future with Forests
Seoul, Republic of Korea
https://wfc2021korea.org/