Sustaining Forest Ecosystems

a workshop supported by *Forest Ecosystems*
(https://forestecosyst.springeropen.com)

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Forests include a great variety of ecosystems where plants and animals interact with their physical environment. The challenge is to sustain their ability to function, to adapt to changing climates, and to satisfy a variety of human needs. This workshop, presented online during the COVID 19 pandemia, complements textbooks and standard teaching syllabi. In each of the following nine remote sessions, we will provide 3-5 published papers, a dataset with R code, a 30min pptx (live or narrated and available for download), and a 15-30min spontaneous discussion among the 20 active participants.

1   Biomes and Anthromes   KG   2 Mar 2021
Reconciling the classic biomes paradigm and the new anthromes paradigm; traditional and new approaches to forest classification; a toolbox for sustaining forest ecosystems.

2   Continuous Forest Observation   KG   9 Mar 2021
Active experimentation vs passive observation; examples of forest observational infrastructures; establishing a field plot with mapped trees; analyzing the structure and dynamics of species-rich forests.

3   Review of 3D remote Sensing   XL   16 Mar 2021
A brief review of remote sensing technology including airborne and terrestrial laser scanning as well as image-based technologies for detailed assessment of field plots; examples of new technology and applications.

4   Forest Density   KG   23 Mar 2021
Measuring forest density; modeling risk, mortality and survival; estimating maximum density in planted and self-regenerating forests; analyzing structural modification and selection preferences in harvest events.

5   Drivers of ß-Diversity   CZ   30 Mar 2021
Latitudinal gradients and ecological drivers of ß-diversity; variation across spatial scales in a large temperate forest region; random assembly null models for assessing effects of species abundance distributions on ß-diversity.

6   Estimating Forest Growth and Production   JGA   6 Apr 2021
Estimating height growth and site quality in planted forests and the use of such models for estimating forest production. Integrating estimates of tree growth and forest production (example with R code).

7   Biological Diversity   KG   13 Apr 2021
Measures of diversity, forest diversity and biomass production; acquisitive/conservative traits and niche complementarity; assessing dissimilarities among forest communities.

8   Stand Delineation   TP   20 Apr 2021
Automated forest segmentation. Using cellular automata, self-organizing maps and combinatorial optimization for clustering grid cells into homogeneous stands.

9   Sustainable Use   KG   27 Apr 2021
A review of sustainable use: traditional harvest scheduling vs residual structures; mitigating conservation conflicts; rigid zoning or small-scale spatial mixing of options in a continuously evolving landscape.

Our aim is a) to facilitate access to some key areas of forest ecological research, and b) to present a coherent set of methods for sustaining forests where humans are an integral and essential part of ecosystems. Scientific publishing is big business. The dominance of the English language in the scientific community conveys an advantage to scientists from English-speaking countries, and a marginalisation of the non-English speaking world of science. We will address this deficit by including a contribution on scientific writing and publishing.
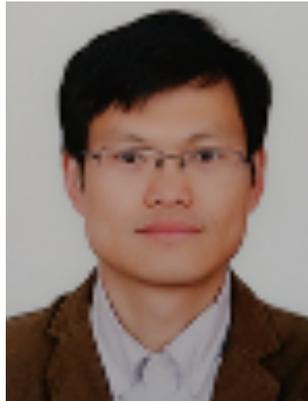
The Team

Juan G. Álvarez G.
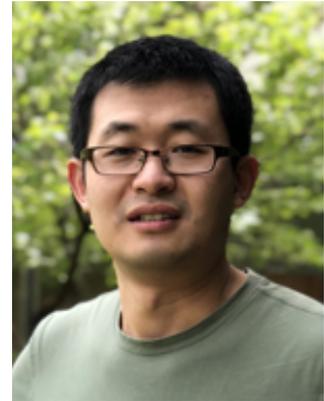
Zhang Chunyu

Liang Xinlian

Timo Pukkala

Klaus v. Gadow

Dr. Chunyu Zhang (张春雨) is a professor of Forest Ecology and Management at the Beijing Forestry University. His research is focused on ecological and biogeographic processes that generate specific forest patterns and functions.

Dr. Juan Gabriel Álvarez González is a professor of Biometry at the University of Santiago de Compostela, Spain. His research interest is focused on the improvement and integration of forest models into forest simulators suitable for different spatial levels: tree, stand, management area, landscape, region and country.

Dr Xinlian Liang is a senior research scientist and a team leader at the Department of Remote Sensing and Photogrammetry at the Finnish Geospatial Research Institute and the Centre of Excellence in Laser Scanning Research of the Academy of Finland.

Dr. Timo Pukkala is a professor of Forest Management Planning at the University of Eastern Finland. He has been teaching Forest Management Planning for 30 years.

Dr. Klaus von Gadow is a retired professor at the Georg-August-University in Göttingen, Germany. His main research interest is how to sustain forest resilience in times of change.

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Session Rules for Participants

Each session starts with a 30min (live or narrated) pptx address delivered by the presenter. This is followed by a 15-30min discussion involving all active attendees (AA). The coordinators may decide to be the institution's AA herself/himself or select a qualified person (e.g. a PhD student) to participate in the discussion. The number of inactive participants (IP's) is unlimited. IP's may receive the material, they may listen, but will not be able to participate in the discussions. New Zealand wants to participate, but not actively, due to time zone constraints (status=IP).

	Coordinator	email	Institution	Country	Status
1	Ahto Kangur	ahto.kangur@emu.ee	University of Life Sciences	Estonia	**AA**
2	Alexander Alekseev	a_s_alekseev@mail.ru	Saint-Petersburg State Forestry University	Russia	**AA**
3	Chunyu Zhang	zcy_0520@163.com	Beijing Forestry University	China	**AA**
4	Alberto Rojo	alberto.rojo@usc.es	University of Santiago de Compostela	Spain	**AA**
5	Javier Corral Rivas	jcorral@ujed.mx	University of Durango	Mexico	**AA**
6	OK Remadevi	okremadevi@gmail.com	Environmental Mgmnt & Policy Research Inst.	India	**AA**
7	JingJing Liang	alpenbering@gmail.com	Purdue University	USA	**AA**
8	David Drew	drew@sun.ac.za	University of Stellenbosch	South Africa	**AA**
9	Carola Paul	carola.paul@uni-goettingen.de	Georg-August-University Göttingen	Germany	**AA**
10	Guillermo Trincado	gtrincad@uach.cl	Universidad Austral de Chile, Valdivia	Chile	**AA**
11	VP Tewari	tewarivp@gmail.com	Indian Council of Forest Research & Education	India	**AA**
12	Bruce Manley	bruce.manley@canterbury.ac.nz	University of Canterbury, Christchurch	New Zealand	**IP**
13	Can Vatandaşlar	canvatandaslar@artvin.edu.tr	Artvin Çoruh University	Turkey	**AA**
14	Thomas Seifert	Thomas.Seifert@iww.uni-freiburg.de	Albert-Ludwigs-University Freiburg	Germany	**AA**
15	Johannes Breidenbach	johannes.breidenbach@nibio.no	Norwegian Institute of Bioeconomy Research	Norway	**AA**
16	Seyed Mohsen Hosseini	hosseini@modares.ac.ir	Tarbiat Modares University	Iran	**AA**
17	Luiz Carlos Estraviz Rodriguez	lcer@usp.br	University of Sao Paulo	Brazil	**AA**
18	John Kershaw	kershaw@unb.ca	University of New Brunswick	Canada	**AA**
19	Lydie Stella Koutika	ls_koutika@yahoo.com	Res. Center Industrial Plantations, Pointe-Noire	Rep Congo	**AA**
20	Wookyun Lee	leewk@korea.ac.kr	Korea University, Seoul	Korea	**AA**
21	Mykola Korol	nikkorol@ukr.net	Ukrainian National Forestry University, Lviv	Ukraine	

The presenter will send 3-5 relevant publications (sometimes a dataset with a brief description and R code) to the coordinators, at least one week ahead of each session. The coordinator forwards the material to his/her group of IP's.

Each session starts at 2:30pm and ends at 3:30pm central European time (CET). The workshop platform will be VooV. Proff. Andres Kiviste and Ahto Kangur of the University of Life Sciences in Tartu/Estonia have kindly offered to be the official host of this workshop; this is an honorary assignment without any obligations. Ms Huang Zhen of the Beijing Forestry University will manage the sessions. More detail will be communicated in time.