BOOK OF ABSTRACTS

I. SESSION DESCRIPTION

ID: S3a

Forests for a better world: ecosystem, human and economic perspectives

Hosts:

	Name	Organisation	E-mail
Host:	Claudia Carvalho-Santos	University of Minho	c.carvalho.santos@bio.uminho.pt
Co-host(s):	Rita Sousa-Silva	University of Leiden	a.r.de.sousa.e.silva@cml.leidenuniv.nl
	Jan Machac	University of Jan Evangelista Purkyně in Ústí nad Labem	machac@ieep.cz
	Jan Brabec	University of Jan Evangelista Purkyně in Ústí nad Labem	brabec@ireas.cz

Abstract:

Forests play a crucial role in conserving biodiversity and providing many ecosystem services that are essential for human well-being. From providing medicinal resources to opportunities for mental and physical restoration, climate and water regulation, and socio-economic sustenance, forests embody and exemplify the interconnectedness of human, animal, and environmental health-in essence, One Health. The effectiveness of policy instruments promoting the provision of ecosystem services is not solely dependent on natural conditions. Specific aspects, such as relationships among various stakeholders, legislative barriers, public acceptance, and more, must also be considered.

In this session, we aim to bring together researchers studying the role of forests within the One Health framework. Specifically, we invite contributions focused on (1) mapping and modelling the environmental impact of forestation strategies on human, animal, and/or environmental health; (2) developing tools to assess and quantify the benefits of forests in both urban and rural settings; and (3) proposing innovative schemes to incentivize forestation efforts. We strongly encourage

submissions that reflect diverse geographical contexts and especially welcome contributions from early-career researchers.

Goals and objectives of the session:

Understand the multiple values of forests in urban and rural areas, especially bringing concrete examples and applications. Discuss perspectives to foster sustainable and resilient forestation solutions for both people and the planet.

Share experiences related to the development and implementation of serious games that focus on or support environmental management and promote the provision of ecosystem services.

Publicize the working-group ESP TWG 16A – Tree-based PES (PESFOR-W).

Attract new members to the working group ESP TWG 16A – Tree-based PES (PESFOR-W) interested in this thematic.

Planned output / Deliverables:

The outcomes of this session--a summary of the session with information about the participants, the topics presented and the take-home messages from each oral and poster communication--will be advertised on social media, on the webpage of the ESP TWG 16A – Tree-based PES (PESFOR-W), and the ESP monthly newsletter. We also aim to explore the possibility of a joint publication or dedicated special issue based on the contributions and insights shared during the session (Potential titles: i) Forests (Forestation strategies) in an era of One Health; or ii) Promoting One Health through Forests).

II. SESSION PROGRAM

Room: Expert Street 5

Date of session: 19th of November 2024

Time of session: 11:00-12:30

Timetable speakers

Time	First name	Surname	Organization	Title of presentation
11:00 – 11:02	Claudia	Carvalho-Santos	UMinho, PT	Welcome /Introduction
11:03-11:13	Dumitru-Mircea	Duşcu	University of Bucharest, RM	Mapping the cultural ecosystem services provided by urban forests using public participation. Case study Băneasa Forest, Romania

Time	First name	Surname	Organization	Title of presentation
11:15–11:25	Rita	Sousa-Silva	University of Leiden, NL	Health and environmental benefits of urban street tree stewardship
11:27–11:37	Lisa	Best	Wageningen University and Research, NL	Urban green space and wellbeing in the tropics: understanding challenges, conditions, and values through serious games
11:39–11:49	Jan	Brabec	Jan Evangelista Purkyně University, CZ	Sponge Solutions: Navigating Flood Negotiations Through Serious Gaming
11:50 – 12:30				Joint Discussion

III.ABSTRACTS

The first author is the presenting author unless indicated otherwise.

1. Mapping the cultural ecosystem services provided by urban forests using public participation. Case study Băneasa Forest, Romania

First authors(s): Dumitru-Mircea DUȘCU
Other author(s): Geta RÎȘNOVEANU
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Urban areas face significant pressures from urbanization and climate change that is why urban green infrastructure (urban forests, parks, street trees etc.) becomes increasingly relevant for landscape planning and management, due to their ability to provide ecosystem services. Our research aimed to assess and map the cultural ecosystem services provided by Băneasa Forest using Public Participation Geographic Information System (PPGIS) and emphasize its important contribution to the health and well-being of the population. The potential of the forest to provide cultural ecosystem services was assessed based on the citizens' stated preference. We applied the georeferenced survey method, using the online survey tool Maptionnaire. 816 respondents have marked 882 points on the Băneasa Forest map that they consider to be the most important for the provision of cultural ecosystem services. Based on the points, we

created high-resolution maps with hot spots of cultural ecosystem services offered by the only urban forest in Bucharest, Băneasa Forest. This study underscores the complexity of interactions and relevance of the local context for cultural ecosystem services distribution and reaffirms the critical importance of urban forests in providing cultural ecosystem services and contributing to urban social resilience and environmental sustainability, in the context of rapid economic development, real estate pressures, and climate change. Our results support forest managers to adapt management according to public preferences, anticipate potential conflicts and set management priorities for the conservation of Băneasa Forest.

Keywords: Băneasa Forest, Cultural ecosystem services, PPGIS, Urban forests

2. Health and environmental benefits of urban street tree stewardship

First authors(s): Kelly Baldwin Heid
Other author(s): Rita Sousa-Silva
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As urbanization accelerates and population density increases, the importance of provision of green spaces where people live becomes ever more important. Integrating nature-based solutions (NBS) into urban settings offers a practical approach to enhancing both human and environmental health. In this talk, we will present the results of a project on citizen stewardship of street tree beds, highlighting the role of urban trees as one of the main tools available in cities to face current and future health and environmental challenges within the One Health framework.

Through surveys and interviews, we found that stewards are driven by a desire to promote positive environmental behavior and to support their community. They reported various benefits, including a stronger sense of place, deeper connections to nature, and improved mental health. Stewards also view street tree beds as personal gardens, suggesting these spaces can serve as restorative areas that improve public health and social cohesion.

These findings underscore the significant role urban trees and forests can play in promoting One Health. As many people living in cities lack access to a balcony or backyard for gardening or even to community gardens, tree beds, which are abundant in most cities, offer a practical solution to this lack of green space. Our research also connects these findings to the practice of

nature-based social prescribing (NBSP), which uses community-based activities in natural settings to address health and social care needs.

This research provides valuable insights for policymakers and practitioners aiming to integrate nature-based solutions and nature-based social prescribing practices into urban planning and public health initiatives. By doing so, cities can create healthier and more sustainable environments, benefiting both people and ecosystems.

Keywords: urban trees, urban forests, mental health, well-being, nature-based social prescribing

3. Urban green space and wellbeing in the tropics: understanding challenges, conditions, and values through serious games

First authors(s): Lisa Best
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Urban green spaces supply ecosystem services and benefits that are vital for wellbeing in urban and peri-urban landscapes. The necessary conditions to enable the provision of urban ecosystem services and what this entails for urban planning is underexplored in developing countries in Latin America and the Caribbean (LAC). Lack of inclusion, a lack of knowledge on urban ecosystem services and benefits, and green space maintenance needs hamper the optimization of urban green space. Consequently, potentially foregoing opportunities to address multiple urban challenges. In our study, we use a serious game for exploring urban planning in Paramaribo, a coastal city in South America. Our research aims to better understand the conditions for optimizing benefits from urban green spaces and assess the role of instrumental and relational values of urban green. We i) Developed a serious game to interact with groups ranging from government, environmental NGO's, neighborhood and place-based organizations, women's organizations, youth, to academics, ii) Facilitate interaction and explore opinions of participants on urban green, ecosystem services and disservices, and iii) Analyze debriefing discussions and game results to gather insights into instrumental and relational values associated with the players' strategies. In the game, participants can develop a part of the city by allocating land cover and investing in the maintenance of infrastructure and green space. We expect that the game will be useful for engaging with participants, and test to what

extent it can contribute to fostering shared understanding of the problems surrounding urban green space in the tropics, and potential steps to address them. The results from our study will contribute to knowledge on urban ecosystem services in the LAC region, and to the growing body of literature on the use of serious games in natural resource management contexts.

Keywords: Urban green space, serious games, ecosystem services, wellbeing, urban planning

4. Sponge Solutions: Navigating Flood Negotiations Through Serious Gaming

First authors(s): Jan Macháč
Other author(s): Steven Forrest, Jan Brabec
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One of the many adverse effects of climate change is the increased frequency and severity of floods. The evidence that traditionally used grey infrastructure is insufficient in reliably protecting human settlements is more compelling than ever. There is a need to support grey infrastructure with additional means of flood risk reduction, such as nature-based solutions. These small-scale measures are a valuable complementary tool that can be distributed along the river flow to temporarily retain floodwater when necessary. This so-called sponge effect, however, is challenging to implement due to the scattered nature of land ownership and the differing motivations of upstream landowners and downstream residents. Along with issues related to urban development and political priorities, this results in conflicts regarding the financing of these measures. Landowners often feel no need to mitigate flood risk (and potentially forego part of their revenues) while endangered cities do not own the land required for implementing these measures.

A possible negotiation process can be demonstrated in a serious game called the Flood Game, in which participating players assume the roles of mayors of settlements in a river basin. During several rounds, which differ mainly in the assignment of responsibility for floods in the basin (property rights), players discover the existing barriers to establishing an effective solution and the power of negotiation. The experience and results from playing the game could lead to increased engagement from politicians and a higher number of tools that support negotiation and implementation of sponge measures on both public and private land. Effective support schemes should be one of the outputs of the ongoing Horizon project Spongeboost. This

contribution aims to introduce the game and showcase the shift in opinions about flood responsibility that occurs after playing the Flood Game.

Keywords: Flooding, upstream downstream, negotiation, serious game, policy tools