BOOK OF ABSTRACTS

This Book of Abstracts provides a comprehensive overview of the session content and is structured into three main sections:

I. Session Description – an introduction to each session, including its objectives and expected outputs
II. Session Program – a detailed schedule for each session, including speakers and timing
III. List of Abstracts – a complete compilation of all accepted abstracts

I. SESSION DESCRIPTION

ID: E2

Ecosystem services education for people- and nature-positive future

Hosts:

	Name	Organisation	E-mail
Host (s):	Katharina Hecht	Utrecht University	k.hecht@uu.nl
Co-host(s):	Luis Inostroza	Mendel University in Brno	luis.inostroza@mendelu.cz

Abstract:

Education is a cornerstone for advancing people- and nature-positive future. Ecosystem services (ES) science provides a robust framework to connect ecological knowledge with human well-being, enabling learners of all ages and sectors to rethink their relationship with nature and their ultimate dependency on healthy ecosystems. This session explores how ES science can be integrated into education across schools, universities, professional training, companies, and governance. By showcasing diverse experiences and practices, we aim to understand how ES concepts are taught, for what purposes, and with what outcomes. Examples may include using ES to foster ecological literacy in schoolchildren, teaching future professionals to design regenerative cities and buildings, or embedding ES in organizational training to inform sustainability strategies. This session invites contributions from educators, researchers, and practitioners who are committed to integrating ES knowledge in education as a means to cultivate ecological literacy, foster transformative change and regenerative mindsets, and support the transition towards a society that stops ecological deterioration and thrives with nature.

Goals and objectives of the session:

- Map existing educational approaches and initiatives that integrate ES across different sectors and audiences.
- Exchange best practices, teaching methods, and tools for various target groups (students, professionals, policymakers, citizens).
- Explore the role of ES education in shaping regenerative societies, supporting transformative change with a focus on both social and ecological benefits.
- Foster connections between educators, researchers, and practitioners to create synergies and build a shared vision for ES education.

Planned output / Deliverables:

- A compiled overview of “who teaches what, and where” regarding ES education (across schools, universities, professional sectors and governance).
- A collection of best practices, case studies, and teaching resources to be shared with participants and beyond.
- Initial groundwork for a knowledge exchange network on ES education within the ESP community.
- Input and inspiration for developing future collaborative projects, guidelines, or educational platforms to mainstream ES in learning and practice.

Session format:

This discussion forum will present a set of case studies on ecosystem services education to provide ground for a discussion with session participants on the promotion of ecosystem services at all educational levels. Contributions showcasing the inclusion of ecosystem services at any educational level (primary, secondary school, bachelor's, master's, and PhD) are welcome. Presentations should focus on the contents and methods taught and shouldn't be longer than 10 minutes.

Related to ESP Working Group:

Other -Taskforce Education

II. SESSION PROGRAM

Room: Lounge
Date of session: Thursday 21, May 2026
Time of session: 11:00 – 12:30

Timetable speakers:

Time	First name	Surname	Organization	Title of presentation
11:00-11:10	Luis	Inostroza	Mendel University Brno	Introduction
11:10-11:20	Katharina	Hecht	Utrecht University	Integration of ecosystem services into organizational routines – how intrinsic motivation and learning changes in a course of seven workshops.
11:20-11:30	Jan	Macháč	Jan Evangelista Purkyně University in Ústí nad Labem; IREAS, Institute for Structural Policy	Learning ecosystem services through play: a serious game on private landowners' decision-making for nature-based solutions
11:30-11:40	Diana	Surová	Czech University of Life Sciences Prague, Czechia	Transforming education for biodiversity: higher and vocational education enabling nature-based solutions
11:40-11:50	Sabrina	Lai	Department of Civil and Environmental Engineering, and Architecture	Mainstreaming ecosystem services in an environmental engineering master's programme. A newish experience from the University of Cagliari, Italy
11:50-12:00	Zdeněk	Ent	Prague Institute of Planning and Development	Learning ecosystem services through experience: sensory and art-based education for transformative ecological literacy
12:00-12:10	Elena-Alexandra	Miron	The Youth Platform for Sustainability (Platforma Tinerilor pentru Sustenabilitate), Romania	From concepts to choices: teaching ecosystem services through youth-led climate education and decision labs in Romania
12:10-12:25	Luis Inostroza & Katharina Hecht		Mendel University Brno	Questions and discussion
12:25-12:30	Luis Inostroza & Katharina Hecht		Utrecht University	Closing

III. LIST OF ABSTRACTS

The first author is the presenting author unless indicated otherwise

1. Integration of Ecosystem Services into Organizational Routines - How Intrinsic Motivation and Learning Changes in a Course of Seven Workshops

***First author*:** Katharina Hecht
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The building construction industry, a major consumer of materials and energy, negatively impacts ecosystem functioning and ecosystem services (ESs) generation. Growing awareness of environmental challenges increasingly leads to laws that promote sustainable building practices, however, practical guidelines for their implementation are lacking. Organizational resistance is another challenge that can be tackled by effective change management strategies, including training, communication, and stakeholder involvement. We developed a workshop sequence for building developers at the Campus & Facilities department of Utrecht University using participatory action research. The goal of the workshops was to weave ESs into building (re)development processes resulting in ecologically functional and regenerative buildings. The Kirkpatrick model for training evaluation, together with a mixed methods approach, was used to analyze the workshop outcomes. Furthermore, we tested how intrinsic motivation and knowledge on ESs implementation into buildings changes among workshop participants. A initially high intrinsic motivation was observed, with an increase in 'effort and importance', 'perceived competence' and 'relatedness'. The participants also showed a significant learning curve, indicating that the workshops supported the use and implementation of ESs into building projects. Furthermore, first indicators for successful organizational change were recorded through the integration of ESs into binding ambition documents for the university buildings and environment. Workshop participants acted as change agents within their organization inducing more sustainable decision-making through ecological systems thinking, ecological functionality and ESs wherever possible. This research shows that direct collaboration with building development experts can further close the gap between scientific theory and its translation and integration into building (re)development practice. Workshop participants indicated that a digital space where existing building designs are linked to their measured ESs benefits could support informed decision-making towards regenerative buildings. That could be supported by a data-driven platform that facilitates knowledge exchange between scientists and different building professionals, including architects and designers.

***Keywords*:** ecosystem services, regenerative building design, workshops, data-driven platform

2. Learning Ecosystem Services through Play: A Serious Game on Private Landowners' Decision-Making for Nature-Based Solutions

***First author*:** Jan Machac
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Education plays a crucial role in supporting a transition towards people- and nature-positive futures. Ecosystem services (ES) offer a powerful conceptual framework to connect ecological processes with human well-being, yet their integration into real-world decision-making particularly on privately owned land remains challenging. Conflicts between the public benefits of nature-based solutions (NBS) and private landowners' economic preferences often limit their implementation.
This contribution presents a serious game developed as an educational tool to explore these tensions and opportunities within Horizon Europe project Land4CLimate. The game focuses on private landowners' decision-making and the role of innovative policy instruments (such as payments for ecosystem services, biodiversity or carbon offsets, transferable development rights) in motivating the implementation of NBS. Players assume the role of landowners managing agricultural, peri-urban, or urban land under climate-related risks (e.g. floods, droughts, erosion, urban heat). Through structured scenarios, participants are confronted with trade-offs between private economic outcomes and the provision of ecosystem services

such as water retention, cooling, soil protection, or biodiversity.
While grounded in realistic land-use and economic contexts, the game is designed for a broad audience. It has been applied not only with landowners and practitioners, but also with students, who use the game to better understand how ES can be integrated into land-use decisions, why conflicts arise, and how policy instruments can help align private incentives with societal benefits.
The game thus functions as a learning environment that fosters ecological literacy, systems thinking, and reflection on governance mechanisms for NBS. We argue that serious games can complement traditional ES education by translating abstract concepts into experiential learning and by supporting transformative, solution-oriented mindsets needed for regenerative land-use futures.

Keywords: Ecosystem services education, Serious games, Nature-based solutions, Private landowners, Policy instruments

3. Transforming education for Biodiversity: Higher and Vocational Education Enabling Nature-Based Solutions

First author: Diana Surová
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Higher and vocational education institutions (HE & TVET) play a crucial role in preparing future professionals to tackle urgent biodiversity (BD) and other ecosystem services challenges through Nature-Based Solutions (NBS). Realising this potential requires navigating complex institutional, cultural, and policy landscapes. This study, part of the eNaBIS Horizon Europe project, examines how European HE and TVET institutions engage with BD and NBS, highlighting achievements, challenges, and governance contexts.
Using a combination of quantitative and qualitative methods, including surveys and expert interviews, we explored knowledge transfer, institutional collaboration, and the integration of BD and NBS into curricula. Findings indicate a strong interest, but systemic barriers persist, including hierarchical structures, disciplinary silos, limited time and funding, and gaps between academic and non-academic knowledge systems. These obstacles slow collaboration and hinder consistent adoption of NBS-focused learning. Positive examples demonstrate that institutions embracing Living Labs, hands-on projects, and challenge-based learning enable students to engage directly with real-world environmental problems, while fostering a transdisciplinary understanding. Clear pathways forward include strengthening HE–TVET collaboration, co-developing curricula with local stakeholders, and embedding experiential learning across programs. Policy recommendations are being developed to support NBS education. Early insights suggest policies must be adaptive, aligning EU strategies (e.g. Green Deal, Biodiversity Strategy 2030) with institutional realities and flexible enough to respond to evolving educational challenges. Governance, institutional frameworks, and coordinated support are key to translating educational potential into tangible societal impact.
Time is short, if learners in HE and TVET are not equipped with the knowledge, skills, and experiences needed for urgent action, opportunities to address pressing environmental and social challenges will be missed. Education must provide hands-on NBS experiences, foster transdisciplinary collaboration, and link learning to real-world contexts. In doing so, it not only prepares students for appropriate practice but also strengthens the application of governance and policy intentions.

Keywords: education, nature-based solutions, transdisciplinarity, policy, survey

4. Mainstreaming ecosystem services in an environmental engineering master's programme. A newish experience from the University of Cagliari, Italy

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Cross-disciplinary understanding of ecosystem services (ES) in conceptual and operational terms is essential for spatial planners. By regulating land-use changes, spatial planning can either accommodate or prevent human activities that affect ecological structures and processes in both urban environments and natural or semi-natural systems, thereby directly influencing the supply of ES and, in turn, the quality of life of their beneficiaries. Therefore, if the desired objective of planning is to improve environmental quality and human well-being, sustainable planning choices, goals, and actions should be grounded upon robust data and analyses concerning the relationships between the full spectrum of planning provisions and their consequences for ES delivery.
To support this transformative change in planners' mindsets, a new course titled "Urban and regional sustainability: Smart cities and ecosystem services in planning" was integrated three years ago into the planning curriculum of the master's programme in Environmental Engineering for Sustainable Development at the University of Cagliari.
Delivered during the second and final year, the course aims to provide students with the conceptual foundations needed to frame the relationships between natural, semi-natural, and peri-urban environments (as primary ES providers) and built spaces (where demand is concentrated). A second objective is to equip students with methods and tools for spatially analysing ES supply, demand, and trade-offs. Finally, a third objective focuses on supporting students in understanding concepts that have gained popularity in spatial planning, such as green infrastructure and nature-based solutions (NbS), as multifunctional ES providers.
The course adopts a hands-on approach: students learn how to use software tools to model ES supply and demand, such as INVEST or i-Tree, and are introduced to useful spatial datasets at both local and international levels and available NbS catalogues. Moreover, serious game simulations are employed in the classroom to reinforce lectures on trade-offs and NbS multifunctionality. Hands-on approaches are essential in spatial planning courses, as they enable students to directly engage with real-world data, spatial tools, and decision-making contexts. Experiential learning enhances the understanding of complex socio-ecological interactions and improves the ability to integrate ES into evidence-based planning and policy processes.

Keywords: Urban and regional planning, Environmental engineering, Ecosystem services, Green infrastructure, Nature-based solutions

5. Learning Ecosystem Services through Experience: Sensory and Art-Based Education for Transformative Ecological Literacy

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Education plays a key role in advancing knowledge of ecosystem services (ES), which are essential for the future of both people and nature. However, ES education often remains abstract, predominantly cognitive, and detached from lived experience. This contribution presents outcomes from the applied research project "Interpreting Landscape Aspects through Art" (Technology Agency of the Czech Republic, TL05000508), which develops and tests experiential educational approaches that strengthen ecological literacy through sensory engagement and emotional relationships with landscapes.
The project aimed to explore how direct contact with real nature, combined with artistic interpretation and creative reflection, can deepen understanding of ecosystem services, human dependence on healthy ecosystems, and the need for regenerative thinking. The research was carried out within the Confluence Project in a peri-urban floodplain landscape at the confluence of the Berounka and Vltava rivers in Prague—an area of high ecological and social significance.
Methodologically, the project integrates ecosystem services research with experiential learning, participatory education, and art-based methods. Five educational programmes and interpretive centres were developed, employing site-specific art, performance, sound walking, and storytelling. One example is the programme "Grazing and New Wilderness", which connects sensory exploration of landscape processes with the Parliament of Things method—an educational module that facilitates reflection on relationships among human and more-than-human beings, ecosystem functions, and values. Each programme concludes with creative reflection (writing, drawing, performative mapping), supporting

reflexive and transformative learning.
The results demonstrate that embodied, sensory learning enhances understanding of ecosystem services, deepens emotional bonds with landscapes, and supports a shift from anthropocentric toward relational and regenerative perspectives. The project provides practical tools and a transferable methodology for ecosystem services education in schools, communities, and spatial planning practice.

Keywords: ecosystem services education; sensory experience; human–nature relationships; transformative learning; art-based methods

6. From Concepts to Choices: Teaching Ecosystem Services through Youth-Led Climate Education and Decision Labs in Romania

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Ecosystem services are widely referenced in policy discourse, yet education and capacity building often stop at awareness and do not equip learners to apply ecosystem services thinking to real trade-offs, budgets, and governance constraints. This contribution presents a practice-based education model that translates ecosystem services concepts into decision literacy for a people- and nature-positive future, tested through youth-led climate education activities in Romania.
The approach combines short learning modules (ecosystem services foundations, equity and beneficiaries, nature-based solutions, and uncertainty), participatory ecosystem services mapping, and facilitated “decision labs” in which participants work with local case scenarios (urban heat, air quality, flood risk, and public space design). The model is designed for mixed audiences, primarily youth, educators, and early-career practitioners, and is delivered through a blended format: interactive workshops complemented by a curated digital learning stream that sustains engagement beyond single events.
Preliminary outcomes indicate improved ability to (1) identify ecosystem services beneficiaries and distributional impacts, (2) articulate co-benefits and trade-offs across sectors, and (3) formulate policy-relevant proposals grounded in local context and measurable indicators. The decision labs also function as a structured science-policy-practice interface by producing concise outputs that can be shared with municipal stakeholders and incorporated into youth consultation processes.
The presentation will share the learning design, facilitation sequence, and a replicable toolkit outline, including recommended assessment questions and indicators for evaluating whether ecosystem services education leads to more actionable, equitable decision-making. The aim is to support educators and practitioners in moving from ecosystem services as a narrative concept to ecosystem services as an applied competence.

Keywords: ecosystem services education, capacity building, participatory mapping, decision-making, science-policy-practice interface