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: T14d

Reframing Urban Rewilding through the lens of balancing ecosystem services and disservices

Hosts:

	Name	Organisation	E-mail
Host (s):	Anton Shkaruba	Estonian University of Life Sciences	anton.shkaruba@emu.ee
Co-host(s):	Ruthi Veibiakkim	Estonian University of Life Sciences	ruthi.veibiakkim@emu.ee

Abstract:
Currently, over half of the global population resides in cities, with projections indicating that this figure with rise to 70% by 2050 (Baldi et al., 2025, Calatayud et. al., 2024, UNGC, 2016; World bank, 2022). This demographic shift has placed significant pressure on infrastructure, public health systems and environmental resources requiring integrated approaches to urban sustainability. The EU, with its share of urban population over 70% (Eurostat) is one of the most urbanized regions in the world. Remarkably, its built-up areas expand significantly faster than population growth (Schiavina et al, 2022) and reached 3.6% of the EU land area in 2024 (Eurostat). To address the growing demand for ecosystem services in urbanized contexts, many cities worldwide, and particular in the EU, have embraced urban rewilding as a cornerstone of their sustainability agendas, recognizing the wide-ranging ecosystem services (ES) that nature provides, including improving public health and wellbeing, regulating microclimates and enhancing social cohesion (Calderón-Argelich et al., 2023, Egerer et al., 2019, Tian et. al., 2024, Zheng et. al., 2023).

However, it is increasingly recognized that alongside with services, rewilding projects may be bringing undesirable aspects associate with urban nature. Some communities' experiences negative impacts (Veibiakkim et. al., 2025), giving rise to the concept of ecosystem disservices (EDS) - outcomes of ecosystem functions and processes that have a negative impact on human wellbeing (Visintin et al., 2024). These include increased exposure to allergens, pests, diverse vectors, or poorly managed green spaces that reduce usability or safety (Ostoic et. al., 2024, Visintin et al., 2024, Yeshitela, 2020); urban nature also proved to be a vehicle for invasive species to propagate, while mismanagement of rewilded areas brings even stronger EDS impacts (Veibiakkim et. al., 2025). Recogizing and addressing these disservices does not undermine the importance of urban rewilding, it strengthens it by ensuring that interventions are designed to be inclusive, context-sensitive and socially responsive.

Balancing the benefits and undesirable aspects of urban nature becomes a considerable challenge for contemporary urban planning and governance. This rebalancing requires a paradigm shift in how urban planning, management and governance are conceived and implemented. It calls for a shift from technocratic, top-down, expert-driven planning approaches (Ertiö & Bhagwatwar, 2017) toward participatory, adaptive and community-informed planning approaches that reflect the diverse needs, values and lived realities of urban residents (Brokking et al., 2021, Ertiö & Bhagwatwar, 2017). In many cities, marginalized groups are disproportionately affected by environmental burdens, have limited access to the benefits of green infrastructure and often lack meaningful influence in planning decisions. Target 7 of Sustainable Development 11 reflects this growing shift in planning paradigms from traditional top-down

approaches toward more by calling for the 'provision of safe, inclusive and accessible green and public space for all, in particular for women and children, older persons and persons with disabilities' (Calderón-Argelich et al., 2023, Simone Borelli et al., 2022) highlighting the need for embed equity and accessebility into every stage of planning.

A re-natured area valued for its biodiversity, for example, might be avoided by some residents who perceive it as unsafe or unwelcoming. Similarly, a new green corridor may bring ecological value but limit accessibility for certain communities. Understanding these social dimensions including perceptions of safety, belonging and place attachment is key to ensuring that benefits of nature in cities are meaningful, equitable and shared by all. Integrating both ecosystem services and disservices and finding a balance between the two into planning and management allows for more inclusive and resilient cities, where urban greening supports wellbeing, strengthens communities and enhances environmental performance.

Goals and objectives of the session:

This session therefore seeks to advance interdisciplinary dialogue on how cities can develop and manage rewilding projects in ways that maximize ecosystem benefits while reducing potential disservices. We invite contributions that explore conceptual, methodological and practical approaches to balancing ES and EDS in diverse urban contexts. Central to this discussion would be approaches that integrates community knowledge, stakeholder collaboration and adaptive experimentation to co-produce and resilient urban green solutions.

By bringing together scholars, planners and policymakers, this session aims to bridge ecological and social perspectives on urban greening. It will examine how ES frameworks can evolve to better account for justice, accessibility and lived experience, fostering cities that are not only ecologically sustainable but also socially equitable and emotionally connected.

Through this exchange, we seek to reimagine urban nature as a shared, dynamic and co-created space where both benefits and burdens of greening are consciously balanced in pursuit of truly sustainable urban futures.

We seek contributions that:

- Advance conceptual and methodological understanding of the relationship between ecosystem services and disservcies in rewilding projects and in broader urban contexts
- Explore participatory and co-creative approaches that integrate local knowledge, stakeholder collaboration and citizen engagement in planning and management of rewilding and other urban greening projects. Emphasis on co-production methods such as citizen science, living labs, participatory GIS and community-driven monitoring systems.
- Present pratical designs, strategies and governance models for designing rewilding and other urban greening projects that are both ecologically effective and socially inclusive.

Planned output / Deliverables:

The session aims to generate tangible outcomes that advance understanding of how ecosystem services (ES) and ecosystem disservices (EDS) can be balanced within contemporary planning and governance frameworks. By applying this perspective, the discussion seeks to identify ways to maximize the ecological and social value of urban rewilding projects while preventing or mitigating potential negative responses. Drawing on interdisciplinary dialogue, the session will produce both conceptual insights and practical strategies for the design, management, and governance of inclusive urban green spaces that promote wellbeing, ecological resilience, and social equity.

Session format:

After the topic introducting and topic starter presentation by co-hosts, talks by other session participants will follow with 15 min allocated for each talk and 5 min for Q&A. At the end of the session the co-hosts will wrap up the session with their summary and observations and offer discussion points based on the contributions and Q&As. A potential special issue based on session contributions will be discussed as well.

Related to ESP Working Group:

TWG 14 – Application of ES in Planning & Management

II. SESSION PROGRAM

Room: A1
Date of session: Thursday 21, May 2026
Time of session: 09:00 – 10:30

Timetable speakers:

Time	First name	Surname	Organization	Title of presentation
9:00 – 9:05				Welcome and Introduction (Hosts)
9:05 – 9:15	Erik	Andersson	University of Helsinki and Stockholm University	Transforming the nature of cities - a stewardship perspective.
9:15 – 9:25	Dagmar	Haase	University of Berlin and Helmholtz Centre for Environmental Research UFZ	Beyond the dichotomy between nature and humans in cities: Wilderness and rewilding cities as co-beneficiary strategies.
9:25 – 9:35	Ruthi	Veibiakkim	Estonian University of Life Sciences	Managing Ecosystem Services and Disservices: Evidence from a Living Lab approach.
9:35 – 9:45	Elina	Sirén	Tampere University	The Balcony Meadow – Urban Balconies as Instruments for Rewilding.
9:45 – 9:55	Brenda Maria	Zoderer	BOKU University Vienna	Urban Rewilding: Social Acceptability and Perceived Ecosystem (Dis)services of a Novel Ecological Restoration Approach.
9:55 –10:05	Chiara	Cortinovis	University of Trento	Explaining individual behaviour in managing private green spaces: a systematic map of factors and theories.
10:05 – 10:15	Chinmay	Sonawane	Stanford University	Global decline of apex scavengers threatens human health.
10:15 – 10:25				Audience Q&A and moderated panel discussion (presenters).
10:25 – 10:30				Closing remarks (hosts)

Each presentation is limited to 10 minutes to ensure adequate time for Q&A and discussion

III. ABSTRACTS

The first author is the presenting author unless indicated otherwise

1. Transforming the nature of cities - a stewardship perspective

***First author*:** Erik Andersson
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'Stewardship' is promoted as a potentially transformative practice to foster more sustainable human-nature relationships. However, much of the evidence relates to collaborative, consensus-based initiatives where the cared-for nature, like gardens or parks, is domesticated or considered to be aligned with human norms and interests. Moreover, the urban realities facing most of the world population - with lives and livelihoods often far removed from direct management of natural resources - are very different from the social-ecological systems stewardship models are often created for. This article uses cities and their complex and often contested nature to investigate how the conceptualisation of stewardship could be expanded to better address how to work with, and benefit from, plurality and tensions. Approaches that better acknowledge other-than-human agency and accommodate the diverse relations this creates, may be key to deliver on the transformative promise of more sustainable ways of living often seen in stewardship. This study draws on and synthesises the recent advances and insights on transactional agency, inter-group dynamics and the roles and rights of other-than-human actors the study takes a relational perspective on stewardship in recognition of agency in others, people as well as non-humans, and the ability to and benefits of engaging with the tensions between these different actors and agencies. The study concludes with a discussion about stewardship as a compass for relating to others and help find acceptable and constructive ways of working with and around differences to make cities more liveable for all their current and future inhabitants.

Keywords: Cohabitation; non-human agency; plurality; people-nature relations; collective action

2. Beyond the dichotomy between nature and humans in cities: Wilderness and rewilding cities as co-beneficiary strategies

***First author*:** Dagmar Haase
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Today, cities are the most important living space for people. But cities are also becoming increasingly important for wild and human-controlled flora and fauna. Current national and international research shows that urban areas become significant niches for species that are searching for refuge from habitat disturbances, especially through urbanization, intensive farming and monotonously afforested areas. Trade, transport and migration also unintentionally bring new species into cities, which become established and, in some cases, spread invasively. Nature conservation close to our cities on the one hand and rapid urbanization and the advance of urban life into previously unsettled areas on the other also bring a new proximity between wilderness and humans, which is highly ambivalent, if you think only of the recent jumps in vectors, such as Corona, Mpox or Ebola. What is more, rarely do people associate wilderness and rewilding with cities, despite the huge potential for both to boost biodiversity and ecosystem services in our cities.
The talk will bring some relevant and empirically tested arguments for a positive co-existence of people and wildlife in cities, embedded in a broader picture of ecosystem services and human-wildlife interactions and perceptions in urban environments. I argue that wilderness and rewilding are flexible, low-cost, hands-off, extensive management approaches to biodiversity conservation and human well-being in cities under climate change. What is more, I will proof that urban design that supports biodiversity can be an effective accelerator of public health and wellbeing. Last but not least, urban rewilding can provide new ways to engage city residents with nature, including both monitoring and stewardship.

Keywords: Dichotomy between nature and humans, cities, wilderness, rewilding cities as co-beneficiary strategy

3. Managing Ecosystem Services and Disservices: Evidence from a Living Lab approach

***First author*:** Ruthi Veibiakkim
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Rapid urbanisation is increasing pressure on urban ecosystems and human wellbeing prompting urban rewilding to be increasingly promoted as a strategy to enhance ecosystem services (ES) in cities. However, growing empirical evidence increasingly shows that rewilding initiatives may also generate ecosystem disservices (EDS) including safety concerns, invasive species spread and reduced usability of urban green spaces. Such disservices are often context-specific and remain underrepresented in planning, design and governance of urban greening initiatives.
Our work develops and presents a conceptual framework for balancing ES and EDS in urban context, informed by empirical insights from participatory research and living lab practices. It draws on a systematic review of urban ecosystem disservices and ongoing action-oriented research in European and Asian cities. We demonstrate that rewilded spaces valued for biodiversity can simultaneously lead to avoidance, conflict or resistance due to safety concerns, aesthetic perceptions or invasive species impacts.
The paper further draws on a Living Lab approach focusing on the management of the invasive Spanish slug (Arion vulgaris) in urban environments in Tartu (Estonia). This case demonstrate how EDS can be addressed through community-based monitoring and citizen science initiatives. These include coordinated removal efforts, shared monitoring systems and local management agreements. Together, these bottom-up practices function as proto-policy tools to complement formal regulatory frameworks.
By grounding conceptual advances in empirical cases, our work shows how integrating EDS into inclusive urban planning and adaptive governance can enhance the ecological effectiveness. It also contributes to the current understanding of how urban rewilding initiatives can be designed and managed to better balance ES and EDS.

Keywords: Ecosystem Disservices, Ecosystem Services, Urban Planning, Living Lab, Participatory approach

4. The Balcony Meadow – Urban Balconies as Instruments for Rewilding

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Policies such as the EU Nature Restoration Regulation aim to increase urban greenery, including building-integrated greenery. Balconies, although commonplace in residential blocks, have received surprisingly little attention in this context. Balcony greening, especially in the form of wildlife-friendly gardening (WFG), could benefit urban pollinators and other wildlife. Additionally, WFG on balconies could provide residents with daily interaction with nature, including those with reduced mobility. WFG on balconies could be fostered through top-down or bottom-up efforts, as well as the architectural design of the balcony itself. As a private space, the success of balcony greening is, however, heavily dependent on the willingness of the residents to invite urban wildlife to their balconies and to engage in WFG efforts, which may bring both perceived ecosystem services and disservices to the residents.
Thus, the aim of this pilot study was to explore the feasibility of using balconies as instruments for rewilding on the urban scale. To do this, we conducted an intervention experiment on 22 domestic urban balconies in the cities of Tampere and Turku in Finland during the summer of 2025. Voluntary participants were given a set of native flowering plants and necessary supplies to take care of them. The participants planted the plants and took care of them over the summer. We collected data through pre- and post-participation surveys, observations during balcony visits and temperature sensors installed on glazed balconies. The results indicate that balconies have under-realised potential for enhancing urban biodiversity. Both experienced and inexperienced gardeners can be motivated to rewild their balconies through different means. Moreover, glazing can be a barrier for WFG on balconies, although it can also be beneficial for plant growth.

Keywords: balconies, urban rewilding, wildlife-friendly gardening, citizen stewardship, housing design

5. Urban Rewilding: Social Acceptability and Perceived Ecosystem (Dis)services of a Novel Ecological Restoration Approach

First author: Brenda Maria Zoderer
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Urban rewilding is a novel approach to renaturing cities that promotes the development of self-sustaining, resilient urban ecosystems by giving nature more space to self-develop. While increasingly embraced globally, substantial uncertainties remain about its acceptability among local communities and its implications for environmental justice. The presentation introduces urban rewilding as social-ecological transition processes that convert grey or conventional green spaces into urban wild spaces, enabling varied human–nature interactions and diverse governance and management regimes. Building on this multidimensional conception, we share empirical insights on acceptability and how this relates to perceived ecosystem (dis)services among local communities in Vienna, Austria. Drawing on a questionnaire with 800 residents and an innovative multi-scenario design, the findings show high acceptability across rewilding scenarios, particularly for transitions toward "urban forests" and "urban wildflower meadows". Residents predominantly associate rewilded spaces with regulating and cultural services such as climate regulation, biodiversity support, recreation, and opportunities for nature experience, while disservices like perceived neglect, allergens, and safety concerns are present but less salient. Despite overall high support, acceptability is strongly patterned by age, neighbourhood deprivation, and prior experience with wild spaces. We provide in-depth insights into how social differences in acceptance relate to varying perceptions of ecosystem (dis)services, highlighting where urban rewilding may unintentionally reinforce environmental inequalities. The findings suggest that urban rewilding is a socially viable strategy for renaturing cities, but benefits and burdens will not be evenly distributed unless differences in access to urban wild spaces and people's capacities to engage with these spaces are explicitly addressed. We therefore argue for implementing urban rewilding as a "people with nature" strategy that creates diverse opportunities to experience wild spaces while shifting from control-oriented management toward other forms of care and human–nature interaction.

Keywords: urban rewilding, environmental justice, human-nature interactions, acceptability, ecosystem (dis)services

6. Explaining individual behaviour in managing private green spaces: a systematic map of factors and theories

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Private green spaces cover a significant part of the city and contribute to the health and wellbeing of urban inhabitants through the provision of ecosystem services. Moreover, they play a key role in supporting urban biodiversity by providing a suitable habitat for non-human species. However, not all green spaces are the same: the benefits that they provide depend on how they are designed and managed.
Differently from public green spaces, whose responsibility ultimately lies with public authorities, private green spaces are designed and managed according to the preferences, attitudes, and beliefs of their owners. Therefore, achieving ambitious greening and rewilding targets requires understanding the motivations behind individual behaviours and the factors that affect them.
A broad literature exploring the individual-level factors associated with the design and management of private green spaces has emerged in the last few years. However, despite the closely interconnected topics, separate research streams focusing on different aspects, using different sets of keywords, and referring to different theories can be identified.
In such a complex panorama, this contribution presents the results of a systematic map of the literature. The review focused on both the explanatory factors that have been linked to different behaviours and the

theories adopted to explain the link.
The literature on “urban rewilding” in private green spaces intersects that on “ecological gardening”, “wildlife-supporting gardening”, urban tree planting, and many others. The theoretical basis is quite diverse including consolidated theories such as “the theory of planned behaviour” and “the cognitive hierarchy theory” but also novel or modified theories.
By identifying recurring topics and contexts, as well as gaps and areas that deserve further exploration, the results support the formulation of hypotheses to be tested in future studies and guide researchers in the selection of the theories that can be used to interpret their results.

Keywords: Private gardens, individual behaviour, wildlife-supporting gardening, management practices, systematic map

7. Global decline of apex scavengers threatens human health

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Vertebrate scavengers play a critical role in ecosystem functioning worldwide. Through the cascading effects of their ecological role, scavengers can also alleviate the burden of zoonotic diseases on people. This importance to human health fuels a growing need to understand how vertebrate scavengers and their ecosystem services are faring globally in the Anthropocene. We reviewed the conservation status of 1,376 vertebrate scavenging species and examined the implications for human health. We uncovered that 36% of these species are threatened or decreasing in population abundance and that apex (large-bodied or obligate) scavengers are disproportionately imperiled. In contrast, mesoscavengers (small-bodied or facultative) are thriving from anthropogenic food subsidies and ecological release. We posit that this global shift in scavenger community structure increases carrion persistence enabling zoonotic pathogens to propagate. Our analysis also indicates that the release of mesoscavengers is associated with reservoir host proliferation, potentially further exacerbating human disease burdens. Urgently tackling the key threats to scavengers—intensive livestock production, land use change, wildlife trade, and the interactions among them—is critical to securing the long-term public health benefits of the world’s diverse scavenger communities.

Keywords: human health, pathogens, disease, animals