

SESSION DESCRIPTION

ID: T14b

How to achieve "no net loss" and "net gain" targets for urban nature? The role of ecosystem accounting and other emerging tools at multiple scales

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Abstract:

Across Europe, a wide range of “no net loss” and “net gain” targets for urban nature are being advanced in international, national, and local policies. Among the most prominent are the targets for tree canopy cover and green spaces in urban ecosystems defined in art. 8 of the EU Nature Restoration Regulation and target 12 of the Kunming-Montreal Global Biodiversity Framework. Other well-known examples include England’s Biodiversity Net Gain requirement, mandatory since 2024 (Schedule 7A of the Town and Country Planning Act 1990, as amended by the Environment Act 2021), as well as the “no net land take” objective (EC 2011 Roadmap to a Resource Efficient Europe) and the “no net soil sealing” ambition (EU Soil Mission).

Achieving these targets requires robust methods and decision-support tools that can guide their integration into spatial planning processes and actions across multiple decision-making levels, from site-specific interventions to entire urban regions. Such tools should meet the specific requirements of the diverse European urban contexts, characterized by a large variability in terms of socio-ecological-technological conditions, governance systems, spatial planning traditions, and local needs. At the same time, they should enable consistent application across contexts, producing comparable and reproducible outputs such as datasets, maps, certificates, or reports, thus supporting monitoring at higher administrative levels.

Urban ecosystem accounting, framed as a thematic account under the SEEA-EA, offers a promising tool to inform local decision-making while ensuring coherency with a standardized international framework. However, its application still faces conceptual and operational challenges that limit widespread uptake. The controversial and divergent policy uses that urban ecosystem accounts could serve represent a key limitation hindering their mainstreaming and standardization. Therefore, exploring their potential role in monitoring “no net loss” and “net gain” targets is also a way to understand the implications that such a use could have on the further development of urban ecosystem accounts.

Alongside ecosystem accounting, a growing set of methods and tools is being proposed or developed to support “no net loss” and “net gain” policies in urban areas. Some of them, such as life cycle assessment

and life cycle costing, are innovative in their extension to urban systems and can be coupled with ecosystem services accounting methods to fully characterise both positive and negative externalities, providing the comprehensive evidence needed for “net gain” targeting. Others have been designed with an explicit urban focus and represent genuinely novel tools purposely developed for policy support. Among them are Oslo’s Blue-Green Factor tool, which supports developers in achieving defined nature targets in their area, and Flanders’ BetonMeter, which helps local authorities track progress towards “no net soil sealing” and identify suitable areas for desealing interventions. Some of these tools are already integrated into administrative procedures for building or environmental permits, such as the statutory Biodiversity Metric of the UK, while others are aimed at raising awareness and providing recommendations, such as the Estonian Greenmeter.

Conceptual decision-support tools too, such as the recently-proposed Nature Future Framework (NFF), can support the achievement of “no net loss” and “net gain” targets. They do so by fostering the development of target-oriented visions (narratives), identifying the underlying value perspectives within these visions, and guiding the selection of indicators to track progress toward them. Building on these indicators, such tools enable both qualitative and quantitative modelling and help explore how different policies or pathways, expressed as scenarios, may lead societies toward realizing these target-oriented visions.

This session will examine the operationalization of “no net loss” and “net gain” targets for urban nature across scales, with a focus on emergent methods and tools, including but not limited to urban ecosystem accounting. It will discuss their strengths and limitations, principles and commonalities, explore opportunities for their integration, and reflect on how such tools can affect the feasibility and inform the implementation of ambitious targets for increasing and strengthening urban nature in European cities.

Goals and objectives of the session:

- The overall aim of this session is to present and discuss novel methods and tools, as well as innovative applications of existing ones, that can inform planning and policy actions to achieve “no net loss” and “net gain” targets in urban areas. The session is open to contributions addressing multiple spatial levels, from site-specific interventions to entire urban regions. It welcomes both research-oriented and practice-oriented studies, including work developed collaboratively among researchers, practitioners, and public institutions.
- A practical goal of the session is to bring together researchers, public officers, and professionals engaged in delivering “no net loss” and “net gain” targets, who are experimenting with or applying diverse perspectives, methods, and tools across a variety of contexts in Europe and beyond.

Of particular interest to this session are contributions focused on the following themes:

- Tools designed to support experts and stakeholders in developing target-oriented visions, from which models and scenarios can be generated to understand suitable pathways towards achieving “no net loss” and “net gain” targets.
- Tools purposely developed to guide local actors, e.g. developers, in the implementation of “no net loss” and “net gain” targets within specific urban contexts.
- Methods for monitoring the achievement of “no net loss” and “net gain” strategies at the city, regional, national, and international level.
- Applications of urban ecosystem accounts to support “no net loss” and “net gain” targets at multiple scales.
- Approaches for the prioritization of interventions and the identification of suitable compensation areas.
- Approaches that factor-in the value of ecosystem services in the achievement of “no-net loss” and “net gain” targets.
- Digital data pipelines and tools (GIS, remote sensing, IoT, digital twins, AI-assisted decision support) that scale monitoring and scenario analysis.
- In addition to these themes, the session also welcomes other research or practical work that falls within its overall scope.

We are especially interested to hear from the speakers and to discuss:

- The role of ecosystem condition and ecosystem services in the proposed tools and approaches;
- If and how the tools presented can be integrated in cross-scale reporting mechanisms;
- Possible combinations/integration of several tools to inform “not net loss” and “net gain” targets;
- Methods to address uncertainty, additionality, cumulative impacts, leakage, spillover and telecoupled effects, and permanence over long time horizons;
- Validation of the proposed approaches through local data.

Planned output / Deliverables:

The session is expected to generate the following outputs:

- A summary paper synthesizing key insights from the session, prepared for submission to a peer-reviewed journal.
- Identification of innovative methods, tools, and gaps, while bringing together ESP members from diverse sectors to support the prospective ESP urban ecosystem accounting sub-group.
- Contributions focused on urban ecosystem accounting are invited to contribute to the Special Issue of the journal Ecosystem Services titled “Urban ecosystem accounting under the SESA-EA framework: advancing concepts and applications” (submission deadline: January 31, 2026).

Session format:

This Standard session with presentations followed by a discussion. The duration depends on the number of presenters, but based on previous ESP conferences, two slots (i.e., 3 hours) will be probably needed.

Voluntary contributions accepted:

Yes, I allow any abstract to be submitted to my session for review

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