BOOK OF ABSTRACT

I. SESSION DESCRIPTION
II. SESSION PROGRAM
III. ABSTRACTS

I. SESSION DESCRIPTION

ID: B10e

Governance approaches for ecosystem services in urban and peri-urban open spaces

	Title	Name	Organisation	E-mail
Host:	Dr.	Marcin Spyra	Martin Luther University Halle-Wittenberg, Germany	marcin.spyra@geo.uni-halle.de
	Dr.	Silvia Ronchi	Politecnico of Milano, Italy	silvia.ronchi@polimi.it
Co-host(s):	Prof.	Andrea Arcidiacono	Politecnico of Milano, Italy	andrea.arcidiacono@polimi.it
	Dr.	Janina Kleemann	Martin Luther University Halle-Wittenberg, Germany	janina.kleemann@geo.uni-halle.de
	Dr.	Daniel Rozas	Temuco Catholic University, Chile	danielrozas@gmail.com
	Dr.	Nica Calò	Martin Luther University Halle-Wittenberg, Germany	calonicaclaudia@gmail.com
	Prof. dr.	Irena Niedźwiecka-Filipiak	Wrocław University of Live and Environmental Sciences, Poland	irena.niedzwiecka-filipiak@upwr.edu.pl
	Dr.	Justyna Rubaszek	Wrocław University of Live and Environmental Sciences, Poland	justyna.rubaszek@upwr.edu.pl

Abstract:

Urban and peri-urban open spaces (UOS) contribute to a range of ecosystem services (ES) for the well-being of city dwellers, thus being an essential determinant of human health. At the same time, many UOS are not part of the agenda of urban policy makers and planners and,

therefore, are neglected in governance and planning processes. Such UOS have unclear targeted uses and not well specified potential to deliver ES. We hypothesize that a better supply of urban ES by UOS could be fostered by effective governance approaches that implement blue-green infrastructures (GBI) at the different administrative levels. This could be done in the frame of both practical and formalized, in the frame of binding legislature, top-down governmental processes (e.g. land use planning) and more open, participatory bottom-up governance initiatives (e.g. guerilla gardening).

The session welcomes theoretical and practical contributions, which address the following research questions:
- What are the research gaps related to ES provided by UOS?
- How to implement GBI in governance processes to foster ES provision by UOS?
- What are the governance actors related to UOS? Who needs to be addressed to implement GBI that foster ES provision in UOS?
- What are the existing governance approaches implementing GBI for enhancing ES provision by UOS?
- What are the demands for the ES provided by UOS? How to implement GBI to increase the provision of the targeted ES?

Goals and objectives of the session:

Before and during the session, we will collect, present, critically discuss and synthesize governance approaches implementing GBI for enhancing ES provision. The session will discuss implemented and theoretical examples of such governance approaches. In this manner, we aim to deliver general recommendations on how to implement GBI in the governance frameworks to enhance ES provision by UOS.

Planned output / Deliverables:

We plan to discuss with the participants and collect general recommendations on how to implement GBI in the governance frameworks to enhance ES provision by UOS.

As a long-term output, we plan to encourage the session participants to work on a joint opinion paper or, depending on their motivation and interests, a compilation of a special issue in a peer-reviewed scientific journal.

Related to ESP Working Group/National Network:

Thematic working group: TWG 14 – Application of ES in Planning & Management

II. SESSION PROGRAM

Date of session: Tuesday, 22 October 2019
Time of session: 13:30 – 15:00

Timetable speakers

Time	First name	Surname	Organization	Title of presentation
10:30-10:40	Marcin	Spyra	Martin Luther University Halle-Wittenberg, Germany	Introduction (setting the scene)
10:40-10:53	Igone	Palacios	UNESCO Chair on Sustainable Development and Environmental Education (UPV/EHU)	Implementation of the ecosystem service approach in territorial planning
10:53-11:06	Elisabet	Roca	Universitat Politècnica de Catalunya	Nbs for coastal adaptation: a challenge of coordinated action in Barcelona metropolitan area
11:06-11:19	Bruno César Nascimento	Portes	Universidade Federal do ABC – UFABC	The spatial dimension of ecosystem services in the process of periurbanization of the Macrometropolis of Sao Paulo
11:19-11:32	Sabrina	Lai	Regione Autonoma della Sardegna	Assessment of municipal masterplans aimed at identifying and fostering green infrastructures: A study from the Metropolitan Area of Cagliari, Italy
11:32-11:45	Monica	Hammer	Södertörn University	Transforming peri-urban landscapes in metropolitan Stockholm, Sweden – implications for ecosystem services in local planning and governance
11:45-12:00	Lina	Suleiman	KTH, Royal Institute of Technology	Urban rainwater harvesting from niche to mainstream: Challenges and opportunities for planning in Stockholm
12:00-13:30	Lunch break			
13:30-13:43	Carla	Washbourne	University College London	Designing a Green Infrastructure CityLab for London

13:43-13:56	Harald Luis	Zepp Inostroza	Ruhr University Bochum	Shanghai's Ecosystem Service Policy. Will Shanghai lead the way?
13:56-14:09	Silvia	Ronchi	Politecnico di Milano	Wrap-up and conclusions
14:09-15:00				Q&A

III. ABSTRACTS

The abstracts appear in alphabetic order based on the last name of the first author. The first author is the presenting author unless indicated otherwise.

1. *Type of submission:* ***Abstract***

B. Biome Working Group sessions: B10e Governance approaches for ecosystem services in urban and peri-urban open spaces

Transforming peri-urban landscapes in metropolitan Stockholm, Sweden – implications for ecosystem services in local planning and governance

First author: Monica Hammer
Other author(s): Patrik Dinnetz, Mats Grahn, Therese Janzén, Mona Petersson
Affiliation: Södertörn University, Sweden
Contact: monica.hammer@sh.se

In this paper, we analyse ecosystem services in transforming peri-urban landscapes in the rapidly expanding urban region of Stockholm, Sweden. The aim of the study is two-fold; how is the transformation of the open rural landscape affecting ecosystem services and how is ecosystem services integrated in municipal planning and governance. Municipalities in Sweden have the principal responsibility for physical planning. Each municipality is required to have a comprehensive plan, which provides strategic, non-legally-binding orientation for land use. In Sweden, comprehensive plans have been described as one of the most important instruments for managing the task of sustainable land use and blue-green infrastructure.

In this study, we analyse official policy and planning documents, including comprehensive municipal plans, combined with GIS-mapping and field studies of land use practices and interviews with stakeholders and municipal planners focusing on three selected peri-urban municipalities.

The peri-urban landscape is characterized by a diversified and fragmented land-use with strong relations to functions belonging to an urbanized society with urban, mobile life-styles. Open peri-urban areas are being transformed from agricultural production to recreational landscapes. A particular trend is the rapidly increasing number of sport horses as providers of cultural and recreational services for urban dwellers. Horse keeping conserves many of the rural landscape features, but also causes conflicts that need more attention in planning and management. Horse keeping provides an interesting example of issues that cut across administrative municipal boundaries where ecosystem services as a planning tool can be useful to visualize and identify synergies and trade-offs to support decision-making. We found several differences in the recreation dominated landscape compared to the agricultural landscape affecting ecosystem services. How ecosystem services were integrated in municipal planning in the case study pointed to a range of strategies depending at least partly on local municipal organisation and governance approaches.

Keywords: open peri-urban landscapes; local governance; blue-green infrastructure, recreational ecosystem services

2. *Type of submission:* ***Abstract***

B. Biome Working Group sessions: B10e Governance approaches for ecosystem services in urban and peri-urban open spaces

Shanghai's Ecosystem Service Policy. Will Shanghai lead the way?

First author: Harald Zepp
Other author(s): Matthias Falke, Franziska Günther, Luis Inostroza, Nannan Dong
Affiliation: Ruhr University Bochum, Netherlands
Contact: luis.inostroza@rub.de, Harald.Zepp@ruhr-uni-bochum.de

During the last decades, we got used to ever-new reports on economic and population growth of Shanghai effecting in a tremendous urban sprawl and an enormous conversion of agricultural land into urban fabric. Ambitious master plans to establish green rings were put up in the past, but were not realized due to the economic pressure. Only recently, there has been a shift in official statements and institutional terms. The Shanghai government attempts to enforce a zero-growth strategy in terms of land consumption and to strengthen ecosystem services. These goals are backed-up by the installation of the National Ministry of Natural Resources in 2018, which subsequently led to reorganizing the provincial administration establishing authorities of Urban Planning and Natural Resources.

This contribution describes the base line for the new developments and examines the strategies for the attempted net-zero land-consumption. We discuss the consequences for the demand and the supply of ecosystem services (ES). Besides the overall analysis of the institutional governance framework and the regional setting, we illustrate ES-centered findings from the Baoshan district. We give a first report of a newly established BMBF-funded research project "Implementation of the Concept of Ecosystem Services in the Planning of Green Infrastructure to Strengthen the Resilience of the Metropolis Ruhr and Shanghai" in cooperation with the Tongji-University, College of Architecture and Urban Planning, and the Chinese Academy of Sciences, Beijing.

Keywords: Environmental governance, environmental policy

3. *Type of submission:* ***Abstract***

B. Biome Working Group sessions: B10e Governance approaches for ecosystem services in urban and peri-urban open spaces

Assessment of municipal masterplans aimed at identifying and fostering green infrastructures: A study from the Metropolitan Area of Cagliari, Italy

First author: Sabrina Lai

Other author(s): Federica Leone, Corrado Zoppi

Affiliation: Regional Administration of Sardinia, Department for the Environment, Office for nature protection and forestry policies, Italy

Contact: slai@regione.sardegna.it

According to the European Commission, a green infrastructure is a strategically planned network of natural and semi-natural areas that deliver multiple ecosystem services. Building upon a work that maps a regional green infrastructure (RGI) in relation to four components (natural value, conservation value, landscape value, and recreational value), this study aims at identifying planning policies that can foster the enhancement of the RGI by increasing one or more of its components at the local scale. To this end, the RGI suitability map is overlaid with the planning schemes of the municipal masterplans (MMPs) of three towns belonging to the Metropolitan City of Cagliari (Italy), and multiple linear regressions are performed. This study shows that the eligibility of a land parcel to be part of the RGI depends on several factors related to planning policies entailed by the zoning schemes of the MMPs, such as presence and spreading of safeguard areas within urban fabrics, improved accessibility of historic and natural landmarks, planned use of nature-based solutions within the regulating codes of MMPs, improvement of habitat quality in rural (peri-urban) areas. Main limitations of the proposed methodology concern the fragile theoretical foundations concerning the assessment of the recreational value, and the need for structured integration of nature-based solutions into the proposed methodology.

Keywords: green infrastructures, ecosystem services, Natura 2000 Network, land-use planning, environmental planning

4. *Type of submission:* ***Abstract***

B. Biome Working Group sessions: B10e Governance approaches for ecosystem services in urban and peri-urban open spaces

Implementation of the ecosystem service approach in territorial planning

First author: Ibone Ametzaga

Other author(s): Lorena Peña, Beatriz Fernández de Manuel and Miren Onaindia

Presenting author: Igone Palacios

Affiliation: UNESCO Chair on Sustainable Development and Environmental Education (University of the Basque Country-UPV/EHU), Spain

Contact: lorenapelo@hotmail.es

In recent years, the number of studies on ecosystem service (ES) assessment and mapping has continually increased, however, the application of these assessments have been scarce. Some mismatches still exist between the ES framework and its practical applicability and implementation at multiple scales. In this context, the project "Ecosystem Services Assessment of the Basque Country", financed by the Basque Government and the County Council of Biscay, emerged as a regional integrative approach to enhance the link between research, decision making and society and to implement the ES approach in territorial planning. In this communication, we provide an example of the application of this approach into landscape management in the Basque Country: the Bilbao Metropolitan Partial Territorial Plan, which has been under revision since 2016. We worked with technicians of the provincial council to include the ES framework into the on-going decision-making process. Based on the maps of ecosystem services (provision of food, timber and water, carbon storage, flood buffering, pollination, recreation and aesthetic enjoyment of the landscape) and conservation of natural diversity, areas with high value for the conservation of natural diversity and for the provision of at least three of the services described were proposed as priority areas. Nevertheless, in order to improve the provision of ecosystem services, it was recommended that these priority areas should be connected. For this reason, public utility forests and areas classified as erodible, among others, were proposed as connecting spaces, prioritizing forest use zones rather than agricultural and pasture zones, whenever possible. Thus, the implementation of ES approach in territorial planning is possible but requires an open collaboration of institutions.

Keywords: Peri-urban areas, Mapping ecosystem services, Landscape management

5. *Type of submission:* ***Abstract***

B. Biome Working Group sessions: B10e Governance approaches for ecosystem services in urban and peri-urban open spaces

The spatial dimension of ecosystem services in the process of periurbanization of the Macrometropolis of Sao Paulo

First author: Bruno César Nascimento Portes
Other author(s): Paulo Antonio de Almeida, Luciana Rodrigues Fagnoni da Costa
Affiliation: Federal University of ABC - UFABC, Brazil
Contact: bcportes@gmail.com

The approach of ecosystem services (ES) has gained relevance in the discussions about its importance for human well-being, for sustainability and for public policies. In the case of highly urbanized regions such as the Macrometropolis of Sao Paulo, the major city-region in Latin America, should be thought in a spatial dimension associated to these services, since the functioning of the urban-rural system depends on the contribution of resources located outside urban centers. There are different patterns of urban and rural spatial transformations known as periurbanization. The understanding of this phenomenon is fundamental for the construction of models and scenarios of the ES to increase the resilience of the urban centers against the climatic changes. However, the theoretical approaches that underlie most ES research in this context are based on dichotomous visions between urban and rural, which compromise the construction of a multidimensional debate. Such approaches are based on a theoretical-conceptual logic skewed from the point of view of urban development, in which spatial dynamics are understood as expansions of the city over a static and homogeneous rural landscape. These approaches have been heavily criticized by contemporary rural studies. Thus, it is necessary to advance the discussion of ES in peri-urban regions from a spatial approach, in which dichotomic and unidimensional visions give rise to multidimensional and interdisciplinary approaches. In this sense, these approaches comprise a spatial expression of urban and rural dynamics in a rural-urban gradient. The use of the space as an analytical tool allows the structuring of ES analyzes that consider the multiple relationships between social actors and the biophysical environment, in the land uses and in the appropriation of natural resources, subsidizing new ways of thinking about ES governance and its insertion in the spatial planning agenda.

Keywords: Ecosystem Services, Urban-Rural Gradient, Periurbanization, Spatial Planning, Macrometropolis

6. *Type of submission:* ***Abstract***

B. Biome Working Group sessions: B10e Governance approaches for ecosystem services in urban and peri-urban open spaces

NBS for coastal adaptation: a challenge of coordinated action in Barcelona metropolitan area

First author: Elisabet Roca

Other author(s): Nancy Andrea Ramírez, Míriam Villares

Affiliation: Institute for Sustainability Science and Technology. Universitat Politècnica de Catalunya, Spain

Contact: elisabet.roca@upc.edu

Nature-Based Solutions (NBS) deployment is gaining a crucial role as adaptation strategies in coastal areas. Specifically, their governance and planning at a Metropolitan scale is a feature for facing the impacts of climate change, sea-level rise, water scarcity, and urbanization pressures. It's habitually associated as a technical mechanism since it has been recognized how NBS (e.g. dune, wetland, and delta restoration) it's crucial to provide ecosystem services such as biodiversity support, coastal protection, flooding management, while could support recreational land uses. However, the sustainability of the different NBS efforts also depends on social aspects such as governance, social networks, regulations, etc. Consequently, analyzing NBS as a dynamic socio-technical system could increase our understanding of the features that have facilitated impact outcomes as coastal areas adaptation. In Barcelona Metropolitan Area (BMA), its high density' condition within two river deltas and the Mediterranean seafront, a territory of accentuated urbanization and anthropization; the implementation of NBS through dunes, delta and river restoration could be identified as an exemplification of a mandatory condition: coordinated action. This presentation aims at exposing the metropolitan approach to make ecosystem services feasible in littoral open spaces and the ongoing learning for coastal governance, focusing on the roles of organizations. Based on interviews with crucial informants and their insights on their alliances through a social network analysis, the results show that BMA benefits from the presence of key agents for technical integration (e.g. horizontal and vertical) plus social involvement (e.g. collaboration among different stakeholders), whom could be conceptualized as boundary

organizations, due to its interplay role. We conclude that for BMA to have a visible collective benefit, the focus should be on the role of key agents at different governance levels, promoting the enhancement of its technical and financial capabilities, besides their permeability with socio-economic dynamics as boundary organizations for NBS.

Keywords: Coastal adaptation, Barcelona, Boundary organizations, social network analysis

7. *Type of submission:* ***Abstract***

B. Biome Working Group sessions: B10e Governance approaches for ecosystem services in urban and peri-urban open spaces

Exploring the link between Ecosystem services, Green infrastructure and Nature-based solutions for planning purposes. Evidence from an Italian case study

First author: Silvia Ronchi
Other author(s): Andrea Arcidiacono, Laura Pogliani
Affiliation: Politecnico di Milano, Department of Architecture and Urban Studies, Italy
Contact: silvia.ronchi@polimi.it

Green Infrastructures (GI) has increasingly become the strategy for having considerable potential to advance the adoption of ecological practice in land-use planning and urban design. The EU Green Infrastructure strategy has underlined the link between GI and Ecosystem Services (ES) defining GI as a "network of natural and semi-natural areas with other environmental features that is supposed to deliver ecosystem services, but also described it as a product of human activity as it is strategically planned, [...] designed and managed" (European Commission, 2013).

Moreover, GI pursues the use of natural solutions (e.g. green roofs, rain gardens, wooded barriers, permeable paving) for their potential to contribute to a range of urban challenges and policy objectives.

Despite the full-blown evidence of the link between ES, GI and Nature-Based Solutions and of their contribution in spatial planning for decision making support, practical experiences are still rare.

The abstract aims to present a recent urban planning experience conducted in the municipality of Rescaldina, in the north of the Milan metropolitan area (Lombardy region, north-west Italy) focusing on the implementation of an ES approach for the deployment of a local GI strategy implemented by means of a number of NBS.

The use of NBS are considered for defining criteria and parameter for the new Urban transformation areas as qualitative standard based on ES provision.

The local GI strategy was included both in the strategic component of the Plan and in the regulative part, ensuring its operability and practical application.

The Urban Plan and related SEA were approved in March 2019.

Keywords: Ecosystem services, Green infrastructure, Nature-based solutions, Land-use planning

8. *Type of submission:* ***Abstract***

B. Biome Working Group sessions: B10e Governance approaches for ecosystem services in urban and peri-urban open spaces

Neglected urban spaces for better provision of urban ecosystem services

First author: Marcin Spyra
Other author(s): Tereza Aubrechtova, Petr Krpec, Luis Inostroza
Affiliation: Martin Luther University Halle-Wittenberg, Germany
Contact: marcin.spyra@geo.uni-halle.de

Ecosystem services (ES) deficit areas, which are characterized with higher ES demand than ES provision, are frequent in urban landscapes. At the same time the sufficient provision and accessibility to diverse ES is one of the most important constituents of well-being of urban inhabitants. Due to dynamic processes of urbanization many urban spaces become neglected, meaning un-accessible, abandoned, unused, or used and managed below their potential to provide ES.

We hypothesize that neglected urban spaces show the underestimated potential to deliver more ES close to the ES deficit areas. Thus our research aims to provide and test a quantitative methodology to delimitate neglected urban spaces, which have such a potential. We define these spaces to comprise as abandoned green spaces, brown-fields, vacant spaces, non-developed built areas, fully or partially sealed areas. Neglected urban spaces need to be located in the close vicinity of the areas, which show the highest deficit of ES and have no access over the road network to ES provisioning areas.

To fulfill the research aims we propose a quantitative method based on spatially explicit indicators (technomass, NDVI, ES Deficit Factor) and the calculation of the accessibility over the road network from the areas, which show the highest deficit of ES to the ES provisioning areas. The calculations are provided for the hexagonal cells, distributed in the form of a grid over the case study area, which is the urban landscape of Ostrava city, Czech Republic. Our method is usable for other urban and peri-urban landscapes and could be also implemented as an approach supporting more effective governance of urban landscapes and their ecosystems

Keywords: Ecosystem services, urban landscape, neglected urban spaces, ecosystem services deficit areas

9. *Type of submission:* ***Abstract***

B. Biome Working Group sessions: B10e Governance approaches for ecosystem services in urban and peri-urban open spaces

Urban rainwater harvesting from niche to mainstream: Challenges and opportunities for planning in Stockholm

First author: Lina Suleiman
Affiliation: KTH, Royal Institute of Technology, Sweden
Contact: lina.suleiman@abe.kth.se

An alteration from conventional rainwater drainage systems towards Urban Rainwater Harvesting systems (URHS) for sustainable management of rain is widely acknowledged. Yet, URHS are not a common component of urban water management practices. This paper investigates three URH projects in the City of Stockholm with the aim of examining whether URHS can be mainstreamed and complement conventional approaches in Stockholm, or, on

the contrary, remain isolated projects. The paper synthesises and uses a theoretical outline that is organised along seven analytical categories: context, actors, instruments, purposes, processes/dynamics, outputs, and impacts/outcomes, for analysing and understanding the transformation towards URHS that are viewed as sociotechnical systems (STS). The analyses show that Stockholm has remarkable strengths for moving towards URH solutions in terms of receptive and adaptive contexts, agency, socio-political space for technology experimentation, and planning culture. However, the city needs to develop a long-term commitment and governance model that will generate systematic learning and, accordingly, be able to uptake, institutionalise and stabilise needed changes for a breakthrough and mainstreaming of URHs.

Keywords: Urban Rain Harvesting, sociotechnical transition, governance, planning, Stockholm

10. Type of submission: ***Abstract***

B. Biome Working Group sessions: B10e Governance approaches for ecosystem services in urban and peri-urban open spaces

Designing a Green Infrastructure CityLab for London

First author: Carla-Leanne Washbourne
Other author(s): Christina Culwick, Gillian Maree
Affiliation: University College London, United Kingdom
Contact: c.washbourne@ucl.ac.uk

London is globally recognised as a city with strong sustainability aspirations; in part due to its proactive and progressive plans for urban green space. The 'Green Infrastructure CityLab for London' project aims to provide an opportunity for engaged discussion and debate between diverse actors involved in green space (green infrastructure) in the city. It is working to create an ongoing platform for strengthening connections and knowledge sharing, with implications for practice and potentially valuable insights for decision-making.

Many groups contribute to the day-to-day creation, preservation and management of urban green spaces, but they rarely have an opportunity to come together to share successes or concerns, think creatively and collaboratively about what is/isn't feasible

and find opportunities to shift thinking/practice. The Green Infrastructure CityLab recognises that while there is an increasing body of knowledge and experience around the effective planning, development and management of urban green spaces, this is not always usefully available or accessible. There is a great potential for practice to be enriched by the sharing of knowledge and experiences, positive and negative. Starting these conversations is the first step in a bigger dialogue informing effective approaches and developing mutual insights and support.

The activity sought to bring together a range of specialists and professionals in research, practice and policy and leveraged the skills and expertise of global partners from the Gauteng City-Region Observatory (GCRO) in Johannesburg in the design and delivery. The CityLab model is a tested method for bringing together people from a range of backgrounds to develop a collective understanding and co-produce ideas and actions on a topic. It has been used successfully by GCRO to engage urban stakeholders around green infrastructure, resulting in technical reports, policy outputs and ongoing engagement.

This contribution reflects on the process of scoping, designing and delivering the first CityLab as well as thoughts for future engagements. It reflects on the challenges and opportunities around creating a functional space for the open sharing of experiences to provide tangible benefits to practice, planning and implementation and to inform decision-making.

Keywords: Green infrastructure, urban, decision-making, co-production