

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: T18b/T18a

Assessment of ecosystem services governance and policies in dynamic political landscapes: Needs, approaches and empirical evidence/Transformative laws for a nature-positive Europe: assessing the legal integration of ecosystem services

T18b - Hosts:

	Name	Organisation	E-mail
Host (s):	Carsten Mann	Eberswalde University for Sustainable Development	Carsten.Mann@hnee.de
Co-host(s):	Dieter Mortelmans	INBO	dieter.mortelmans@inbo.be
	Lasse Loft	ZALF	Lasse.Loft@zalf.de
	Michael Leone	INBO	michael.leone@inbo.be


Abstract:

Perspectives and questions we seek to cover in our session are:

- Debating needs and challenges for assessing the effectiveness, efficiency, and equity of ecosystem services governance and policy instruments/mixes
- Insights from assessment and evaluation studies into how well governance and policy design aligns with norms, beliefs and values of relevant stakeholder
- Innovations and performance of participatory assessment approaches for opening up policy design processes
- Ideas how ecosystem services governance and policy assessments can lead to more sustainable ES provision

Goals and objectives of the session:

- Various assessment approaches exist when it comes to determine if ecosystem services (ES) governance modes and policy instruments (mixes) are achieving intended goals for sustainable ES provision and provide pathways for improvement. For this session we are particularly interested in assessment approaches that take a systems approach and build on multi-stakeholder and multi-criteria assessments. The goal of the session is to provide insights and stimulate reflections on current learnings and future needs for assessing the sustainability of ES governance and policy. We aim to gather empirical findings on current approaches and practices in ES governance and policy assessments, focusing on their actionability, functionalities, outcomes, and potential.
- Building on this, we will initiate a debate on the strengths and limitations of qualitative and quantitative assessment approaches for ES governance and policy. The discussion will explore implications for their future conceptualization and use, particularly in dynamic political landscapes and for sustainable ES provision.
- Additionally, we seek to explore how these new policy assessments can support innovative approaches to policy co-design. For example, if integrating diverse knowledge systems (such as values and



experiential knowledge) alongside an ES approach could enhance policy effectiveness and sustainability.

Planned output / Deliverables:

The outcome might be a Special Issue on perspectives and insights into ES governance and policy assessments and ways ahead based on the presentations and discussions

Session format:

This two-hour session is structured into two interlinked parts:

Part I: Empirical Insights into Current Assessment Approaches for ES Governance and Policy (90 min)

In the first part, following an introductory presentation by the organizers, we invite contributions from the ES community to share empirical findings on current assessment approaches and their impact on ES governance, policy processes and outcomes. Key questions addressed in this part include (i) where and why ES governance and policy assessments are applied, (ii) how they perform in practice, and (iii) what role stakeholder participation (including their interests and motives) plays in these processes.

Part II: Debating Needs and Potentials for Future Assessments of ES Governance and Policy (30 min)

The second part focuses on the underutilized potentials and opportunities of ES governance and policy assessments, adopting a prospective and/or experimental perspective. A moderated debate about the needs and potentials for the future design and use of assessment approaches for ES governance and policy will be initiated. The discussion will centre on perceptions of the practicability and relevance of assessments of ES governance and policy. Guiding questions will be: (i) how can assessments impact ES governance and policy, (ii) how can they account for dynamic political landscapes, and (iii) how to support stakeholder knowledge integration, as well as governance and policy co-design? Through this debate, we will distil implications for future design and use of ES governance and policy assessments and identify potential pathways towards more sustainable ES provision.

Related to ESP Working Group:

[TWG 18 – Governance & Institutional aspects](#)

T18a - Hosts:

	Name	Organisation	E-mail
Host (s):	Francesca Leucci	Wageningen University - Vrije Universiteit Brussel - Austrian Academy of Sciences	francesca.leucci@coleurope.eu
Co-host(s):	Alexandra Aragao Luis Inostroza	Coimbra University Mendel University in Brno	aaragao@fd.uc.pt luis.inostroza@mendelu.cz

Abstract:

Biodiversity loss, whether arising from imminent polluting activities or from cumulative, diffuse anthropogenic pressures, poses a major challenge to contemporary legal systems. International, regional and national legal frameworks are increasingly recognising that tackling this challenge requires not only conservation, but also proactive restoration of ecosystems. In this regard, the ecosystem-services (ES) framework offers a powerful bridge between science, policy and law.


Legal scholars have long urged the law to adopt an ecosystem services approach. For instance, James Salzman (2005) has noted that, despite their obvious importance, ecosystem services have largely been overlooked by environmental laws and policies. Similarly, Ruhl and Salzman (2007) explored how common-law principles (such as the public trust doctrine or nuisance) might be adapted to protect services rather than functions alone. Mertens et al. (2012) initiated a discussion on the use of the ES framework for biodiversity protection in the EU. More recently still, Colognese and Granato (2024) have described how the concepts of natural capital and ecosystem services are gaining traction in European and Italian legal systems.

According to the European Commission, the ES framework should be applied at least at two key stages:

- Assessment of biodiversity and environmental loss: determining which ecosystem services have been degraded or lost as a result of human activity, and evaluating the implications for ecological integrity and human wellbeing.
- Planning for biodiversity restoration and conservation: deciding which ecosystem services should be conserved and which ones restored, where and how conservation and restoration of ecosystem services should occur.

In the first stage, legal and scientific actors must ask: what services have been lost, how significant is the loss, and what are the implications for biodiversity and the communities that depend on it? In the second stage, they must address: which ecosystem services are critical for recovery and long-term resilience, and how can conservation and restoration be implemented within a legally enforceable and scientifically informed framework?

The ES framework can serve as a legal interpretive lens through which to assess the adequacy of existing norms, reorienting environmental law from the protection of 'nature' in the abstract to the maintenance of effective, service-providing functions that sustain biodiversity and human wellbeing. Yet, many legal regimes only partially internalise these insights. While ecological and economic disciplines have advanced rapidly, legal scholarship has lagged behind in addressing the value of ecosystem services. Moreover, embedding this approach in the law involves several challenges, such as establishing dynamic ecological baselines, addressing data limitations and the complexity of ecological modelling, balancing trade-offs between restoration and conservation goals, and designing long-term monitoring systems that are cost-effective and legally viable. These challenges underscore the need for robust legal and methodological guidance. Public authorities, regulators, courts, companies and practitioners require standardised tools and procedures to incorporate the ES framework into biodiversity-related legal processes. Aligning legal instruments with ecosystem service-based assessments can ensure that decisions lead to measurable and lasting benefits for biodiversity, ecosystems and society.



For the reasons above, this session invites contributions that critically examine how and to what extent the ES framework is already embedded in legislation and case law, and/or how it could be more effectively implemented. The aim of this session is to open a discussion that explores whether existing legal frameworks truly deliver the measurable ecological and social benefits promised by the ES framework. By comparing doctrinal interpretations and practical experiences across jurisdictions, participants will collectively evaluate the effectiveness of the current legal framework for ecosystem service-based environmental conservation and restoration.

Presentations may, for example, illustrate and assess:

- the degree to which EU and national instruments advance (or fall short of) the coherent integration of ecosystem services into environmental laws;
- whether environmental liability, impact assessment and natural capital accounting regimes embed an ES framework;
- how courts interpret damage and restoration obligations in terms of lost or degraded services;
- the interaction between the ES concept and core legal notions such as causation, proportionality, or ecological baselines.

Goals and objectives of the session:

The aim of this session is to contribute to the ongoing debate about how the ecosystem services framework can help to implement biodiversity laws relating to conservation, restoration and liability. The ecosystem services approach provides a structured method of assessing the causes and consequences of biodiversity loss, and identifying effective responses.

More specifically, this session will gather case studies, practices, and theoretical perspectives on the employment of ecosystem services within legal frameworks for evaluating biodiversity losses and implementing conservation and restoration policies. The session will also provide a platform for proposing concrete tools, guidelines and standards for integrating ecosystem services into legal and policy frameworks. To support the integration of ecosystem services into legal decision-making processes for biodiversity conservation and restoration, this session will encourage discussions around the harmonisation of definitions and classifications, the standardisation of valuation and monitoring approaches, the development of accessible, authoritative data systems and the alignment of ES methodologies with national and international legal obligations.

Planned output / Deliverables:

Best practices, check-lists, recommendations for model laws, guidelines for the judicial interpretation of environmental laws embedding the ecosystem services framework. A Special Issue collecting the best papers presented.

Session format:

Standard session (presentations)

Related to ESP Working Group:

[TWG 18 – Governance & Institutional aspects](#)

II. SESSION PROGRAM

Room: C2

Date of session: Wednesday 20, May 2026

Time of session: 09:00 – 12:30

Timetable speakers

Part I: Conceptual and methodological considerations and empirical evidence

Time	First name	Surname	Organization	Title of presentation
09:00 – 09:05	Lasse Dieter Carsten Michael	Loft Mortelmans Mann Leone	ZALF INBO HNEE INBO	Introduction to the session – Part I
09:05 – 09:20	M. Susana	Orta-Ortiz	University of Trento	Towards an EU “Science Service for Biodiversity”: Application examples in the field of urban nature-based solutions
09:20 – 09:35	Gladys	Spiliopoulos	Independent researcher	Ecosystem services as regulatory infrastructures: assessing biocultural governance pathways in a post-industrial Mediterranean city
09:35 – 09:50	Anže	Japelj	Slovenian Forestry Institute	Operationalizing ecosystem services in protected area governance: Development and testing of the ecosystem-based governance model in the Rački ribniki-Požeg landscape park
09:50 – 10:05	Leva	Misiune	Vilnius University	Co-producing Governance for Natural Pest Control as an Ecosystem Service: Evidence on Policy–Stakeholder Alignment
10:05 – 10:20	Carsten	Mann	Eberswalde University for Sustainable Development	Using scenarios for assessing Payments for Ecosystem Services policy options for forests in the European Union
10:20 – 10:30	Lasse Loft & Luis Inostroza			Remaining q&a

Coffee Break: 10:30 – 11:00

Part II: Implications for governance, policy and laws

Time	First name	Surname	Organization	Title of presentation
11:00 – 11:05	Francesca Alexandra Luis	Leucci Aragão Inostroza	Austrian Academy of Sciences University of Coimbra Mendel University	Introduction to the session – Part II
11:05 – 11:20	Marianna Lourdes	Dänner	Heidelberg University	Advancing environmental laws by means of the ES framework

11:20 – 11:35	Yixin	Cao	University of Strasbourg	Translating Rights of Nature into French Water Governance Framework: Insights from the Loire and Tavignanu Cases
11:35 – 11:50	Kerry	Waylen	James Hutton Institute	Is Natural Capital fully embedded in Scottish Government policy?
11:50 – 12:05	Jarumi	Kato Huerta, et al.	University of Trento	Navigating decision windows for the integration of ecosystem evidence in planning and policy-making
12:05 – 12:30	Dieter Mortelmans & Alexandra Aragão, et al.			Final and joint debate: A reflection on needs and challenges for assessing the effectiveness, efficiency, and equity of ecosystem services governance, policy instruments and laws Session conclusion

III. ABSTRACTS

The first author is the presenting author unless indicated otherwise

1. Towards an EU “Science Service for Biodiversity”: Application examples in the field of urban nature-based solutions

First author: M. Susana Orta-Ortiz

Other author(s): Chiara Cortinovis, Alessandra Longo, Davide Geneletti


Affiliation: University of Trento

Contact: maria.ortaortiz@unitn.it

The EU is developing the Science Service for Biodiversity (SSBD) as the scientific pillar of the EU Knowledge Centre for Biodiversity outlined in the EU Biodiversity Strategy 2030. The SSBD connects scientific and non-scientific biodiversity knowledge with policymaking, creating a transformative science-policy-society interface to support evidence-based biodiversity and ecosystem restoration across Europe. Specifically, the BioAgora Horizon Europe is tasked with designing the SSBD's networks, functions, and processes. Among these is the answering request function, which addresses EU-level knowledge needs through a structured co-production process that reinforce and enhance legitimacy and trust across the interface.

This presentation explains how this function operates, detailing the stages of the process and the outcomes of two requests related to urban nature-based solutions (NBS). These requests respond to key provisions in the EU Biodiversity Strategy 2030 and the Nature Restoration Regulation, offering direct support to local authorities and practitioners. The first request compiled tools for generating and using biodiversity and ecosystem services data to inform and monitor the development and implementation of Urban Nature Plans. The second request synthesized typologies and best practices for green roofs and walls, including guidance on multifunctionality, biodiversity-positive design, governance, and financing. It contributes to implementing Article 8 of the Regulation, which seeks to implement building-integrated greenery.

The presentation will outline the key stages of the process, including ticketing and reception, expert panel formation, knowledge overview, finalization, and follow-up. For each stage, we will highlight



the actors involved, describe the main activities carried out, and reflect on the key challenges and lessons learned.

Keywords: knowledge co-production, evidence-based decision-making, urban ecosystem restoration, urban greening strategies

2. Ecosystem services as regulatory infrastructures: assessing biocultural governance pathways in a post-industrial Mediterranean city

First author: Gladys Spiliopoulos

Other author(s): Giada Marossi, Giuseppe Barbalinardo, Niccolò Giambruno, Matteo Falcone

Affiliation: Environmental economist, independent researcher

Contact: gladys.spiliopoulos@gmail.com

Despite two decades of scientific and policy advances, ecosystem services are still predominantly addressed through descriptive assessments or sectoral impact evaluations, with limited capacity to inform the evaluation of governance and policy performance. This paper responds to this gap by proposing an assessment-oriented framework in which ecosystem services are conceptualized as regulatory infrastructures for evaluating post-industrial urban governance through a biocultural lens. The framework is developed through the TRACCE programme (Taranto Rigenerata Attraverso Cultura, Comunità ed Ecologia) in a post-industrial Mediterranean city characterized by long-term environmental degradation, social vulnerability, and contested decision-making processes. The approach integrates three interrelated assessment dimensions. First, a bio-physical assessment translates ecosystem functions into measurable indicators relevant for policy evaluation, including marine and coastal ecosystem condition, climate regulation, microclimatic performance, and ecological connectivity. Second, a biocultural assessment captures how non-material values—such as cultural identity, heritage, and everyday relationships between communities and ecosystems—interact with governance processes. These dimensions are explored through qualitative methods, community mapping, and participatory practices. Third, a governance assessment dimension is operationalized through the Taranto ESG Watch, a civic system of environmental, social, and governance indicators that integrates institutional datasets, international ESG and ecosystem accounting frameworks, and community-generated knowledge.

Rather than functioning as a monitoring tool, the Taranto ESG Watch operates as an assessment device for ecosystem services governance, enabling the evaluation of policy effectiveness, equity, and actionability in a dynamic political landscape. The framework is illustrated through four interconnected territorial applications addressing industrial brownfield regeneration, biocultural districts, ecological corridors, and access to urban waterfronts.

The results show how ecosystem services can support systematic assessments of governance arrangements and policy outcomes, contributing empirical evidence to current debates on ecosystem services governance. The work offers a transferable approach for post-industrial cities seeking to align ecosystem services, governance evaluation, and nature- and people-positive transitions.

Keywords: ecosystem services governance; governance assessment; biocultural approach; post-industrial cities; civic monitoring

3. Operationalizing ecosystem services in protected area governance: Development and testing of the ecosystem-based governance model in the Rački ribniki-Požeg landscape park

First author: Anže Japelj

Other author(s): Andreja Ferreira, Andrej Kobler, Anže Martin Pintar, Kaja Plevnik, Pia Höfferle

Affiliation: Slovenian forestry institute

Contact: anze.japelj@gozdis.si

Protected areas increasingly face the dual challenge of conserving biodiversity while accommodating socio-economic needs and climate risks. To address these pressures, we developed and tested an Ecosystem-Based Governance Model (EBGM), an innovative framework designed to integrate ecosystem services (ES) directly into statutory management planning. The EBGM was piloted in the Rački ribniki–Požeg Landscape Park (Slovenia), a Natura 2000 site characterised by complex ownership structures and land-use conflicts. Structured around seven fundamental principles, including adaptive management and social justice, the model follows a six-phase process that operationalises ES for decision-making. Through participatory workshops, stakeholders identified priority services such as flood protection and habitat conservation, and mapped conflict hotspots arising from agricultural and recreational pressures. A key innovation of the study is the development of management zones based on the spatial concentration of ES supply rather than traditional administrative boundaries. Our spatial analysis showed that areas dense in provisioning services were spatially distinct from those dominated by regulating and cultural services, enabling the design of targeted measures to minimise trade-offs. The results demonstrate that the EBGM successfully fosters stakeholder legitimacy and provides a transparent evidence base for resolving conflicts. By linking past management actions to current ES conditions, the model offers a flexible, scalable tool for managers to enhance ecosystem resilience. We conclude that the EBGM effectively bridges the gap between theoretical ES concepts and practical, on-the-ground governance, with high transferability to other sectors such as forestry and urban planning.

Keywords: ecosystem services, protected areas, participatory approach, ecosystem governance model, management zones

4. Co-producing Governance for Natural Pest Control as an Ecosystem Service: Evidence on Policy–Stakeholder Alignment


First author: Leva Misiune

Other author(s): Gintare Janusevskaite, Gintare Tamasauskaite-Janicke

Affiliation: Institute of Geosciences, Faculty of Chemistry and Geosciences, Vilnius University, Lithuania

Contact: ieva.misiune@chgf.vu.lt

The importance of knowledge co-production in governing ecosystem services (ES) is increasingly recognized, given that concepts gain meaning and legitimacy only as they circulate between science, regulation and practice. Natural pest control (NPC) is a well-established ES in the field of ecological research. However, the extent to which it contributes to the resilience of farming systems is contingent upon the manner in which NPC is defined, incentivized and enacted by institutions and land managers. Within the IMPRESS project, this study provides empirical evidence on how ES



governance translates scientific knowledge on NPC into legal framings, and how these framings align with stakeholders' understandings, norms, and on-farm practices.

A structured analysis of nearly 70 EU-level and national documents was implemented to assess how NPC is addressed. Later, 30 semi-structured interviews (April 2024–August 2025) were implemented across five countries with stakeholders from public authorities, private actors, and NGOs. The results indicate that NPC is not explicitly defined in regulation; moreover, policy-promoted "non-chemical alternatives" associated with NPC do not always correspond with NPC goals as understood in the scientific literature, nor do they necessarily imply positive biodiversity or resilience outcomes. Stakeholders perceive NPC importance for maintaining biodiversity, reducing dependence on externally supplied chemical inputs, and protecting health as key motivations — normative goals that are not consistently reflected in the way in which policies operationalize "alternatives" to pesticides. Simultaneously, uncertainty about effectiveness and entrenched "good farming" norms reduce the perceived viability of NPC.

The findings indicate a discrepancy between the design of policy and the value frames of stakeholders: governance instruments tend to specify actions and compliance categories, while stakeholders evaluate NPC through outcomes, risk, and fairness. It is concluded that the governance of NPC currently exhibits an alignment and legitimacy gap between scientific concepts, regulatory framings, and stakeholder understandings.

Keywords: Knowledge Co-production; Stakeholder assessment; Policy–practice gap; Agricultural resilience

5. Using scenarios for assessing Payments for Ecosystem Services policy options for forests in the European Union

First author: Carsten Mann


Other author(s): Gino Garcia, Paola Gotta, Giulia Corradini

Affiliation: Eberswalde University for Sustainable Development (HNEE)

Contact: carsten.mann@hnee.de

Society benefits from a wide range of ecosystem goods and services offered by forests. However, many of these services are largely devoid of economic value, which in turn influences forest management decisions. In Europe, the payments-for-ecosystem services (PES) concept has been gaining momentum as a means to address this gap by attributing monetary resources for non-timber forest ecosystem services (FES) namely regulating and cultural FES.

In this study, we investigate the feasibility of integrating PES for FES provision into the European Union's policy and financial landscapes. We employed a step-wise methodology beginning with a scoping study to assess the current state of FES and PES in policy and financial documents. Next, a Delphi study was utilized to ask for experts' opinions on the matter. Finally, a scenario-based policy assessment was carried out with various forest stakeholders, where we designed four contrasting scenarios anchored upon varying PES design parameters. We found that stakeholders had a preference for hybrid approaches for funding (public and private), conditionality of payment (action- and results-based) and intermediaries (public and private). At the same time, there are concerns regarding the private sector in terms of raising interest for their involvement and time horizon preferences being that longer time horizons are needed for effective FES provision, which presumably might not coincide with the private sector's interests.



Our study suggests that a multi-stakeholder assessment of PES design preference is an essential part of the policy debate on the actionability, functionalities, outcomes, and potential of PES to be up-scaled on EU level.

Keywords: Payments for ecosystem services, multi-stakeholder policy assessment, forest ecosystem services, scenario narratives

6. Advancing environmental laws by means of the ES framework

First author: Marianna Dänner

Affiliation: Marianna Dänner, Heidelberg University

Contact: marianna.daenner@ipr.uni-heidelberg.de

My contribution will provide an example of connecting factors for the Ecosystem Services (ES) approach in (German) public law and discuss how existing legal mechanisms can be advanced by implementing the ES framework. It will elaborate the potential for a multi-level and cross-sectoral integration of ES into the law, ranging from public nature conservation law to private law.

German public law provides for a specific mechanism for environmental interventions associated with the issuance of administrative permits. Anyone who applies for a permit that involves significant adverse effects on nature has to primarily refrain from such interventions (§§ 13 ff. BNatSchG, the German nature conservation law). If the desired action cannot be realized without interfering with the environment, the applicant must compensate for the interference by either compensation or substitution measures (Art. 15 (2) BNatSchG). If the effects cannot be compensated for and the interests in the desired action take precedence over the interests of nature conservation, the applicant must provide for monetary substitution. The ES framework could be applied in all of these steps, as a legal method to both assess the significance of adverse effects as well as by providing a legal standard to assess the adequacy of compensation and substitution measures. Following a holistic approach, the findings will then be transferred to other instruments of public law, primarily environmental assessments and planning law, allowing for a comparison of laws.

Subsequently, I will show how the findings can be connected with private law regimes or practices, such as assessing environmental liability or market-based legal mechanisms for nature conservation. Overall, the contribution will refer to analyses of case law, showing deficits *de lege lata* as well as potential for improvement by applying the ES framework, theoretical legal foundations and creative approaches for advancing the existing nature conservation law.


Keywords: environmental damage compensation, nature conservation law, environmental liability, (administrative) legal frameworks

7. Translating Rights of Nature into French Water Governance Framework: Insights from the Loire and Tavnaganu Cases

First author: Yixin Cao

Affiliation: Institut Terre & Environnement de Strasbourg (ITES UMR 7063 CNRS), University of Strasbourg

Contact: yixin.cao@unistra.fr



Today's freshwater crisis highlights the need for water governance to move beyond anthropocentrism. Globally, Indigenous cosmologies that conceive nature as living beings have inspired the Rights of Nature (RoN) movement, leading to the legal personhood of rivers in Colombia, Australia, New Zealand, and beyond. However, translating this movement into the context of Europe's technocratic and deeply institutionalized water governance systems present major challenges. While some cases foster bottom-up governance and empower riverine communities, many river rights remain symbolic and weak in implementation. In France, RoN initiatives are also emerging to various rivers, typical inland social-ecological systems, e.g., the Parlement de Loire (2019) and the Déclaration des Droits du Fleuve Tavignanu in Corsica (2021). The Parlement de Loire, 1st RoN initiative in France, centered on the country's last major undammed river, reimagines the Loire as a subject rather than an object, fostering dialogue among scientists, stakeholders, and citizens through artistic and participatory approaches. The Tavignanu Declaration, initiated by a Corsican NGO to oppose a landfill project within the river basin and later endorsed by the Corsican Assembly, represents the 1st formal political recognition of river rights in France. Despite their innovation, both initiatives face obstacles in adopting Indigenous-inspired ethical concepts and in legitimately representing nonhumans, as local NGOs and activists currently serve only as temporary "spokespersons" for the rivers and neither initiative has yet achieved enforceable legal status. Drawing on 38 interviews with actors in the Loire and Tavignanu in 2025, alongside participant observations of diverse meetings and events, this study explores the opportunities and challenges surrounding the RoN in France and how these social movements may reshape human–nonhuman relationships and support bottom-up eco-centric governance practices. This research is part the French 10-year PEPR programme "OneWater – Eau Bien Commun" PC7 (Projet Ciblé 7) "Accompagner les transitions socio-écologiques".

Keywords: water governance, social-ecological system, rights of nature, river personhood, France


8. Is Natural Capital fully embedded in Scottish Government policy?

First author: Kerry Waylen

Affiliation: James Hutton Institute

Contact: kerry.waylen@hutton.ac.uk

The Scottish Government is amongst the pioneers making significant commitments to working with 'Natural Capital'. In this talk I review what has been done so far, and whether these activities have yet made any substantive change in the content and outcomes of policy development. Firstly, I explain the actions made to support working with Natural Capital, a concept understood as including ecosystems services concepts and promoting a systemic approach to understanding the values of nature. Activities have included creating national level accounts, reporting, commissioning research, reference in some strategic documents, and the creation of some new policy roles related to natural capital and nature markets. There have also been UK-level changes including making available a "Enabling a Natural Capital Approach toolset" for policy analysts to work with. All these initiatives can already be counted as a form of change. But is this yet causing substantive shifts in the norms, values and activities on the decisions that influence nature, even nature itself? Based on several strands of data collection from and interactions with policy-makers working within the Scottish Government over the past 5 years, including surveys of policy-makers across



departments, I show that awareness of the concept of natural capital is increasing; but that it is so far from being something embedded into daily activities that constitute policy development. I conclude by reflecting on priorities and possibilities for achieving further change to achieve just and sustainable management of Scotland's nature and landscapes.

Keywords: natural capital, ecosystem services, decision-making, policy, mainstreaming

9. Navigating decision windows for the integration of ecosystem evidence in planning and policy-making

First author: Jarumi Kato Huerta

Other author(s): Chiara Cortinovis, Davide Geneletti

Affiliation: University of Trento

Contact: jarumi.katohuerta@unitn.it

Ecosystem evidence, covering ecosystem services and condition, is increasingly important in environmental governance to inform better and more sustainable policies. However, a notable implementation gap persists because, even if this evidence is recognised, its actual uptake in public decision-making remains less understood. This gap could result from scientific assessments that do not align with institutional realities, are presented too late, or are offered in formats that lack practical accessibility, thereby hindering the transition from knowledge creation to applied policy. To address this, we examine the science–policy interface through the decision window framework, which identifies specific temporal and institutional moments when policy processes become receptive to external evidence. Moving beyond the assumption of linear knowledge transfer, we conducted a qualitative cross-case analysis of decision windows across seven real-world planning and policy-making processes, spanning multiple governance levels (local, regional, and national) and sectors, including restoration, spatial planning, and coastal management.

Our findings indicate that ecosystem evidence is rarely the basis of formal decisions. Instead, its role is primarily conceptual and technical, aiding in clarifying complex issues or evaluating the real-world feasibility of policy options. Moreover, the effectiveness of decision-making periods is often limited by fixed procedural timelines and organisational barriers, including political shifts and institutional fragmentation. Significantly, successful use of evidence depended less on the quality of technical data and more on contextual factors, especially the strength of actors' relationships and the presence of high-level institutional mandates, such as EU policy requirements.

The presentation concludes that effective evidence integration requires moving beyond simple knowledge transfer to a more nuanced understanding of institutional timing and knowledge co-production. These insights offer a strategic foundation for researchers and practitioners to ensure that ecosystem evidence is not only scientifically rigorous but also practically useful within policy processes.

Keywords: decision windows, ecosystem evidence, public decision-making,