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: T14f

Linking Ecosystem Services and Nature-based Solutions for achieving a nature-and people-positive Europe

Hosts:

	Name	Organisation	E-mail
Host (s):	Edna Cabecinha	UTAD/ IUCN CEM	edna@utad.pt
Co-host(s):	Emmanuelle Cohen Shacham	Nature-based Solutions Thematic Group Lead Commission on Ecosystem Management IUCN - International Union for Conservation of Nature	minacs@gmail.com

Abstract:

Achieving a nature- and people-positive Europe requires innovative, knowledge-based approaches that integrate ecosystem services into policies and practices for restoration, resilience, and sustainability. NbS are central to this agenda, offering pathways to climate mitigation, adaptation, biodiversity conservation, and improved human well-being. However, effective design and implementation of NbS depend on evidence about ways ecosystem services provision is enhanced in different ecological, social and economic contexts.

This session will highlight case studies in which the IUCN Global Standard for NbS was implemented, some of which are published in the new book on "Applying the IUCN Global Standard for Nature-based Solutions™: 21 case studies from around the globe." These examples demonstrate how NbS can restore ecosystems, strengthen resilience, and generate measurable co-benefits for people and nature.

By linking real-world case studies to the ecosystem services framework, the session will explore how NbS can be planned, implemented, assessed, monitored, and upscaled for positive outcomes for biodiversity and society. In doing so, it will highlight the importance of integrating scientific evidence and local knowledge to strengthen and mainstream strong NbS interventions, upscaled in policy. In addition, by recognizing the value of nature and harnessing its power through NbS, society can achieve a more sustainable and resilient future for both people and the planet. Through dialogue among researchers, practitioners, and policymakers, this session will contribute to advancing ecosystem services knowledge and explore the integration of ES and NbS to unlock NbS' potential in Europe.

The IUCN Global Standard for NbS and its Self-Assessment Tool provide an operational framework to assess, improve and upscale NbS interventions. For this session, we welcome the presentation of relevant case studies and research initiatives that look into the link between NbS and ES knowledge and/or tools to achieve a nature- and people-positive Europe.

Goals and objectives of the session:

The objectives of this session are to:

- Present the Global Standard for NbS and raise the awareness of the ESP community on NbS implementation and this operational framework;
- Learn, through presentations of case studies and relevant research initiatives, ways that the two concepts can complement each other to address global challenges at scale, for a nature-and people-positive Europe;
- Strengthen knowledge exchange between researchers and practitioners to support the integration and mainstreaming of NbS in European policy agendas.

The session's objectives are consistent with the conference theme, ""Advancing ecosystem services knowledge for achieving a nature- and people-positive Europe,"" with a special focus on the key challenge, ""Climate and natural solutions for ecosystem restoration and resilience.

Planned output / Deliverables:

A summary of the case studies presented, main discussion points, and ideas for new research collaborations on the link between NbS and ES to achieve a nature-and people-positive Europe.

Voluntary contributions accepted:

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

Related to ESP Working Group:

TWG 14 – Application of ES in Planning & Management

II. SESSION PROGRAM

Room: C2

Date of session: **Tuesday, 19 May 2026**

Time of session: **16:00 – 17:30**

Timetable speakers:

Time	First name	Surname	Organization	Title of presentation
16:00	Emmanuelle	Cohen-Shacham	IUCN Commission on Ecosystem Management	Implementing the IUCN Global Standard for NbS: lessons learned for a Nature- and People-Positive Future
16:10	Edna	Cabecinha	UTAD/Centre for the Research and Technology of Agro-Environmental and Biological Sciences (CITAB), IUCN Commission on Ecosystem Management	From Ecosystem Services to Nature-based Solutions: Co-designing Pathways towards a Nature- and People-Positive Europe
16:20	Kerry	Waylen	James Hutton Institute, UK	Knowledge and Nature-based Solutions: priorities for strengthening NbS
16:40	Chiara	Catalano	Consiglio Nazionale delle Ricerche, Istituto di Ricerca sugli Ecosistemi Terrestri /	Fostering the uptake of NbS through digital tools: the NbS CataToolDecision Support System

			National Biodiversity Future Center (NBFC)	
16:50	Nicolas	Elleaume	Laboratoire d'Ecologie Alpine, CNRS, France	Co-designing adaptation scenarios that reconcile biophysical needs with local landscape values
17:00	Marcela	Prokopová	Global Change Research Institute of the Czech Academy of Sciences, Czech Republic	A comprehensive Approach to the selection of Nature-based Solutions to enhance landscape resilience
17:10	Silke-Silvia	Michelitsch	HYAM - BOKU University, Austria	Transformation through integration – looking back on more than two decades of river restoration at the Danube east of Vienna
17:20	Andrea	Motroni	Autonomous Region of Sardinia, Italy	Leveraging the potential of ecosystem services through nature-based solutions and a regional green-blue infrastructure: an ongoing experience from the Horizon DesirMED project in Sardinia
17.30	Anabela	Paula	Centre for Functional Ecology - Science for people & the planet, Terra associate laboratory, university of Coimbra (Portugal)	Integrating Ecosystem Services into Regional Planning: A Co-creation Approach to Sustainable Development in Portugal's Beira Interior region

III. ABSTRACTS:

The first author is the presenting author unless indicated otherwise

1. Knowledge and Nature-based Solutions: priorities for strengthening NbS

First author: Kerry Waylen
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This talk focuses on the issue of knowledge in and for NbS. We often hear calls for evidence-based decision-making, which sounds reasonable: but what do NbS practitioners actually need? What forms of knowledge should we collect? Given constraints of time and resources, what are our priorities for supporting knowledge use? Is a focus on knowledge even helpful, given the myriad challenges facing our attempts to upscale transformative NbS?

In this talk I will outline what types of knowledge we might expect to be relevant to NbS; the different individuals and groups we might expect to be involved in providing and sharing these knowledges; and the tactics and strategies we might expect to knowledge sharing. This is informed by literatures related to knowledge co-production, socio-ecological systems thinking and relational governance.

Then, I turn to consider what those working to achieve NbS think about knowledge. I draw on an ongoing longitudinal study of NbS in Scotland, as well as the experiences of experts around the world who represent some of the case studies described in the "Applying the IUCN Global Standard for Nature-based Solutions™: 21 case studies from around the globe." I explore their views on knowledge sharing, and how important they consider knowledge to be in the context of the challenges for NbS. Are there common themes to be found across all these diverse experiences?

Lastly, I conclude by identifying some priorities for strengthening knowledge-sharing to support NbS and so safeguard ecosystem's ability to provide services to people.

Keywords: governance, systems thinking, participation, collaboration, decision-making

2. Co-designing adaptation scenarios that reconcile biophysical needs with local landscape values

First author: Nicolas ELLEAUME
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Place-based climate adaptation can be supported by the deployment of nature-based solutions (NbS). Yet an implementation gap persists between biophysical needs and local uptake, partly due to issues of social acceptance. This study uses Participatory Scenario Planning in a French Alpine Living Lab to co-construct adaptation scenarios for 2050.

Through a one-year co-production process, we identified structural NbS (e.g. hedgerow plantations linked to land cover) and functional NbS (e.g. changes to agricultural practices linked to land use). During workshops, we collected individual preferences for nature's contributions to people (NCPs) expected from their implementation and synthesized these into productivist, naturalist and systemic archetypes of landscape values. We also collected suggestions for changes to land use and management. These qualitative narratives on future land management, combined with archetypes of values, informed the logic of three scenarios: Inertia, Intensification, and Multifunctionality.

We translated these scenarios into land use maps by determining transition volumes based on the scenario narratives and defining topographical or access constraints to feasibility. For land cover changes (hedgerows), we built a spatial model that integrated local constraints and the biophysical need for NCPs. This model was weighted according to the specific preference archetypes of each scenario, and was used to produce maps of ideal hedgerow plantations.

We then modelled the supply of selected NCPs to assess each scenario's capacity to mitigate the impact of climate change by 2050. To address the main contrasts between stakeholder expectations, we analysed the trade-offs between material and regulating NCPs. Our results suggest that ignoring the interplay between landscape structure and management intensity could result in maladaptation. By contrasting the three scenarios, this study demonstrates that integrating diverse local values and operational constraints is critical to the spatially-explicit deployment of nature-based climate adaptation.

Keywords: Climate Adaptation, Nature-based Solutions, Nature's Contribution to People, Participatory Scenarios, Mountain, Land Use and Land Cover

3. A Comprehensive Approach to the Selection of Nature-Based Solutions to Enhance Landscape Resilience

First author: Ondřej Cudlín
Other author(s): Vilém Pechanec, Lenka Štěrbová, Renata Včeláková, Ondřej Cudlín, Jan Purkyt, Jiří Jakubínský, Pavel Cudlín,
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Assessing habitat vulnerability and resilience, as well as key ecosystem functions (EF) and services (ES), in the context of land degradation driven by global change is increasingly important. This contribution presents an integrated framework for evaluating landscape vulnerability and resilience to support prioritization and spatial targeting of nature-based solutions (NBS), such as stream restoration, changes in forest tree composition or structure of agricultural land. The first phase applies the Environmental Sensitivity Area Index (ESAI), combining 20 parameters related to soil, climate, vegetation, and land use. Landscapes are classified into eight vulnerability categories linked to land degradation risk. The second phase assesses selected EF and ES, including local climate regulation via evapotranspiration, climate mitigation through carbon storage, extreme runoff regulation by water retention, and habitat provision.

This evaluation, based on biophysical indicators, is classified using a five-level semi-quantitative scale. The third phase addresses landscape resilience under climate change, considering climate-related risks and resilience factors such as heterogeneity, species diversity, and ecological connectivity. In the fourth phase, results of vulnerability, resilience and the status of EF/ES are integrated into a 100 × 100 m grid and compared to one another. Based on this comparison, the urgency of mitigation or adaptation measures and the most suitable intervention types are identified for each grid cell. The final phase selects specific NBS for each cell based on a combination of critical parameters from previous steps and simple guidelines from an NBS Catalogue (e.g., restoring a connected mosaic of bank and wetland habitats; establishing "stepping stones" – a group of trees or solitary trees in a landscape). Results are communicated to stakeholders via an interactive web application enabling detailed georeports. The framework is demonstrated through a case study in the Krušné Mountains, north-western Czech Republic near the German border.

Keywords: Assessment of ecosystem functions, Impacts of climate change, Assessment of biodiversity, Habitat biodiversity, Adaptation measures

4. Transformation through integration – looking back on more than two decades of river restoration at the Danube east of Vienna

First author: Silke-Silvia Michelitsch
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Integrating nature-based solutions with the ecosystem services framework provides a holistic approach to river restoration by linking ecological processes with societal benefits. This combined perspective supports multifunctional restoration measures that enhance biodiversity, ecosystem functioning, and climate resilience while addressing human demands. The following case study highlights how an integrative approach in river restoration promotes achieving overarching aims to mitigate biodiversity loss, climate change as well as other societal challenges. The Danube east of Vienna is one of the last two free-flowing stretches of the Danube in Austria. Extending over approximately 48 km, from sections of the Vienna metropolitan area to the Slovakian border, the Donau-Auen National Park was established in 1996 to safeguard river–floodplain ecosystems from further anthropogenic degradation. First restoration attempts were already made earlier by reconnection of side channels and removal of river embankments. The catalogue of measures, as a lesson learned document from former restoration efforts at this river section, was defined, which embraces river morphology, biodiversity, navigation and flood protection. The integrative approach at the Danube was set through step-by-step empowerment of stakeholders from all relevant sectors in river restoration. Initial focus was on interdisciplinary planning and the development of a shared management framework for the river section. Experts from ecology, navigation, hydraulic engineering, and regional economics jointly defined planning principles to harmonise ecological, water management, and navigation objectives, including flood protection. Subsequently, stakeholder participation was strengthened through the establishment of a stakeholder advisory board, providing a formal platform for involvement within the legal framework. Representatives with domain-specific expertise were selected by the two main stakeholder groups—ecology and navigation—and originated from diverse institutions, including NGOs, ministries, municipalities, and associations. The Danube east of Vienna is a role-model for comparable navigable river systems worldwide in terms of biodiversity net gain and adaptive management.

Keywords: river restoration, NbS, catalogue of measures, Danube, Austria

5. From Ecosystem Services to Nature-based Solutions: Co-designing Pathways towards a Nature- and People-Positive Europe

First author: Edna Cabecinha
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Achieving a nature- and people-positive Europe is a central objective of the European Green Deal and requires policy frameworks that effectively operationalise ecosystem services (ES) in the design, governance, and evaluation of nature-based solutions (NbS). This contribution presents policy-relevant lessons from the application of the IUCN Global Standard for NbS in the Paiva River watershed (Portugal).

NbS were co-designed through a structured multi-stakeholder process that integrated ES assessments into landscape planning, supporting objectives of the EU Biodiversity Strategy for 2030 related to ecosystem restoration, participatory governance, and spatial coherence. The NbS Self-Assessment Tool was applied not only as an evaluation framework, but also as a learning and governance support instrument to enhance transparency, accountability, and adaptive decision-making.

Three key lessons emerge with direct relevance for EU-level policy and implementation. First, the participatory identification of societal challenges and ES priorities proved essential for ensuring policy relevance, social legitimacy, and alignment with territorial needs, supporting strong performance under Criterion 1 and reinforcing EU commitments to inclusive, place-based approaches.

Second, sustained cross-sectoral and multi-level engagement facilitated the mainstreaming of NbS into existing policy instruments, including spatial planning and conservation management. This highlights the need for EU guidance and funding mechanisms that support long-term institutional anchoring of NbS beyond project-based initiatives.

Third, limited integration of ES trade-offs, economic viability, and sustainable financing constrained performance under Criteria 4 and 6. This underscores a persistent gap in current practice and points to the need for EU decision-making frameworks to better integrate economic analysis and financing strategies, particularly to support climate resilience objectives under the EU Climate Change Adaptation Strategy.

Overall, this case demonstrates that embedding the IUCN Global Standard within ES-based co-design processes can enhance policy coherence and support the upscaling of NbS as credible pathways towards a nature- and people-positive Europe.

Keywords: Nature-based solutions; ecosystem services; IUCN Global Standard; Co-management, Atlantic landscapes

6. Fostering the uptake of NbS through digital tools: the NbS CataTool Decision Support System

First author: Chiara Catalano
Other author(s): Giulio Hasanaj , Enrico Baglione, Costanza Carbonari, Laura Sandra Leo, Mariachiara Chiantore, Roberto Bologna, Chiara Baldacchini, Carlo Calfapietra
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Nature-based Solutions (NbS) represent a strategic approach simultaneously addressing the climate crisis, biodiversity loss, and other societal challenges. Their growing relevance within European policy frameworks - including the Green Deal, the EU Biodiversity Strategy, and the Nature Restoration Regulation- has made the development of evidence-based Decision Support Systems (DSS) necessary to support their planning and implementation.

The NbS CataTool DSS was developed within the National Biodiversity Future Center (NBFC), building on the widely adopted NbS definitions formulated by IUCN (2016) and UNEA (2022), with the aim to facilitate the NbS uptake across Mediterranean urban, terrestrial, and marine contexts. The tool is grounded in a comprehensive taxonomy comprising more than 100 NbS, coupled with an interconnected database of case studies that integrates scientific evidence with practical decision-making needs.

The CataTool offers three main functionalities:

1) An NbS Selection Tool, which guides users through a stepwise screening of theoretical solutions based on NbS types, implementation contexts, and societal challenges;

2) A Learning Tool enabling open exploration of NbS through predefined attributes;

3) A Case Study Finder, which provides georeferenced, metadata-rich examples assessed through a shared evaluation framework.

Both theoretical solutions and case studies are described using synthetic cards, detailed sheets, and scoring following an expert-based evaluation framework derived from the European Commission NbS impact evaluation handbook (2021) and aligned with the global societal challenges defined in the NetworkNature Research and Innovation Roadmap on NbS (2023). In addition, case studies are linked to the voluntary self-evaluation framework of the IUCN Global Standard for NbS (2020).

The prototype of the DSS was released in May 2025 as a web-based application (https://tinyurl.com/CataTool) freely accessible on the NBFC Biodiversity Gateway (https://www.biodiversitygateway.it/en/). The system is currently positioned between TRL4 and TRL5, thus requiring further development and testing with relevant stakeholders outside the developing environment.

Keywords: Standardization, Innovation, Planning, Monitoring, Evaluation

7. Leveraging the potential of ecosystem services through nature-based solutions and a regional green-blue infrastructure: an ongoing experience from the Horizon DesirMED project in Sardinia

First author: Andrea Motroni
Other author(s): Sabrina Lai , Corrado Zoppi, Laura Santona, Silvia Serra, Carla Asquer, Giovanni Satta, Micol Vascellari, Mario Deriu
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Green infrastructure and nature-based solutions, with their provision of multiple ecosystem services in both urban areas and rural landscapes, are key elements to leverage transformative pathways towards climate change adaptation.

This is of particular relevance in Mediterranean insular contexts. On the one hand, these areas are exposed to climate change–related risks, including sea-level rise, coastal erosion and submergence, as well as biodiversity loss driven by changes in precipitation regimes and temperature patterns. On the other hand, their insularity exacerbates environmental vulnerabilities, complicates risk governance and management, and amplifies anthropogenic pressures, most notably those associated with tourism and uneven population distributions concentrated along coastal zones.

Within the context of the DesirMED project, funded through the HORIZON-MISS-2022-CLIMA-01 call, Sardinia aims at testing innovative governance solutions through ecosystem-based approaches, with a view to developing a regional strategy for a green-blue infrastructure and to mainstreaming nature-based solutions for climate adaptation and reduction of biodiversity loss, particularly at the local level.

Ongoing activities within the project include a comprehensive twin assessment of ecosystem services from spatial and biophysical perspectives, as well as ecological connectivity. Based on these assessments, multiple solutions are being tested, including seagrass afforestation plans, sandy beach restorations, and a regional strategy for the regional green and blue infrastructure grounded on a spatially-explicit biophysical assessment of the potential supply of multiple ecosystem services and on the identification of linear corridors connecting core areas. This approach is of paramount importance for implementing the Regional Strategy for Climate Change Adaptation and achieving the 2030 Biodiversity Strategy goals in Sardinia.

Preliminary results concerning monitoring methods and governance agreements will be presented, together with the forthcoming evolution of project actions and implementation.

Keywords: Climate change adaptation, Regional strategies and governance, Green-blue infrastructures, Nature-based solutions

8. Implementing the IUCN Global Standard: Global lessons for a Nature- and People-Positive Future

First author: Emmanuelle Cohen-Shacham
Other author(s): Edna Cabecinha
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Nature-based Solutions (NbS) require a robust operational framework to be effectively planned and implemented, and to support them address global societal challenges at scale. This presentation introduces a comprehensive publication highlighting the practical implementation of the IUCN Global Standard for Nature-based Solutions™ around the globe.

This work highlights 21 case studies from diverse (marine, freshwater, terrestrial, and urban) ecosystems, designed to address various societal challenges, and which were assessed against the Global Standard's eight criteria and 28 indicators, using the IUCN Self-Assessment Tool (NbS-SAT). The assessments' results reveal important insights into the state of NbS implementation. While NbS interventions generally excel in addressing societal challenges (Criterion 1) and ensuring net gains to biodiversity (Criterion 3) - thereby directly supporting a nature-positive agenda - significant gaps remain. Specifically, economic viability (Criterion 4) and the equitable balancing of trade-offs (Criterion 6) were identified as the weakest criteria, often restricted by limited data, funding constraints or policy gaps.

Crucially for a "people-positive" Europe, the findings underscore that successful implementation relies on inclusive governance and the active empowerment of Indigenous Peoples and Local Communities. The main results and lessons learned will be presented, to help upscale high-quality NbS that deliver benefits for both people and nature.

Keywords: Nature-based Solutions (NbS); IUCN Global Standard; Biodiversity net-gain; Societal challenges; Inclusive governance

9. Implementing the IUCN Global Standard: Global lessons for a Nature- and People-Positive Future

First author: Anabela Paula
Other author(s): Natália Roque, Luciana Frazão, Albano Figueiredo, Paulo Fernandez, Helena Freitas, Paula Castro
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The Beira Interior region of Portugal, a rural area facing significant socio-economic challenges and increasing wildfire risks due to agricultural abandonment, provides a critical case study for integrating ecosystem services (ES) into regional planning. This study employed a co-creation approach to map nine key ES—provisioning (crops, livestock, biomass), regulating (soil quality, climate regulation, fire protection), and cultural (recreation, cultural landscapes, legacy)—using ES mapping and hot/cold spot analysis. A cluster analysis of landscape typologies, based on land use, diversity, and configuration metrics, revealed strong associations between traditional agricultural landscapes and provisioning and cultural services, as well as between forested areas and climate-regulating services. Our findings highlight the multifunctionality of heterogeneous landscapes, such as agricultural mosaics and agroforestry systems that integrate traditional agriculture with native forests. These landscapes were identified as critical for balancing multiple ES, enhancing landscape resilience, and providing co-benefits for climate adaptation and rural livelihoods. Stakeholder engagement through co-creation workshops enabled the identification of strategic priorities via a SWOT–TOWS methodology, which validated these findings and emphasized the need for innovation and the valorisation of cultural landscapes.

Keywords: Ecosystem services, co-creation, regional planning, landscape resilience