SESSION DESCRIPTION

ID: X10

Linking land, freshwater, and sea: Nature-based Solutions for healthy and resilient aquatic ecosystems

Hosts:

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Abstract:

Marine, coastal, and freshwater ecosystems are strongly connected by the spatial flows of energy and matter, as well as the movement of organisms. These cross-realm connections shape how impacts imposed by drivers of change (e.g., land-use dynamics, climate change) are propagated, with anthropogenic pressures producing direct and indirect consequences across terrestrial, freshwater, and marine systems. Although the terrestrial-freshwater-marine ecosystems continuum is well recognised, environmental research and management have often treated realms in isolation, hindering holistic actions to mitigate human impacts. Nature-based Solutions (NbS) offer a promising approach by tackling pressures on freshwater, coastal, and marine waters while simultaneously contributing to human well-being through the delivery of a broader range of ecosystem services (ES).

However, NbS planning and testing has mainly been conducted at restricted spatial scales targeting specific ecosystems, limiting scalability and cross-realm application. Moreover, current policies may not fully recognise the value of NbS for mitigating pressures on aquatic ecosystems. How can we best integrate ES with NbS to ensure scalability? How can we better equip planning processes with operational approaches and tools that support the seamless transition from vision to action? How can water-management frameworks fully benefit from an integrated ES–NbS approach? How do perceptions, institutional settings and stakeholder involvement affect the upscaling and implementation of integrated ES–NBS approaches?

We invite contributions on methods for mapping and modelling water-related ecosystem services, approaches for NBS planning and prioritization in aquatic environments, and practical applications of these insights in participatory decision-making and land and water governance involving diverse stakeholders. We welcome examples across aquatic realms, from freshwater to coastal and marine environments.

Goals and objectives of the session:

1. Synthesise recent methodological advances in aquatic ES mapping/modelling integrating realms, from land to sea.
2. Showcase examples that prioritise and implement NbS effectively, highlighting barriers and enablers.

3. Facilitate exchange on best practices for integrating ES and NbS approaches into decision-making and water management.

Planned output / Deliverables:

Strategic perspective paper on operational and forward-looking approaches for integrating ES into the design of NbS. Special attention will be given to the mapping and modelling of ES and their role in guiding the design, prioritization, and optimization of NbS to address major environmental challenges while maximizing their multifunctionality. Drawing on case studies, the paper will showcase tools and methods that enable the effective design and implementation of NbS across terrestrial, freshwater, and marine ecosystems, with the potential to strengthen their consideration in policy and decision-making.

Session format:

Two slots of 1.5 h each. The session will begin with a 10-minute introduction, followed by presentations following a 10+5 format (10 minutes for the talk and 5 minutes for questions). Each slot will be followed by a roundtable discussion or breakout groups., providing space for all participants to exchange perspectives.The exact balance between presentations and discussion may be adjusted depending on the number of speakers and the desired level of interaction.

Voluntary contributions accepted:

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

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