



Conference Abstract

# The holistic ecosystem research approach of eLTER and practical implications for building a Research Infrastructure

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## Abstract

Driven by the increasing awareness that innovative approaches to solving the problems at hand in our complex human-environment interactions require closer collaboration among scientific disciplines and communities, inter- and transdisciplinary integration is continuously gaining importance in R&D agendas and Research Infrastructure (RI) development strategies. In addition, the complexity and costs of RIs have substantially increased in many realms triggered by technological developments and the need to organize beyond national and continental boundaries. This suggests multi-, inter- and transdisciplinary collaborations, sharing and multiple usage of infrastructures. Alignments of infrastructure developments needed for this purpose require a conceptual framework for disciplinary integration suited for identifying common approaches and resulting infrastructure design and service components. The talk reports recent advancements in

building a common theoretical base between major communities that is - inter alia - underlying the ongoing implementation of the Integrated European Ecosystem, critical zone and socio-ecological Research Infrastructure (eLTER RI). An overview of considered theories on within- and cross-scale interactions and feedback loops will be given and the pathway to the eLTER "Whole System Approach" will be presented. We will also expand on the potential of such a unifying approach in theory-guided integration and division of tasks amongst related environmental RIs. Expected practical implications are answers to questions like where concretely existing and planned European environmental RIs are challenged to interact in response to common overarching questions, and what practical for and mechanisms (across RIs) would be needed to bridge the gap between research teams driven (bottom-up) efforts and the centralistic RI design and operations.

## **Presenting author**

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## **Conflicts of interest**

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