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Conference Abstract

DANUBIUS-ERIC: Engaging with Environmental Research Infrastructures from Rivers to Seas

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Abstract

Addressing the scientific and societal challenges specific of the land-sea interface require coordinated environmental observations, interdisciplinary research and collaboration among Research Infrastructures capable of connecting knowledge, data, services and expertise across freshwater, transitional and marine environments.

DANUBIUS-ERIC, the European Research Infrastructure Consortium dedicated to advancing research on River-Sea Systems, provides a framework for strengthening this integrated approach. Through its Supersites, Nodes and supporting facilities, DANUBIUS-ERIC brings together observation, analysis and modelling, supported by harmonised methods and data integration, addressing the continuum from river source to estuary, delta and coastal sea. It supports the investigation of interconnected environmental processes and the transfer and transformation of water, sediments, nutrients and contaminants along the river-sea continuum. Its focus on River-Sea Systems creates opportunities to connect these capabilities with the complementary expertise and facilities offered by complementary European research infrastructures, such as JERICO, ICOS, eLTER, LifeWatch, EMBRC, EPOS, EMSO, Euro-Argo and ACTRIS. Such cooperation could link observations and expertise across inland waters, transitional environments and coastal and marine systems.

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This is presently exemplified in the EU funded LandSeaLot project (Land-Sea Interface: Let's Observe Together!) in which DANUBIUS, JERICO and ICOS have joint forces to elaborate a Common Observation Strategy for the land-sea interface, with the support of other environmental RIs. It illustrates the importance of coordinated Earth and *in situ* observations, knowledge exchange and interoperability. LandSeaLot identified gaps in existing observation capacities and works on: defragmentation of observations, harmonising of essential environmental variables, improving data integration across spatial and temporal scales and strengthening of the cooperation among complementary Research Infrastructures. These efforts can contribute to a more coherent observing system, capable of capturing the interactions between natural processes and human pressures along the land-sea interface. By connecting complementary research infrastructures and observing communities, DANUBIUS-ERIC can help turn integrated knowledge of the river-sea continuum into evidence for environmental management and decision making.

Keywords

river-sea continuum, environmental Research Infrastructures, integrated observations, land-sea interface

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Conflicts of interest

The authors have declared that no competing interests exist.