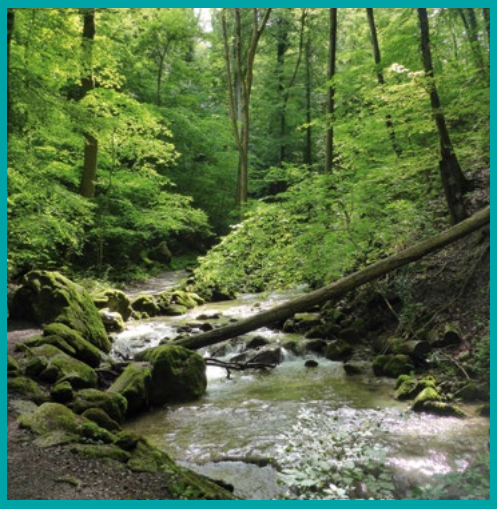

Stream-riparian network.

Partners:

Swedish University of Agricultural Sciences, Uppsala, SWEDEN (Coordinator)

Ghent University, Gent, BELGIUM

Helmholtz-Centre for Environmental Research, Leipzig, GERMANY

Norwegian Institute for Water Research, Oslo, NORWAY

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CROSSLINK - Understanding cross-habitat linkages between blue and green infrastructure to optimize management of biodiversity, ecosystem services and multiple human uses

Context

Stream-riparian networks are key components of green and blue infrastructure (GBI) that underpin landscape integrity by transporting nutrients, regulating floods, buffering human impacts and supplying fresh water. Unfortunately, stream-riparian networks are also subject to multiple human pressures (e.g. from agriculture and hydropower) that affect longitudinal and lateral connectivity, driving habitat and diversity losses, threatening ecosystem services, and causing stakeholder conflicts. There is thus a pressing need to understand the importance of connectivity within these networks, in particular its effects on biodiversity and ecosystem functioning and services, and to apply this understanding in managing stream-riparian GBI for both natural values and societal needs.

Main objectives

CROSSLINK aims to:

1. evaluate how the extent, spatial arrangement and connectivity of riparian-stream GBI affects biodiversity, and ecosystem functioning, services, and resilience in forested, urban and rural settings, and
2. to produce an optimization framework capable of balancing multiple values, uses and needs, including biodiversity, water provisioning and purification, exploitation for hydropower, and aesthetic values, in riparian-stream networks.

Main activities

The CROSSLINK project will analyze existing data and conduct extensive novel and spatially explicit field studies. A GBI asset portfolio will be constructed, comprising biodiversity, ecosystem processes and services, flood protection and resilience properties. Relationships between the portfolio elements, spatial connectivity and human impacts are analyzed and incorporated into an optimization platform, which identifies spatial configurations and strategies for GBI that minimize management trade-offs and maximize multifunctionality.

Stakeholders assist the CROSSLINK project in identifying pressures and priorities, areas of conflict, and possible management actions. CROSSLINK's findings, including optimal solutions for GBI planning, will be translated into a learning-based environment, allowing stakeholder analysis of tradeoffs/ synergies between multiple values/goals in GBI management.