Introducing a new COST Action: ES1306: Connecting European Connectivity Research

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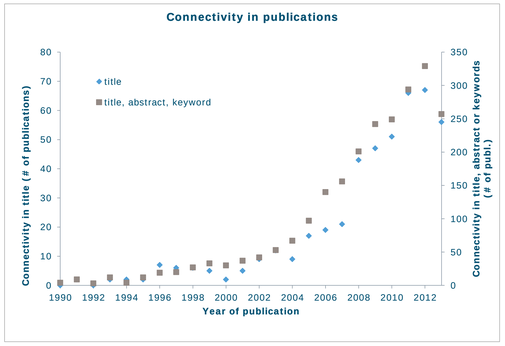
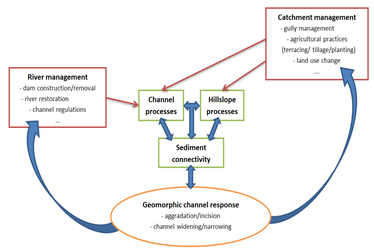
Connectivity of water and sediment

- Understanding/predicting transfer of surface water and sediment and associated substances through landscapes (on and off-site impacts; ecology)
- Studied in many institutes around Europe and beyond
- New concept as conceptual framework: connectivity
- Many types of connectivity but we focus on water (hydrological) and sediment connectivity

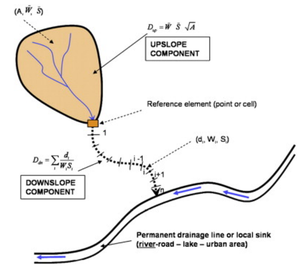


Why COST Action? There is a need to: COST will enable:

- Harness experience and expertise: cross-fertilization Hydrology/eco-morphology/Soil Science, Ecology
- From parallel single discipline projects to concerted interdisciplinary research; from case studies to more generic, comparable research
- Definitions, concepts and methodological approaches to coordinated research activity along agreed lines
- Connectivity as a management tool
- greater awareness and attract others to be involved
- Immediate benefit for **existing projects** and a springboard for the **development of future research projects**.



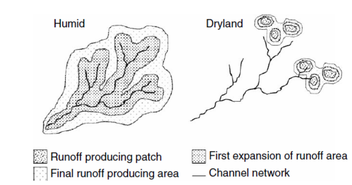
Source: Poeppl, Keesstra, Maroulis, Barneveld submitted to River research applications. he influence of river and catchment management on sediment connectivity and channel morphology in small- to meso-scale fluvial systems



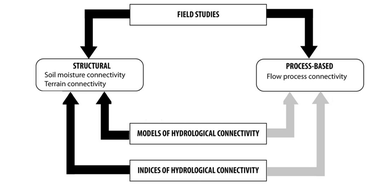
Source: Borselli, Cassi, Torri, 2008. Prolegomena to sediment and flow connectivity in the landscape: A GIS and field numerical assessment. Catena 75, 268-277

Main objective COST Action

To form an EU-spanning **network of Connectivity scientists**, to **share expertise** and develop a consensus on the **definition** and **scientific agenda** regarding the emerging field of water and sediment connectivity within Europe (and the diversity of European environments), and to **identify potential for synergy with other disciplines** and research applications in practise.



Source: Bracken and Croke, 2007. The concept of hydrological connectivity and its contribution to understanding runoff-dominated geomorphic systems. Hydrol. Process. 21, 1749–1763



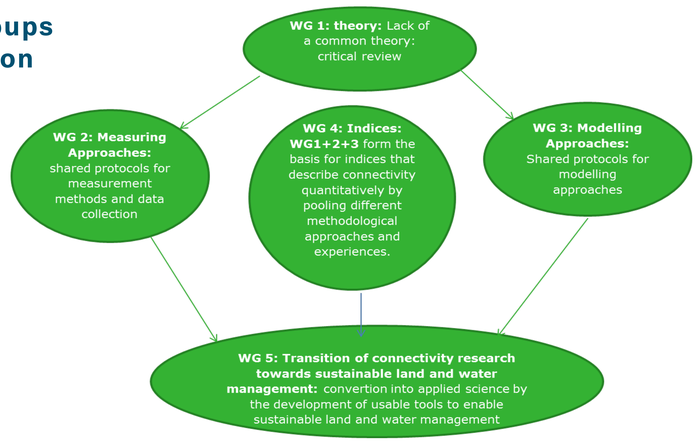
Source: Bracken, Wainwright, Ali , Tetzlaff , Smith , Reaney, Roy, 2013. Concepts of hydrological connectivity: Research approaches, pathways and future agendas . Earth-Science Reviews 119 (2013) 17–34

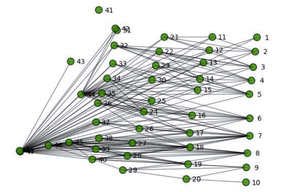
Sub-objectives COST Action

The Action will investigate connectivity in Earth Science in order to develop the concept so that it may be used to prevent and mitigate societal, economical and biophysical hazards.

1. Network of Earth scientists (different disciplines) of connectivity research, promote Early Career Researchers (ECRs).
2. **Critically evaluate methodologies** (theory development; experimental research; modelling)
3. **Generate an inventory** of **definitions** and concepts of connectivity: **potentially valuable methodologies** from different disciplines and theories gaps of knowledge and propose a **prioritization for research**
4. Organize of **workshops, trainings**, and ad hoc **'think tanks'** related with connectivity for **ECRs and PhD** students
5. **Disseminate its deliverables towards scientists and end-users**

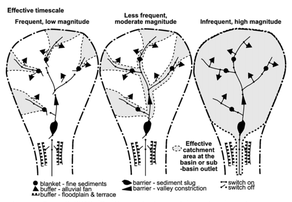
Working Groups of COST Action





By Rens Masselink

Photo by Jantiene Baartman

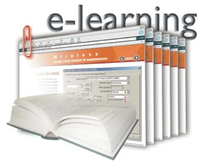


Source: Fryirs K. 2012. (Dis)Connectivity in catchment sediment cascades: a fresh look at the sediment delivery problem. Earth Surface Processes and Landforms 38(1): 30-46.

Dissemination plan

Researchers in and outside COST Action	• **Website** with discussion platforms; web-conferences, for both research and educational purposes • **Short Term Scientific Missions** for PhD and Senior scientists • **workshops** and **conferences** • **Kick-off and final conference** with invited key-scientists of a variety of disciplines and **decision makers** • **Think tanks** on specific research questions find consensus/solutions • **exchange** of students (mostly PhD) among Actions partners • **Summer schools** (8-10 days) on research sites of partners • **Scientific publications**, including special issue publications in open access peer review journals
Land and water managers	• Website with e-learning modules • General publications in public media • Workshops designed for this target group
Policy makers	• Final conference • Info on website
Local stakeholders / general public	• Brochures and flyers in different languages • Online database with readily retrievable data accessible to all stakeholders

Website: communication, education and re-use of data and insights



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