

## Research Project

### Compound specific stable isotopes to trace sediment origin and connectivity of sediment source areas to freshwater systems

#### Third-party funded project

**Project title** Compound specific stable isotopes to trace sediment origin and connectivity of sediment source areas to freshwater systems

**Principal Investigator(s)** [Alewell, Christine](#) ;

**Co-Investigator(s)** [Di Bella, Katrin](#) ;

**Organisation / Research unit**

Departement Umweltwissenschaften / Umweltgeowissenschaften (Alewell)

**Department**

**Project start** 01.12.2015

**Probable end** 31.12.2017

**Status** Completed

Many European freshwaters have recovered from the impacts of acidification and contaminant input. However, impairment from sediment input (and thus also from eutrophication) remains a dominant threat to freshwater systems. As such, the COST Action ES1306 with its main aim to share expertise on water and sediment connectivity in Europe a timely network to bring together and optimize the existing knowledge in this field. As we aim to reconstruct main sediment sources to the Baldeggersee (Canton Luzern, Switzerland) over space (catchment scale) and time (back to the 1950ties) with a combination of compound specific isotope analysis (CSIA) and connectivity modelling, our project is bedded into the main aims of the Action with simultaneously enabling us to build on the emerging network on connectivity knowledge.

Sediment source areas in the catchment and sediment quantity to specific river sections will be identified with a modified sediment connectivity index. Additionally, sediment origin and quantity will be assessed with CSIA. Variation of sediment origin will be determined via analysis of suspended sediment samples taken at base and high flow conditions (short-term) and analysis of lake sediment core samples (long-term).

The expected outcome of the proposed project is the determination of the dynamic of sediment origin over space and time, as a basis for future management options to reduce sediment loading to the Baldeggersee.

**Financed by**

Swiss Government (Research Cooperations)

**Add publication**

**Add documents**

**Specify cooperation partners**