



The ESF Network SEDIFLUX: Sedimentary Source-to-Sink-Fluxes in Cold Environments

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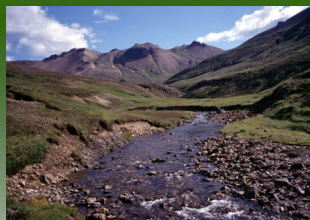
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River system in northern Finnish Lapland



Drainage basin in eastern Iceland



Drainage basin with lake in northern Swedish Lapland



Delta and slope processes in northern Swedish Lapland



Drainage outlet in northern Swedish Lapland



Coastal erosion in northern Siberia

Coordination Committee

The Coordination Committee consists of scientists from seven countries:

- Achim A. Beylich, Network Convenor, Norway
- Samuel Etienne, France
- Bernd Etzelmüller, Norway
- Vyacheslav V. Gordeev, Russia
- Jukka Käyhkö, Finland
- Volker Rachold, Germany
- Andrew J. Russell, UK
- Karl-Heinz Schmidt, Germany
- Þorsteinn Sæmundsson, Iceland
- Fiona S. Tweed, UK
- Jeff Warburton, UK

Background

Climate change will cause major changes in the Earth surface systems and the most dramatic changes are expected to occur in the cold climate environments of the Earth. Cold climate landscapes are some of the last wilderness areas containing specialized and diverse plants and animals as well as large stores of soil carbon. Geomorphological processes, operating at the Earth's surface, transferring sediments and changing landforms are dependent on climate, vegetation cover and human impacts and will be significantly affected by climate change. In this context it is a major challenge to develop a better understanding of the complex ecosystems and the mechanisms and climatic controls of sedimentary transfer processes in cold environments. More reliable modelling of sediment transfer processes operating under present-day climatic settings is needed to determine the consequences of predicted climate change. It is necessary to collect and to compare data and knowledge from a wide range of different high latitude and high altitude environments and to develop more standardized methods and approaches for future research on sediment fluxes and relationships between climate and sedimentary transfer processes. In Europe the wide range of high latitude and high altitude environments provides great potential to investigate climate-process relationships and to model the effects of climate change by using space-time substitution. The highly relevant questions to be addressed need a multidisciplinary approach and the joining of forces and expertise from different scientific fields. Especially a closer cooperation between geoscientists and biologists / ecologists is urgently needed and links between running global change programmes and the ESF Network introduced here are of major importance.

Aims of the Network

The ESF Network "Sedimentary source-to-sink-fluxes in cold environments" (SEDIFLUX, 2004 – 2006), is bringing together leading scientists, key researchers, young scientists and research teams from different fields. The large number of projects run by Network participants demonstrates the high level of research activity of scientists working on sediment fluxes in different cold environments. The Network forms a framework for an integrated and multidisciplinary investigation of the research topic and is a catalyst for strengthening and extending contacts and exchange.

Organization of SEDIFLUX

SEDIFLUX is organized in four Working Groups:

- I. Selection of critical test catchment
- II. Analysis of geographical and geological setting of test catchments
- III. Analysis of present-day fluxes
- IV. Integration, data management and modelling

SEDIFLUX Activities include:

- Four Science Meetings in Sauðárkrúkur (Iceland, June 2004), Clermont-Ferrand (France, January 20th-22nd, 2005), Durham (UK, December 15th-19th, 2005), Trondheim (Norway, October 2006)
- Coordination Committee Meetings attached to these Science Meetings,
- A Session organized in association with ESF SEDIFLUX at EUCOP II 2005, Potsdam, Germany, June 12th-16th, 2005,
- Development of a SEDIFLUX Database,
- Publication of a SEDIFLUX Handbook (Guidelines),
- Journal Publications (Special Issues),

- Publication of Abstract Volumes and Reports,
- Development of links to other networks and programmes
- Initiation of project/programme proposals both at national and international level (IAG WG SEDIBUD, EU FP6 DYNAFLUX, etc.)
- Activities related to IPY 2007/2008 (IPY EoI SEDIFLUX)
- Diffusion and dissemination of Network activities and outputs by using electronic media (Web-pages, Newsletter, Forum).

A strong monitoring and operational data collection and more standardized methods provide a baseline for the development of reliable models and for future research in the changing cold environments.



Slope processes and fluvial processes in the Alps

For further information please contact the Network Convenor:

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