ESF Network SEDIFLUX

Sedimentary Source-to-Sink-Fluxes in Cold Environments

SEDIFLUX NEWSLETTER

December 1st, 2004

- 2004 B -

Content

1. INFORMATION ON SEDIFLUX

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, transfering 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 for 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 co-operation between geoscientists and biologists / ecologists is needed. The ESF Network “Sedimentary Source-to-Sink-Fluxes in Cold Environments” (SEDIFLUX, 2004 – 2006), will bring together leading scientists, young scientists and research teams from different fields. The large number of projects run by the ESF Network participants demonstrates the high level of research activity of scientists working on sediment fluxes in different cold environments. The Network will form a framework for an integrated and multidisciplinary investigation of the research topic and will be a catalyst for strengthening and extending contacts and exchange.

The Steering Committee of SEDIFLUX consists of scientists from seven countries:

- Achim A. Beylich (Co-ordinator of SEDIFLUX), Trondheim, Norway;
- Samuel Etienne, Clermont-Ferrand, France;
- Bernd Etzelmüller, Oslo, Norway;
- Vyacheslav V. Gordeev, Moscow, Russia;
- Jukka Käyhkö, Turku, Finland;
- Volker Rachold, Potsdam, Germany;
- Andrew J. Russell, Newcastle, UK;
- Karl-Heinz Schmidt, Halle/S., Germany;
- Þorsteinn Sæmundsson, Sauðárkrókur, Iceland;
- Fiona S. Tweed, Staffordshire, UK;
- Jeff Warburton, Durham, UK.

Network activities include four Science Meetings in Sauðárkrókur, Iceland (June 18th-21st, 2004, see Report under 3. in SEDIFLUX Newsletter 2004 A), Clermont-Ferrand, France (January 20th-22nd, 2005, see below 4.), Durham, UK (December of 2005) and Trondheim, Norway (October of 2006), Steering Committee Meetings attached to these Science Meetings, a Session (Session 05) "Hydrology and sediment fluxes in permafrost regions (organized in association with: ESF project SEDIFLUX)" at the 2nd European Permafrost Conference (EUCOP) in Potsdam, Germany (June 12th-16th, 2005, see below 4.), Journal Publications (Special Issues, see below 3.), Publication of Abstract Volumes, Publication of a SEDIFLUX Handbook (Manual, Guidelines for Process Monitoring Programmes in selected cold climate catchments), development of a SEDIFLUX Database, and the diffusion and dissemination of Network activities and outputs by using electronic media (Webpages, Newsletters, Forum, etc.).

A strong monitoring and operational data collection and more standardized methods will provide a baseline for the development of reliable models and for future research in the changing cold environments. Apart from further collaborations and collaborative research activities project and programme proposals both at national and at the European level will be discussed and initiated. For further information see http://www.esf.org/sediflux and please contact the SEDIFLUX Co-ordinator: Achim A. Beylich (Achim.Beylich@ngu.no)

2. INFORMATION FOR COMPLETING THE SEDIFLUX DATABASE PROJECT, STUDY SITE AND MEMBER INFORMATION FORMS

Background:

The European Science Foundation (ESF) Network SEDIFLUX (Sedimentary Source-to-Sink-Fluxes in Cold Environments) was approved by the ESF Network Group in November 2003 for a three-year period (01.01.2004 – 31.12.2006).

The aim of this Network is to perform the quantitative analysis of sediment transfers in cold environments that has been lacking so far. Such an analysis clearly depends on the level of climate change expected. However the major focus of this Network is on the impact on sediment transfer processes of a variety of climate change scenarios and is therefore concentrating on the sediment flux processes from source to sink. To realize a sufficiently integrated study of source-to-sink sediment fluxes in cold environments, this Network is analysing the key processes of weathering, chemical denudation, erosion, mass movements, fluvial transport, and sedimentation in lakes and coastal areas. Bringing these different weathering, transfer and sedimentation processes within one broad field of study requires collaboration between a variety of specialists working in the respective subjects. This Network is bringing together both leading and young scientists in these fields, and creating a unified approach that will take research forward within the specific focus of climate change impact on the surface.

One of the strengths of this Network is the wide variety of scientific fields being harnessed, including physical geography, quaternary geology, oceanography, limnology, climatology, civil engineering, paleobiology, and ecology. The Network will also consider the impact of human activity on the environmental sites being studied and how this might relate to climate change. Another important aspect to consider is the possible impact of climate change on the soil carbon budget. If global warming led to a net release of carbon into the atmosphere from the Earth`s surface, this could have a positive feedback accelerating in turn the warming process.

The Network is meant to build on existing or earlier work carried out both within Europe and elsewhere in different study areas. Indeed the large number of current related research projects, funded by a wide variety of agencies, highlights the interest already in this field. The Network shall take this opportunity both to strengthen the existing ties and build up new collaborations within Europe and reaching out to other parts of the world. It will also stimulate research in parts of Europe such as Poland and Russia where activity has been low in the recent past.

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 effects of climate change by using space for time substitution.

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

First steps to do:

As a first step within the ESF SEDIFLUX Network we would like to ask all SEDIFLUX members to spend some time and to provide some information on:

1) Their ongoing and recently completed projects which are scientifically related to SEDIFLUX (see Form A)
2) Their present study sites (see Form B)
3) Their contact addresses, web-addresses, research interests, research areas, etc. (see Form C)

Submissions will be used solely by the SEDIFLUX Steering Committee for compiling of a SEDIFLUX project, study site and member database which will be accessible from the SEDIFLUX webpage (to be installed, developed and up-dated by the SEDIFLUX Co-ordinator).

!!!A reply to these forms is required for each SEDIFLUX member!!!

Please use one separate copy of the forms A, B and C (see below) for each project, study site and SEDIFLUX member description and **send the completed forms electronically before**

December 20th, 2004 (final deadline!),

to the SEDIFLUX Co-ordinator:

Achim.Beylich@ngu.no

Please keep descriptions short. Each completed form (A, B, and C) should not be longer than two A4 pages.

The members of the SEDIFLUX Steering Committee thank you very much for your co-operation.

Sincerely yours,

Achim A. Beylich (SEDIFLUX Co-ordinator, Trondheim, Norway)
Samuel Etienne (Clermont-Ferrand, France)
Bernd Etzelmüller (Oslo, Norway)
Vyacheslav V. Gordeev (Moscow, Russia)
Jukka Käyhkö (Turku, Finland)
Volker Rachold (Potsdam, Germany)
Andrew J. Russell (Newcastle, UK)
Karl-Heinz Schmidt (Halle/S., Germany)
Þorsteinn Sæmundsson (Sauðárkrókur, Iceland)
Fiona S. Tweed (Staffordshire, UK)
Jeff Warburton (Durham, UK)

Form A:
Information on ongoing and recently completed projects (please use one A form per project)

Project title:
Principal investigator Name:
Title: Postal address: Phone number: Fax number: Email:
Scientific personnel within the project:
Collaborators:
Start date of project: (Expected) completion date of project:
Funding agency:
Short summary, project description:
Main goals of the project:
Key words (5 – 10):
Study site:
Other comments:

Form B:
Information on study area/ study site (please use one B form per study site):

Name of researcher (SEDIFLUX member):
Title of ongoing or recently completed project: Duration of project (start and (expected) end dates):
Name of study site:
Description of study site Country: Area: Geographical coordinates: Elevation a.s.l.: Climate: Vegetation cover: Topography: Lithology: Other description:
Short description of data sets available from this site (meteorological data sets, data sets from longer term process monitoring etc.):
Short description of other material which is available from this site (aerial photographs, DEM, maps, etc.):
Short description of instrumentation and methods used at this study site:
Other comments:

Form C:
Information on SEDIFLUX members:

Name:
Title:
Position:
Postal address: Phone number: Fax number: Email:
Webpage:
Scientific field:
Research interests:
Research areas/study sites:
Title, duration (start and completion date) and funding agency of ongoing and recently completed projects which are scientifically related to SEDIFLUX:
Five key publications of the last 5 years:
Are you willing to send photo(s) of your study site(s): Yes: No: If yes please send photo(s) (one or two per study site) in digital form.

3. PROGRESS OF SEDIFLUX ACTIVITIES

- Publication of Accepted Papers from the First SEDIFLUX SCIENCE MEETING in Sauðárkrókur, Iceland, June 18th-21st, 2004 (http://www.nnv.is):
  Submission of delayed Papers before December 10th, 2004 (final deadline!)
  (see below 5.).

- Further development of SEDIFLUX Webpage and SEDIFLUX Database: Please copy, fill in and send the Form Sheets A, B and C (see below 2.) electronically to achim.beylich@ngu.no before December 20th , 2004 (final deadline!) (see below 5.).
  Following step: Development of Guidelines: Start during the Second SEDIFLUX SCIENCE MEETING in Clermont-Ferrand, France, January 20th-22nd, 2005 (see below 4.).

- Further development of links to other groups, networks and programmes.

- Further development of Proposals related to SEDIFLUX

4. FURTHER MEETINGS

- Second SEDIFLUX SCIENCE MEETING *SHIFTING LANDS* and STEERING COMMITTEE MEETING in Clermont-Ferrand, France, January 20th – 22nd, 2005:
  Scientific Organizer: Samuel Etienne (setienne@seteun.net)
  Find more information: http://geo.islande.free.fr/shifting/prelimprogram.htm

- Session 05 "Hydrology and sediment fluxes in permafrost regions (organized in association with: ESF project SEDIFLUX)" at the 2nd European Permafrost Conference (EUCOP) in Potsdam, Germany, June 12th -16th, 2005.
  More information: http://www.awi-potsdam.de/EUCOP/science.html

- Third SEDIFLUX SCIENCE MEETING and STEERING COMMITTEE MEETING in Durham, UK, December 2005. Scientific Organizer: Jeff Warburton (jeff.warburton@durham.ac.uk)

- Fourth SEDIFLUX SCIENCE MEETING and STEERING COMMITTEE MEETING in Trondheim, Norway, October of 2006. Scientific Organizer: Achim A. Beylich (achim.beylich@ngu.no).

5. RELEVANT DEADLINES

December 10th , 2004 (final deadline!):

For the participants of the First SEDIFLUX Science Meeting:
Submission of delayed Papers from the First SEDIFLUX Science Meeting in Sauðárkrókur, Iceland, June 18th-21st, 2004.
Accepted Papers will be published in a Special Issue of GEOMORPHOLOGY.

Please send four complete copies of manuscripts to:

Dr. Achim A. Beylich
Geological Survey of Norway
N-7491 Trondheim
Norway
Email: achim.beylich@ngu.no

December 20th , 2004 (final deadline!):

For ALL SEDIFLUX MEMBERS:
Submission of the Form Sheets A, B and C for the SEDIFLUX Database.
Please copy and fill in the three Forms A, B and C (see below 2.) and send the three Forms A, B and C electronically to the SEDIFLUX Co-ordinator:
achim.beylich@ngu.no (Achim A. Beylich)

6. NEWS FROM SEDIFLUX MEMBERS

The fifth IASC (International Arctic Science Committee) / IPA (International Permafrost Association) – sponsored ACD (Arctic Coastal Dynamics) workshop took place at McGill University in Montreal (Canada) from 13-16 October 2004. The main focus of the 2004 ACD workshop has been on physical, chemical and geological processes in Arctic coastal areas; however, a new theme introduced at the Canadian meeting was the impact of coastal change on the inhabitants of the Arctic shore zones. The four-day workshop started off with a plenary session bringing participants up to date on developments since the St. Petersburg workshop in November 2003. The plenary session also outlined the taskings for the working group sessions which took place over the following three days (www.acd2004.mcgill.ca).
An ACD (Arctic Coastal Dynamics) related session ("The role of permafrost coasts in the Arctic System"), co-chaired by V. Rachold and V. Romanovsky, will be held at the AGU Fall Meeting in San Francisco, December 2004 (www.agu.org).
A coastal working group (chaired by V. Rachold) has been approved for the 2nd International Conference on Arctic Planning (ICARP II) to be held in Copenhagen (November 2005). According to the ICARP II terms of references, the working group is currently developing a science plan to address critical questions of Arctic coastal research which need to be addressed over the next 5-10 years (www.icarp.dk).

Volker Rachold, Alfred Wegener Institute, Research Unit Potsdam,Germany (vrachold@awi-potsdam.de)

7. NEXT SEDIFLUX NEWSLETTER

The next electronic SEDIFLUX Newsletter will be sent **in March 2005 (Newsletter 2005 A)** by the SEDIFLUX Co-ordinator.

8. CALL FOR CONTRIBUTIONS

PLEASE SEND CONTRIBUTIONS for the SEDIFLUX Newsletter and the SEDIFLUX Webpage to: Achim.Beylich@ngu.no.

Information on (Links to) relevant/SEDIFLUX related:

- Meetings,
- Workshops,
- Conferences,

Information on (Links to):

- Activities of other (SEDIFLUX related) Groups, Networks, Programmes etc.;

Information on:

- SEDIFLUX related Proposals

All kinds of Suggestions, Ideas etc.

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