

IAG GeoNorth and GeoNor Newsletter

Scientific report on the First IAG GeoNorth and IAG GeoNor Conference on Geomorphology and Geomorphological Research in the Nordic Countries, 1-2 October

The first joint conference of the IAG National Scientific Members IAG GeoNorth (Regional Group Member including the five Nordic countries Denmark, Finland, Iceland, Norway and Sweden) and IAG GeoNor (Norway) (further details are available at: <http://www.geomorph.org/national-scientific-members>) was held as a virtual conference, 1-2 October 2020. The theme of the conference was *Geomorphology and Geomorphological Research in the Nordic Countries* and the event was organized under the auspices of the International Association of Geomorphologists (IAG). In total 41 scientists and students from 17 different countries participated in the virtual event and the conference was organized by Achim A. Beylich and Katja Laute (GFL, Norway). The conference programme included a detailed introduction on the organization, goals and activities of the IAG National Scientific Members GeoNorth and GeoNor (both were formally approved as IAG National Scientific Members in September 2019), invited key lectures, invited self-presentations of newly appointed Young Geomorphologists' National Representatives within GeoNorth/GeoNor, invited scientific lectures, scientific talks of conference participants, and extended scientific discussions and networking activities. The invited key lectures included presentations on the structure, organization and training programme of the International Association of Geomorphologists (IAG) presented by Mauro Soldati (IAG President, Modena, Italy), on outreach and communication activities of the

IAG presented by Susan Conway (IAG Vice President, Nantes, France), on the development, organization, activities and achievements of the Italian Young Geomorphologists' Group presented by Irene Bollati and co-authors (Milan, Italy), and a scientific talk on patterns of channel stability of mountain streams given by Marwan Hassan (Vancouver, Canada). The newly appointed Young Geomorphologists' National Representatives Gregor Lützenburg (Copenhagen, Denmark), Kamilla Skaalsveen (Tromsø, Norway) and Ramona Schneider (Stockholm, Sweden) introduced themselves to the Nordic and international community and started discussions, networking activities and the exchange of experiences and ideas with the Italian Young Geomorphologists' Group and the other conference participants. Invited scientific lectures were given by the GeoNor Core Members Benjamin Bellwald et al. (Meltwater sediment transport as the dominating process in mid-latitude through mouth fan formation) and Nils Rüther et al. (Sediment management for sustainable hydro power development and operation), and by the GeoNorth National Representative (Sweden) Lina Polvi (The state of fluvial geomorphology in Sweden – previous research and unanswered questions). In addition to the invited key lectures from scientists from outside the Nordic countries and the invited lectures from scientists from the Nordic countries, the ten scientific talks presented by Nordic and international colleagues covered a wide range of topics related to geomorphology of the Nordic

countries and of cold climate environments. All scientific presentations were of high quality and the conference was successful in bringing together scientists with different backgrounds, bridging among different disciplines and national communities. The conference was characterized by lively discussions and a very positive, constructive and welcoming atmosphere. As a result, the conference is considered as a successful start of the IAG GeoNorth and IAG GeoNor initiatives. The detailed conference programme and all conference abstracts are available in the published volume of abstracts (Beylich and Laute, 2020).

Beylich, A.A., Laute, K., (Eds.), 2020. First IAG GeoNorth and IAG GeoNor Conference: Geomorphology and Geomorphological Research in the Nordic Countries, 1-2 October 2020, Virtual Conference. Volume of Abstracts. GFL Geomorphological Field Laboratory Publication Series, Number 2, October 2020. 43 pp.

Achim A. Beylich
Chair of IAG GeoNorth and GeoNor
Conference organizer

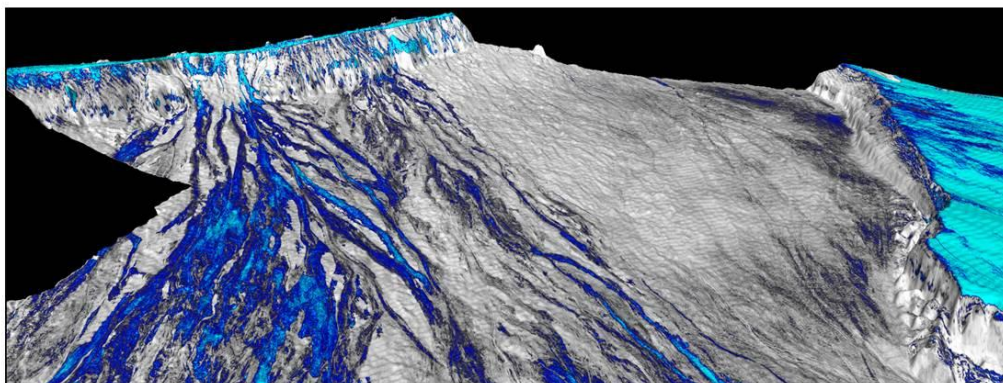
Highlights / Latest publications

- Beylich, A.A., (Ed.) (2021): *Landscapes and Landforms of Norway*. Springer.
 - Highlights selected landscapes and landforms in case studies written by leading scientific experts.
 - Highly illustrated book, presenting the geomorphology of mainland Norway.
 - Discusses the status and value of geomorphological heritage and geoconservation in Norway.
- Under the title “*Denudational processes and landscape responses to global environmental changes*” the IAG Working Group DENUCHANGE published a Virtual Special Issue in the journal *Geomorphology*. The issue is edited by Katja Laute, Ana Navas, Achim A. Beylich and can be accessed here: <https://www.sciencedirect.com/journal/geomorphology/special-issue/10P2X98DS2K>
- New article by: Bellwald, B., Planke, S., Becker, L.W.M. *et al.* Meltwater sediment transport as the dominating process in mid-latitude trough mouth fan formation. *Nat Commun* 11, 4645 (2020). <https://doi.org/10.1038/s41467-020-18337-4>



Meltwater Sediment Transport as the Dominating Process in Mid-latitude Trough Mouth Fan Formation

Benjamin Bellwald¹ (benjamin@vbpr.no), Sverre Planke^{1,2,3}, Lukas W.M. Becker⁴, Reidun Myklebust⁵
¹VBPR | ²CEED | ³ARCEX | ⁴University of Bergen | ⁵TGS



Nature Communications 11, 4645 (2020) | Article | Open Access | Published: 15 September 2020

Introduction of GeoNorth national and Young national representatives (Part II)



Assoc. Prof. Lina E. Polvi Sjöberg

Department of Ecology & Environmental Science, Umeå University, Sweden

Sweden, national representative

I am a fluvial geomorphologist with a broad interest in determining controls on river channel form and function, ranging from biota, sediment transport, glacial legacies, to winter ice. I am currently examining how boulder-bed semi-alluvial channels in northern Fennoscandia have adjusted post-deglaciation. My research often involves multi- and interdisciplinary collaborations with riparian and aquatic ecologists as well as biogeochemists. With a multidisciplinary perspective on river systems, much of my research has practical implications for stream restoration. I have several projects with County Administrative Boards in Sweden and the Swedish Agency for Marine and Water Management to form stream restoration guidelines. At Umeå University, I teach courses in GIS, geomorphology and freshwater management.



Gregor Lützenburg

Department of Geosciences and Natural Resource Management, University of Copenhagen, Denmark

Denmark, Young national representative

Gregor is a PhD fellow at the Department of Geosciences and Natural Resource Management at the University of Copenhagen. His research focuses on the drivers of coastal cliff erosion in Denmark and Greenland. By applying remote sensing data to investigate rates of coastal change along sedimentary cliffs over time, he is gaining insights into different processes of cliff failure. As an ECS representative of Denmark within the GeoNorth community, Gregor is enthusiastic about building a network between young Geomorphologists in the Nordic countries. He is looking forward to the new position as ECS representative and promoting an inclusive science community.



Prof. Arjen P. Stroeven

Department of Physical Geography, Stockholm University, Sweden

Sweden, national representative

I am a geomorphologist with a keen interest in landscape evolution. I specialize in paleoglaciology, radionuclide dating applications in glacial and mountain geomorphology, glacial geology, and modeling of glaciological systems to assess former regional and global climate changes. I have participated in, and led studies, in many of the (formerly) glaciated regions of the world, including the Russian and Canadian Arctic, Yukon and the Northwest Territories, Fennoscandia, Tibet and Central Asia, and Antarctica. I am also interested in the long-term landscape evolution of the Baltic shield, including the formation of the Subcambrian unconformity. I teach courses in geomorphology on all levels.



Ramona Schneider

Department of Physical Geography, Stockholm University, Sweden

Sweden, Young national representative

I am a recently graduated MSc student in Physical Geography and Quaternary Geology from Stockholm University and the newly appointed GeoNorth ECS representative for Sweden. My research interests are glacial and fluvial process geomorphology, geomorphological systems, paleoglaciology, and geohazards. I like to apply multi-method approaches in my research and combine, for example, field-based methods with laboratory techniques and GIS / Remote Sensing. Furthermore, I love polar and alpine environments and enjoy outdoor activities.



Dr. Kamilla Skaalsveen

Norwegian Institute of
Bioeconomy Research (NIBIO),
Department of soil and land use,
Tromsø, Norway

Kamilla works as a researcher at the Norwegian Institute of Bioeconomy Research (NIBIO) in the department of soil and land use. Her background is a master's degree in Management of Natural Resources, mainly focusing on freshwater management, from the Norwegian University of Life Sciences. She recently completed her PhD at the University of Gloucestershire (UK) titled: "Assessing the Impact of No-till on Water Related Soil Functions and the Role of Farmer Networks in Knowledge Exchange and Implementation". This was an interdisciplinary PhD-project assessing the effect of different soil management water purification and retention in a UK case study, and the characteristics of learning networks and knowledge exchange amongst UK farmers.

Open call for Young Geomorphologists National Representatives

We kindly invite Young Geomorphologists (undergraduate or postgraduate – Masters/PhD students or scientists who have received their highest degree, i.e. BSc, MSc or PhD within the past 7 years; provided parental leave fell into that period, up to one year of parental leave time may be added per child, where appropriate) in the two Nordic countries Finland and Iceland to participate in our new initiatives and to consider the opportunity to become a Young Geomorphologists National Representative. As a Young Geomorphologists National Representative you will have key responsibilities in creating young geomorphologists activities in your Nordic country under the umbrella of IAG GeoNorth (<https://geonorth.org/>). If you are interested in this possible role please contact Achim A. Beylich (achim.beylich@geofieldlab.com).

Announcement of activities

- New and independent GeoNorth website and twitter account created by Gregor Lützenburg, Ramona Schneider and Kamilla Skaalsveen. Please have a look at: <https://geonorth.org/> where you can also subscribe to this biannual newsletter.



- IAG launches the International Geomorphology Week 2021 during the first week of March 2021 and will organise regional geomorphology webinars (#IntGeomorphWeek2021). Detailed information can be found here: <http://www.geomorph.org/2020/10/launching-international-geomorphology-week-2021/>.
- Upcoming special issue in *Earth Surface Processes & Landforms* on 'Cutting-edge research by Fennoscandian Researchers' from Norway, Sweden and Finland with Special Issue Editors Petteri Alho and Lina Polvi Sjöberg. We aim to showcase research on earth surface processes by researchers with a tie to an institution in one of the three Nordic countries mentioned above (due to recent open-access agreements with Wiley) carried out in these countries or elsewhere. The preliminary deadline for manuscript submissions is in November 2021.

IAG Webinar for Northern Europe



Within the framework of the IAG International Geomorphology Week 2021 a regional online webinar for Northern Europe will be organised by Katja Laute and Achim A. Beylich. The webinar is scheduled for Wednesday 3 March 2021 at 13:00 CET and will be open to the entire international scientific community. The webinar will cover novel geoscientific research in the five Nordic countries (Denmark, Finland, Iceland, Norway and Sweden) presented by six invited speakers. Further information will be soon circulated and will be available here: <http://www.geomorph.org/>

Spotlight on field work

Identifying reference conditions for Sweden's lost boulder-bed rivers

Richard Mason & Lina Polvi

Department of Ecology & Environmental Science, Umeå University, Sweden

In northern Sweden, as in many forested regions worldwide, the vast majority of rivers were cleared and channelised for timber floating. Restoration seeks to reverse this process by replacing boulders and large wood, but identifying the natural or target state of a river is a challenge. Restoration design is often based on aesthetics rather than empirical data. Our study involved a large-scale field campaign to survey reference rivers across northern Sweden. At each river, we surveyed channel morphology and the size distribution of bed material over a 100 m reach. We also measured the location and protrusion of each boulder and large wood. We completed measurements at 20 rivers before shorter days and snow forced a stop!

Surveyed reaches varied considerably in morphology from steep, narrow, mountainous channels to low-gradient reaches, with high floodplain connectivity. Sediment size was also very variable (median grain size ranged from 0.16 to 1.2 m) and some sites were extremely bouldery (up to 500 large boulders (> 1 m diameter) within a 100 m length of river. Further analysis will allow us to determine the range of geomorphological conditions once found Swedish rivers and to identify relationships between landscape controls and river characteristics, to guide future restoration. The results are important for understanding habitat restoration in boulder-bed streams worldwide, as well as prompting discussion of the challenges and opportunities for identifying reference conditions from near-natural, unmodified, rivers.



Photo: Baksjöbäcken – featuring many boulders, large wood jams and freshwater pearl mussels is a rare reference site unaffected by clearance for timber floating.

Photo series of distinctive geomorphological landforms in the five Nordic countries



Limfjord, Denmark



Terminal moraines of Isfallsglaciären in Tarfala valley and Tarfala research Station, Sweden

Call for contributions

You are kindly invited to send contributions for the third GeoNorth/GeoNor Newsletter 1/2021 (June). Please send possible contributions before 31 May 2021 to Katja Laute (katja.laute@geofieldlab.com), e.g.:

- notice on relevant ongoing or future research projects,
- notice on new and relevant scientific publications,
- news from field work (for example a photo),
- notice on relevant meetings, workshops, seminars,
- announcement of training courses and exchange opportunities for students and PhD students,
- relevant job advertisements,
- photos on distinctive geomorphological landforms of your country,
- other important information.

18 December 2020

© Katja Laute
Secretary of IAG GeoNor

You can follow us on twitter [@GeoNorth4](https://twitter.com/GeoNorth4) and sign up for updates on our [website](#).

