



## **Sediment budget, processes and landscape evolution in Nordfjord, western Norway**

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Glacial fjords are perhaps the most spectacular glacial landforms; they are also important sediment sinks and conduits of sediments during both glacial- and interglacial periods. In order to characterize and quantify source-to-sink processes and volumes in a fjord system, we have examined a Norwegian fjord (Nordfjord) on different temporal- and spatial scales. We start by reconstructing the pre-Quaternary palaeo-geography in order to establish Quaternary glacial erosion. Furthermore, we have mapped and quantified sediment infill, stratigraphy and sediment volumes deposited since the last deglaciation. Finally, we have an ongoing campaign to measure present day source-to-sink rates, climatic data and chemical denudation rates in a key tributary to the fjord.

In order to accomplish the above objectives we have utilized a wide array of investigations and tools, including mapping, dating techniques and stratigraphy both in the field and through geophysical measurements, which has been done in the terrestrial, lacustrine and marine environments. All data, including basic data such as topography, was continuously assembled using Geographic Information Systems (GIS), greatly aiding interpretation, calculations and visualization.

Preliminary results include a conceptual model on sediment dynamics in the fjord environment where recycling of previously deposited sediments (eg. from the last deglaciation) plays a key role to the overall sediment budget. In addition, a quanti-

tative, time dependent, sediment volume model is under development.

The present project (SEDITRANS) will provide first class knowledge on source-to-sink processes and rates in a Norwegian fjord and will serve as a base-line for ongoing and future studies of fjord environments.