

## **Wednesday, November 01<sup>st</sup>, 2006**

09:00 – 16:00

Excursion (including Lunch at 12:00 at Tyholt Tower):  
*Trondheim and Surrounding Areas*

*Field Guides:*

**Lars Olsen** (Excursion Organiser) (NGU)

**Harald Sveian** (NGU)

**Geir Vatne** (NTNU, Department of Geography)

***Guides: \*Parts 1-3: Harald Sveian and Lars Olsen, NGU, and \*\*Part 4:  
Geir Vatne, NTNU***

The excursion is planned to include several topics from the late- and postglacial period. Thematically, the excursion will be separated in four parts, *i.e. (1) deglaciation history, (2) glacial rebound, (3) clay slide history and (4) recent fluvial environment.*

The transportation during the excursion will be carried out by bus. The final selection of sites will be done when more is known about the expected weather conditions during the excursion.

### ***Deglaciation history (1) and glacial rebound (2)***

Ice marginal deposits from several lateglacial readvances are recorded in the Trondheim region. Some of these, both from the main Younger Dryas (YD) ice advance (10600 –10900 <sup>14</sup>C-yr BP) as well as younger YD ice advances will be visited during the excursion.

The glacial isostatic conditions lead to a high relative late-/postglacial sea level in the Trondheim region, and a mean altitude of c. 175 m asl is recorded for the lateglacial marine limit in this area. The glacial rebound slowed down during the considerable ice growth in the initial part of YD, and this lead to formation of distinct YD shore lines, both in unconsolidated sediments and in bedrock. The rebound gradient is supposed to be as high as 1.4 m/km since mid YD.

Examples of shore lines and deltaic terraces corresponding to high relative sea levels will be given.

### ***Clay slide history (3)***

Numerous scars from clay slides are recorded in this region, and some of the historic slides are well described in the literature. The huge clay slide in Verdalen (90 km to the northeast of Trondheim) in 1893 is perhaps the best known such slide, and was a catastrophe that led to more than 100 human casualties.

Examples of old clay slide scars, both small and km-wide scars will be demonstrated during the excursion.

### ***Fluvial environment (4)***

The excursion will examine the river Nidelva, draining through central Trondheim, which has caused many of the historical quick clay slides in Trondheim. During the last years several deep scour hollows, extending well below sea level, have been discovered in the river bed, that may cause slope instabilities and has the potential to initiate quick clay slides. Department of Geography at NTNU has initiated a research project to study selected scour hollows. The excursion will visit the selected field sites in Nidelva, and field methods and preliminary results of the study will be presented and discussed.