ProGEO / Northern European working group International conference in Vaasa, Finland May 20–24, 2007 Geodiversity and geology for nature heritage

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The 2007-year conference and meeting of ProGEO WG 3 was held in Vaasa, western Finland 20-24 September. It consisted of two days of presentations, business meeting and discussions, followed by two days of field excursions. About 50 participants from ten nations in Northern and Eastern Europe + the Netherlands and Ireland attended the meeting. The program contained 25 oral presentations and several posters. ProGeo WG 3 together with the Geological Survey of Finland (GTK) and the Geological Society of Finland organized the meeting. The National forest and park services (Metsähallitus) and the city of Vaasa contributed to the meeting and excursions in many ways.

The theme of the conference was divided into four sessions:

- Geoconservation, transboundary co-operation
- Geoparks, geosites
- Geotourism, popularisation of geology
- Planning and management of conservation areas

Hanneke van den Ancker opened the conference with greetings from Jonas Satkunas (chairman of ProGEO WG 3), who was unable to attend the conference. Many interesting geosites were described during the sessions. Geoparks was a common theme in several presentations. Geoparks are under development in many countries. The best ways to initiate a geopark and wake the interest of the local communities were discussed. There was a vivid discussion about where the initiative for a geopark should come from. From local communities, authorities or geoscientists? It was suggested that the amount of geoparks should be limited and the participants were encouraged not only to work with top geosites but also promote the geodiversity in every day landscape.

Several presentations and papers inspired and adviced how to implement geotourism and popularisation of geology. *E.g.*, the following subjects were brought up and discussed:

- The development of a system to display geological data in a clear and popularly understandable way and how to format the information to fit an Internet environment (University of Turku, Finland).
- Develop geological sights located at or close to tourist routes.
- Develop educational material (leaflets and films) for schools, courses for teachers, geological camp schools / trips for children.
- The public is interested in: the beauty of geology and landscape, the geological time, the processes behind the formations, etc.
- In most (all?) countries the flora, fauna and history, but not geology, are protected in different programs. However, for example in Norway geology and landscape are gradually becoming part of the descriptions for National Parks.
- Individual sites are usually protected for their landscape or geomorphological values, not on scientific grounds.
- Geoparks are often considered as a tool for conservation and popularisation.
- Many universities have difficulties getting enough students in geosciences. The school teaching in geosciences should be improved.

Field trips

On the first excursion day we visited geosites included in a regional Geopark project. Our first stop was at Öjberget on the rim of the ca 520 million years old Söderfjärden meteorite impact crater. The well-preserved crater is filled with fossiliferous sandstone and claystone covered by loose surficial deposits formed during several glaciations. The uppermost layers consist of clay deposited during 10,000 years after the latest glaciation, when Söderfjärden was under water.

At our next stop we had the opportunity to crawl into the Wolf Cave, the home of Neanderthals more than 50,000 years ago. At least seven sediment layers dating back to Eemian interglacial and Weichselian interstadials have been found during the excavations of the cave. The four lowermost layers contain archaeological finds. All of us probably felt the breeze from the past when we sat there in the cave.

After lunch break the bus headed towards Lauhanvuori, western Finland's highest hill. The tor

Figure 1. ProGEO-conferens participants in the Kvarken Archipelago World Heritage site. Photo by Jennie Wikström

formation Aumakivi brought about lively discussions; is it really a tor formation shaped by preglacial weathering or was it just an erratic boulder? The most striking formations on Lauhanvuori are however large autochthonous boulder fields of quartz sandstone.

The final stop for the day was at the Levaneva mire system, where we climbed up a watchtower and walked along a duckboard trail into a Natura 2000- and mire protection area. Levaneva is the largest protected bog in the region (2500 ha), and it consists of concentric and eccentric raised bogs. There is also a representative aapa mire part, while the central parts of the bog contain lots of bog pools.

The second excursion day we spent in the newly approved Kvarken Archipelago World Natural Heritage Site. The stony land uplift archipelago of Kvarken is a unique, changing landscape formed during and after the Ice Age. In July 2006, the Kvarken Archipelago was included on UNESCO's World Heritage List, as an extension to Sweden´s "High Coast". "The Kvarken Archipelago is the most representative site in the world for the study of land uplift processes in flat and shallow moraine archipelagoes. It is a unique example of ongoing geological and biological processes and ecosystem development in space and time."

The unique characteristics are the result of geological processes that have been going on for millions of years. The flat bedrock is the remnant of an 1800 million years old mountain range, and it is overlain by spectacular formations formed mostly during and after the latest Ice Age, ending 10,000 years ago. De Geer- and ribbed (Rogen-type) moraine ridges (transversal to the flow of the inland ice) are common, while elongated drumlins (parallel to the flow) are quite sparse. The ice sheet pressed down the earth's crust for hundreds of thousands of years, and the land has then risen 250 metres, today at a speed of 80 cm/100 years. The first islands in the Kvarken area rose from the sea ca 2000 years ago. The rapid land uplift - a heritage from the Ice Age – creates ever-changing dynamic geoenvironments, landscape and nature. This land is reshaped by waves and winter ice, creating shingle fields and raised beaches at different levels.

The area is well suited for geotourism and for educational purposes from compulsory school to university and adult education. The ongoing processes of land uplift and the ever-changing environment are most tempting also for multidisciplinary research.

One positive outcome of the Conference, for the Finnish geologists and for ProGEO, was that the amount of ProGEO-members in Finland increased from one to eight (thanks also to Gunnel Ransed).

The Business meeting of the ProGEO Regional working group no 3, Northern Europe, was held during the conference. The participants surely returned home with new inspirations and ideas about how popularization and conservation of geology can be realized / put into practice and how geotourism can be promoted.

Concluding and closing remarks and thanks were made by Peter Edén and Keijo Nenonen from the organizers, and by Lars Erikstad, Hanneke Van den Ancker and Radoslav Nakov. Enno Bregman wished us welcome to the Netherlands in 2009 for the next conference.

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