



Restored megalithic graves, "Hunebed" at Hondsrug in the province of Drenthe. The link between geological and cultural heritage is represented by these large erratic boulders from the north

ProGEO – WG3 meeting 2009

Geoheritage, Geodiversity & Nature and Landscape management

Sylvia Smith-Meyer, ssm@nve.no

The international conference was held in the Province of Drenthe, The Netherlands 19-23 April. About 100 participants from 27 countries were registered. All was very well organized, with meetings mostly at the House of the Province Drenthe in Assen. We offer a great thanks to the organisers! From the WG3 countries following were present: Denmark, Estonia, Finland, Germany, Ireland, Lithuania, The Netherlands, Norway, Russia and The United Kingdom, as well as Poland.

Meeting: The working group meetings started in the evening 19. April, with discussions around a coming project concerned about Land-ice localities and geo-documentation for tourism. Each country presented the status for their country. The project was also discussed later during the Conference. The plan is to create a web-based information system. This will be more developed during the coming year and we look forward to hear more about this project.

Conference: The conference opened with a discussion where the aim was to assess the opinion of ProGEO members and conference participants on the subjects brought to their attention in short introductions. The result of the discussion was meant to be an important input for the ProGEO business meeting at the end of the conference, and should assist the network in de



The new chairman of ProGEO Working Group for Northern Europe, Kejo Nenonen

fining its near future efforts. This was a good idea, but did not function as good as planned, mainly because it came too suddenly. I think people were not good enough prepared for this powerful start. But again, the idea was good.

The presentations gave a great variation of topics. They were divided into 10 sessions and showed together the great amount and diversity of ProGEOs working space. Focus was set on the importance of Geodiversity and relation to landscape in spatial planning. Also the need of geological education and information for tourists was focused. If I should mention something I missed, it should be better focus on protection of areas/localities. This was not a separate session.

Business meeting: After closing of the conference ProGEO - WG 3 had their business meeting which is reported by the secretary of the working group, Krista That-Kok. A new chairman for the working Group was elected, Kejo Nenonen from Finland.



A high-quality and modern digital elevation is a good tool in demonstrating geomorphological diversity in a flat landscape

Excursions: We also had some instructive and informative excursions. Two of them were in the evenings and one whole day excursion in the middle of the conference. All three gave together a good knowledge of the country's geological problems and their work with management and protection. We were taken to Ameland, one of the islands on the west coast, to see sand drift. We were also introduced to their work with the ground water and the balance between sea-level, ground water and dikes. We also were taken to special localities with great geological and landscape value such as till deposits and a pingo landscape which I really liked. I have never before seen or heard about "dead" pingos, only active like those on Svalbard. To me, this gave a historical perspective as part of the Geological heritage. The post conference excursion was concentrated on coastal landscapes in the area between drenthe and Amsterdam. We visited nice (hilly!) moraine landscapes and large beaches with sand dunes inside. Especially the developing of new coastal protection and sand drift controlling strategies was of interest relative to our Geoheritage perspective.



New-formed mini-sanddunes on the coast of Ameland



Our guide at Ameland, Dirk Visser from the Rijkswaterstaats gave a lot of information about the coast of Ameland and the relation between flood defenses, ground water development and Geoheritage.

Summary: The Title of the Conference had a good thought-threw title. After ended conference included excursions, I think we all experienced that consideration of Geoheritage, Geodiversity & Nature and Landscape are important to practice a good management of the Netherlands. The country is extremely flat seen with Norwegian eyes, and as a first impression from a non geological person, it might not have much geological value. However this country with its problems due to sand-drift and ground-water, is dependent of a well balanced geological management. We were also introduced to very interested localities of great value, I am thinking of informative geological profiles in the sediments and a fascinating landscape with old pingos, which I think are outstanding in a North-European setting.

The 6th International Symposium on Conservation of Geological Heritage

29. May 2010 - 02. June 2010

(see www.progeo.se for the first circular)

The Ruhr Area National GeoPark, Germany

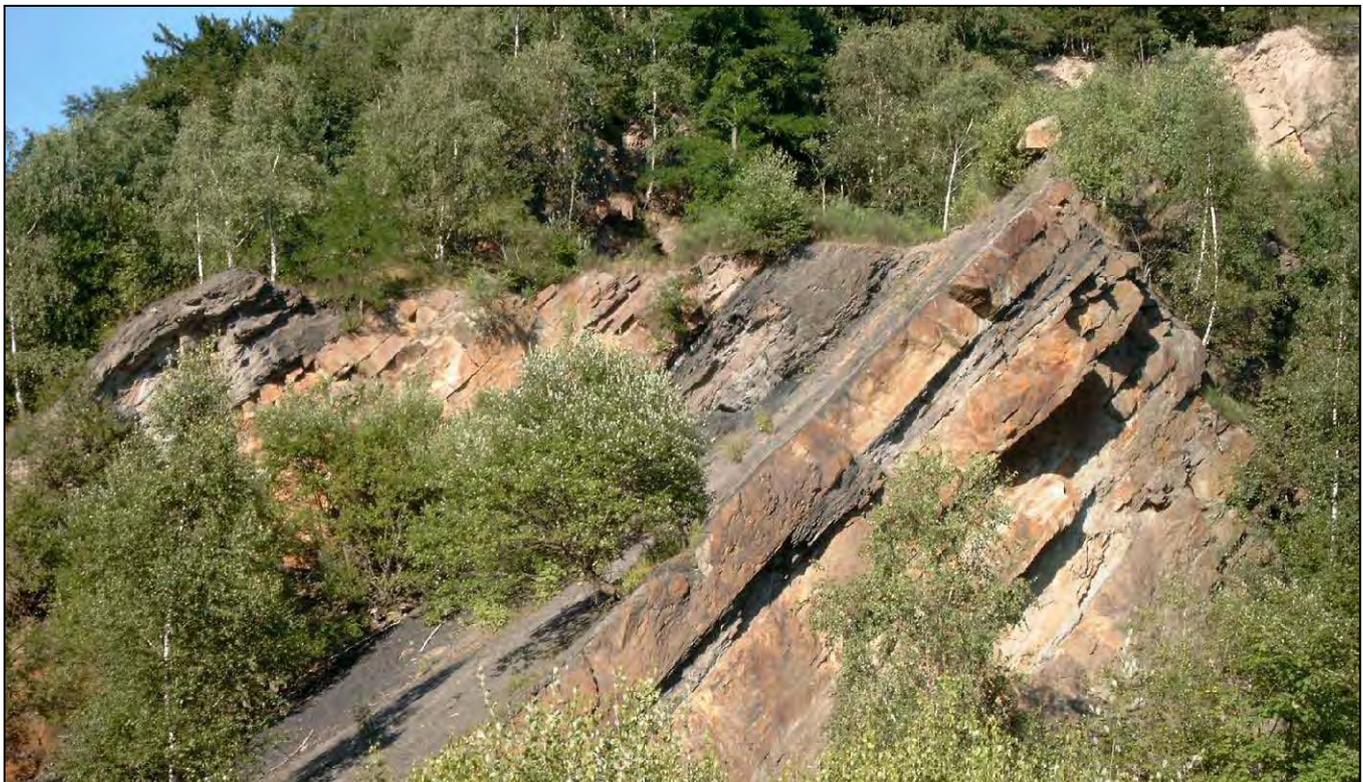
Dr. Volker Wrede, volker.wrede@gd.nrw.de

Few regions in Europe demonstrate the connection between natural resources and their economic development as clearly as the Ruhr area, Germany. The fast growth of this agglomeration mainly was based on geo-resources: hard-coal, ores, salt, and other. Today, after the decline of the mining industry, the area is facing considerable changes in socio-economic structures. Confronted with these changes, people desire for points of identity. With geo-resources being the crucial point for the identity of the area, the foundation of a geopark is a logical consequence of this development.

Initiated by the regional council and the Geological Survey in 2004 the "GeoPark Ruhrgebiet" was set up.



Unesco World Heritage Site "Zeche Zollverein", Essen



Rauen Quarry, Witten: Coal bearing Pennsylvanian strata



Hagen-Vorhalle quarry: Namurotypus sippeli

Besides nature conservation and development of tourism focusing on the links between geology, industrial development and social and cultural history of the area. The "GeoPark Ruhrgebiet" is one of the first concentrating on these topics.

In 2006 the "GeoPark Ruhrgebiet" officially was recognized as a National GeoPark. The park contains some 400 listed geosites, some of them honoured as "National Geotopes", more than 20 geological trails, 3 show caves, 24 museums displaying regional geology and mining history, and some 100 mining heritage sites (among them the UNESCO World Heritage Site "Zeche Zollverein").

Stratigraphy of strata in the Ruhr area ranges from Lower Devonian to Permian rocks includes Cretaceous and Tertiary sediments and deposits of the Pleistocene and Holocene. Most of the sediments are rich in fossils, starting with early Devonian plants and Devonian reef limestones. Most important is the occurrence of Namurian insects in the Hagen-Vorhalle Quarry, some of them with wing spans of some tens of centimeters. The coal bearing Pennsylvanian strata, of course, contain lots of beautiful fossils, as well as the Upper Cretaceous, which is well known e.g. for findings of *Parapuzosia seppenradensis*, the biggest ammonite known worldwide. Within the pleistocene sediments hundreds

of mammals have been found and are displayed in museums today.

The great number of inhabitants of the region forms an important potential of cooperators for the geopark and a large target group for geo-educational programs. Geotope presentation and geo-educational programs make the public aware of the natural roots of the industrial and urban agglomeration they live in. The organization of a geopark within a densely populated area, however, is a challenging task, in some aspects quite different from one in a rural environment.

The Ruhr Area National GeoPark looks forward to house the "6th International Symposium on Conservation of Geological Heritage", which will be organized together with the "14. Internationale Jahrestagung Geotop" of the Geo-Heritage section of the German Society for Geosciences. The themes of the conference "Geosites: Resources for the Public" and "Palaeontology and Conservation of Geosites" open a wide field for discussion. We invite geo-scientists from all over Europe to join the conference and to contribute to these discussions.

Conserving geodiversity in a changing climate

Colin Prosser,
colin.prosser@naturalengland.org.uk

On 4 June 2009, the geoconservation community from across the UK gathered at the University of Chester, England, to consider how climate change may impact on the long term management of our geological heritage.

The delegates, included staff from government conservation agencies, the Geoconservation Commission of the Geological Society of London, the British Geological Survey, the geological conservation voluntary sector, land managers, land owners and academics. The aim of the seminar was to:

- 1) to consider the impacts of climate change, and the social response to it, on geodiversity and its conservation,
- 2) to identify the response and adaptation strategies required in order to manage and conserve geodiversity in a changing climate, and
- 3) to identify the evidence gaps that need to be filled in order to fully understand the likely impacts of climate change and to develop strategies to manage and conserve geodiversity in a changing climate.

Thought provoking keynote presentations covered the new climate change scenarios developed by the UK Climate Impact Programme (Paul Bowyer, UKCIP), the likely social and economic consequences of future climate change (Alison Darlow, Natural England), the responses of the biodiversity community to addressing climate change (John Hopkins, Natural England) and the potential impacts of climate change on physical processes (John Gordon, Scottish Natural Heritage). Posters were also on display providing more information on specific case studies and ongoing work being carried out by the seminar participants.

The afternoon consisted of workshops. Four workshops, each addressing a different part of the geological heritage, geological exposures, physical processes, integrity and finite sites (eg. caves, mine dumps, landforms) and soils, explored: 1) the impacts of climate change on the resource, 2) the impacts of the social responses to climate change on the resource, 3) the conservation responses / adaptation strategies required to manage the resource discussed and 4) the evidence gaps that need to be filled in order to fully understand and plan adaptation to the impacts of climate change.

The day was extremely informative and productive and it was agreed that paper would be written on the findings of the day and that the geological conservation community in the UK should come together to produce principles and guidance to inform the conservation of geodiversity in a changing climate.



Example from the coast of the Netherlands (the ProGEO WG North Europe meeting) showing a change in coastal management strategies, where the natural processes are allowed to a certain extent to operate more freely than before. This scar is not filled in and secured and new aeolian habitats are allowed to form

The History of Geoconservation

Burek, C.V. & Prosser, C. D. (eds) 2008. The history of Geoconservation ; The Geological Society , London. Special Publications, 300.

Compiling the papers of the Geoconservation conference in Dudley Museum November 2006 has resulted to this first outlook to the history of Geoconservation. Geological Society London has been an excellent platform for the idea to raise interest in geoconservation and its historical aspects. It has been really a good culture action to promote the conference by starting preparations January 2004, coordinating the conference 2006, resulting to the publishing of the book July 2008. The History of Geoconservation contains 312 pages and is already No: 300 in the line of well known Geological Society Special Publications. Editors Cynthia Burek from the University of Chester and Colin Prosser from Natural England have done a great job when compiling the papers and coordinating the work. They are also writers in five of the papers in the book. Their introductory article of The history of geoconservation gives general provisions, subject and scope for the theme.

Evidently this book as the first in geosciences deals with the history of geoconservation. From Google search engine one finds 16 100 hits by this topic history of geoconservation and in a form history of geological conservation gives 1,8 million hits, many hits are referring just to this book. Geoconservation and geodiversity are quite recent terms and their contents and meaning is evolving still like Murray Gray in the article on Geodiversity: the origin and evolution of a paradigm points out. Protecting or conserving natural heritage, geological heritage or natural history are more familiar terms which gives you millions of Google hits and are one of the criterions for Word Heritage nominations by UNESCO. Just to remind that geology is only one part of the multidisciplinary nature protection often situated in geographically same localities.

The book concentrates mostly in British area and in the periphery of the English speaking world the easily available literature and documentation is usually in English, thus overlooking other language areas. When studying historical things before Second World War the documentation and information in national languages usually is a rule.

England, Wales and Ireland are covered with several articles in the book, European perspective in one article, Tasmania in one and an excellent international outlook with 25 pages is the books last article of Geological site designation under the 1972 UNECO World Heritage Convention by Patrick Boylan.

In the article of History of geoconservation in Europe, Lars Erikstad has refers traces of geoconservation back in 1565 in Germany. Graham Worton in his article shows that the probably first geological map at least in Europe was published in Metallum Martis 1665 describing mineral seams around Dudley Castle West Midlands of England.

The British Geological Survey (BGS) with 174 years is the oldest geological survey in the world and has thus maybe the longest traditions and geological memory of us and their knowledge of mapping and survey goes back to 1791 when the Ordnance Survey was established like Andrew McMillan describes. Many of the geological surveys in Europe are well beyond 100 years which shows how sustainable the organisations are as they have lived and got over several recessions, revolutions and wars. They are safe places to protect and conserve geological heritage and archives. The article "Geological conservation in nineteenth and early twentieth century's", by Barry Thomas and Lynda Warren leads us to the time when interest in geology and conservation of its most outstanding monuments and landscapes of superlative aesthetic beauty rose in Britain as well elsewhere in Europe and Northern America. Simultaneously also geotourism began as a hobby of wealthy travelers and after during the 20`

The History of Geoconservation

Edited by
C. V. Burek and C. D. Prosser



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century also for wider range of interested people. The article, "Toward a history of geotourism: definitions, antecedents and future", by Tomas Hose elucidates this aspect in British perspective. This show the increasing tourism interest as many of the most representative Geosites, Geoparks, UNESCO's World Heritage localities on geological criterion described in the book are annually visited by millions of travelers spending hundreds of million Euros giving constantly growing income for the tourism industry.

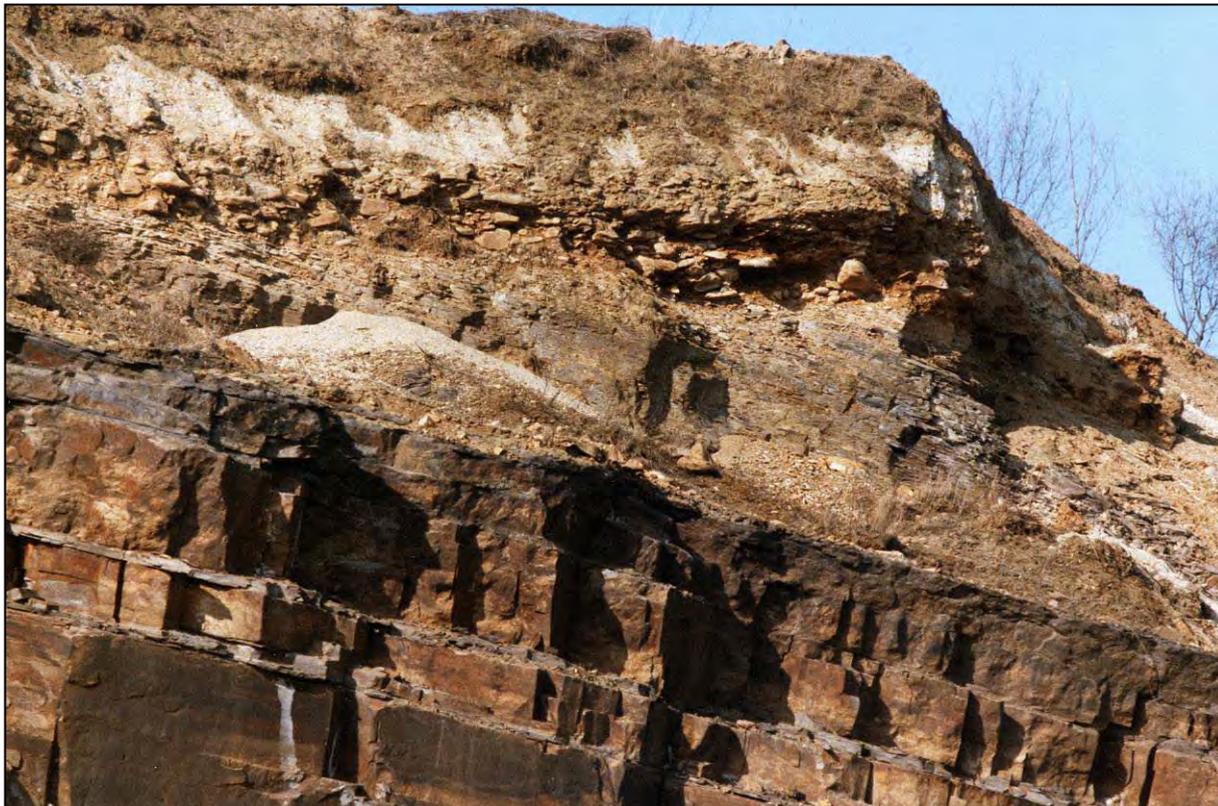
Mass tourism can be harmful for the delicate localities by erosion, increased littering of the nature, increased traffic, exploiting the target too heavily etc. Fortunately geological localities are usually more environmentally sustainable than biological or cultural localities. One advantage for geological sites is that they don't escape or bite you when trying to observe, protect and conserve them. You find them from the same safe place you left them last season and you can enjoy a geological locality without haste, in peace.

One comment on the printing quality of the book, it could be more colourful as many examples could benefit from colour images. Now the book resembles old-fashioned textbooks and makes it more demanding to follow, especially in some long chapters without any breaks.

The book "The History of Geoconservation" is an excellent benchmark in the topics of and gives the reader up to date list of references for future studies and readings. It is certainly a good source of information for students and researchers that are digging themselves deeper in this branch of geosciences.

It would be interesting to see if more information of the history of geoconservation emerges from Asia, and overseas. Also what is the archaeological linkage to the outstanding Geosites as many of them have been also holy and tribal places or waypoints for ancient man? In Scandinavia those places has been often protected and conserved in the minds of local population since the dawn of history.

Keijo Nenonen
ProGEO regional working group: Northern Europe
Geological Survey of Finland (GTK)
P.O. Box 96
FI-02151 ESPOO
FINLAND
E-mail: keijo.nenonen@gtk.fi



Kassenberg, Mülheim: The Variscan unconformity: Cenomanian overlaying folded carboniferous rocks. The Ruhr Area National GeoPark, Germany



Museum for Early History, Bottrop: Pleistocene Fossils. The Ruhr Area National GeoPark, Germany

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ProGEO: European Association for the Conservation of the Geological Heritage • **Address:** Box 670, SGU, SE-751 28 Uppsala, Sweden. • **Treasurer:** Sven Lundqvist. • **Bank:** SWEDBANK, SE-105 34 Stockholm, Sweden. Swiftcode: SWEDSESS. **IBAN:** SE81 8000 0838 1697 3296 5174. • **Membership subscription:** personal: € 50 (including GEOHERITAGE subscription), 25/yr.(without journal subscription), institutional: €185/yr. • **President:** W.A.P. Wimbledon, Postgraduate Research Institute for Sedimentology University of Reading, Whiteknights, READING RG6 6AB, United Kingdom. • **Executive Secretary:** Lars Erikstad, NINA, Gaustadaleen 21, NO-0349 Oslo, Norway. **ProGEO NEWS** - A ProGEO newsletter issued 4 times a year with information about ProGEO and its activities. Editor: Lars Erikstad, NINA, Gaustadaleen 21, NO-0349 Oslo, Norway, Phone: + 47 73 80 17 08, Fax: +47 22 60 04 24, e-mail: lars.erikstad@nina.no. Contributions preferred on diskette (Word- or ASCII-format) or by e-mail if possible.