



Fig. 1: Participant during the visit of intermittent Lake Cerkniško jezero interpretation model constructed and run by a local inhabitant. Photo M. Simić

Geological Heritage in Our Hands ProGEO South-eastern European Working Group Conference, 5-9 September 2007, Ljubljana - Slovenia

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The 12th Regional Conference and Annual Meeting of the ProGEO WG 1 on the Conservation of the Geological Heritage were held in Ljubljana, capital of Slovenia, 5-9 September 2007. It was organised on behalf of the Slovenian Geological Society, Environmental Agency of Slovenia, Institute for Nature Conservation of Slovenia and Geological Survey of Slovenia.

The conference received the sponsorship of many domestic donors and sponsors, the support of the

the organising committee facilitated a successful conference, the participants contributed to the conference activities and products and created the best atmosphere for a valuable exchange of views, experiences and ideas.

The geoconservation strategies and activities, including heritage interpretation assessed by experts from western and south-eastern European countries demonstrated some common views, but also a strong contrast between the levels of geoconservation institutionalisation.

The conference consisted of two and the half days of plenary presentations, workshops and annual meeting, followed by two and the half days of field visits. About 70 participants from ten WG 1 country members, Great Britain, Germany and Italy attended the

meeting. The program contained 7 key-note speeches, 26 case studies and several poster presentations. These contributions were devoted to the following main themes: 1) geosites: evaluation, data base, legislation, management, stakeholders; 2) public understanding of science: interpreting Earth heritage, community involvement, economic benefits, and geoparks.

An Abstracts Volume and Field Guide were published and distributed to participants. Electronic versions are available at the <http://arsis.net/circular/>.

The purpose of the meeting was to take a step back from day to day work on geology and geoconservation and make some assessment of what we have achieved so far and where are we going. It was a chance to look at the bigger geoconservation picture and clarify it in terms of evaluation of what we have and how can we "sell" these values to society and trigger its desire to protect them. The panel of speakers and the programme as a whole were thought out in a way to balance different topics. The main objectives of the conference were:

- To better define the geosite frameworks and make comparative geosites evaluation to match geosites to existing published frameworks with the help of a broader geocommunity.
- To bring geoheritage to people's doorstep by making geoheritage interpretation a tool for better public understanding of geoconservation and geosciences.
- To clarify the picture of what we want to conserve, protect and interpret, underpinning the integration of geoconservation into mainstream nature conservation and the production of economic benefits for local communities.



Fig. 2: Learning the geoconservation protection and management reality in the natural monument Gorge Dovžanova soteska. Photo M. Simić

After the welcome speeches by the representatives of the Ministry of Environment and Spatial Planning, IUGS, ProGEO, the Slovene Nature Conservation Institute and the Slovene Geological Survey, the first conference session started by the lecture of Antonio Brambati (Italy) who gave the overall picture of International Year of Planet Earth (IYPE) promoting geosciences, and the vision of IUGS to work on geosciences' activities that clearly educate and benefit society as a whole in the global sense. The importance of conserving geological heritage was acknowledged due to its environmental, economic and cultural values.

Chris Cleal (UK) gave a philosophical overview on what we are doing in geoconservation and summarised the results of UK's Geological Conservation Review approach, documenting some 3000 geosites in 100 blocks. Despite some underlying similarities between conservation of earth heritage and biological heritage, there are fundamental differences in what we are conserving in geoconservation and why. If we cannot explain clearly to owners or to the government agencies, who will be implementing the conservation policies, why these sites need to be conserved then we have no right to expect our wishes to be respected. Selecting sites at different levels of significance according to their relative scientific importance is comparative. We need a framework within which to make the comparison. Breaking down geology into its natural 'parts' means basically: basins for stratigraphical geology, tectonic belts for tectonic geology, floristic/faunistic belts & zones for palaeontology etc.

Bill Wimbledon (UK) recalled how the Geosites project gives added value to national conservation efforts. It is based on efforts to select sites, not in isolation, but in clearly defined categories. It is not such a large task, if one has a national list already made. The Geosites method can allow country geologists to give a justifiable value to their sites and to justify protection. With competition for governmental funds, this is an essential aid.

The second session addressed the development of effective heritage interpretation to achieve better public understanding of geosciences and gain adequate social support for geoconservation efforts. Ulrich Lagally (Germany) reported on the German geological community's proactive involvement in geoconservation promotion activities and engaging public participation. Geoscientists must present the facts without being enigmatic to non-professionals. Voluntary partnerships have a vital role in various initiatives on a local basis rather than by aiming at legal protection. After the launch of UNESCO's "Geopark" initiative, Germany introduced the category of "National Geopark" with high required stan-



Fig. 3: Participants visited mercury mine in Idria and led and zink mine in Mežica. The photo was taken during the original mining meal in Mežica mine, which is today one of the three tourist mines in Slovenia. Photo M. Simić

dards meeting UNESCO's Global Geopark standards.

Dan Grigorescu (Romania) pointed out that conservation targeted at development of tourism and education activities in Hateg Geopark following the needs of the local population, might help balance the strong economic recession caused by the closing of the coal and copper mines and metallurgic factories and consequently high rate of unemployment in the region. The Geopark objectives were developed by a consortium of universities, local authorities, enterprises and NGOs, but the local community is a key success factor of the park.

John Macadam (UK) noted that we interpret Earth heritage sites for several reasons including educating visitors, managing visitors' behaviour, promoting our organisation and developing geotourism. Numerous examples demonstrated both good and bad interpretation, and proved that we have to deal with the process of interpretation rather than just with the products. We need to decide who we are interpreting for, then decide what we want to interpret, and finally decide the most suitable media. Putting complicated text on a board does not help public understanding of science, and will hinder rather than help our wish to promote geoconservation.

Kevin Page (UK) rounded off the key-note themes with a look at the community involvement in geosciences and geoconservation. Conservation sys-

tems often have a tendency to create barriers between the communities associated with geological heritage in favour of an external scientific 'elite'. Inappropriate exclusions inhibit science and education and might deter community participation in both the investigation and protection of geological heritage. In the UK there is a long tradition of the participation of an amateur community of geoscientists. They are making new discoveries and with an ever decreasing level of funding for paleontological research and the non-replacement of palaeontologists in universities, their potential contribution to science is even more significant. Similarly, broader community focussed projects can involve local populations in the direct management and protection of geosites. A dialogue between the scientific and conservation community is essential for the benefits, both in engendering support for geoconservation and for site conservation.

Some ten case studies and posters highlighted different topics underpinning the key-note themes in many ways. The first day was complemented by an evening welcome reception by the Mayor of Ljubljana, the Slovene Geological Society and the ProGEO WG 1 chairman.

The geosites workshop on the second day started with ten case studies from Greece, Croatia and Slovenia, demonstrating the ideas of frameworks and geosites to match. The discussion drew out the conclusion that the necessary follow up is to bring clarification into existing draft proposal of regional geosites

frameworks. It was agreed to list actual sites alongside the country frameworks. It was agreed that the first step is to collect national lists of geosites and Bill Wimbledon had volunteered to connect them to the already existing frameworks published after the Dublin symposium. Secondly, the list of expert specialists from each country is required as each major subject needs a consortium of experts who can advise on the specifics of valuation and assessment of the sites. The completion of this task should be done before the ProGEO conference in Croatia in October 2008.

The workshop on public understanding science on the third day, started with four case studies on geosciences promotion and the needs of developing interpretation activities and channels. Although geoparks was a theme in several presentations, it was not the main aim to discuss, but we concentrated on how to best promote the geodiversity with the use of modern interpretation standards. The practical part of the workshop was dedicated to preparing a short presentation of the main geological highlights of each country in a form understandable to a member of the public. This was not an easy task due to the jargon we use and the complicated concepts we cannot avoid. As a conclusion of this workshop there was agreed that the member countries upgrade their presentations done at the workshop in a way to attract attention by short interpretation texts easy to read and understand. For the purpose of their presentation on the internet, John Macadam volunteered to edit English language versions.

Some 40 participants joined the post-conference field visits. They visited carboniferous fossil flora exhibition at Ljubljana Castle Hill; and the next day a variety of karstic phenomena. The intermittent Lake Cerkniško jezero had an excellent interpretation model constructed and run by a local inhabitant. In the afternoon we visited the World Heritage Site Škocjanske jame caves learning the problems and challenges of the park; and Idrija mercury mine bearing numerous geotourism challenges. The last day field visit to Dovžanova soteska gorge highlighted the problems of mismanagement, challenges of proper management of natural monument, in situ and ex situ protection of fossils, interpretative methods and local community involvement and needs. We ended the trip in Mežica tourist mine learning the metalogenesis and geology of the area and the tectonic geological heritage of the Periadriatic fault zone in the surrounding area, as well as the challenges of sustainable tourism combining sport, history and geology.

It was most encouraging and rewarding to meet with colleagues and take strength and ideas back to continued work for the conservation of geological heritage.

Stonescaping of public urban spaces by boulders at Espoo, Finland

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Glacial, erratic boulders are a natural and prominent part of Finnish landscapes (Fig. 1). They have also had an important role in national traditions. Nowadays, they are used in landscaping in many Finnish towns. Here we present some examples from Espoo which is located at the Metropolitan region of the capital Helsinki.

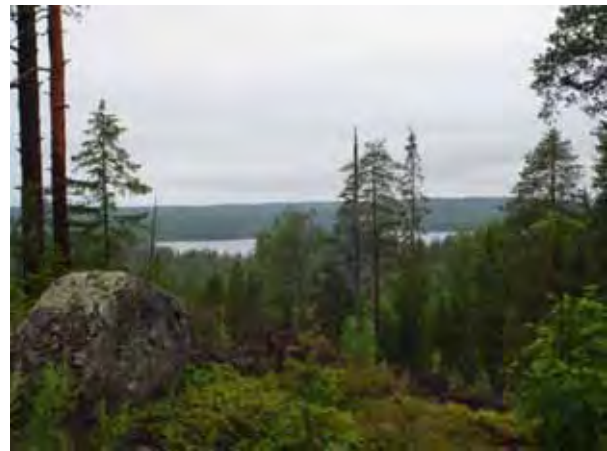


Fig. 1. Finish landscape



Fig. 2. Preserved boulders in Kyyhksmäki.

In Espoo, boulders are also found in constructed spaces. Boulders are preserved when constructing in their surroundings (Fig. 2). The biggest of them are even protected as geosites and integrated in interpretative trails. However, some of the urban boulders

ders are not erratic in the sense that they were not transported to a place by a glacier, but installed by man. The aim of these installations is aesthetic and practical. Boulders are used to limit parking areas, decorating the place at the same time. One of the examples is the parking area of a famous furniture shop (Fig. 3). They were installed along lines towards a crop surrounded by forest. In residential areas, boulders are also used to avoid car traffic in walking ways (Fig. 4). This practical application has been used since 1960's.



Fig 3. Parking at Ikea



Fig 4. Driving obstacle



Fig.5. Decoration in Espoonlahti.



Fig. 6. Use of stones in road environments in Leppävaara.

When used only in landscaping, boulders are installed in groups, half-immersed into the ground, and surrounded by well-rounded glacio-fluvial pebbles (Fig. 5). These examples can be found at Leppävaara, Espoonlahti, Espoon keskus, and Kilo, where boulders decorate margins of bicycle and walkways, and beside a road under a bridge (Fig. 6). They are also used to decorate spaces that separate streets with opposite driving directions (Fig. 7). Those have been designed and proposed by private planning companies, approved by the municipality and



Fig 7. Road environment in Espoon keskus

installed by a contracted construction company. This kind of rock installation is also used outside of a shopping centre located at Leppävaara (Fig. 8). There strongly angular boulders extracted directly from the bedrock were installed in a “cubistic” fashion. A similar, but more massive example is found surrounding a gas station at Bemböle (Fig. 9). Erratics are mainly local, extracted directly from the more-nic ground, exposed by excavation of construction sites.

These installations are made with rough, undesigned boulders, composed mainly by K-feldspar granites, but also amphibolites, migmatites and gneisses are used, reflecting the Precambrian bedrock of southern Finland. Their dimensions are usually around 0.5 – 1 m. Their rough, brutal naturalness reproduces a primitive, monolithic aesthetics, that fits well with Finnish landscape and Finn’s minds. The Chinese call it as “ugliness” in stones, that has a strong aesthetic and artistic value for them. This can also be called brutal aesthetics. The boulders described here are examples of applications of geology and geoaesthetics, bringing geology and stonescaping closer to people in their everyday lives.

Presentation at the 15th Meeting of the Association of European Geological Societies (MAEGS15) Estonia, September 2007.



Fig 8. Use of stone outside a supermarket in Leppävaara.



Fig 9. Gas station at Bemböle



Interpretive Training Course for geoscientists of the Institute of Geology and Mineral Exploration of Greece.

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The event started with a seminar 3 December 2007, facilitated by the author of this report and Vas. Demertzi, specialist on educational sciences. The seminar was intended as a warming up to an interpretive course by John Veverka, American specialist on interpretation (www.heritageinterp.com) that followed the following four days.

Definitions, principles and concepts (provided by John Veverka, interpreter).

Within the interpretive profession there are several

definitions of what interpretation is. One of the most commonly used definitions of interpretation is that:

Interpretation is a communication process designed to reveal meanings and relationships of our cultural and natural heritage, to visitors, through first hand involvement with objects, artifacts, objects or sites. (Interpretation Canada – 1976).

The American Association for Interpretation defines interpretation as:

A communication process that forges emotional and intellectual connections between the interests of the audience and the inherent meanings of the resource.

The main difference between interpretation and information is not what the message or program contains – the information – but *how* the information is presented.



The basics of interpretation principles are:

- All interpretive efforts must relate to a visitor's personality, experience or interests. This includes tangibles, intangibles and universal concepts as well.
- Information does not equal interpretation, but all interpretation contains information.
- Interpretation is an art, which combines many arts regardless of subject material. Any art is to some degree teachable.
- Interpretation does not equal instruction, but rather provocation.
- Interpretation should aim to present a whole rather than a part.
- Interpretation for children must be designed specifically for children, and not simply a dilution of programs and information for adults.



*Exploring ancient galleries
Photo: I. Theodosiou*

The communication process used to "interpret" information is based on Tilden's Interpretive Principles (Tilden, 1954). Tilden's basic communication principles are also the ones you found in every first year marketing or advertising textbook on successful communication with your market (audience). To make remembering Tilden's principles easier we came up with the TIPS (Tilden's Interpretive Principles shorthand), a short hand version of the main principles:

- Provoke - attention, curiosity and interest.
- Relate - to the everyday life of your visitors.
- Reveal - the main concept or theme through some creative or unusual viewpoint.
- Address the Whole - make sure your program relates to your main program THEME.
- Strive for message unity - use the correct supporting elements in your program to illustrate your theme or main concept.

(Note: Tilden's principles appear in the poster of the training course.)

Learning Concepts:

- We all bring our pasts to the present.
- Categories can blind us.
- First impressions are especially important.
- Unless helped, we often fail to find, see or comprehend.
- Meanings are in people, not in words.
- My perception is not your perception.
- Circuit overload causes distortion and fatigue.
- Feedback is essential.
- Simplicity and organization clarify messages.
- A picture can be worth 1000 words (but can be the wrong 1000 words).

The interpretive training course

Monday: Three successive workshops took place with the following issues:

- Workshop 1: Approaching the concept of geological- and geomorphological heritage.
- Workshop 2: Geotourism and crucial issues, focused discussion in groups.
- Workshop 3: Geoparks, priorities and scale of actions.

All three workshops attempted to answer the question of the need for a geological heritage interpretation course. Discussion at the end of the day was a stimulus for the course in the following days.

Tuesday 4: The day was dedicated to:

- Introduction to heritage interpretation
- Planning and design of interpretive media.
- Interpretive master planning for heritage/geological sites, parks and facilities.



*Restored ancient mineral washing plantations
Photo: D. Karageorgiou*

In the evening an open session on “An interpretation general overview” took place. The evening finished with a nice reception.

Wednesday: Field Trip to the Laurium area and its ancient mines. Practicum on site experience to begin an analysis and interpretive planning considerations. A site assessment has been preceded in the framework of the IGME project on Geosites and Geoparks promotion and designation. The area is under study for a geopark establishment. Field trip was coordinated by Zantik Tzanikian, economic geology specialist.

The region of Laurium in the south-eastern Attica has been identified with mine exploitation since antiquity, and has always played a key role in the technological, economic and political development of Greece.

Famous since ancient times for its substratum, rich in metals and minerals, the region of Laurium became a major metallurgical centre as early as 3000 B.C. approximately, when the first galleries were dug. Laurium provided all the great civilisations of the Aegean with silver, lead and bronze.

The importance of the Laurium mines for the city of Athens grew rapidly after the 6th century B.C. Silver from Laurium was used to mint Athens' own silver coins – the famous “Laurium owls” of Aristophanes. The Athenian coins, bearing the head of Athena on one side and the owl – the goddess' sacred symbol – on the other soon circulated everywhere in the Mediterranean and dominated in commercial transactions for centuries.

The Laurium mines became a catalyst for Athenian history since the 5th century B.C. The precious silver of Laurium became the basis for the development of the Athenian democracy.

Following centuries with fluctuating production and finally abandonment, the area of Laurium witnessed a second period of prosperity in the 19th century. The interest in the exploitation of the Laurium mines mainly for lead this time, was revived in the early 1860's, new industrial buildings and mining facilities was erected. These industrial facilities constituted the earliest heavy industry in Greece, the largest in the Balkans at the time, and soon, one of the most important metallurgical centres in the world. Activities



The group on the edge of a doline circumference

Photo: D. Karageorgiou

continued until 1990 approximately. More than 200 minerals have been identified there, a number of which have been named after localities (e.g. kamarezite, laurionite,) or persons that played a significant role in mining (e.g. serpierite).

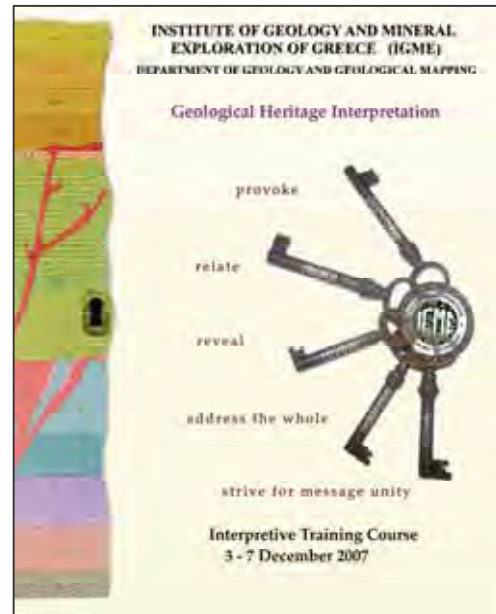
Today, following the cessation of mining activity, the area of Laurium retains its historical significance, as well as its great beauty. The industrial buildings of the 19th century and their surroundings, characterized as historical monuments by the Ministry of Culture, constitute an important vestige of industrial and metallurgical technology of the past. It is a monument to human labour, as well as a great chapter in Greek industrial archaeology. A Technological cultural park has been created in the area by the mining company, administered by the Technical University of Athens.

Thursday: Interpretive planning practicum for the site visits. The aim was to develop an interpretive plan draft for Laurium that should include: specific objectives, specific theme and storyline flow, potential visitors and marketing considerations. The work to fill out interpretive planning form sets for inventoried

sites was started as well as the work to develop an implementation and operations matrix for putting the plan into action

Friday: Continue interpretive planning practicum for Laurium site, discussion for the further work and workshop summary and evaluation.

It was a week with a lot of hands-on experience, practicum and fun.



Deadline for the next issue of ProGEO NEWS: 10.03.2008

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