

## SESSION 48

## 48-7 Oral Kiss, Gábor

CONSERVATION OF EARTH SCIENCE VALUES IN HUNGARY, AND THEIR USE IN ENVIRONMENTAL INTERPRETATION AND ECOTOURISM (SOME EXPERIENCES OF THE EARTH SCIENCE CONSERVATION REVIEW PROJECT)

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Keywords: Earth Science Conservation; National Cadastre of Earth Science Values; Ecotourism

In the frame of a nationwide project called Earth Science Conservation Review, the national survey of earth science (geological, geomorphological, hydrological and pedological) values has started. A result of this, The National Cadastre of Earth Science Values is being compiled. In the first phase, there were 182 earth science objects listed, and the most important 90 objects from ecotouristic point of view are documented. Some interesting experiences of the project are the following: - A major portion (90%) of the investigated objects is geological and geomorphological values. This expressively indicates their outstanding aesthetic value, and their importance in ecotourism. - Almost three quarter of the objects can be found in natural occurrence. A major portion of the geological values occurs in man-made exposures created by mining. - A major part of the investigated objects is utilised for environmental interpretation and ecotourism. 50% of the places are interpreted with the use of interpretive panels. This expressively proves the outstanding role of earth science values in rising environmental awareness of the public. - The high attractive force for tourism is mainly due to the visual value (32%) of the earth science objects. - The territory of the Bükk National Park Directorate (39%) and Balaton Upland National Park Directorate (27%) is especially rich in earth science values with high attractive force for tourism. - 60% of the investigated objects are actually or potentially endangered. The natural vegetation of the exposures and rocks kept clear artificially is the most characteristic (25%) endangering factor. This process reduces the visibility and accessibility of the objects, and hereby their use in research, environmental interpretation and tourism. - A major part (94%) of the places is in "excellent" or "good" condition. The earth science values of the Balaton Upland National Park Directorate are in the best condition. The most important reason of this is their touristic use, which demands their permanent clearance and management. This indicates that, in the case of earth science values, tourism is not just an endangering factor, but in many cases it contributes to the maintenance of their scientific and educational importance. Compilation of The Cadastre of Earth Science Values is a very important task of earth science nature conservation, but it constitutes only the first step of their maintenance in the long-term.

## 48-8 Oral O'Connor, Patrick James

LANDSCAPES FROM STONE - A SUCCESSFUL PUBLIC OUTREACH INITIATIVE IN GEOSCIENCE FROM IRELAND

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Keywords: Geotourism; Landscapes; Ireland; Outreach

Today there is an ongoing challenge for professional geoscientists to communicate effectively with policy makers and the general public on issues of societal concern. From 1997 to 2001, the Geological Survey of Ireland (GSI) and the Geological Survey of Northern Ireland (GSNI) embarked on an ambitious programme under the brand name "Landscapes from Stone" to promote wider understanding and enjoyment of the landscapes and rocks of the twelve northern counties of Ireland. The initiative received substantial funding under the EU Special Support Programme for Peace and Reconciliation. Popular literature was produced for the mainstream recreational visitor market with walking, driving and cycle routes used to link sites of geological interest with sites of archaeological, cultural and mythological interest. This approach of integrating geology with other landscape attributes has proven very popular with users of our guides. The success of the initiative, reflected in sales figures to date, demonstrates the appetite of the wider public for geoscience information when it is presented in an accessible format. The initiative has brought added economic benefit to a region recovering from civil unrest.

## 48-9 Oral Guerrieri, Luca

GEOLOGICAL FIELD TRIPS: THE FOURTH DIMENSION OF TOURISM

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Keywords: field trips; tourism; Italy; Mediterranean Consortium

The Italian peninsula and Mediterranean area provide a complete rock record spanning from the Precambrian to the Holocene. Young collisional belts, thick exposed crustal and mantle sections, metamorphic and magmatic rocks, classic fossil and mineral collecting sites characterize this region. Moreover, the signs of recent tectonic activity, volcanic eruptions, earthquakes, glacial processes, coastal evolution, large gravitational phenomena and floods are imprinted on the present landscape, providing impressive sights. In order to give to the 32nd IGC participants the opportunity to examine these features, a large number of geological Field Trips have been offered. A special publication of the 32nd IGC, arranged in six volumes, collects more than 80 guidebooks of field trip offered in Italy (70%), in other countries of Mediterranean Consortium (Southern Europe, Northern Africa and Middle East) and one in Central Asia (Prestige Field Trip). The proposed geological field trips give the opportunity to discover areas usually not reached by classical tourist routes, but showing likewise natural and cultural attractions. For example a visit in the mining areas of inner Sardinia has likely the same charm of more famous coastal beaches. Similarly the dramatic effects of 79 AD eruption of Vesuvius, well known in the classical archeological sites of Pompei and Ercolano, are nevertheless preserved in the landscape of the whole surrounding area. The geological field trips add the temporal dimension to the three spatial coordinates that characterize the classical tourist itinerary, and allow to appreciate the evolutionary dynamics of the visited site. Examples are excursions reaching important natural and cultural tourist sites like Florence, Rome and Naples, the major Mediterranean islands (Sicily, Sardinia and Corsica) and the minor islands of Thyrrenian and Aegean Seas. Moreover, according to the tradition, the excursion offer is completed by enjoining field trips such as the tours in the vineyards of Cognac, Tuscany and Umbria. Participants, even not expert geologists, will appreciate how different geological evolution have influenced the different taste and flavour of famous wines.

## 48-10 Invited Sheppard, Fred

PARKS CANADA'S ROLE IN GEOLOGICAL EDUCATION AND TOURISM

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Keywords: GEOLOGICAL EDUCATION; HERITAGE TOURISM; TEACHER INSTITUTES

Gros Morne national park of Canada was established in 1973 and is one of forty-two national parks in Canada that protect and preserve nationally significant natural and cultural heritage areas. Gros Morne was declared a UNESCO world heritage site in 1987 and the global stratotype section and point for the Cambrian-Ordivician in 2000. We have endeavoured to engage visitors and educators to Gros Morne national park in a variety of different ways and means. This presentation will highlight our past achievements with connecting people to the spectacular geology and landscape of our national park through the artist in residence project, teacher institutes, urban schools project and heritage tourism.

## 48-11 Oral Macedo, Arlei Benedito

PRESENT CONDITIONS AND PROPOSALS FOR SUSTAINABLE TOURISM IN THE ANDRE LOPES KARSTIC AREA, BRAZIL

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Keywords: geosite; geological heritage; geology; Andre Lopes; Vale do Ribeira The Andre Lopes area comprises an elevated marble nucleus, surrounded by lower metasedimentary terrain. In the marble occur surface and underground karstic structures, being a part of the Jacupiranga State Park (150,000 hectares). The best known is the Caverna do Diabo (Devil's cave), also known as Tapagem, with more than 8000 meters, 700 of which are open to the general public, and prepared for comfortable visitation, with paved access trails, stairs and lights, and monitors to assist and give explanations to visitors. Other parts of this cave and others in the area have few tourist facilities and can only be visited with specially trained monitors. There is a fairly complete, albeit badly maintained, tourist infrastructure, with paved roads, restaurant and cabins. Less visited but important are the karstic structures on top of the Andre Lopes mountain, the Agua Suja (Dirty Water) cave, and waterfalls, like the Queda do Meu Deus (My God's Fall), 50 meters high. The assets of the area come from nature: caves with breathtaking speleothems, beautiful landscape, with access roads cutting the Ribeira Valley, where is the only large tract still remaining of well preserved Atlantic Rainforest in Southern Brazil. It is situated 300 km from São Paulo, the largest city in South America (18 million people), and is near enough of other parks to make possible integrated routes. However, there is little visitation, and this small activity causes environmental and social impacts. For a long time the company of official monitors was not mandatory, and visitors took pieces of cave formations as souvenirs and impacted the surrounding vegetation. Some examples show the problems in administration: the admission ticket price is low (around US\$ 1.60); the restaurant's concessionaire takes profits but does not help in maintenance; the cabins are in bad shape, and the museum and visitor's center building was closed for repairs in the middle of the tourist season. No wonder the number of visitors decreases continuously, being now less than 4000 a year. The efforts to solve problems are impaired by the lack of a Management Plan for the Park. The Institute of Geosciences of the University of São Paulo is developing projects to help protect this and other Geological Heritage areas in the Ribeira Valley, comprising cave and surface geology surveys, training for monitors and production of maps and folders for tourists, working in collaboration with state agencies and NGOs.

## 48-12 Oral Gaitán-Morán, Javier

USE OF GEOLOGICAL HERITAGE FOR ALTERNATIVE TOURISM ACTIVITIES IN BAJA CALIFORNIA SUR, MEXICO

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Keywords: Ecotourism Baja California Sur México; Alternative Tourism; Environmental Education; Geological Heritage Baja California Sur México

The state of Baja California Sur in northwest Mexico is geographically located in a semiarid and a coastal region. It has been distinguished by its scenery's beauty, geographic isolation and low human density. It encompasses a wide territory conformed by open, diverse and pristine areas, of the very few still left in the planet. Geologically the entity is acknowledged for its variety of rocks, fossils, mountain and coastal geomorphology which form its rich natural heritage. They also constitute the irreplaceable testimony of a unique and complex geological evolution. In this context, some of these elements which conform the landscape are invaluable natural monuments for the enjoyment and appreciation of the locals and the visitors. Alternative Tourism, as a way of sustainable tourism which takes into account the natural potential, represents an interesting offer to the visitors which principal interests reside in the practice of diverse activities other than the ones practiced by conventional tourism. The Environmental Geology and Development Group of the Universidad Autónoma de Baja California Sur has a project in process in which the geological heritage is considered as a potential base for the state's Alternative Tourism development. The methodology is presented further on this paper.

## 48-13 Oral Berry, William

THE "BIG ISLAND" OF HAWAII: A WONDERLAND FOR ENVIRONMENTAL-GEOLOGICAL TOURISM

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Keywords: Kilauea; coral reefs; geothermal energy; wetlands

The "Big Island" of Hawaii affords a marvelous array of opportunities to tourists with geological and environmental interests. Kilauea's active volcanism attracts most tourists who become enchanted watching lava flows surge towards the sea. Billowing steam clouds rise into the air as hot lava hits the ocean. Tourists who walk across the bulging, steaming main crater can get a sense of volcanic energy. The island's geothermal energy plant generates about one-third of the island's energy needs. It is an attraction for those who wish to learn about an alternative to energy generation from fossil fuels. Undersea life is rich and varied - ranging from coral reefs (many of which lie within protected sanctuaries) to colorful reef fish, sea turtles and rays. The island's twin volcanic peaks, Mauna Loa and Mauna Kea, both of which rise more than 4000 meters above sea level, are sites for study of rain forests (on the windward side) and near-desert vegetation on the dry side. A visitor center at 3000 meters on Mauna Kea provides visitors with a guided tour of the heavens most evenings. Ice age geologic features can be seen near Mauna Kea's summit. Steep waterfalls cascade downward into wetlands with a rich tropical vegetation that was home to many natives. Petroglyphs and fish ponds that were designed for sustainable fish farming comprise other fascinating features to be seen by tourists.

## 48-14 Oral Bajpai, Sadhna