



Geoparks

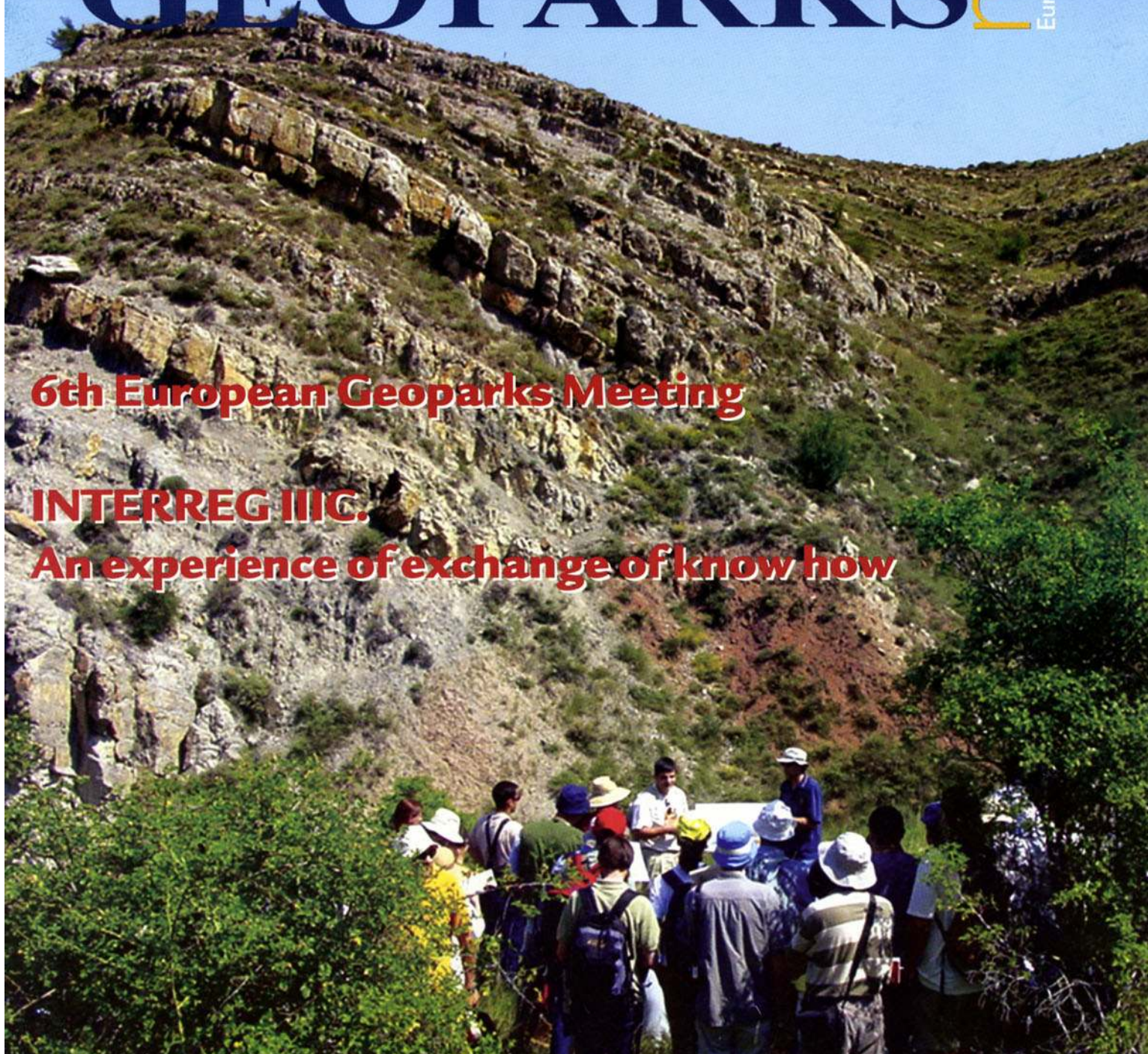
network
European Geoparks Magazine • Issue 3

europaean GEOPARKS

6th European Geoparks Meeting

INTERREG IIIC.

An experience of exchange of know how



How do you get people up and out of their houses and into their natural surroundings? And how do you capture their interest so that they also learn about the physical world? The answer lies in geotourism. And geotourism is the bread and butter of the growing geopark movement.

The European Geopark Network concerns itself with the conservation of unique geological regions across Europe and the communities found within them along with education of the public. In order to achieve this, geoparks need people to come and visit them. Therefore the European Geopark Network has been very busy since its inception in June 2000 with the tasks involved in developing and promoting geotourism. So far they have managed to secure European Community funding through the INTERREG IIIC program to work on various sorts of cooperative projects. One of these projects involved the establishment of an evaluation process for the geoparks (applied every three years) to make sure they are indeed providing excellent services and products to their visitors. Then there is the building of the EGN structures that facilitate exchange between members as they seek the best methods for geoconservation and promotion of their regions. Besides the many EGN meetings and conferences, members have constructed a main website, annual magazine, many leaflets and posters, a cd-rom promoting the EGN as a tourist attraction, a promotional corner for every geopark that familiarizes visitors with all other geoparks in the network, and various souvenirs (EGN postcard sets, logo t-shirts, hats and bags, casts of ammonites and leaf fossils etc.). Last summer's EG Week was a great success as it attracted many new visitors to geoparks across Europe through fun activities for the young and old.

Not only are people interested in geoparks, many regions across Europe have shown interest by applying to become geoparks. From four original geoparks in 2000, there are now 25 across 10 countries in Europe. The geopark formula (geoconservation + sustainable development + education) has attracted much attention on the international level as well. The formation of the UNESCO Global Geopark Network answered the need for the establishment of geoparks outside of Europe as well. The GGN now contain 33 geoparks worldwide and continues to grow.

All this growth means infusions of new ideas from new colleagues on how to get people out of their houses and into the geoparks and get them interested in the values that protect our natural heritage across Europe. And this is the essence of the network aspect of the EGN – together much can be accomplished.



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Naturpark Stenische Eisenwurz

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European Geoparks

A Network for cooperation on geotourism and local development

A network of cooperation between European Geoparks was supported by the INTERREG IIIC initiative. The project, which started 12-6-03 and will soon end in 31-12-05, involved nine European geoparks.

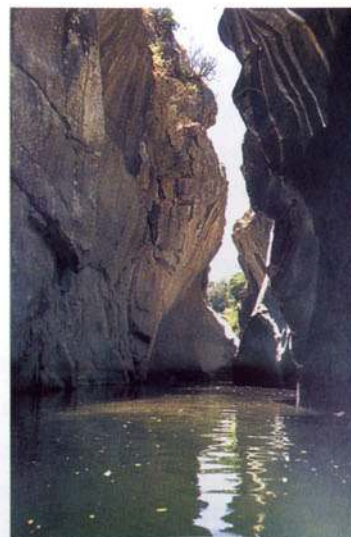
Let's explore this type of cooperation and whether it addressed regional needs (such as ensuring the efficient exchange of experience and transfer of knowledge among participating regions). A network type of cooperation does indeed address regional needs since it provided the forum within which to share and solve similar problems that partners from seven different countries with similar socio-economic characters faced. These challenges included how to manage and promote natural heritage and how to accommodate operating staff with various mentalities while successfully achieving common goals. Their success in facing



these challenges has since been recognized by independent international organizations such as UNESCO, IUGS, IGU and IUCN.

The project emphasized the importance of using geo-tourism as a means to support sustainable territorial development along with geoconservation. To carry out effective geotourism, the partners needed to develop rules of practice and tech-

niques to ensure high quality standards in the operations and services in geoparks that would address the increasingly sophisticated demands of visitors from different European countries. The main advantage of interregional cooperation schemes as compared to other mainstream programs and initiatives is that it ensures that quality standards and operations are not influenced by





national criteria and opinions but that they reflect the vision of the international community which is the source of tourist flow to geo-parks.

The main achievements of the operation thus far:

- the development of an evaluation process for infrastructure, operations and services
- the exchange of experience and know-how in geoconservation and geotourism development
- the exchange of exhibitions and geopark events
- the organization of common events to promote geotourism and geoparks like the EG Week
- the promotion of geotourism through common promotional material such as the EG magazine, website, leaflets, books, and the EG Corner

And finally, who are the beneficiaries of the INTERREG operation? They are European citizens who enjoy recreational activities that simultaneously educate and sensitize people to the value of our common geological heritage. They are also the European citizens living in the local communities of the geopark regions as they benefit from the income generated by the increase of geotouristic activity in their areas. Finally, geopark members are also beneficiaries as they are encouraged by the results of their hard work and cooperation as the geopark network expands across Europe.

Welcoming new European Geoparks

The representatives of the New European Geoparks receiving the official nomination at the opening ceremony of the 6th European Geoparks Meeting on October 5th, 2005



The Prefect of Lesvos Mr. P. Vogiatzis awards Geoparks A. Adrassanu and Dan Grigorescu from Hateg Country Geopark – Romania , M. Burlando, F. Zannino and F. Dario from Beigua Geopark - Italy



Middle photo the Mayor of the Eressos-Antisa Mr. P. Abatzis awards M Pascova from Bohemian Paradise Geopark – Czech Republic, T. Ramsey, J. Davis and C. Gledhill form Forest Fawn Geopark - UK



The G. Secretary of N Aegean Region Mr S. Tsiftis awards W Speidel, E. Heizmann from Geopark Swabian Alb- Germany, A. Buddenbohm Mecklenburg Ice Age park- Germany, H. Zellmer and C. George from Geopark Harz - Germany (lower photo)

Review of the 6th European Geoparks Meeting

Lesvos Island, Greece • October 5 – 8, 2005



More than 220 scientists from 40 countries from Europe and around the world participated in the 6th European Geoparks Meeting, the international conference on geoparks, geoconservation, geotourism, communication and local development which was held on Lesvos Island, Greece from 5 to 8 October, 2005.

The conference was organized under the auspices of UNESCO, on behalf of the European Geoparks Network by the Natural History Museum of the Lesvos Petrified For-

est and the Department of Geography of the University of the Aegean, with the support of the E. U. Initiative INTERREG III C.

The Director General of UNESCO Koichiro Matsuura in his message which put the meeting under UNESCO auspices, noted that "for many years UNESCO has promoted geological heritage by its programmes in the framework of the World Heritage Centre and the UNESCO Geopark activities. For several years, the Earth Observation Section of UNESCO's Division of Ecological and Earth Sciences has been closely cooperating with the European Geoparks Network in joint geological heritage and environmental education activities.

The theme of your meeting is fully in line the decision of UNESCO to support ad hoc initiatives of Member States to promote territories or natural parks having special geological features. The aim is to conserve geological heritage with a view to enhance education on our natural environment, and to achieve sustainable development by using it as a tool for tourism and investment."

The Minister of the Aegean Mr A.

Pavlidis, attended the conference and noted the importance of Geoparks for geological heritage protection and local development in the Aegean Region and in the world.

The success of the conference was based the wide participation and the quality of presentations and discussions. Presentations of various geoparks (infrastructure and activities) as well as on proposals for new geoparks reflected the increasing interest in Europe and worldwide in collaboration of the creation of geoparks, protection and promotion of geological heritage and the sustainable development of the hosting territories through the development of geotourism. The conference gave an opportunity to all participants re-presenting existing geoparks and initiatives for the creation of new geoparks in Europe and in the world, to discuss progress in the above fields as well as the achievements of the European Geoparks Network, which has been growing rapidly since its formation in June 2000 and now comprises 25 members from 10 European countries. This growth confirms the utility of a European network of collaboration in which expertise and tools linking geoconserva-





tion and sustainable development through geotourism can be shared and implemented in a structured and responsible manner.

The meeting also focused on examining the present state of knowledge, communication and management in the European geoparks. New ideas in areas such as geoconservation, protection and enhancement of geomorphological and geological heritage, geodiversity, sustainable and local development or environmental education were also discussed. Furthermore the role of the European Union in supporting a sustainable development strategy was explored along with future developments in the EGN.

New members were officially welcomed into the Network and new candidatures were also presented. At the same time poster presentations and informative promotional materials were displayed for each geopark, showing their efforts to trigger the interest of the public on geoparks, geoconservation and geotourism.

Scientific report

The Network's collaboration with UNESCO's Division of Ecological and Earth Sciences, as mentioned by Mrs M. Patzak, emphasizes the importance of organizing cooperative efforts in the field of geoconservation and geotourism.

New initiatives and proposals of collaboration in geoconservation and geoparks were presented by the official representatives of the International Union of Geological Sciences (IUGS) W. Janoschek, the International Geographical Union (IGU) N. Barrera Basols and the Chinese National Geoparks Network Zao Hun, as well as examples of similar initiatives in other continents. S. Turner reported on the situation in Australia and Oceania and A. Hertzog Cardoso on Brazil.

The spreading of the idea of geoparks and geotourism development in Europe was incredible. Proposals for potential geoparks came from Portugal, Spain, Italy, UK, Norway, Switzerland, Norway, Finland, the

Czech Republic, Ireland, Austria, Poland and Turkey.

The official ceremony

The official ceremony of the conference took place on October 5 in the Municipal Theater of Mytilene. The General Secretary of the North Aegean Region, Mr S. Tsiftis, provided an opening speech. The chairman of the Organizing Committee N. Zouros welcomed the participants. The Prefect of Lesbos P. Voyiatzis, the Mayor of Eressos-Antissa Mr P. Ambatzis, the Rector of the Aegean University Prof S. Katsikas, the representatives of UNESCO Mrs M. Patzak, IUGS W. Janoschek and EGN P. McKeever among other distinguished guests also appeared at the opening ceremony. During the ceremony the new European Geopark Network members were officially nominated and received their certificates and a plaque dedicated to their inscription in the EGN.

Lesvos Geopark visit

All participants had the opportunity to visit the Lesbos Petrified Forest Geopark, and especially the museum, the visiting parks, geosites and scenic spots as well as enterprises collaborating in the geopark's activities. The field survey was a key activity of the meeting for which the Organizing Committee arranged well prepared action plans. Emphasis was given to activities and meetings where the participants had the opportunity to observe the impact of the geoparks activities on the local economy and the inhabitant's living conditions. The conference meals were prepared by five different women's co-operatives who are operating in the geopark's area.

From Beach Mosaics to Geo-kayaking: European Geoparks Week 2005

Were you busy building a giant beach mosaic of rocks, meeting Dinouli the little Elephantoid and learning about his adventures in the Sequoia Forest, treasure hunting or touring a chilly ice cave last summer? If you were, you were part of the crowds that enjoyed the exciting activities and events hosted by geoparks during the European Geoparks Week May 28 – June 5, 2005. Aimed at raising public awareness of the EGN and educating the public about our rich geological heritage, EG Week also provided a focused opportunity for the geoparks to co-operate and support each other.

In 2005, the nine geoparks participating in the EG Week organized various attractive and fun events for the public. These included mixed media exhibitions, presentations, lectures and EG displays on various geopark related topics such as "Impressions



of the Copper Coast", "Voluntarism and the Petrified Forest", "Petrified Forest – The Pompeii of Plants", "Introduction to the archaeological finds and conservation work at Tankardstown Engine house", and "The Enns Valley during the Great Ice Age - not a totally cool story".

For the more active younger visitors, "The Little Paleontologists" provided hands on experience in the excavation and purification of a petrified tree trunk in Lesvos. Over in the Eisen-

wurzen Geopark, local schools participated in the "Explorers en route" program making casts of fossil snails and learning how to wash gold among other activities. The geopark also hosted a "Children's Party" where they explored nature playfully! The North Pennines A.O.N.B. Geopark hosted children's craft activities, puppet shows and animation workshops among other activities. The popular Rock and Fossil Roadshows for school groups were held for the EG Week at the Abberley and Malvern Hills Geopark along with field trips for children. Throughout the week in Lesvos, educational programs involved plays (Dinouli the little Elephantoid), knowledge games such as "Traveling Across Europe" (made of card photos presenting landscapes across Europe) and museum kits which kept kids geographically and geologically challenged.

For the still active older visitors, imaginative outdoor activities included Geo-kayaking, Geo-rafting and all kinds of Geo-walking. Maestrazgo Cultural Park organized geo-walks using field notebooks edited for pedagogical activities in primary



The 2nd International Conference on Geoparks

17th to 21st September 2006
Belfast
Northern Ireland



Geoparks Conference 2006

This four-day event will comprise of plenary sessions and educational workshops for delegates to learn more about Geoparks - how to promote geological heritage and sustain local communities through the development of quality tourism. It will highlight the process involved in the development of GEOPARKS as well as the criteria involved in the application process for membership of the UNESCO-endorsed European and Global Geoparks Networks. It will also highlight the benefits GEOPARKS can bring to your local and national economy. Daytime excursions to the historical and cultural sites of Northern Ireland and also pre- and post- conference field trips to GEOPARKS, landscape and cultural attractions across Ireland, Britain and mainland Europe will also be organised.

For more information and to register your interest please visit
www.geoparks2006.com



school. Abberley and Malvern Hills Geopark got visitors out on the trails for their "Geology of Wine Vineyard Trail" and the "Wyre Forest Coalfields Mining History" guided trail. The Copper Coast Geopark provided boat trips and a challenging treasure hunt, two of many other events they hosted. Rock climbing, smelting demonstrations, and mine tours were some of the activities hosted by the North Pennines A.O.N.B. Geopark. Guided tours to the Floristella Grotta-calda Mining park as well as historical villages were organized by the Rocca di Cerere Geopark. Terra Vita Geopark celebrated EG Week with Naturpark Tagen (nature park days). Many more recreational outings like birdwatching, guided walks and trekking tours familiarized visitors with the natural beauties of the geoparks across Europe.

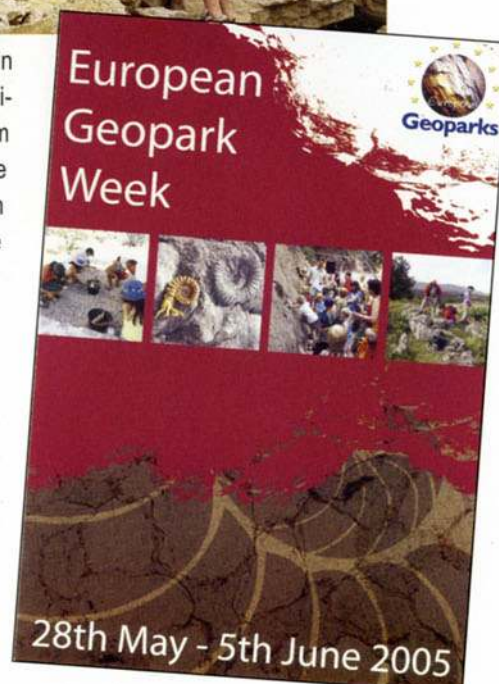
In addition to these sorts of events, the EG Week was a vehicle for the exchange of exhibitions between geoparks. Réserve Géologique de Haute Provence in France presented the exhibition "Olive Trees during the ages, from the Miocene to mythology" from the Natural History Museum



Geopark Harz-Braunschweig

of the Lesvos Petrified Forest in Greece. At the same time an exhibition entitled "The Dinosaurs from Sisteron" organized by the Réserve Géologique de Haute Provence in France was presented in the the Na-tural History Museum of the Lesvos Petrified Forest in Greece.

The next EG Week will be held from May 29 to June 4, 2006 – lots of time to devise creative new events and coordinate efforts in the planning of another successful and exciting EG Week!



INTERREG IIIC

AN EXPERIENCE OF EXCHANGE OF KNOW-HOW AND EXHIBITIONS

In the course of 2005, the Museum of the Lesvos Petrified Forest and the Geological Reserve of Haute Provence took advantage of the European Interreg IIIC programme to exchange know-how and experience through exchanges of staff and exhibitions. This experience helped reinforce existing ties between the two structures and develop the spirit of the European Geopark Network.

The Geological Reserve of Haute Provence and Museum of Lesvos Petrified Forest geoparks have been meeting for five years within the European Geopark Network, of which they are both founding members.

The Museum of the Lesvos Petrified Forest Geopark is located on the island of Lesvos in Greece and protects and enhances a series of exceptional fossil forests of the Miocene Age. The museum and enhancements of natural sites in this forest are an unquestionable tourist attraction for the second largest Greek island in the Aegean.

The Geological Reserve of Haute Provence manages a territory of more than 2,000 km² in south-eastern France.

Since both parks are genuinely committed to boosting local development, each with its own specificity and approaches shaped by their history and culture, it seemed natural for them to cooperate and exchange their know-how.

Three separate actions have been undertaken:

- exchanges of exhibitions
- meetings between museum shop managers
- training in the preparation of palaeontological casts

EXCHANGE OF EXHIBITIONS:

In the course of 2004, with the Olympic Games in Athens, the Museum of the Lesvos Petrified Forest Geopark prepared an exhibition harmoniously blending palaeontology, history and mythology. This exhibition was based on three trees emblematic of the pan-Hellenic Games of ancient times: pine, olive and laurel. The three species were displayed in their historic context, illustrated by remarkably well-preserved palaeontological specimens. (Photo 1)

This principle aroused a strong interest on the part of the Geological Reserve of Haute Provence, which has always

been interested in the relationship between science and culture.

In turn, the Geological Reserve of Haute Provence has displayed and enhanced dinosaur remains discovered on the edge of its territory (life-size reconstruction of the animal, reconstruction of the site, fossils, etc). The appeal of dinosaurs for the general public explains the Museum of the Lesvos Petrified Forest Geopark's strong interest in presenting this exhibition in a region where there are no such fossils. The Geological Reserve of Haute Provence extended the theme of the exhibition to reinforce its appeal in Greece by broadening the presentation of the geological period concerned. (Photo 2)

Through these exhibitions it was possible to:

- Undertake communication actions:
 - Mentions in the national and local printed press as well as regional and national television (Greece)
 - Official inaugurations with strong presence of personalities
 - Welcome of the official French and Greek delegations
 - Creation of communication materials: posters, brochures
- Exchange local products available





for sale in the museum shops

- Raise awareness among all our local partners to the importance of our European cooperation through a concrete example
- Promote the partner territory and the Interreg IIIC programme in every sector
- Develop teamwork by integrating cultural differences and the constraints of geographic distance

MEETING OF SHOP MANAGERS

The Geological Reserve of Haute Provence and the Museum of the Lesvos Petrified Forest Geopark have both had museum shops for many years, managed according to different philosophies linked to their cultures, geographic location, clientele and the local context. A meeting of shop managers was set up in order to exchange ideas and information, among other things, and to help develop activities and sales.

The Museum of Lesvos Petrified Forest Geopark shop manager spent a week in France in January 2005. The first part of the stay took place at the Geological Reserve's three museum sites, all with shops on the theme of the museum.

The points discussed concerned the following areas: familiarity with the clientele, the products sold and their prices, the products' museographic presentation, the local context, local craftsmen and their products, the

search for new products and strong points and weak points in our respective organizations.

The second part of the stay took all the participants (French and Greek) to Paris, for the 'Maison & Objets' international professional trade fair, an invaluable opportunity for studying new trends, discovering new suppliers and products or simply gleaning new ideas for what can be manufactured in their territories.

In summary, this exchange enabled the partners to understand each other better, become more aware of tourists' buying attitudes, identify sources of information for the purchase of new products, understand the need to raise awareness among local craftsmen on the creation of products corresponding to customers' expectations and, finally, reflect on the realization of future products in common. (photo 3)

This was also a key experience from a human standpoint, since the staff involved in this exchange do not usually travel or participate in European programmes.

TRAINING IN THE PREPARATION OF PALAEONTOLOGICAL CASTS

From the start, the Geological Reserve of Haute Provence has been concerned with supplying reproductions of major fossils from its territory for tourists and aficionados. This led the park to develop professional skills in terms of casting techniques in cooperation with the finest specialists from French museums and universities.

These techniques for creating perfect replicas are used by scientists to study

specimens that are unique or very fragile. For example, such reproductions may concern specimens as small as pentacrinites or fish vertebrae or as large as the famous ammonite slab, a cast of which has been displayed for over 10 years in Kamaishi, Japan.

In April 2005, two Geological Reserve technicians spent five days on Lesvos to teach their colleagues these techniques so they can reproduce the delicate plant fossils that characterize their heritage. Such practices may have several uses: protection of geological heritage, scientific applications and commercial goals.

This session helped raise the team's awareness of other techniques and provided know-how, it envisaged commercial development of the activity and it put the spotlight on the technicians doing the training, as they are not usually directly involved in European programmes outside their territories.

This, too, was a very meaningful human experience, with an exchange of cultures, professional practices, mutual understanding (linguistically) and discovery that certainly motivated everyone to pursue the cooperation further. (photo 4)

In conclusion, the Interreg IIIC programme has led to fruitful exchanges between our structures and especially our staff. Experience from Leader IIC has shown that these types of relations are pursued beyond the programme itself, truly contributing to European integration and harmonious sustainable development.

S. Giraud



The Eisenwurzen A Geopark in Progress

Located in the northern corner of the Austrian province of Styria, the Nature Park Eisenwurzen represents 250 million years of Alpine geological history. The area boasts scientifically highly renowned sites. A one time interval of the Triassic – the Anisian, which lasted from 245 to 237 million years before our time – was first recognized at a small village in the Nature Park. The Anisian stage was named after the Latin word for the Enns River, which flows through the village. ninety to 50 million-year-old deposits, including a world-famous Cretaceous/Tertiary boundary site, continue to yield new and surprising scientific data even today. Finally, extensive deposits of the Great Ice Age make this region a key area for the study of this period.

Ongoing scientific research over nearly 200 years has revealed a particular geological heritage, which is the prerequisite for becoming a geopark. As a first step in this direc-

tion, a touristic profile was developed. The label GeoLine embraced such diverse attractions as caves, a museum of the Vienna Water works, the GeoCentre, the GeoTrail and the geological bicycle trail of Gams and the Wasserloch Gorge of Palfau. Each of these attractions focuses on presenting the original witnesses of geological history: minerals, fossils, rocks and geological structures. During this autumn a new plank bridge will be constructed in a narrow gorge. It will complement the GeoTrail by providing an up-close view into the geological activity of water. A planned Ice-Age Trail will demonstrate the fascinating history of the area during the Great Ice Age and the following period.

A multitude of activities for various target groups complements the sites. Talks, guided conferences and the annual Geoparks Week have gained a constantly increasing audience. Project weeks and one-day excursions for school classes have become an economic factor for the region. The GeoWorkshop, in which

rocks and fossils can be cleaned from the matrix, polished and then investigated, has been a resounding success. GeoRafting on the Salza River provides a most intimate insight into geological structures.

The main objective of all the activities is to joyfully experience geology. In a next step, new sites will provide an even closer look at the geological periods represented in the park. One the planned attractions will transfer the visitors into the Anisian stage mentioned above. The highlight will be a simulated submarine trip through the ancient Triassic sea. The star performer will be a 6-meter-long marine reptile whose remains were found in the village; this reptile will also be commemorated with a life-size monument at the site where it was found. The "Snail Safari" will be an adventurous confrontation with one of the most successful animal groups in the history of Earth. Visitors will be introduced to the biology of snails in a visitor's centre and will then get to know 80-million-year-old fossil snails and living snails from various biotopes on a special trail. A former granary will house the Ice Age World. Visitors will get a close feeling for glaciers and the landscape during the Great Ice Age. Finally, the project Aqua Mystica will enable a breathtaking voyage to a large subterranean lake.

The geopark will therefore provide both fascinating geology and stimulating interpretations of the geological past. The touristic framework for the Eisenwurzen is complex: The Nature Park is located off the beaten touristic path. Urban areas that serve as potential sources of visitors are located more than 100 km away. Tourism must therefore to be stimulated by the geopark itself. The water adventure park in the town of St. Gallen currently attracts over 50,000 visitors each year, some of which come from afar. This proves that the geopark's expectations are very realistic.

**H. A. Kollmann
- R. Mitterbäck**



Geopark Volunteers

The approach of TERRA.vita



In 2004 TERRA.vita published a set of 17 new thematic cycling routes, leading along the geopark's points of interest. Since this new product turned out to be a real success (half of the first edition was sold during the first summer), TERRA.vita decided to set up a volunteer-programme to be able to offer guided tours on the TERRA.trails in the future. Additionally, volunteers could help keeping the signposting in a good condition.

In May 2005 the local newspaper published an article written by TERRA.vita, explaining the concept of this volunteer-programme. Surprisingly, this article generated an enormous response. More than 50 people called and showed interest in the programme during the first three days.

A few weeks later TERRA.vita invited them all to attend a first information meeting. During this meeting potential participants were introduced to the geopark team and the different tasks and roles were outlined to them. The high number of participants enabled us to define three different roles: tour guides, signpost-controllers and "escorts" that accompany guided tours, keep the group together, help in case of technical problems etc. All the volunteers were asked to choose their favourite TERRA.trail and job. From this we were able to form a team of five or six people to be responsible for every TERRA.trail.

The training of the volunteers is organized in three steps: First of all, the volunteers took part in a seminar evening giving them basic informa-

tion on the topics of earth history, archeology and nature protection. The second element is a guided tour, where the volunteers learn to know all the features of "their" route. The third step will be an intensive course that will take place in winter 05/06. During this course, which will be organized by the geopark in cooperation with a local adult education institute, the volunteers will get additional information on the thematic contents as well as skills in leading tours, first aid, bicycle repair and many other things necessary to successfully deliver the programme. As an obviously successful way of integrating voluntary capacities into a park's work, this project is suitable to be a model for other geoparks.

Traineeship for the environment – Ecosponsoring at its best

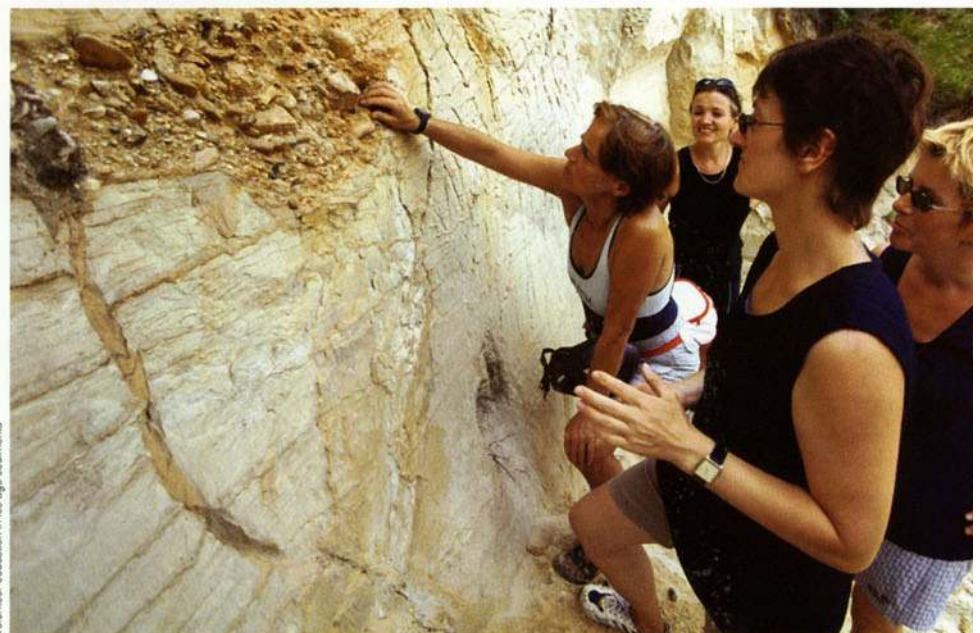
For 5 years TERRA.vita has been working together with Europarc Germany in a project entitled "Traineeship for the environment". Organized by Europarc, a major private bank

(Commerzbank) finances a traineeship for half a year. Students can apply for this traineeship every spring. Those who succeed can work for the Geopark and get an impression of how geotourism works. The bank pays for accommodation and salary.

Usually the applicants for this traineeship are students of geography, biology or landscape-planning in higher semesters with some experience in related jobs. So the trainees are an important assistance, especially as the geopark usually has just four employees.

What is so special about this project? Ecosponsoring has become something quite common in terms of supporting events, exhibitions and other short term objects. Currently the financial situation of all institutions that deal with environment and tourism is very difficult and staff is reduced in many places, and so this type of payed traineeship is a real enrichment for a geopark.

H. Escher



Volunteer education in ice age sediments

Geopark: A great laboratory for geology learners

Case study: Maestrazgo Cultural Park

The Maestrazgo Cultural Park is a great laboratory for exploring the Mesozoic and Tertiary evolution of the Iberian Plate. Some of its splendid geological formations and structures, modelled into impressive landforms, are highly valued for scientific and educational activities. These mainly deal with the Geological Park of Aliaga, in the western part of Maestrazgo and involve field-work stages by students from the universities of Utrecht, Plymouth and Cardiff, a practical course on geology of the Summer University of Teruel, and field-trips developed within the framework of different scientific congresses and symposia.

A high variety of scientific questions are currently being researched at the Geological Park of Aliaga: the geometry and evolution of Mesozoic sedimentary basins, the 'snake-like' vertical-axis folds which affect Creta-

ceous limestones, and the kinematics of folding and tectonic stress directions recorded in Tertiary deposits. A continuous flow exists from the results of such investigations to pedagogic or touristic products, since many geologists work on both basic research and the popularisation of their results through educational programs and newspapers. A number of books and leaflets have been published in the last ten years for all types of users: a complete scientific guidebook for researchers and academics, a short guidebook for tourists, pedagogic tools for primary and secondary schools (including field notebooks and an interactive CD widely diffused among teachers), and a comic book for children.

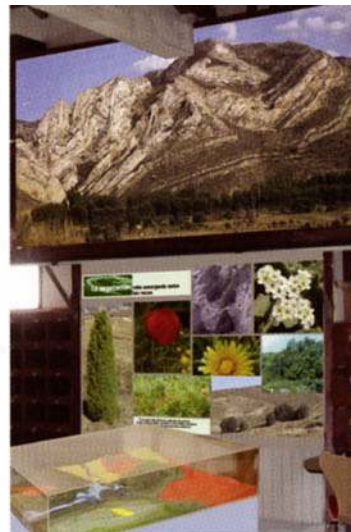
New Museums

The Maestrazgo Cultural Park also has an important paleontological heritage, which is being studied and excavated by the Fundacion Conjunto Paleontologico de Teruel. A big

museum in Teruel city and a network of small exhibition centres all on the Teruel province made up the Dinopolis project, linked to the F.C.P.T. and promoted by the regional government of Aragon. Two of these centres are located within Maestrazgo: Galve, a small village with an important ensemble of dinosaur fossils and footprints, and Castellote, showing an interesting site of Cretaceous petrified trunks.

Currently, an ancient industrial building is being restored for use as a visitor centre of the Geological Park of Aliaga. It includes a room that can be used both as a laboratory for students and as a lecture room for small meetings, conferences or workshops. A second room will soon become a small Geology museum which will simplify the interpretation of geological processes for visitors. At present, the design of this museum is ready and we hope it will be finished next year.

S. L. Simon



Management of a complex participatory process

Multi - tiered visitor information in the European Geopark Bergstraße - Odenwald

The Geopark Bergstraße-Odenwald, with a territory of about 3.200 km², has been a member of the European Geopark Network since October 2002. The geopark is implementing an innovative and sustainable approach towards visitor information and education for its territory. The three tiered approach has been developing since summer 2001 within a participatory process of exchange, communication and knowledge transfer in the geopark region.

The geopark rangers representing the level which is qualified in scientific terms and in a wide range of methodological tools. The rangers act as geopark ambassadors in the entire territory and addressing the whole range of the geopark's target groups. The more than 40 members of the ranger team, most of them

holding university degrees, were trained by the geopark in cooperation with the regional chamber of industry and commerce. The training was realised by the participation of regional experts and institutions with the strong support of local authorities. The continuous integration of the geopark's regional network into the training of the ranger team as well as in the development of the rangers' tourism and education programmes has created a process of dialogue and cooperation in the region that reaches far beyond the frame of a visitor service.

The second group of geopark ambassadors are the "Geopark-on-site" guides, local stakeholders who participated in a 4-weekend training course provided by the geopark administration. The Geopark trained five very committed groups of citizens in different areas of the territory. The geopark-on-site groups are a

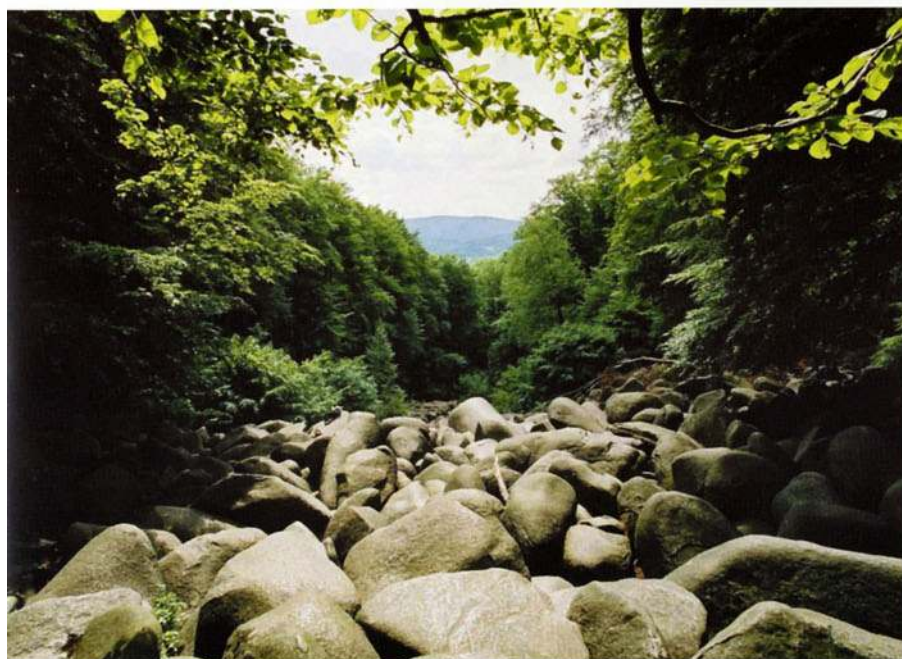
valuable addition to the ranger programme and offer their often very special local experience and knowledge to visitors and inhabitants of the region. The success of this programme is also a result of the approach towards social sustainability – geopark-on-site tours open opportunities for close contact between the generations.

As a third level, the geopark is about to integrate women on farms into the visitor service since a large part of the geopark territory has a rural character and farm holidays are a growing segment within regional tourism. The qualification of women in rural areas as well as the strong integration of agriculture into the regional network of the geopark and into the activities of the visitor service has to be looked at as an essential step towards sustainability of the geopark's development process.

The entire visitor service is embedded into the infrastructural frame of the geopark's visitor information system, a region wide network of facilities like GeoTrails, GeoPoints and Geopark Information Centres. The information system is also being developed under a participatory approach together with local experts and regional institutions.

The exchange of experience and the active cooperation with our partners of the European Geoparks Network towards the development of a sustainable visitor service is providing the continuous and essential impetus for this process.

C. Eckard



Geopark: a destination for lessons outside the classroom

Public relations for the target group schools

Case study - Vulkaneifel European Geopark

Protection, preservation and description of the phenomena in earth-science and the use of the geological heritage for tourism as a means of regional economic development is where the European Geoparks have found their position.

The protection of geologically outstanding sites is differently realized at advanced stages in the existing geoparks. In the Vulkaneifel European Geopark almost 65 % of the total area has already been covered by statutory protection categories. We focus on the protection of parts of the landscape from the viewpoint of biologists and ecologists, and this means the motivation to protect areas and sites is to save rare plants, animals and special biocenoses. In contrast, the motivation to focus on the inanimate environment for its outstanding or unique geologic and geomorphological shape is relatively young.

To impart the knowledge of the geological and geomorphological

development and formation of our planet is a central task for the Geoparks. Processes of the complex geological, endogenous and exogenous landform genesis have to be adapted for different target groups. Schools are defined as being one of these target groups. The following example of a project of public relations shows in which way an approach to this target group and its involvement into the topic can be achieved. The pivot of this project is the cooperation between the Vulkaneifel European Geopark and the Pädagogisches Zentrum des Landes Rheinland – Pfalz, branch Daun. The Pädagogisches Zentrum is an institution directly connected to the Ministry of Education, Women and Youth of Rhineland-Palatinate. In this context it is worth knowing that the development of learning sites outside of school is one of the aims the Pädagogisches Zentrum pursues.

Since 1994 a working group of the Pädagogisches Zentrum has worked on the topic Museums in the Vulkaneifel. In time the idea evolved to convert park documentation into a museum guide for teachers- to offer

them material for project work, school trips, field trips, or for afternoon activities as part of the full-time lessons programme. This idea was picked up by the geopark accompanied with the offer to set up the thematic framework. The publication of a teachers' book and a teachers' work-shop were planned and finally presented during the European Geopark Week 2005. Cooperation with the Pädagogisches Zentrum made it possible to get official legitimation as a teachers' training and thus an access to all schools and teachers in Rhineland –Palatinate.

Under the motto "from teachers for teachers" the teachers' book gives information about the geo-museums in Vulkaneifel and practical advice for hiking tours and excursions with school classes. In addition it contains short descriptions of other European geoparks to familiarize German teachers with other geopark destinations for more extended field and school trips. The idea is to offer teachers and pupils the opportunity to organize their trip under a theme which is promoted throughout Europe. For Geography and Science, the network of European geoparks offers this unique opportunity to approach earthscience all over Europe. Currently the topics earthscience and environmental education are combined in 25 geoparks in 10 European countries. Orientated at an equal standard of quality they are adapted for the public at large. Furthermore, the geoparks as a destination for school trips reveals the geo-diversity of the European continent which has played a decisive role in the development of the cultural

lecturers of the teachers workshop: Brigitte Dreyer (PZ Daun), Martin Kozol (maar museum Manderscheid) Willi Acker and Gerd Rieder (geography teachers, authors), Peter Blösch (nature science museum Gerolstein), Andreas Schuler (Vulkaneifel European Geopark)



Museen der Vulkaneifel

und Vorschläge für naturkundliche Wanderungen

Sachunterricht und Erdkunde



mit Klassenfahrt-Ideen
im European Geopark Network

Vulkaneifel
EUROPEAN GEOPARK

PÄDAGOGISCHES ZENTRUM RHEINLAND-PFALZ

cover sheet of the issued teachers' book

diversity in Europe.

Besides the aspect of environmental education, the cooperation with the Pädagogisches Zentrum pursues the idea of generating the economic value added. From the point of view of tourism, the cooperation with schools opens up new groups of customers through the use of youth accommodations while on a school trip or when former pupils later visit the geopark areas as pre-informed adult guests.

Within this context the teachers' training workshop was held. The agenda of the meeting comprised the presentation of the Vulkaneifel European Geopark and the teachers' book *Museums in the Vulkaneifel* with proposals for hiking tours and ideas for school and field trips in the areas of the European Geoparks Network. In the afternoon, 90 teachers from all parts of Rhineland - Palatinate had the opportunity to participate in two different excursions showing the highlights of the Vulkaneifel. The cooperation between the Pädagogisches Zentrum and the European Geopark Vulkaneifel was widely appreciated and the resonance at the end of the meeting was positive; moreover, the wish for further similar events was unanimous.

A. Schuller

Introducing the invisible water routes of karstic systems to pupils

An educational project of Psiloritis Geopark

The water cycle is an attractive topic for environmental education in all educational levels and surface water is the most suitable environment to establish such projects. The Psiloritis Geopark, located in central Crete, is characterized by carbonate rocks that support water percolation and underground water transportation, rather than stream development.

It is therefore not possible to develop ordinary stream related projects in most areas of the park, whilst it is also difficult to introduce the underground water cycle, especially to younger ages. Psiloritis Geopark in collaboration with Natural History Museum of Crete and the Environmental office of the Primary Education of Rethimno have developed an educational project for pupils that tries to explain how surface water moves underground in carbonate rocks, what it creates, and how it reaches the sea at the end. The project focuses on three individual environments: the collecting area (meaning the mountainous plateaus and sinkholes), the underground routes in cave systems and the runoff sites around springs. In any case, pupils are introduced to the diversity of the landscape, the vegetation style, the wild life and the impact of human activities. A questionnaire will be used to visualize the differences between environments and to introduce observation and research methodologies.

The project is scheduled to be first applied to a group of pupils during the European Geoparks Week in June 2005. The implementation of the project, the effectiveness of the applied methods, as well as the selection of the field areas will be tested by the reactions of the children and will be used for the improvement of the project.

C. Fasoulas



"Geokids" and "Geoworlds"

Geo-Educational Tools suitable from Regional to Global Level in the Geopark Bergstrasse-Odenwald

The European and Global Geopark Bergstrasse-Odenwald is situated in the southwest of the State of Hesse (Federal Republic of Germany). The Geopark territory takes in approximately 3200 km², between the Rhine valley in the west and the Main valley in the east. The region is bounded to the south by the Neckar valley and to the north by the UNESCO World natural heritage Messel pit.

"Discover the fascination of geology and Earth history" – this is one of the main intentions of geo-education. It includes the different disciplines of geosciences connected with their appearance and importance in our "every day life" as well as the insights into the landscape and life of our planet in former times. Understanding "how the Earth works" can be an important key for the sustainable use of our natural resources in the future. Therefore the knowledge and importance of the basic aspects of Earth history, lithology and landscape development are essential tools for geo-education. The membership in the Global and European Geoparks Network is connected with three main tasks which are "conservation" (protection of the geological heritage), "education"

(information and education of the public) and "tourism" (sustainable regional development).

With respect to these main tasks the Geopark Bergstrasse-Odenwald has developed a wide range of geo-educational and public relations tools.

These are: 1. Daily, weekly and monthly press release (newspapers, journals, radio, TV), 2. homepage, continually maintained, 3. publications in geoscientific newspapers and journals, 4. cooperation projects with universities, 5. cooperation projects with schools in the Geopark region: trip through the Earth history of the Geopark territory, overview of the main lithological units with examples and long term projects concerning geotopes of the Geopark. 6. "Geokids" – interactive programme (homepage – out door based) for children aged 8 to 12 for families and school classes. Downloads of maps and worksheets are available. Teachers can use the Geokids-geosites for project weeks, one-day hiking tours and alternative out-door projects. 7. "Geoworlds" – range of geo-educational programmes like continents on the move, adventure geology, discover the rocks, field trips, Geopark memory, Geopark rock box, Geopark rally, Geopark educational posters...

The **"Geokids"** programme is implemented as an interactive "window into Earth history" at the Geopark's homepage which includes four sec-

tions. Besides a basic overview of "what is geology" a summary of the Geopark's Earth history is presented. Information about the main rock types occurring in the Geopark are also available. Finally, the "Dragon Sigg" invites the visitor to discover a basic number of localities in the Geopark territory which represent the main geological units.

Detailed maps and a questionnaire for each location are available for download and print. If the kids visit the localities, answer the questions and return the questionnaires to the Geopark office, they get a "Geokids" certificate, an additional gift and they can win a special prize: an adventure day with a Geopark Ranger.

The "Geokids" programme which is developed for the territory of the Geopark Bergstrasse-Odenwald can be extended to partner Geoparks by creating additional windows into the local Earth History of the territories by using the Time scale and integrating the special time slice of the potential partner. The new window into Earth history could then be completed by the virtual/real discovery of representative locations on site.

These basic insights into Earth history of different times and parts in Europe are considered to support the exchange of experience between the partner Geoparks and to enable the creation of an European-wide integrated "Geokids" visit programme for school classes and families.

Jutta Weber



Fascinating crystalline rocks - the Felsenmeer



Creative discovery of the stony book of life - fossils made with gypsum



New paths into the landscape



Learning by doing - discover knowledge and develop holistic approaches

Plaka Petrified Forest Park in Western Lesvos – Greece

Fossil site conservation in a new visiting area

Geotourism development and visitors management in the Lesvos Petrified Forest Geopark

Lesvos island (North Aegean area, Greece) exposes large accumulations of fossilised tree trunks comprising the Petrified Forest of Lesvos, declared as a protected natural monument. The Lesvos Petrified Forest Geopark comprises a core zone (15,000 hectares of the petrified forest protected area) and a broad buffer zone (more than 20,000 hectares of the central volcanic terrains).

The formation of the petrified forest of Lesvos is directly related to the intense volcanic activity in North Eastern Aegean area during late Oligocene - middle Miocene.

The area west of Sigri coast, submerged and the petrified trees, already uncovered from their pyroclastic cover by continental erosion, placed within a marine environment. Many fossilized trees are present along the coast in the area of Sigri, on the beach and in the sea. Systematic scientific research has been carried out by the Natural History Museum of the Lesvos Petrified Forest during the last years. The coastal area of Plaka which is located 500 m south of Sigri village in western Lesvos, was one of the main areas of research interest on the terrestrial and marine fossil sites.

The abundance of standing and lying petrified tree trunks, the quality of the findings and the variation between the Plaka fossil site and the other fossil sites of the Lesvos petrified forest lead to the decision to create a

new visiting park. The whole project was co-financed by the European Union and the Greek state

In the area of the Plaka park several clusters of petrified trees have been found and identified in 45 different fossil sites. Some of them were standing while others were lying. The diameters of the petrified tree trunks vary between 0,5 to 4,5 meters. Among them the biggest standing petrified tree trunk found in the Petrified forest of Lesvos having a perimeter of 14,5 m. The root systems of the standing trees found intact in their original position provides proof that these trees were petrified and still remain in situ. Most of the trees belong to angiosperms and gymnosperms.

Fossil site conservation works have been carried out during the last four years in all fossil sites of the Plaka park. Special shelters have been constructed in fossil sites facing major conservation difficulties. Small-scale interventions were also made in order to effectively conserve the fossil sites and to facilitate visitor access. These include protective low stonewalls and wooden fences that have been designed and built to guard the petrified trunks from run-off water and erosion, shelters have been built along the trails as well as cobblestone pathways and stone stairs that were carefully added to the trail system.

The fossil sites of the petrified forest in combination with volcanic and tectonic structures, coastal landscapes along with a rich ecosystem com-

prise the rich geotouristic potential of the new Plaka park. On the other hand it provides alternative visiting opportunity for tourist having already visited the other visiting parks of the Petrified forest and has the potential to capture the interest of those who have little or no knowledge of the subject. It is also accessible for older people or for those facing moving problems and in this way it becomes an ideal visiting site for families and small children.

The Natural History Museum of the Lesvos Petrified Forest is operating the Plaka park since July 2005. In the park the visitor will have the unique opportunity to observe and admire the beauty of a terrestrial and coastal fossiliferous area created by the volcanic activity. The Museum will collaborate with local tourist enterprises and will support special guided tours in the area. It will also organize educational programmes for elementary and high school classes..



Marble Arch Caves European Geopark

Celebrating 1.000,000 visitors!

Marble Arch Caves reached a massive milestone on Monday 22nd August when the 1,000,000th customer enjoyed the world-class cave tour.

The 1,000,000th visitor was Brigid Teevan from Belturbet in County Cavan who was in for a big surprise when she approached the reception desk in Marble Arch Caves Visitor Centre. Along with free admission for her family group, Brigid received some of Fermanagh's renowned

Belleek Pottery as commemorative gifts including a beautifully handcrafted scene of Devenish Round Tower, which is one of Ireland's best - preserved historical sites.

After her cave tour a delighted Brigid said "This is very exciting, I feel like a celebrity. My husband won't believe me. It must be my lucky day so I'll buy a Lottery ticket on the way home. We have Segolene Stoltz, a French student, staying with us and we wanted to take her out somewhere special for the day we decided to come to Marble Arch Caves. We have been before and the cave tour is always brilliant."

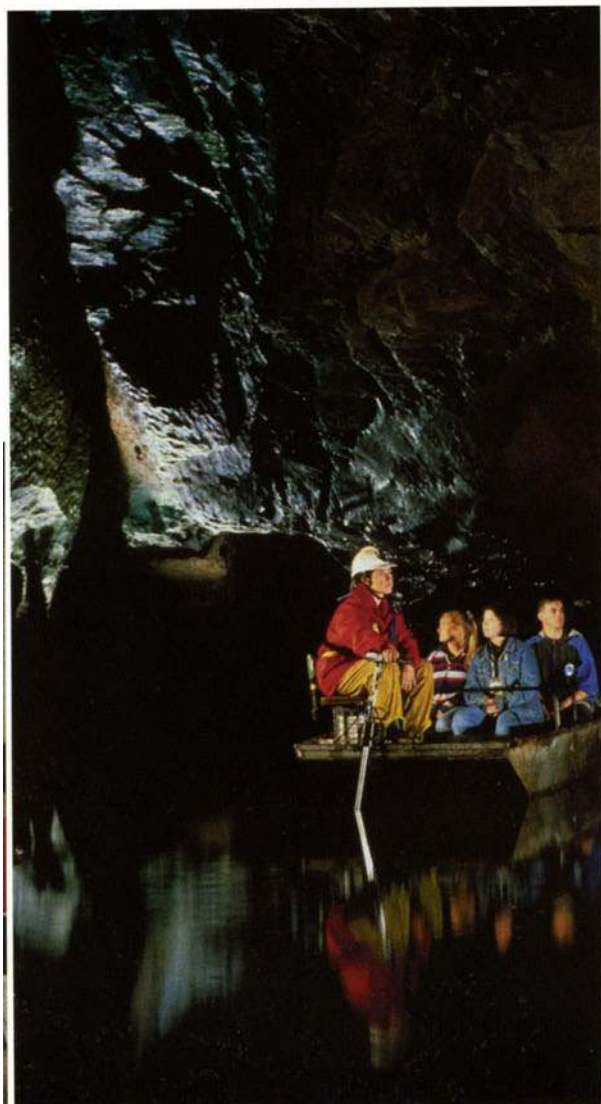
Richard Watson, the Manager of Marble Arch Caves commented that "This is a wonderful day for all of us at Marble Arch Caves, as we have worked hard since 1985 to develop Marble Arch Caves into a world-class tourist attraction. We are absolutely thrilled to celebrate our 1,000,000th customer today. Over the last 20 years we have conducted nearly 60,000 guided tours through the caves while our cave guides have walked around 135,000 miles between them. Part of the cave tour is by boat along a subterranean river and I reckon the fact that we've had one million customers means that we probably operate the busiest ferry on any of Ireland's inland waterways!"

Marble Arch Caves first opened to the public on 29th May 1985 and have gone on to establish a well-deserved reputation as one of Ireland's premier natural attractions. In 2001, Marble Arch Caves and the adjoining Cuilcagh Mountain Park were jointly recognized as a European Geopark due to their highly

successful management approach to combining international tourism with the highest standards of interpretation and conservation of geological sites. More recently, in 2004, UNESCO expanded this recognition to world-wide Global Geopark status. However, today was all about the visitors to the caves and, of course, the staff who have worked so hard over the last 20 years to ensure that those visitors have a memorable and enjoyable experience.

Marble Arch Caves European Geopark is operated by Fermanagh District Council and continues to draw high numbers of visitors to this world-class, unique attraction in Northern Ireland. This year's visitor figures at the caves are up 4% from 2004 while the number of school groups doing educational fieldwork in the Cuilcagh Mountain Park in 2005 has increased dramatically by 100% since last year. Many secondary schools from Northern Ireland, the Republic of Ireland and, increasingly, from England are taking advantage of the Park's educational services. Several educational programmes are very popular especially those covering the limestone element of the geography syllabus of the Northern Ireland GCSE and Republic of Ireland Leaving Certificate exams.

Visitors to Marble Arch Caves have come from far and wide with more than 100 different countries being recorded in the Visitor's Book. Everywhere from Guam to Guatemala from Slovakia to South Africa or from Denmark to Donaghadee. Already, the staff at Marble Arch Caves are looking forward to greeting the next 1,000,000 customers!



Advertising European Geoparks in an Alternative Tourism Guide with the support of the Interreg III C initiative



EUROPEAN GEOPARKS

Spectacular geological heritage sites, unspoiled natural beauty and cultural landscapes

Geotourism and Educational activities

Have you ever seen an Ichthyosaurus skeleton, blanket bog, petrified forest or an Iron Age hill fort? What about a volcano, ice cave or fossilized rhino footprint?

Would you enjoy recreational tours by bicycle, raft or foot through impressive geological landscapes and visits to fascinating and educational visitor centers? If so, come and visit one or all of the 25 geoparks across Europe, and get to know the unique dynamics of the European Geopark Network.

Two new trends mark the growing success of the geopark concept. First, tourists are increasingly looking for new experiences that put them in close contact with the natural world. Second, people are beginning to realize that the geological heritage of their regions can be a source of sustainable economic benefit to their communities. This shift in thinking about geological heritage physical landscapes and tourism has been facilitated by the creation of the European Geoparks Network. Their idea is that geoconservation can lead to sustainable local development

through geotourism. According to UNESCO, geoparks are areas with a significant geological heritage that can also include sites of natural and cultural interest. These parks play an active role in the development of their territories by strengthening the general image of geological heritage as well as in the development of geotourism. They are simultaneously involved in educating not only tourists and the general public about their physical environment, but also students from primary to university levels. Their facilities provide a place for academic research and cooperation in the fields surrounding geoconservation.

Back in 2003, nine European geoparks intent on improving geoconservation, geotouristic activities and the visibility of their territories decided to collaborate closely and operate a network financed by the E.U. Initiative INTERREG III C. Collaborators included the Natural History Museum of the Lesvos Petrified Forest (Greece), Reserve Géologique de Haute-Provence (France), AKOMM - Psiloritis on behalf of the Psiloritis Natural Park (Greece), Provincia Regionale di Enna on behalf of the

Rocca di Cerere Cultural Park (Italy), the Geological Survey of Ireland on behalf of the Copper Coast Geopark, GAL(Ireland), Madonie on behalf of the Madonie Natural Park (Italy), LAG Gesäuse-Eisenwurzen on behalf of Eisenwurzen Nature Park (Austria), Terra Vita Geopark and Fermanagh District Council on behalf of the Marble Arch Caves European Geopark – (Northern Ireland – UK).

Their common goal was to promote geoparks as quality tourist attractions with a high educational, cultural and recreational value.

With the financial support of INTERREG III C, the European Geoparks Network created several common events

- European Geoparks Week – exciting events organized the first week of June all over Europe as a joint celebration of the network

- European geopark thematic seminars and conferences on geotourism development

- Exchange of exhibitions and know-how among network partners

One of the main goals of this cooperation was also to evaluate geopark infrastructures and customer services in order to ensure high quality operating standards as evidenced by the establishment of the Evaluation process, geotouristic information points, the organization of outdoor activities in geoparks etc. All these initiatives will continue with the addition of new collaborators in the European Geoparks Network.

The results of the European Geoparks Network's efforts, which combine protection of geological heritage with sustainable territorial development of rural areas, make up a new and much needed perspective in local development policies. They have opened up a new and exciting field of tourism, where the benefits can be shared by visitors, locals, and academics and where the physical environment is valued again for its beauty, history and power to sustain us.

Come and explore the geoparks across Europe with us.

We hope to see you soon!



Lavra Petrified Forest - Greece

Welcome to the European Geoparks

"4 billion years
of Earth history
to serve tomorrow"



Twenty five European Geoparks developing the conservation and the valorisation of their geological heritage for a sustainable and integrated development of their territory are pleased to welcome you.

We hope that you will enjoy your visit.



North West Highlands - UK, Scotland



The European Geopark Network today ...

At present, the Network is comprised of 25 Geoparks from ten E.U. countries.

- | | |
|--|---|
| 1. Réserve Géologique de Haute - Provence – FRANCE | 13. Naturpark Steirische Eisenwurz – AUSTRIA |
| 2. Vulkaneifel European Geopark – GERMANY | 14. Naturpark Bergstrasse Odenwald – GERMANY |
| 3. Petrified Forest of Lesvos – GREECE | 15. North Pennines AONB – ENGLAND, UK |
| 4. Maestrazgo Cultural Park – SPAIN | 16. Abberley and Malvern Hills Geopark – ENGLAND, UK |
| 5. Astrolème Châtaigneraie Limousine Geopark – FRANCE | 17. Park Naturel Régional du Luberon – FRANCE |
| 6. Psiloritis Natural Park – GREECE | 18. North West Highlands – SCOTLAND, UK |
| 7. Terra Vita Naturpark – GERMANY | 19. Geopark Swabian Alb – GERMANY |
| 8. Copper Coast Geopark – IRELAND | 20. Geopark Harz Braunschweiger Land Ostfalen – GERMANY |
| 9. Marble Arch Caves & Cuilcagh Mountain Park – NORTHERN IRELAND, UK | 21. Mecklenburg Ice Age Park – GERMANY |
| 10. Madonie Geopark – ITALY | 22. Hateg Country Dinosaurs Geopark – ROMANIA |
| 11. Rocca di Cerere Geopark – ITALY | 23. Beigua Geopark – ITALY |
| 12. Kulturpark Kamptal – AUSTRIA | 24. Forest Fawr Geopark – WALES, UK |
| | 25. Bohemian Paradise – CZECH REPUBLIC |

Psiloritis Natural Park

Psiloritis Natural Park is located on the Greek Island of Crete, in the southern Aegean Sea. It has an area of 1159 Km², with 157 settlements and towns and a population of about 42234 inhabitants (population density 36.4 inh/Km²). The park, comprised of the Psiloritis mountains and its northern coastal zone, combines

every year many foreign universities come for basic scientific research and education. In the Geopark all kind of geological structures are visible from a small to regional scale. Big faults with excellent and imposing fault surfaces, fossil sites, caves, impressive gorges and plateaus that host many native species of the



Zoniata cave in Psiloritis M.E. • Photo: K. Paragiamos

fascinating geology with its unique natural environment (part of the area is participating to the Nature 2000 network), long history, individual customs and the outstanding Cretan civilization.

Within the territory of the Geopark,

island, unique fold associations and geomorphologic structures have sustained the culture, tradition and customs of the inhabitants for thousands of years.

As a member of the network, the Geopark is developing several sub-



Zoniata lake • Photo: G. Petrakis

the whole nappe pile of Crete, and the majority of the rock types of the island are presented in excellent outcrops and cross-sections. It is an area of high scientific value where

parks, each one presenting a major geological feature of the area. The Psiloritis Karstic Landscape Park deals with high mountain morphology and landscapes including high

plateaus, caves (ie, Idaion Andron cave where Zeus grew up) and cultural sites. Talea Ori Stratigraphic Sequence presents many rock types, weathering structures, folds (such as the Vossakos fold succession) and fossils (such as the Permian corals) through a 200 million year journey to the early geological history of the island. The Basin to Range Park exhibits the transition from high mountains to low lands and from natural environment to human civilization. The SpeleoPark is planned for the Psiloritis mountains as an individual park in which the main aspects of speleology will be properly demonstrated for all kind of activities. Many other geotopes located within the Geopark are treated as individual sites presenting main features of the geological history of the island.

Recent studies funded from Network common projects aim to establish local info-offices, routes and trails that will join together geotopes, sub-parks and other monuments of the area, as well as a uniform style of labeling and presentation. A new educational project for school children started this year emphasising the role of landforms (caves, plateaus etc.) to the high endemism of the area. In the Psiloritis area, mythology, tradition and nature meet together in an excellent combination to declare that it is an environment of gods and humans or the nest of the real Cretan spirit.



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Copper Coast Geopark

The Copper Coast comprises five independent communities working together, each developing its own resources but are collectively in 2004-'06 developing joint infrastruc-

within the main building will bring visitors through geological time to a panorama of the present landscape with cliffs stretching into the distance against the back-drop of the Com-



Here you can span 100 million years with your arms

tural development and presentation with European INTERREG IIIB and IIIC funding. Adding to a common set of interpretative pamphlets will be an interactive DVD explaining the evolution of the Coast-line. Stills from this will interpret what visitors are looking at from various viewing points along the coast

The existing geological garden is being up-graded to further enhance the understanding of visitors as to the geological forces that created the Copper Coast. A new centre is also being created at the engine house complex which served the 19th century copper mines from which the Geopark derives its name. Not only is the mining history being interpreted but its geological and mineralogical context as well. A spiral staircase

meragh Mountains.

The following are the amenities and current features developed by each of the communities:

- Fenor has opened up its bog with an elevated walkway plus interpretative panels of the flora and fauna to be found there. Here also is the Copper Coast Mini-farm with its rare domestic animals plus some exotics. To its south is the island-fringed beach at Kilfarrasy encompassing a wide range of geological and morphological features. (photo up right).
- Annestown-Dunhill has a dramatic medieval castle and church owned by the community plus a major ecological wetland scheme along its tranquil river Ann. Annestown, as well as being a pretty village



Dramatic effects of sea erosion

with a nice beach, also boasts one of the largest sea-arches in Ireland (photo above).

- Boatstrand to Bunmahon, besides having harbour and beaches, has a geological garden beside the tidal river Mahon, as well as a Heritage Centre with emphasis on mining. Bunmahon also has a Blue Flag beach with striking geological effects on either side nearby. Dramatically sited on the cliff-top road to its east is the 19th century mine engine complex which is being preserved and presented.
- Stradbally, a strikingly pretty village, was European Entente Florale gold medal winner in 2003. Its various antiquities include the remains of a medieval church with tower-house, and an 18th century lime kiln. The cliff fringed Ballydwan beach lies east of here (photo left) and its own cove is unique in its tidal range and in the river that runs beside the beach. The central feature of the village is the large geological sundial created in 2002.



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Turning Copper coloured in the setting sun

La Réserve Géologique de Haute-Provence



Wherever the visitor goes in the "Réserve Géologique de Haute-Provence", the history of the Earth over the last 300 million years is well illustrated.



The geological reserve covers an area of 200000 hectares of the southern Alps in France, incorporating a total of 55 communities. It can also be regarded as Europe's biggest geological open-air museum with numerous fossil-rich sites and fascinating rock formations.

Sign-posted discovery trails around the different sites can be reached from a series of interpretive centres within the reserve.

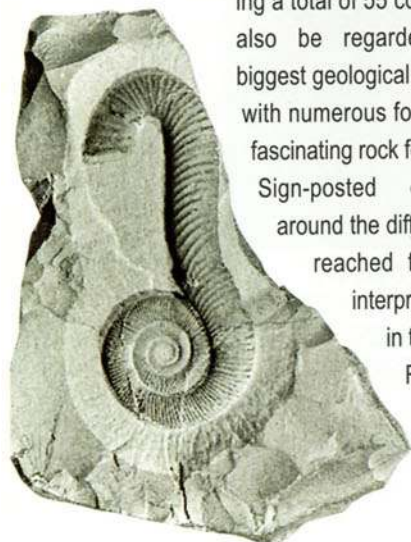
Fossilised footprints of birds can be found in

the reserve as well as fossilised plants. An extraordinary monument can be found within the attractive, wooded area of Saint Benoît, two kilometres north of Digne. Here a huge rock shelf is covered with ammonites. More than 1550 ammonites are preserved on a limestone wall 320 square metres in size. Guided tours are provided to sites where, for example, the skeleton of an Ichthyosaurus can be found while the Verdon gorge offers the opportunity to discover the beautiful landscape of Haute Provence. Verdon is the most spectacular of the French canyons with a length of 21 kilometres and cliffs of up to 700 metres in height.

On discovery tours and educational trips, students learn about the need for, and the meaning of, geological heritage and protection. Information centres and exhibitions also offer guided tours and special publications for all visitors. The museums in Digne les Bains, Sisteron and Castellane are widely used and also act as places where art and science meet. Frequent exhibitions are organized illustrating how themes of contemporary art are influenced by

the relation of the artists to the natural environment.

The "Réserve Géologique de Haute Provence" acts in association with local enterprises that work together for a systematic development of tourism in zones which have so far been ignored by the public. An example has been the establishment of footpaths in three different valleys with the support of the LEADER II program.



**Réserve
Naturelle
Géologique
de Haute
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Petrified Forest of Lesvos

Location – Creation

The island of Lesvos, located in the NE Aegean Sea is one of the largest Greek islands, with an area of 1630 sq. km and a shape likened to a plane tree leaf. On the western coast of Lesvos Island the passage of time and the lapping of the sea's waves have slowly revealed the petrified remains of plant life of the distant past. Intense volcanic activity, which took place in the Northern Aegean 20 million years ago, resulted in the creation of the Petrified Forest of Lesvos. Here one can find fossilised pieces of trees - which in the remote past were once alive - standing upright or lying on the ground in a multitude of colours, with their roots and branches.

Scientists who have studied the Petrified Forest speak with wonder of the uniqueness, rarity and great scientific value of the monument. The Petrified Forest provides considerable information regarding the composition and character of paleoflora and climatic conditions of the distant past. This monument thus constitutes a natural document recording the geological history of the Aegean basin of the last 20 million years.

In February 2004, UNESCO recognised the contribution of the Petrified Forest of Lesvos on geoconservation issues and included it in the UNESCO Global Geoparks Network along with all European Geoparks Network members.

Visiting Areas

The Natural History Museum of the Lesvos Petrified Forest is located in Sigrí, on the western coast of the island and was founded in 1994. The Museum deals with all issues concerning the study, research, preservation, conservation and protection of the Petrified Forest (Law 2260/94).

Apart from the Museum, five more visiting places were created with the necessary infrastructure (refreshment stand, pavilions etc.):

- a. Lesvos Petrified Forest Geopark
- b. Geopark of Sigrí
- c. Geopark of Plaka
- d. Geopark of Skamniouda
- e. Geopark of Nissiopi

Geopark activities

The area of the Petrified Forest of Lesvos offers a variety of different educational subjects on geology and environmental educational activities. In particular, three educational seminars that were addressed to young unemployed people were conducted the last two years in the Museum and one more is in the making.

The participation in the European Geoparks Network enforces common activities and the realization of programmes funded by the European Community such as INTERREG IIIC and LEADER +, which target the application of a common strategy towards geotourism and sustainable development in rural areas.



Petrified tree trunk



Natural History Museum of the Lesvos Petrified Forest



**NATURAL
HISTORY
MUSEUM**
OF THE LESVOS
PETRIFIED FOREST

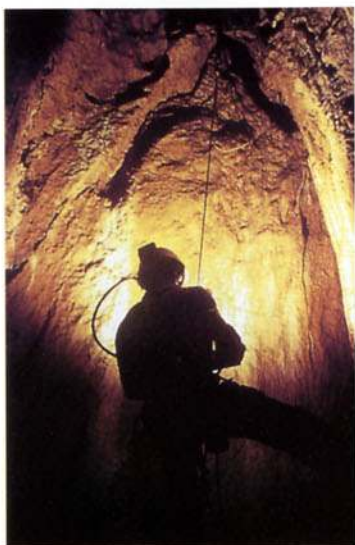
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Madonie Natural Park



The Geopark of Madonie is situated in the Province of Palermo along the Southern Appennini Mountains Chain in Sicily. Within its territory there are 22 local councils, and the majority of them (15) are part of the Regional natural park of Madonie as well. This territory in Sicily, among the most beautiful of landscapes, is of special interest from a geologic and geomorphologic as well as from a didactic point of view.

In this area, the oldest Sicilian mountain can be found, as well as traces of the whole geological history of the island. This mountain territory is mainly composed of limestone and limestone-dolomitic with interesting morphologies of a karstic nature and presents also a very rich and rare

cultural and natural heritage. And this is why all the different plans and programmes for local development (LEADER+, the local AGENDA 21 etc.) are essentially directed towards sustainable development strategies connected with a mindful use of the landscape and the cultural heritage.

The area became part of the European Geoparks Network in 2001 after the candidature was presented by the local LAG with the full support of the Natural Park of Madonie. Both local entities are coordinated to deal with this issue. The LAG deals with activities within the international network and local activities of territory promotion, while the Natural Park manages the protection and the touristic use of the territory.

Being a member of the European Geopark Network is a very important element for our territory because of the very strong dynamic of collaboration and exchange of experiences between the Network members.

The Geopark activities are managed by a coordination group (both presidents of the LAG and the Natural Park, one geologist and one expert of local development). This group is also supported by the Department of Geology and Geodesy of the University of Palermo, which gives the sci-



entific support for what concerns didactic and promotional activities. In this phase, the Madonie Geopark is fortifying its educational structure by opening a geological museum especially dedicated to young people, and is intensifying its promotional activities.



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Marble Arch Caves

A Global Geopark in the border region of Ireland

The distinctive sandstone summit ridge of Cuilcagh Mountain dominates the countryside of County Fermanagh in Northern Ireland. Cuilcagh was heavily glaciated during successive Ice Ages and has fine geomorphology, or weathered erosion features, including impressive landslides and extensive boulder fields. The mountain has rugged, panoramic scenery that is popular with visiting hillwalkers and rock climbers.

Cuilcagh is rich in globally and nationally rare habitats, ranging from ancient forest to mountain heath supporting internationally important flora and fauna. The mountain displays one of the best areas of active blanket bog in Europe and contains Northern Ireland's finest upland

karst, or limestone, landscape.

The Cuilcagh blanket bog is of international scientific importance as a priority habitat under the European Union's Habitats Directive. Blanket bog is globally rare and is being destroyed around the world by damaging human activities. Approximately 25% of the world's active blanket bog is confined to the Atlantic seaboard of Ireland and Scotland so the Cuilcagh bog is clearly of world importance.

The lower limestone slopes of Cuilcagh Mountain boast large cave systems including Marble Arch Caves, one of the most significant caves in Britain and Ireland. These caves were first explored in 1895 by the famous French cave scientist Edouard Martel who lectured in Speleology at the Sorbonne University in Paris. Fermanagh District Council developed Marble Arch Caves as a tourist cave in 1985 and they are now world-famous as one of Ireland's leading tourist attractions, having attracted one million visitors from more than 100 countries.

Cuilcagh Mountain Park opened in 1999 and is managed by Fermanagh District Council in conjunction with Marble Arch Caves. The Park protects this internationally important area of blanket bog and opens the landscape for sustainable tourism and environmental education.

The Geopark offers a wide range of environmental education and field studies to schools, universities and adult groups.

It works closely with government agencies and wildlife charities to develop sustainable tourism in the region. In the late 1990's, Fermanagh co-operated with both the



Geological Survey of Northern Ireland and the Geological Survey of Ireland to develop Landscapes From Stone, a tourism initiative based on the superb diversity of the landscape and geology in the northern half of Ireland.

Marble Arch Caves have long been recognized for their successful management approach to conservation, development, and education with tourism. These efforts were rewarded in 2001 when Marble Arch Caves and the Cuilcagh Mountain Park became the first UNESCO European Geopark in the United Kingdom.



Marble Arch Caves



European Geopark

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Rocca di Cerere Geopark

The European Geopark "Rocca di Cerere", was established in the middle of Sicily in 2001. It is a rich environment with the largest part being the "chalk-sulphur" plateau, and the quarzarenitic peaks of the Flysch Numidic region where, since the Palaeolithic ages, the inhabitants sculpture the landscapes with their daily toils. Farmers, shepherds, miners, warriors, paupers and kings, women and men, are all here. All these lives are still in every little stone that Demetra guards day by day with her maternal eyes.

The gypsum-sulphur plateau was caused by the Messinian crisis, when, about 7 million years ago, the Tetid ocean began its great regression. The chemical sedimentation of the salt formed a very large deposit of several salts, in which the gypsum deposit is the most important.

The Erei hills, from their highest peaks, of a flyschoid formation, and a fantastic morphology sculptured by erosion, lay as steps of large portions of "Marne" (clay), chinks, and trubi, and are sometimes covered by calcarenitic plateaus, with cuestas frequently collapsed to their sides.

In this country, since the ancient times, the miners have opened galleries in search of sulphur minerals.

This landscape was an important extraction site from the prehistoric ages. Here man began to differentiate the salt rocks of natrium clorure from the potassic salts. Certainly from Minoan – Mycenaean ages, the inhabitants of this part of Sicily, exported sulphur tables to the rest of the Mediterranean sea as recent archaeological research in Monte Grande and Milena now demonstrate. The Romans condemned the ancient Christian people "ad metalla" in the central part of Sicily and several hundreds of slaves died in this land from the 1st to the Vth centuries A.C.

In the modern age, geological and mineralogical research began to

open mines in deep stratification of the sulphur plateau and the Sicily become the first producer of sulphur minerals in the world. With the collapse of the Sicilian sulphur market and the gradual dismantling of the Sicilian Mining Company (EMS), the mining complexes were abandoned and nowadays it looks as if the workers, the "carusi" of the past, had run away just a few hours ago, leaving on the ground heaps of raw minerals, tools, pay books, cars and underground equipment. Only the potassic salts mining sites (Pasquasia, Corvillo) survived into the '80s, but with the introduction of Ukrainian salts in the occidental market, these closed too. The park, which manages these important sites, is formed by nine towns and contains four natural reserves and the only mineralogic park of Sicily.



In The Rossomanno, Grottascura Bellia Natural reserve, the strange formation of the "encanted stones" or "dancing puppets": calcarenitic rocks that the erosion has sculptured into a circle of human and animal forms. Traditionally the Sicilians believe that these rocks are a circle of witches petrified by divine intervention during a Sabbath.

Landscape of the flyschoid peaks of Mount Altesina, the highest mountain of the Erei chain




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SPOTLIGHTING the European Geoparks Network

Public Relations Tools

Maximum exposure is what the EGN is after when it comes to public relations. Various tools are currently being used to make sure the EGN gets the publicity it needs thanks to the co financing of the INTERREG IIIC program. These tools involve the following:

First, as a means for communication with the public at large, the EGN now offers an attractive and up-to-date website in French and English which showcases all the geoparks, their activities, facilities and the EGN's structures and philosophy.

Next, the annual publication of the EGN magazine detailing INTERREG IIIC project developments and geotourism promotion provides another mode of publicity through its distribution to geotouristic enterprises as well as schools and universities. A cd-rom that includes EG information and material and emphasizes its global image will be distributed in the tourist market in order to promote the geoparks as a new tourist attraction.

A common presentation series of leaflets has also been produced within the goals for the INTERREG IIIC program. These attractive leaflets bordered in green and brown include standard EGN information on the interior. Various questions are addressed such as: What is the EGN? Who are they for? Is it only

about rocks? (UNESCO's involvement and the EGN website included), What would I expect to see in various geoparks? Do you know what has been happening beneath our feet in Europe? On the exterior of the leaflet, each geopark provides information about its territory and promotes its facilities and programs in an attractive layout with photos.

Finally, each geopark has a promotional corner in their main information center called the EG Corner that publicizes all the geoparks in the Network, their products and offered services.

European Geoparks Corner

The E.G. Corner strengthens the bonds between members of the Network and contributes to the promotion of the Network and its ideas. Informative leaflets and products from all member territories are placed in these information corners. Thus, visitors are familiarized with the European Geoparks Network and its members and sensitised on environmental and geotouristic issues.

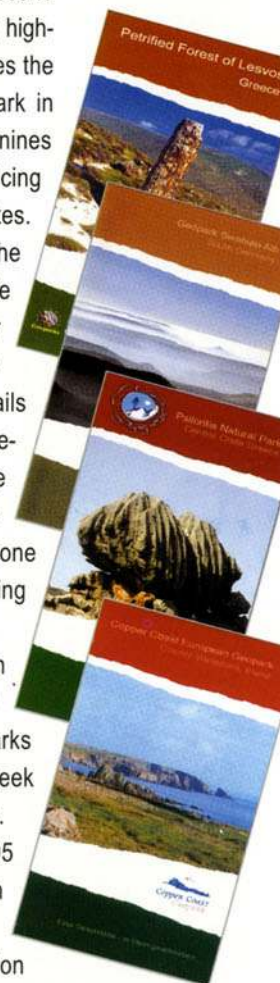
In the construction of the E.G. Corner, each geopark concentrates on the special characteristics of its visitors. In particular, the main objectives (the image improvement of each geopark and the promotion of services offered) remain while each geopark creates a unique information point according to the interests of the main tourist body and also in regards to environmental fea-

tures such as nature, geomorphology and climate.

Publications and Proceedings

Besides the magazine and the leaflet series, Network members have been busy with many other publications. These include a newsletter called TEACHNEWS put out by the Marble Arch Caves Geopark. The second edition of the newsletter, which highlights park activities, celebrates the one-millionth visitor to the park in August 2005. The North Pennines Geopark has put together enticing leaflets for its four cycling routes. Other leaflets bearing the UNESCO Geopark logo include Geopark Harz-Braunschweiger Land-Ostfalen as well as Beigua Geopark which details park activities, maps and involvements with the EGN. The Madonie Cultural Park's attractive fold-out leaflet titled "Stone and Water" sets out 3 walking routes for Geopark visitors. A booklet called the "European Geopark Week" reporting on exciting events in the geoparks during the successful EG Week (2005) has also been published. The proceedings of the 2005 International Symposium on Geoconservation, Geotourism Development, Communication and Local Development, held on the Greek island of Lesbos, have been published and provide significant information about geoparks, promotion initiatives, local development and geoconservation, and environmental education.

Finally the upcoming Second International Conference on Geoparks in 2006 in Belfast, Northern Ireland has its own promotional flyer.





Highlights from the 6th European Geoparks Meeting. Lesvos island, 5-8 October 2005

