ProGEO NEWS

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Disused slate workings near Caernarfon, North Wales. Photo: Stewart Campbell

New legislation

Geological conservation in England and Wales: New legislation brings increased protection and better site management

On 30th January 2001, the Countryside and Rights of Way Act 2000 (CROW) came into force in England and Wales. This new legislation builds on the Wildlife and Countryside Act of 1981, which up until January provided the main legal framework for geological conservation in Great Britain. It applies only to England and Wales, with a separate consultation reviewing SSSI legislation taking place in Scotland. The Act is very good news for those with an interest in the conservation of geology and wildlife, and should also lead eventually to increased public access to large areas of open countryside and common land.

The foundation for geological and geomorphological conservation in Great Britain is the Site of Special Scientific Interest (SSSI). This is an area of land identified as being of national geological importance through the Geological Conservation Review, and designated for protection by the Councils of the con-

servation agencies in Britain. In terms of conserving and managing geological SSSIs, of which there are approximately 1,400 in England and 265 in Wales, the CROW Act is the most significant piece of legislation for almost 20 years. The battle against damage to geological SSSIs from coastal protection, landfill, poor sited development, neglect and irresponsible collecting will certainly continue, but the CROW Act provides tools to better safeguard and manage geological SSSIs in the years ahead.

The Act puts the emphasis on supporting SSSI owners and occupiers in the positive management of their land to benefit geology and wildlife, rather than the fundamentally negative approach of paying money out to prevent new operations that could damage SSSIs. Importantly, owners and occupiers will not be permitted to carry out any new works that could damage SSSIs without first gaining the consent of the relevant body – either English Nature or the Countryside Council for Wales.

It is hoped that this new legislation will encourage partnerships working towards positive management of SSSIs, but where appropriate management can not be secured through agreement, it is now possible to impose it. This is an important new power that will make it possible to tackle sites that are deteriorating through neglect or deliberate damage. New powers to address problems caused by slumping of faces or vegetation growth, for example, are very welcome, and English Nature's geological site enhancement programme, 'Face Lift', will continue to provide funding for improvement of deteriorating geological SSSIs.

There is also a new requirement on all public bodies to conserve and enhance SSSIs. This means that Government departments, local authorities and privatised utilities will have to think carefully about how any of their functions may affect SSSIs. Where a public body is carrying out, or authorising, work that may affect an SSSI (this does not have to be *on* an SSSI), there are strict requirements for taking account of any advice from English Nature or the Countryside Council for Wales.

The Act also makes it an offence for anyone to knowingly or recklessly damage an SSSI. This is an important development, since previously it was not normally an offence for a third party (i.e. not owners or occupiers) to damage an SSSI. Irresponsible collecting of fossils and minerals has caused problems in the past, and although such cases are thankfully rare, more can now be done to protect against site abuse of this type. Vandalism or other damaging activities can also now be dealt with through the courts. English Nature will be able to introduce byelaws on SSSIs to further protect against third party damage.

Management work carried out by the Countryside Council for Wales and Forest Enterprise, at a mineralogical site in the Central Wales Orefield, is designed to prevent excessive removal of the resource and fly-tipping. The CROW legislation should help to ensure that other GCR sites are maintained in favourable condition and managed effectively. Photo: Stewart Campbell

The CROW Act also gives the conservation agencies greater powers of entry to land where access

permission has been refused. Agency staff will, for example, be able to gain entry to investigate offences and to monitor an SSSI.

The part of the Act dealing with access to the countryside will introduce, in time, new access to open country such as mountain, moorland, heath and downland, although there will be some restricted activities – such as camping, horse and bike riding, and the use of metal detectors. Some areas will also be out of bounds, including quarries – although this is probably only active ones. Mapping and defining of 'open country' will take some time. It appears likely that geologists in England and Wales will eventually be able to walk into some previously restricted areas, but that any geological activities other than walking and photography will remain restricted.

In conclusion, the Act brings stronger conservation legislation now, and the opportunity to walk new areas of land in the years ahead. Despite these powers, however, partnership will remain the approach of both English Nature and the Countryside Council for Wales, and most SSSI owners should not notice any change. Achieving a secure and well managed geological SSSI series through partnership and co-operation is certainly the way ahead, but there are now much stronger powers which can be used where cases cannot be solved through negotiation.

References

Countryside and Rights of Way Act 2000. The Stationary Office Limited.

Ellis, N.V. (Ed), Bowen, D.Q., Campbell, S., Knill, J. L., McKirdy, A.P., Prosser, C.D., Vincent, M.A. and Wilson, R.C.L. 1996. An Introduction to the Geological Conservation Review. GCR Series No **1**, Joint Nature Conservation Committee, Peterborough.

Colin Prosser and Iwan Hughes

Geology day in Sweden

The idea of a "Geology Day" arose some years ago, partly with information through ProGEO, and as a project formally launched by the National Committee for Geology. The Royal Academy of Sciences, the National Museum of Natural History (secretariat) and the Geological Survey of Sweden constituted the core of the organisation, sponsored by Swedish Nuclear Fuel and Waste Management Co, universities and several aggregate producers. Associations of Amateur Geologists and ProGEO supported the arrangements.

Opening address at "Geology Day" by Prof. John Peel, Inst. of Palaeontology, Uppsala University, held at the main entrance of the Geological Survey building.

Director Jacob Johnson, Geological Survey, explaining geology and landscape on top of the Uppsala Eske at Uppsala Castle. Uppsala Dome in the background.

A great diversity of activities was presented during the day. At major centre, the geological institutes at universities and the Geological Survey five locations, a set of popular lectures were well attended throughout the day, accompanied by posters and services for identification of minerals and fossils. Excursions in the vicinity by coach and bicycle were well attended.

Similar reports from other events were recorded, particularly from events labelled "Open quarry", where different aggregate producers presented the geology in the area they worked, different steps in production, and, most popular of all, the possibility for children to sit by the driver in monster trucks.
At all permanent exhibitions or geological stands, an information leaflet about ProGEO was handed out. Altogether, some 500 of those were spread over the country.

So far, the formal Swedish representation in ProGEO has been The Geological Society of Sweden, and the Geological Survey was contracted to handle day-to-day affairs. It is now proposed that the non-commercial association "Geologins Dag" (Geology Day) with a wide representation in the scientific society may be the Swedish ProGEO branch. Progress in this respect will be reported.

Summarizing the first Geology Day in Sweden, most impressions are positive. Disregarding co-arrangements with more than 100 000 spectators (airborne geophysics at Air Force Day), some 3000 to 5000 people attended different arrangements around the country, which is more than expected. Reactions from people were positive. However, many organizers did learn a lot from this first year's event, and improvement can be expected for next year.

Lars Karis

Illegal mining and geological heritage

Problem of the geological heritage conservation at the conference on the struggle with illegal mining and turnover of archeological, mineralogical and palaeontological objects

(Krasnoyarsk, Russia, 18-24.06.2001).

The conference was organized by the Territorial Administration of the Russian Ministry of Culture on Conservation of Cultural Values in Krasnoyarsk (Central Siberia) under the sponsorship of other organizations. About 40 persons took part in the Conference and there were 3 members of ProGEO among them, namely Eduard Emlin, Andrei Lapo, Marina Vdovets.

On the plenary session there were 3 presentations devoted to the geological heritage, which were made by Andrei Lapo, Ol'ga Ozhigina and Marina Vdovets.

Andrei Lapo briefly informed participants about the state of the problem of studying and conservating geosites in Russia. At present some books on the geological heritage have been published. Cadastres of the protected natural territories involving the geosites have been issued as well. In Russia there are 5 World Natural Heritage sites in which the geological heritage are included. It is necessary to organize the Expert Council on the Study and Conservation of the Geological Heritage.

Ol'ga Ozhigina (Arkhangelsk) told about geosites of the Arkhangelsk Region. Among the 60 geosites only 4 have been protected. Vendian soft-bodied Metazoa locality is famous all over the world, but it is protected only as a natural monument of regional significance. It may be lost owing to possible elaboration of a diamond deposit nearby. Soyana Late Permian insect locality is known as the richest in Europe but it has not yet been protected. It is necessary to choose key geosites for their continuous study.

Marina Vdovets' presentation was devoted to the geological heritage of Siberia. At present about 200 of Siberian geosites are included into the database of world and federal significance geosites of Russia. There are 2 World Natural Heritage sites (Golden Mountain of Altai and Lake Baikal) in the territory under consideration, in which some geosites are involved. Palaeontological, mineralogical, ore-lithopetrological and geomorphological geosites are more widespread among Siberian geosites. The majority of palaeontological geosites are represented by Devonian, Carboniferous, Permian and Cretaceous flora and insects localities as well as Carboniferous and Pleistocene-Holocene tetrapod localities. For example, the Baisa Earlier Cretaceous biota locality is of great scientific interest. It is one of the richest localities of Earlier Cretaceous insect remains and ancient angiosperms. Molluscs, ostracods, fishes and bird feathers remains occur there as well. The locality is of important significance for understanding the global evolution of terrestrial biota. The majority of Siberian geosites has not yet been protected. The misappropriation of rare and spectacular fossils and precious

From the excursion at the Earlier Carboniferous lepidophytes locality
Photo: Eduard Emlin

stones from the geosites as well as exploitation of mineral deposits are the main factors of danger.

There were also 2 sessions, namely archaeological one and a session on mineralogy and paleontology. The last one was organized by the Central Siberian Geological Museum and there were 6 presentations there.

Eduard Emlin (Ekaterinburg State University) presented a paper concerning the Uralian Belt of Precious Stones. Topaz, beryl and tourmaline mineralization is confined to pegmatites; emerald and phenakite mineralization to greisen; morion, amethyst and agate mineralization is related to hydrothermal deposits and opal mineralization to crusts of weathering. The Uralian Belt of Precious Stones is famous as a place of birth of geology and mining in Russia.

A group of geologists from Krasnoyarsk (V.N. Markov, V.I. Sovluk, B.P. Chesnokov, O.B. Fetisova) presented a paper concerning geosites of the Krasnoyarsk Region. There are numerous geosites in the area under consideration due to variety of geological structures. Some of them has got a world significance. However only 19 geosites have yet been protected. So, other ones may be lost. The map of geosites location as well as documents for the organization of geosites protection have been compiled by the Central Siberian Geological Museum.

S.A. Krasnolutsky, V.N. Markov, N.V. Martynovich (Krasnoyarsk) informed the participants about a new dinosaurs locality, which was found by S.A. Krasnolutsky in the Berezovo coal quarry in the Krasnoyarsk Region. Numerous dinosaurs remains were sent to the Palaeontological Institiute in Moscow for their subsequent study. Perhaps it is the unique locality of Middle Jurassic terrestrial tetrapods in Siberia.

Two presentations were devoted to Siberia caves. M.D. Ovodov and N.V. Martynovich (Krasnoyarsk) presented the information on localities of palaeontological remains in caves all over Siberia. The area of the karst rocks is about 4310000 km2 there, so the quantity of caves is enormous. The age of fossils in these caves varies from the Miocene till Holocene. About 70 species of mammals and 140 species of birds were found in the Holocene deposits. Many caves are famous as ancient human settlements as well. The level of protection of these cases is low yet. Information concerning the caves of the Altai-Sayny Folding Region as natural-historical monuments was presented by R.A. Tsykin and Zh. L. Tsykina (Krasnoyarsk). The majority of karst caves was formed in the Neogene and Pleistocene. Investigations of stalagmites and stalactites allows palaeoclimatic reconstraction. There are numerous bones of mammals and archaeological objects from the Late Palaeolith there.

Palaeontological geosites nearby Krasnoyarsk were described by L.V. Glukhova. There are many localities of flora and fauna remains from the Precambrian to the Quaternary. Earlier Jurassic fauna and flora remains locality Krasnoyarsk is one of the most famous among them. Over 50 well preserved species of insect remains as well as rich remains of ferns and equisetaceous plants were found there. This geosite may be lost because of River Enisei bank landslide and development of the territory.

After the conference there were some excursions to archeological sites and only one to the geosite namely Earlier Carboniferius lepidophytes locality in the Trifon Gulf of the Krasnoyarsk Reservoir. The participants could observe the cross-bedded tuff sandstone with numerous large-trunk lepidophytes mineralized trunks. Lycopsids occupy a dominating position in continental Earlier Carboniferous flora fossils of Angarida. So, the locality is of great stratigraphic significance.

The conference was successful and it will promote the conservation of the geological and archaeological heritage sites of Siberia. Such conferences are regular in Russia, but the problem of the geological heritage conservation was discussed at the Krasnoyarsk conference for the fist time.

Marina Vdovets

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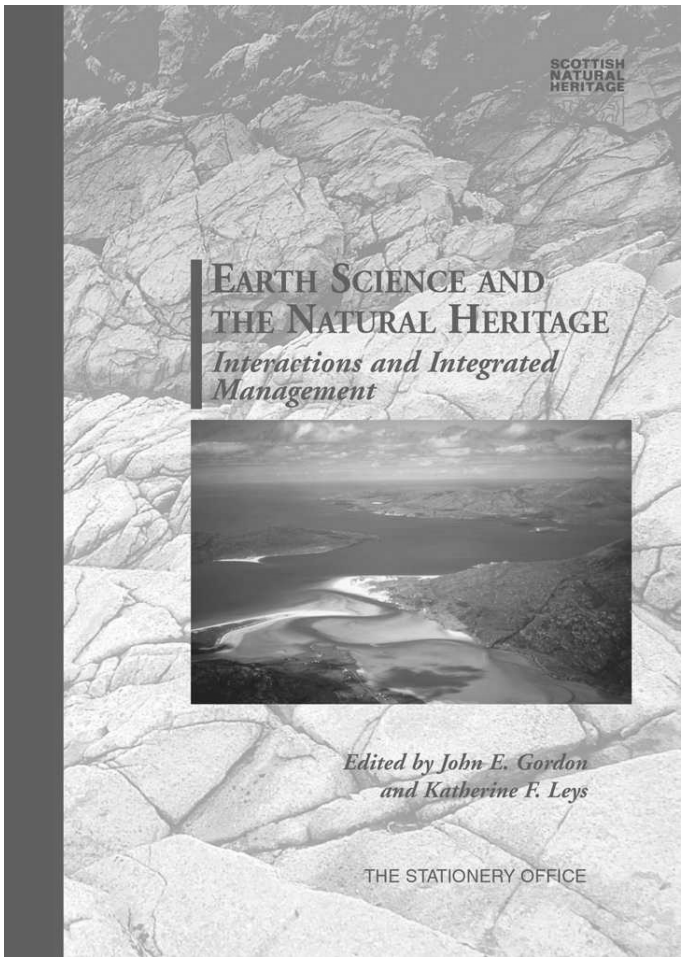
ProGEO **New Publication**

EARTH SCIENCE AND THE NATURAL HERITAGE: INTERACTIONS AND INTEGRATED MANAGEMENT

The proceedings of the 1999 Scottish Natural Heritage (SNH) conference on Earth science and the natural heritage: interactions and integrated management were published recently. The 34 chapters in the book are arranged in five parts and reflect the paper presentations, posters and workshops. Part 1 reviews recent developments in Earth heritage conservation and explores the wider links between Earth science and the natural heritage and the role of geology in global change. Part 2 outlines the geological framework of Scotland and the inherent value of the geological heritage. Crucial links are then examined in three sensitive environments – the coast, rivers and uplands. The chapters in Part 3 focus on sustainable management. They demonstrate the relevance and value of integrated approaches that involve working with, rather than against natural processes, and provide examples of applications. Part 4 addresses the importance of Earth heritage awareness, involvement and education, including recent developments in Scotland, Ireland and Canada. Part 5 looks forward to key challenges for the 21st century, including an agenda for action. Throughout the book, the principal themes of interactions, sustainable management and raising awareness of Earth heritage are emphasised. A full list of contents is available at the SNH web site – www.snh.org.uk



Gordon, J.E. and Leys, K.F. 2001. Earth science and the natural heritage: interactions and integrated management. The Stationery Office, Edinburgh.

ISBN: 0 11 497283 4

Price £35

ProGEO **ProGEO membership 2002**

For coming years, the membership fee will be set in EURO. As the EURO roughly correspond to 2 DM, the new fees are set to

- €25 for individuals, and
- €150 for institutions.

The invoice for 2002 will be distributed in November. For internal routines of administration and also facilitating registration of payment, a numeric code (invoice no.) will be printed in the head of the invoice.

When paying your fee, this invoice number must be stated along with your name and the amount paid. **If you are paying for more than one year, also the actual years included should be stated.**

This information will also be provided together with the 2002 invoice.

Gunnel Ransed, Treasurer

Geotourism in Spain

Field education & geotourism in southern Spain

Just a short note to bring to your attention the very productive labours of our colleagues in southern Spain. The rocky headlands of the coast near Alicante are well known, and many of us have received a holiday postcard showing the monumental rock of Penon de Ifach, at Calpe.

But this is a superb piece of coast also for teaching, for the 'flesh' of vegetation and cover is entirely stripped away and the 'bones' of the geology are laid bare. Prof. Pedro Alfaro (University of Alicante) and colleagues have produced a series of beautifully produced colour guides for the coast and mountains of the region.

These are excellent didactic tools, dealing with geological features at all scales: from orogenic and glacial processes to small-scale karstic forms, from dune deposition to classical turbidite sedimentology, and past and present erosional processes - all superbly illustrated.

These works are:

- Itinerarios geologicos por el litoral de la Provincia de Alicante, 1999
- Itinerario geologico litoral entre Benidorm y Calpe (Provincia de Alicante) , 1999
- Itinerario geologico de la Cordillera Betica, 1999

All authored by P. Alfaro *et alia. (see adress box)*

Workshop

Workshop of the South-Eastern European Countries ProGEO WG1 for the policy or policies needed concerning:

- the promotion of geological heritage conservation issues
- the incorporation of this policy to all other policies of conservation and protection of the natural and cultural environment.

The workshop will take place in Athens, September 27-28 2001, during the 9th International Congress of the Geological Society of Greece and in Lesbos island, 29.9-1.10 2001 with the cooperation of the Museum of the Lesbos petrified forest. The workshop will attend delegates from almost all South Eastern European countries, as well as the President and the Executive Secretary of ProGEO, the Director of the Earth Sciences Division of UNESCO.

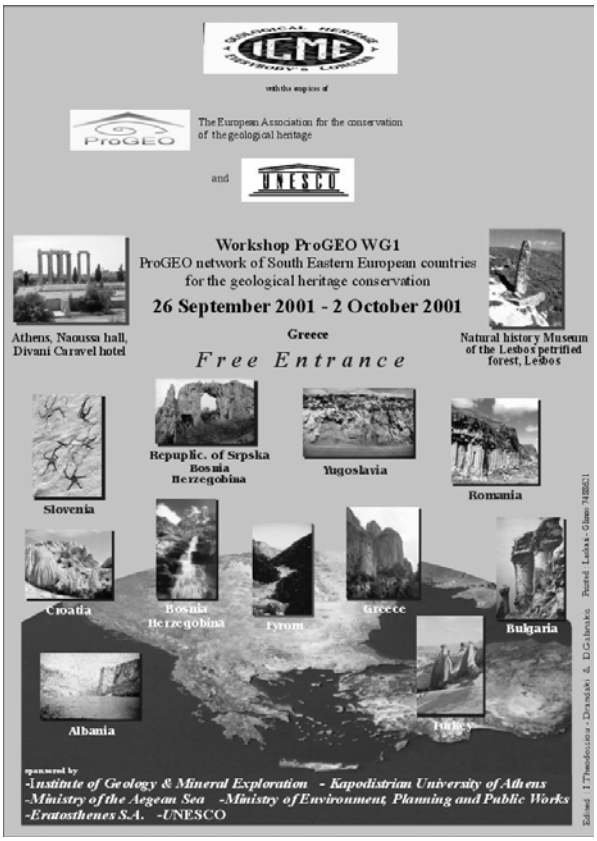
One of the main aims of the Workshop will be comparative work on geological frameworks for defining geodiversity in our region, according to the model proposed in "geosites project".

Further aims of the workshop will be the strengthening of the network via communication and technology tools, cross-border geosites projects, geoparks initiatives and geotourism issues.

A small publication on geological heritage sites in south eastern European countries is under preparation for the workshop. The workshop is under the auspices of ProGEO, UNESCO and it is sponsored by the Institute of Geology and Mineral Exploration of Greece, the Kapodistrian University of Athens, the Greek Ministry of Environment, the Ministry of the Aegean Sea, the Earth Science Division of UNESCO.

The workshop will contain a Special session on geological heritage sites in the Aegean region and perspective for their inclusion in world heritage lists. With presentations from:

- Professor Dimitris Papanikolaou, University of Athens - General Secretary of the Civil Protection General Secretariat , "Hazards-related Geotopes"
- Professor Evagelos Velitzelos, University of Athens - President of the Natural Museum of the Lesvos petrified forest, "Important palaeontological and paleobotanical sites in the Aegean Sea region"
- Professor Georgios Stournaras, University of Athens, "Granitic field of Volax in Tinos island, with spherical weathering and characteristic forms of taffoni and alveoles"
- Assistant Professor Nikolaos Zouros, University of Aegean - Director of the Natural Museum of the Lesbos petrified forest, "Lesbos petrified forest- promotion and protection of a unique monument"
- Dr Constantinos Perissoratis,Director of the Geology and Geological Mapping department of IGME , "Geoarchaeology and sea level changes: Areas of human activities during the



last low sea level"

- Giorgis Vougioukalakis, Volcanologist-Researcher IGME, "Volcanic centers in the Aegean Sea"

A session on progress of geological heritage conservation issues in national level with presentations from the countries in the region. ProGEO will also be presented by its president Professor Todor Todorov, Irini Theodossiou-Drandaki, M.sc. and its executive secretary Dr. William A.P. Wimbledon who will present the "Geosites Project".

It will be arranged excursions by the Natural History Museum of the Lesvos Petrified Forest and on Lesvos the following papers will be presented:

- Zouros N., Kontis E. and Valiakos I.: "European cooperation for Geo-tourism devolopment – European Geoparks Network"
- Kontis E., Zouros N., Valiakos I.., and Bedana K.: "Western Lesvos Geopark – From the volcanoes to the petrified forest"
- Bedana K., Valiakos I.., Kontis E. and Zouros N.: "Educational programs and activities to the Lesvos Petrified Forest"
- Valiakos I.., Zouros N., Kontis E. and Bedana K.: "The Olive Paths – Geotouristic routes of environmental sensitization"
- GRECEL Team, "GRECEL Project, Pedagogical Activities"

The workshop is organized by an organizing committee consisting of, Chair: Irini Theodossiou-Drandaki, Secr.:An. Diakantoni, Members: G. Fermeli, D. Galanakis, An. Koutsouveli, N. Zouros, and sponsored by :IGME, Kapodistrian University of Athens, Ministry of Environment, Planning and Public Works, Ministry of Aegean Sea, Eratosthenes S.A., UNESCO.

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Deadline for contributions to next issue of ProGEO NEWS: 01.12.2001

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ProGEO NEWS

A PRIORITAIRE PAR AVION

NINA•NIKU
STIFTELSEN FOR NATURFORSKNING
OG KULTURMINNEFORSKNING