

The first 100

IUGS Geological Heritage Sites

by: **Lars Erikstad**

[lerikstad@outlook.com]

ProGEO is as we all know an affiliated organisation to IUGS and this year IUGS celebrated its 60th anniversary. The main celebration was organised in the beautiful Basque Coast UNESCO Global Geopark, in the city of Zumaia and the framework around the event was the presentation of the first results of an IGCP project presented as a book released at the conference: "The first 100 IUGS Geological Heritage Sites". The programme was focused on the presentation of most of these first 100 sites. It was a truly magnificent tour with some of the world most famous sites spanning from Hutton's Siccar point to the Grand Canyon. I also had the opportunity to present an invited keynote lecture on behalf of ProGEO under the title "Past, present and global challenges for geoconservation".

The selection of the sites was done through the 731 IGCP project in which several ProGEO members participate. Through this process some 200 sites were nominated and based on a scientific review 100 of them were selected to be included in the first 100 book. Thus the first 100 is not a selection of the best sites based on a systematic inventory, but a recognition based on scientific review of nominated sites. The selection and the book were a recognition of these 100 sites, but also of the very principles of geoheritage and geoconservation.

It is many years since IUGS and ProGEO tried to launch the Global Geosites Project which intended to be a global inventory project to select the best geosites of the world. This first project was not completed, but has had its great impact both in ProGEO as well as in many European countries. Selecting the best is a tremendous task and maybe that this task was too big for the first Geosite Project to succeed. But the idea of IUGS as a major player in recognizing the scientific value of geosites was not forgotten. ProGEO has always advocated the need for a listing of top geosites in the world, both for the geosites themselves, but also as a signal to raise awareness of our geological heritage worldwide.

The task to make a systematic global inventory may still be out of reach, but "the first 100" certainly fulfil the second task, to raise awareness in the geological scientific community, as well as in the general society.

It is a bit ironic that we have not had any response for our wish for global listing of geosites for many years, but now we suddenly have two! On the last World Conservation Congress in 2020, IUCN adopted the "Geoheritage and protected areas" Resolution (WCC-2020-Res-074). This resolution welcomes "the efforts of the International Union of Geological Sciences (IUGS) in supporting the Global Geosites Programme to identify geological sites of international relevance, and the initiative of the IUGS International Commission on Stratigraphy, which identifies sites of global significance as standards for Earth's geological time and its record" and it also supports "the development of a detailed study envisaging the establishment of a future IUCN initiative on Key Geoheritage Areas, as a complement to the existing Key Biodiversity Areas programme, in order to protect geoheritage sites of global conservation significance and move towards more integrated nature conservation". This last initiative is currently under development and ProGEO works actively to support also this process. We hope that the two initiatives mutually can work together and secure geoconservation both in the geoscientific community as well as in the nature conservation community.



The Itzurun-Algorri coast is one of the most important Geosites in the Basque Coast Geopark. The tilted flysch layers build up a fantastic shoreline and a continuous stratigraphical record over 65 million years. Here we also have the Cretaceous – Paleogene contact with iridium layers exposed beautifully. The area has two defined IUGS Global stratotypes defined and is selected as one of the first 100 geosites.

Of special interest for ProGEO was also a declaration from the conference and especially this paragraph:

“Therefore, the International Union of Geological Sciences - IUGS declares the following: Recognizing and preserving Geological Heritage is critical. The IUGS adopts the mission to acknowledge Geological Heritage of highest scientific importance. Collaboration between all international initiatives involved with geoh heritage and geodiversity can lead to their further appreciation, to their sustainable use as educational resources, and, most importantly, to their preservation for the good of society, for future generations, and for our Planet’s well-being.”



The final session of the conference was held outdoors in the most fantastic and appropriate setting. Here the Zumaia declaration was approved.

The declaration was signed by me on behalf of ProGEO. I think we can take this declaration as a good omen for the work that ProGEO has a dedication, and hope it will be a significant push forward for our work. We congratulate IUGS for its 60th anniversary and for “The First 100 IUGS Geological Heritage Sites”. More information about the congress, including the declaration, online version of the book and many videos of presentations of most of the geosites can be found at:

<https://geoparkea.eu/eu/geoparkari-buruz/proiektuak/iugs-globalgeosites>

trip to Ireland

Hedmark geological association’s anniversary

Hedmark geologiforening is a local geological association in Norway that covers the lake Mjøsa area and Hedmark county. The association was started by leader Ole Nashoug in 1973 and thus soon turns 50 years old. In 2007, Mammuthus (Mammoth House) came into place in Vangsåsen in Hamar municipality under the auspices of Ole and the local geological association. Here there are two large life-like replicas of mammoths, and visitors can see what they looked like, and also experience exhibitions of local rocks, minerals and fossils. The Geological Society has also published the book “Mjøsområdet; Geology and landscape” in 2017 (Dahl et al. 2017).

In connection with the approaching jubilee, the association wanted to arrange a trip to Ireland and make a corresponding tour

of Ireland and Northern Ireland which was done in connection with the conference Natural and Cultural Landscapes – The Geological Foundation in 2002 (ProGeo News 3 2002). Deputy head of the association, Vegar Bakkestuen, was on this trip in 2002. With good help from ProGEO we came into contact with helpful local guides at the geosites we visited. During four days we visited, among other sites, the World Heritage Site Giants Causeway, Marble Arch Caves UNESCO Global Geopark and The Burren and Cliffs of Moher UNESCO Global Geopark.



Figure 1. Professor emeritus Johan Petter Nystuen guides on the first day in Gigants Causeway about deep weathering in basalt. Photo (Børre Dervo copyright)

The highlight was that we got a very special tour of the Marble Arch Caves, which were closed for rebuilding and restoration. Thanks to good will from the Geopark we were allowed to go down into the caves and a great tour of the cave system there. This was an fantastic experience.

We also visited the Cliffs of Moher and the landscape of the Burren. Our professor emeritus Johan Petter Nystuen has previously supervised two master's and one doctoral student at this location but had never visited here before. The Burren area is also known for its high biodiversity and especially plant diversity.



Figure 2. Great karst formations in the Marble Arch Caves. (Børre Dervo copyright)

It was very interesting to see how Ireland and Northern Ireland had arranged for large-scale tourism and strategy for the conservation of geoheritage and bio- and geodiversity. We saw, among other things, how they had arranged roads and paths made of local rocks to keep all the tourists within limited areas to protect the sites from wear and tear. We gained a lot of experience when the Hedmark geological association proposed that the lake Mjøsa area could also be a potential Geopark. In addition, we learned right after the trip that one of our localities at home, Jutulhogget, has ended up in the first hundred geosites of the International Union of Geological Sciences (IUGS) in the world.

References

Dahl, R., Nashoug, O., & J. P. Nystuen (red.). 2017. Mjøsområdet. Geologi og landskap. Hedmark geologiforening, Hamar (276 s) ISBN:978-82-7385-200-1 (English edition under production).

3 GEO international Forum

by: **Manu Monge-Ganuzas**

[manu-monge@euskadi.eus]

Last October 14-17, 2022, the UNESCO Cluster Office in Almaty (Kazajistán), the Department of Tourism of the region and the Tien Shan Geological Society organized in Osh (Kyrgyzstan), the international Forum "3 GEO" -Geoheritage, Geotourism and Geo-cooperation for the creation of UNESCO Global Geoparks (UGGps).



Currently, the UNESCO Office in Almaty (Kazajistán), with the support of the Secretariat of the International Geosciences and Geoparks Program (IGGP), actively participated in the promotion of the concept of UGGps in Central Asian countries. Besides, they also cooperate in the fields of research and assessment of geodiversity, the development of cooperation in the creation of the Atlas of Geodiversity of the region, the production of scientific and applied guidebooks and popularizing materials on geoheritage and geotourism with the final aim of popularize the preservation of geoheritage for the sustainable development of local communities.

In this regard, cooperation in this area of the Planet between the specialists of the Central Asian countries has reached a high level and effective communications. UGGp proposals are increasing at the local level in various regions of Central Asia. In addition, attempts are being made to integrate local communities, including state institutions and public organizations, into the development of UGGps, the preservation of unique landscapes, especially geoheritage of international importance as objects of science and education.

In 2021-2022, a number of events, seminars, conferences and field trips were held in the regions of Central Asia dedicated to the "3 GEO". This forum provides a platform for participants to discuss the potential of geoheritage for sustainable tourism, education, science and environmental development for the local population. The administration and public organizations of the Osh region strive to create an UGGp, emphasizing the uniqueness of the geological and cultural heritage of the region. ProGEO was invited by the organisers to present a lecture at the forum on geoconservation of protected areas, which was given by one of its vice-presidents, Dr. Manu Monge-Ganuzas.

ProGEO

The XIth International Symposium

by: **Jack Matthews**

[jack.matthews@oum.ox.ac.uk]

The International Association for the Conservation of Geological Heritage – ProGEO – and Charnwood Forest Geopark are pleased to invite you to participate in the XIth International ProGEO Symposium that will be held in Loughborough and Charnwood Forest Geopark, 9-11 October 2023.



XITH INTERNATIONAL ProGEO SYMPOSIUM

9-11th October 2023
Charnwood Forest, UK

General Information

The Symposium will be held in the Town Hall of Loughborough, a thriving market and university town, rich in heritage and surrounded by rolling English countryside. Visitors to the town will discover the iconic Carillon war memorial and bell tower, the country's last working bell foundry, and the only double track main line heritage railway in the UK. Originally built as a corn exchange and ballroom in 1855, the Town Hall is now the municipal building and theatre for Charnwood Borough. Our scientific sessions will be held in the Main Hall. Next door is the iconic Victoria Room, where the poster sessions will be hosted, as well as the Symposium Dinner which will feature the local produce of Charnwood Forest. There are a number of breakout spaces in the venue, and there is the possibility to book meeting rooms, should groups of delegates require this.

Loughborough is well served by transport links. The nearby East Midlands Airport is a short bus ride away, and has direct flights to over 80 destinations. The town's railways station provides good connectivity throughout the UK, including to Birmingham Airport, London Heathrow Airport, and also London St Pancras Station for rail connections around Europe via the Channel Tunnel.

Loughborough has a number of large and small town-centre hotels that are just a few minutes' walk from the Town Hall - meaning delegates will not need to use public transport each day. We strongly recommend delegates book accommodation at the earliest opportunity.

Charnwood Forest Geopark

Charnwood Forest is Britain's unexpected upland. Having begun its journey nearly 600 million years ago in the seas of the southern hemisphere, this very special region has continued to develop rich layers of heritage. We are home to some of the oldest animal fossils ever described, and have quarries whose stone has shaped not only our quiet villages, but also many English cities. Our landscape is defined by crag-topped hills, wooded valleys, heathlands, and grasslands. Shaded lanes reveal Arts and Craft cottages, ancient monasteries, and drystone walls.

The geological significance of Charnwood Forest has been known for some time, being studied in the early 19th century by some of the founders of modern geology such as Sedgwick and Murchison. Victorian researchers soon concluded that Charnwood Forest contained rocks much older than the surrounding region, and that their Precambrian age precluded the discovery of fossils. It wasn't until the 1950s that two schoolchildren discovered unequivocal evidence of Precambrian life, *Charnia*: a find that prompted a subsequent surge in Precambrian fossil finds worldwide.

However, our geological heritage – the story of the rise of animal life itself – is at risk. If people are not passionate about our region, they will not understand its importance and, ultimately, the features that make it special risk being forgotten and lost. We have created the Charnwood Forest Geopark to celebrate our internationally important geology, connect people to our history, and secure a sustainable future. Working with partner organisations, and supported by the National Lottery Heritage Fund, we are improving geoconservation, developing new interpretation and education projects, promoting the region through art and culture, and so much more! It is hoped that we will apply for UNESCO Global Geopark status in the coming years.



Charnia masoni, a 560 million year old fossil from Charnwood Forest, represents some of the oldest evidence for animal life on planet Earth

Scientific Programme and Conference Themes

The scientific programme includes three days of oral presentations and poster sessions. Registration also includes a half-day field trip to Bradgate Park, a medieval deer park that was the birthplace of the nine-day Queen Lady Jane Grey and is home to examples of the Precambrian rocks Charnwood Forest is famous for.

We welcome abstract submissions on topics from all areas of geoheritage and geoconservation, including methodologies, site management, interpretation, education, legislation, and Geoparks. The meeting will feature a special session on the Conservation of Palaeontological Heritage - we particularly encourage submissions on this topic, though all abstracts associated with the broad themes of geoheritage and geoconservation are welcome.

The Symposium will feature the Helen Boynton Memorial Lecture, which will be given by Dr Jonathan Larwood of Natural England on the topic of Palaeontological Conservation. Helen's work on the fossils of Charnwood Forest led to the discovery of many new localities and species, and also promoted the conservation and proper management of these sites. Dr Helen E. Boynton sadly died in September of 2020.

ProGEO Meeting

The General Assembly of ProGEO will take place on Wednesday 11th October, 2023

Field Trips

In addition to the Bradgate Park field trip during the Symposium, which is included in the registration for all delegates, we are offering two optional field trips.

The pre-symposium field trip is a day trip on Sunday 8th October to the Black Country UNESCO Global Geopark. The trip is co-led by Graham Worton, Geopark Lead and Keeper of Geology at Dudley Council, and Colin Prosser, Principal Specialist in Geodiversity at Natural England. Delegates will leave Loughborough by coach, touring many of the sites that have gained the Black Country Geopark its reputation for exceptionally preserved Palaeozoic fossils and best practice in the management of urban geosites. The day will also include a canal boat trip through the Dudley caverns, explaining how geology shaped the region's development as the centre of the Industrial Revolution. Following a traditional English dinner, delegates will return by coach to Loughborough.

The post-symposium field trip is a 3-day trip exploring the Charnwood Forest Geopark, led by Jack Matthews, Charnwood Forest Geoheritage Conservation and Interpretation Officer. Each day the coach will leave Loughborough to explore different aspects of the Geoparks exceptional geological heritage. Attendees will have opportunities to visit a number of the Ediacaran fossil sites within the area, and see recent interpretation and management work that is helping to conserve these internationally significant sites. Visits to historic and modern quarries will examine the complex relationship between resource extraction and geoconservation. While our most prominent geology is Ediacaran in age, geosite visits will also include Cambrian, Ordovician, Carboniferous, Triassic, and Quaternary geology. Geosites stops will also facilitate discussion on novel ways of exploring geoheritage, including through the Geopark education programme, using local buildings, and by visiting the Rothley Wine Estate!

Prices and subsequent details will be announced shortly.

More Details

More information on the meeting, registration, the field trips, and abstract submission, can be found on the website at progeo2023.com. The 1st Circular is available on the website, and the 2nd Circular, registration, and abstract submission will be available shortly.

The Geopark team and ProGEO have been working hard to deliver a meeting of high quality that provides value for money. The registration price will be announced shortly. With the support of ProGEO we are pleased to announce that a travel grant scheme will be available, particularly to support early career researchers and participants from low-income countries. Further information will be published on the website shortly.



The Ediacaran strata of Bradgate Park, surrounded by the famous deer park

Caves and Karst International Year

by: **George Veni**

[gveni@nckri.org]

On Dec. 16th 2022 I was attending the United Nations Groundwater Summit 2022 Side Event—Karst Aquifers: the Most Prolific, Vulnerable, and Misunderstood. You can find this event on the International Year of Caves and Karst website (<http://iyck2021.org/>) or just go to <https://www.youtube.com/watch?v=ot8MTN3hGBo>.

This well-attended event was the 800th International Year of Caves and Karst (IYCK) event. Six more events will be sent soon from Hungary, and Spain has several more to send. This is excellent! Please continue planning and sending events. I hope to see several reports from you early in the new year.

We set several goals for the IYCK. We have met all except one. Please continue to explore, understand, and protect caves and karst long after the IYCK is complete. Please continue to teach anyone and everyone who is willing to listen about caves and karst. Everyone you talk with and teach is important. One by one, we are reaching the world and making a big impact.

A major event is coming soon for IYCK: United Nations Water Conference in New York City, USA, on 22-24 March 2023 (<https://www.unwater.org/news/un-2023-water-conference>). UIS and partners are working to develop an event or somehow make karst an important part of that conference. This is why we organized the IYCK, to bring caves and karst to the world stage. That is how we can make important and long-lasting good changes in how caves and karst are explored, studied, and protected

ProGEO is welcome to be involved in this event. Please, let me know on your possible interest.

As for my usual reminder, any activity that promotes or teaches or excites people about caves and karst, no matter how small, should be sent to our fabulous website manager, Jasmina Rijavec (webmaster@uis-speleo.org), in the simple format you see on the website.

Location; Date; Event name; Event description; Event report (one or more simple links to websites, social media, and/or news media reports)

All this information will be compiled next year into a report to further demonstrate the importance of caves and karst to the world, and the more events we show in our report, the greater influence it will have in getting everyone support for cave and karst exploration, research, and management in the years ahead.

Thank you again for supporting the International Year of Caves and Karst.

George Veni (UIS Past-President, 2017-2022)

International Congress

Geological and Mining Heritage / XXIII Scientific Session of The SEDPGYM

by: **Manu Monge-Ganuzas**

[manu-monge@euskadi.eus]

Geology and mining in the nineteenth and twentieth centuries: landscapes, history and heritage.

Cuevas del Almanzora (Almeria), 29 September to 2 October 2022

The province of Almeria (Spain) has an enormous geological and mining wealth. From a convulsive geological history and the severity of extreme and constant climatic episodes, an orographic layout has arisen, characterised by the elevation, from south to north, of abrupt mountain ranges that exceed two thousand metres in altitude. Between them, run rivers of short length (barely 100 kilometres) and steep slopes which, fed by a markedly torrential rainfall, have carved deep valleys oriented from west to east. On the provincial façade overlooking the Mediterranean, from the border with the province of Murcia to Cabo de Gata, modest mountain ranges have emerged, now coastal, archipelagos of an ancient sea, most of which are well below 1,000 metres in altitude. A landscape marked by aridity has an impact on those who visit us, although in the territory of Almeria, due precisely to its orographic and, consequently, climatic diversity, the very different environments that follow one another as we travel through it are equally surprising. In addition to its intrinsic scenic value, Almeria contains in its entrails an enormous mineral wealth that made it a coveted object of exploitation from prehistoric to contemporary times.

Cuevas del Almanzora brings together the peculiarities described above and concentrates them in its municipal area. Within its boundaries, between 2200 and 1500 B.C., the so-called Argar Culture developed, a civilisation that occupied the entire southeast of the peninsula, with two main settlements on the site: Fuente Álamo and El Oficio. The Argaric people carried out primitive mining prospecting in the surrounding sierras and practised incipient metallurgy, as evidenced by the discovery of furnaces, crucibles and moulds for making axes, knives, awls, halberds, bracelets... In historical times, in the 7th century B.P., the Phoenicians landed in Fuente Álamo and El Oficio, the Phoenicians landed on the Cuévano coast and founded the city of Baria, later conquered by Rome in the 2nd century B.P. Both these first settlers and their conquerors played a leading role in the systematic exploitation of the iron and silver deposits of Sierra Almagrera and Herrerías.

This new event, sponsored and organised by the SEDPGYM, aims to bring together at the Cuevas del Almanzora headquarters, all those interested and concerned about the study, recovery, enhancement and dissemination of our geological and mining heritage. This event aims to become a dynamic forum for debate, enabling participants to exchange knowledge and experiences. Without sacrificing rigour, it aims to free itself from the corsets that are sometimes imposed by academic congresses, penetrating society and making it participate in the aims that a meeting of these characteristics should pursue: to know, conserve, value and disseminate our geological and mining heritage as resources for economic, social and cultural progress.

More information at <http://www.sedpgym.es/actividades/congresos>



To celebrate its 50th year EuroGeoSurveys (EGS) held a meeting in Brussels to highlight past experiences and achievements and look forward to future projects. EGS are a not-for-profit association comprising of 36 member European Geological Survey Organisations and has various expert groups including Geoheritage. The Geoheritage Expert Group provides knowledge and expertise for the conservation and sustainable management of Europe's geological heritage and is chaired by Enrique-Díaz Martínez who gave an excellent presentation. This group helps to provide information on the relevance of geosites and collaborates with organisations on best practice and promotion of these. ProGEO has links with this group as well as supporting the vision of EGS.

The conference was attended by representatives of the EU institutions, international organisations, industry associations, and international and European national and regional geological survey members, many of whom presented talks and took part in discussions throughout the event. The talks and discussions explored prevalent geoscientific topics for society and the role of EGS within them.

The meeting was divided into four sessions each with a different main theme including 'A sustainable future through international partnerships' and 'A vision for the future – A Geological Service for Europe'. The full programme including some podcasts and background information is available on the EGS website 50th Anniversary - EuroGeoSurveys. (<https://eurogeosurveys.org/about-us/50th-anniversary/>)



Many of the talks referred to the importance of understanding how the 'geo' aspect is essential to understanding resources, mitigating climate change, decarbonisation and also how wellbeing, prosperity and health are linked to this. The aspect of natural resources and supply chains was highlighted as shortages are likely to happen when the demand for some elements grows and instability of markets and governments are a factor. Recycling should become more important along with improved surveys and valuing Natural Capital. Included in this was the recognition that UNESCO with its two geodiversity programmes, Geoparks and Geoscience, supports SDG17.

The two winners of the EuroGeoSurveys Young Geoscientist Award presented on their very interesting winning projects. Frances Versluis' project on 'Working together on the energy transition by sharing geological samples through an open database' aims to facilitate specimen sharing and details of what is held in museums etc. This should mean that there is less need to collect fresh specimens and make more of resources already collected and share knowledge. Loic Piret's presentation on 'Engagement Index: A



new metric to value and encourage engagement beyond the academic realm' aims to recognise that public engagement for academics and educationists should be rewarded in the same way as academic papers. It was a great pleasure to hear of two very important projects being undertaken and recognition of these.

The final discussion session looked to the future and also explored why geoscience, although a vital aspect of everything, is often ignored. It perhaps gave one of the strongest messages of the day in that we must work together to demystify the complexity. This refers to making geoscience more accessible so that it becomes part of everyday language, something we can all relate to.

Wishing all ProGEO members a joyful and peaceful season and a happy New Year 2023



Hadrian's Wall along basaltic Whin Sill (Northern England) - Photo: Lesley Dunlop



Next issue of ProGEO NEWS (deadline)

February 12th, 2023

Please send contributions to ProGEO NEWS. Members are interested in things that happen all over the world, your experiences, activities, science, geosites, geoconservation and geotourism efforts!

february
12

ProGEO NEWS are available in the ProGEO site (under publications) www.progeo.ngo

ProGEO NEWS issued 4 times a year with information about ProGEO and its activities.

Editor: João Rocha • joaorocha@uc.pt • ISSN 2184-8300

Please send your contributions (unformatted word file 500 – 2000 words). Photographs, maps and figures should be sent as separated files (preferentially not included in the word file).

If longer texts are needed, please contact the editor.

ProGEO: international association for the conservation of geological heritage.

President: Lars Erikstad • Executive Secretary: Ewa Główniak • Treasurer: Sven Lundqvist.

Membership subscription: € 50 (including GEOHERITAGE journal), 25/yr.(without GEOHERITAGE journal). Institutional subscription: €185/yr.

ProGEO is affiliated with the IUGS and is a IUCN member

ProGEO NEWS produced with support from the Norwegian Environment Agency