GEOHERITAGE Newsletter

No. 7, February 2023

Non nuoc Cao Bang UNESCO Global Geopark, Viet Nam. The eastern part of the Geopark demonstrates many classic karst landforms in a mountain setting. As well as rich geodiversity and biodiversity, the Geopark has important cultural heritage. (See news item below on 'Geoheritage conservation in southeast Asia'). (Image: kimjongdae via Wikimedia Commons. Creative Commons Attribution 3.0 Unported).

This issue of the Geoheritage Specialist Group Newsletter provides an update on GSG activities during 2022. The Geoconservation and Climate Change Working Group was formally established, scoping of proposals for Key Geoheritage Areas has continued, and the Caves and Karst Working Group in partnership with the International Union of Speleology published a revised edition of the IUCN Guidelines for Cave and Karst Protection.

The Newsletter also includes items on geoconservation activities in southeast Asia and the USA, and in UNESCO Global Geoparks. And reflecting on the links between geodiversity and biodiversity, Nigel Dudley invites consideration of the implications of the 30x30 target of the new Global Biodiversity Strategy for geoheritage and geoconservation.

John Gordon

Message from the Chair

Above all, I would like to express my gratitude to John Gordon for his efforts to publish this newsletter again. I hope everybody is doing well. It appears that we are almost at the stage of overcoming the terrible COVID-19. Everything is getting back to normal in Korea, except that Koreans still have to wear masks inside. My former students managed to organize a Retirement Ceremony for me in July 2022, delayed for one year due to COVID-19.

The draft for IUCN Key Geoheritage Area (KGA) programme is almost completed by Jose Brilha (GSG Deputy Chair), and is now in the process for discussion within IUCN. It has been quite slow in the past few months, and I really do hope that we can make a good progress this year. It will be wonderful to get KGAs adopted as a regular IUCN programme at the 2025 World Conservation Congress.

The greatest news for GSG was the formal approval for the establishment of the Geoconservation and Climate Change Working Group (GCCWG) by IUCN WCPA in 2022. I am sure that this working group will play a significant role for geoheritage conservation in the future. Suzette Kimball and Wesley Hill will lead this working group, and everybody is welcome to join and help promote the group's activities.

I finished my articles in Kids Donga Science magazine in Korea last August, and my last article dealt with geoheritage conservation, of course. I have been involved in filming a series of documentary films (3 billion years of the Korean Peninsula with an English title, 'The Hidden Earth') as a presenter with KBS (Korean Broadcasting Service) for almost 2 years, and they will be shown in March 2023. The English version will come out a few months later. We visited Iceland last August to film "Fire and Ice", and it was quite an experience to see the active volcano so closely. Also, spending two days on Surtsey was unforgettable. We also visited Western Australia to search for the oldest continent (Marble Bar region) on Earth and living stromatolites in Shark Bay.

I was asked to make an educational film by the Korean Commission for UNESCO on the UNESCO Hantangang Global Geopark. In all, seven educational films with one in English were made to explain the geoheritage significance associated with ecosystems, history, culture and archaeology. I think it was really a good idea to make this kind of film because this can help the general public understand the significance of geoheritage and geodiversity more easily. Commonly it is quite challenging for visitors to understand geological features solely based on interpretation panels or explanations by geopark rangers. Thus, this kind of approach to make education films for YouTube will be worth trying in other geoheritage areas of the world. You can enjoy this one together with another (UNESCO Cheongsong Global Geopark) which was released in 2021 (see below).

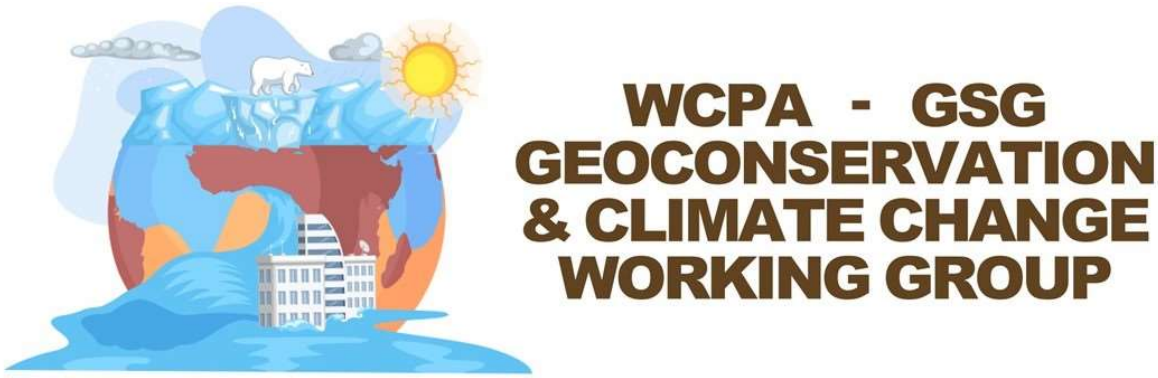
I have been visiting the USA since last July. I have come back and forth between Korea and the USA since then, but I will be back to Korea for good in July 2024. During my visit to the USA, I was able to attend the Geological Society of America annual meeting in Denver. I participated in the conference not only to make a presentation on the IUCN WCPA GSG Key Geoheritage Area initiative but also to see some colleagues. I was able to meet Wesley Hill,

Tom Casadevall, Dan Tormey and Suzette Kimball, and we held useful discussions about future GSG activities.

We held several online GSG Steering Committee meetings last year. But I am really hoping to have a meeting in person somewhere this year.

Stay safe until we meet again in person.
All the best to all of you.
Kyung Sik Woo

Geoconservation and Climate Change Working Group Established



Wesley Hill (Co-Chair) and **Suzette Kimball** (Co-Chair)

In response to the growing climate change crisis, the GSG formed a Geoconservation and Climate Change Working Group (GCCWG) in 2022. The goal of this Working Group is to promote nature-based solutions to scale-up effective adaptations to mitigate impacts of climate change. Bringing geological process discussions to climate talks can round-out holistic ideas for effective solutions.

The GCCWG can assist in increasing the knowledge-base of protected area leaders in order to respond to climate change impacts by linking Earth science systems to ecological foundations, and to manage natural systems as a 'whole' for best practices in climate adaptation and

mitigation efforts. The GCCWG can contribute to action plans within IUCN Commissions and Specialist Groups in priority areas such as:

- Geohazards and risks, their assessment, management and resilience;
- Terrestrial desertification;
- Coastal erosion and hazards;
- Surface and underground hydrology related to flooding;
- Long-term changes of landforms and landscapes;
- Deglaciation and sea-level rise;
- Landslides and slumps, surface and underground stability;
- Carbon sequestration;
- Marine bleaching;
- Implementing nature-based solutions.

The GCCWG has established a Facebook Page to post articles, case studies, courses, conferences, call for papers, and related subject matter. **FOLLOW US on Facebook**: GEO Bulletin – Geoconservation & Climate Change Network. https://www.facebook.com/GEO-Bulletin-Geoconservation-Climate-Change-Network-104107022521790

Additional information on Working Group activities will be sent out in the next months.

Key Geoheritage Areas

The Key Geoheritage Areas Working Group is led by Jose Brilha (Portugal). The Working Group is preparing guidelines and definitions envisaging the establishment of a future IUCN initiative on Key Geoheritage Areas (KGAs), 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. A small working group of GSG members is continuing to prepare a draft scoping document, including the main aims, definitions and criteria to select areas and their governance. When concluded, this draft will be circulated for review and to involve relevant partners.

Caves and Karst Working Group (CKWG)

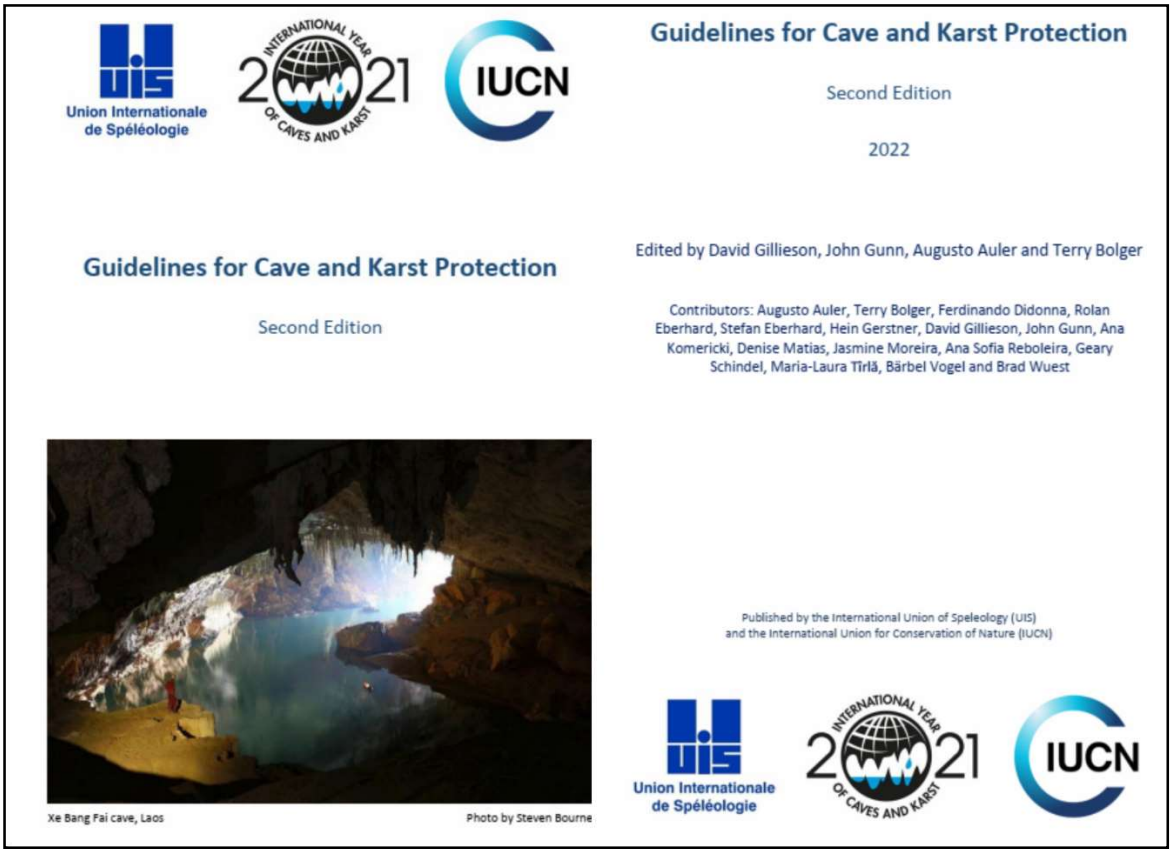
John Gunn (Chair) and **Baerbel Vogel** (Secretary)

The Cave & Karst Working Group (CKWG) was formally established at the 2nd GSG International Workshop on Geoheritage which was held on the Isle of Vilm, Germany, in 2018. The overall goal of the CKWG is to facilitate the conservation of cave and karst geoecosystems within the work of WCPA and protected areas managers, but at the Vilm meeting the CKWG was given two primary tasks:

1) revision of IUCN Guidelines for Cave and Karst Protection first published 1997;

2) producing a report on Caves and Karst in Internationally Designated Areas (IDAs) other than WHS, specifically Global Geoparks, MAB Biosphere Reserves and Ramsar sites.

The first of these tasks was completed in May 2022, when the second edition of the Guidelines was published by the International Union of Speleology (UIS) with support from IUCN. The Guidelines were formally launched at the 18th International Congress of Speleology in Savoie Mont-Blanc, France, from 24 to 31 July 2022. They are available for free download at: https://portals.iucn.org/library/node/49955.



The Guidelines were edited by David Gillieson, John Gunn, Augusto Auler and Terry Bolger, with additional contributions from other members of the Caves and Karst Working Group and from members of the **Cave Invertebrate Specialist Group in the IUCN Species Survival Commission**. There are 76 individual guidelines grouped under 13 headings:

- Some values of karst and caves;
- The special nature of karst environments and cave systems;
- Scales of management in karst areas;
- Recreational and adventure caving;
- Show caves;
- Adventure and tourism activities on surface karst;
- Scientific research;
- Agriculture and forestry;
- Extractive industries;
- Development and infrastructure;
- Water supply;

- Developing effective monitoring and mitigation; and
- Involvement of Indigenous peoples in karst management.

As of January 2023, the 76 Guidelines had been translated into ten languages (https://uis-speleo.org/index.php/listing-of-76-recommendations-for-cave-and-karst-protection/) and there are plans for many more.

The second CKWG task remains as reported in the 2022 GSG Newsletter No. 6; viz, databases have been produced listing cave and karst sites in each of the four IDAs: Biosphere Reserves, UNESCO Global Geoparks and World Heritage Properties which are directly designated by UNESCO, and Ramsar Sites which are designated by International Convention with UNESCO as custodian. A paper on the databases was presented at the 18th International Congress of Speleology but no decision has yet been made on future publications. Updating of the databases is an ongoing task.

The CKWG continues to work closely with the UIS who have a wider remit extending to the conservation and protection of all cave and karst areas whether or not they are at present formally protected. The UIS designated 2021 as an International Year of Caves and Karst (IYCK; http://iyck2021.org/) with three themes: Explore, Understand, Protect. The UIS-IUCN Guidelines were a contribution to IYCK. As of January 2023, the UIS had recorded 875 other contributions making this a highly successful initiative.

Although part of GSG, the CKWG remit extends to cave and karst biodiversity in addition to geodiversity, and members of CKWG contributed to the CaveLife App, developed by the German Speleological Federation (VdHK). This was selected as a finalist in the 2022 Natura 2000 Prize and won in the category 'Cross Border Cooperation'. Natura 2000 is the largest coordinated network of protected areas in the world, spanning all 28 EU countries, and the Prize is awarded by the EU Commission's Directorate-General for the Environment for outstanding achievements in Natura 2000 areas. At the award ceremony, held in Brussels on May 18 2022, the EU Environment Commissioner was presented with a copy of the new Guidelines for Cave and Karst Protection together with an open letter requesting inclusion of geoheritage protection into EU legislation.

Formal CKWG goals for the 2021-2024 period have yet to be agreed but are likely to include working with GSG colleagues on the KGA initiative and in particular developing criteria to identify cave and karst KGAs. CKWG members are also working with colleagues on the Karst Commission of the International Association of Hydrogeologists to select, label and protect the world's most important karst springs as part of the MIKAS (Most Important Karst Aquifer Springs) project. These springs are also landforms so there is a clear synergy with the KGA initiative.

Update on IUCN Resolution WCC-2020-Res-088 Conservation of the Natural Diversity and Natural Heritage in Mining Environments

Enrique Díaz-Martínez and Tom Casadevall

On June 28, 2022, several members of the GSG helped to organize and participated in a Seminar on 'Geological Heritage in Mining Environments' that took place at the rehabilitated quarry of La Chanta, near Corpa, Madrid, Spain. The event gathered professionals from local, regional and national administrations, mining companies, research institutions and NGOs related with nature and heritage conservation, including IUCN member organizations (SEDPGyM, SGE and ProGEO). A declaration document was approved and published with the main conclusions of the seminar, promoting WCC-2020-Res-088 (https://portals.iucn.org/library/node/49227) amongst all stakeholders and for society.

La Chanta quarry (Madrid province, Spain) is an exemplary case study of mine rehabilitation incorporating natural diversity, natural heritage and public awareness in line with WCC-2020-Res-088.

During the Spanish Congress on Mining Heritage held in late September 2022, several members of the GSG met to discuss how to implement WCC-2020 Resolution 088. Several ideas were discussed including preparation of a journal article explaining Resolution 088 and clarifying the terminology to be used moving forward. Also discussed was preparation of a Best Practice Guidelines report that would harvest current best practices for the field. Eventually, a formal GSG Working Group on this theme is likely to be developed. Initially the group felt that a best place to begin would be for formation of a study group to informally explore this theme in some detail and to come to agreement on terminology to be used.

Members of the Spanish Society for the Defense of Geological and Mining Heritage (SEDPGYM - http://www.sedpgym.es/) also gave presentations on the resolution at a number of conferences during 2022 and promoted it in several publications (conference abstracts and magazines).

IUCN WCPA Best Practice 'Guidelines for Geoconservation in Protected and Conserved Areas'

Crofts, R., Gordon, J.E., Brilha, J., Gray, M., Gunn, J., Larwood, J., Santucci, V.L., Tormey, D., and Worboys, G.L. (2020). *Guidelines for geoconservation in protected and conserved areas.* Best Practice Protected Area Guidelines Series No. 31. Gland, Switzerland: IUCN.

This publication, initially launched in English in November 2020, is now available in French, Portuguese, German and Arabic versions, and a Spanish version is also in preparation. It is free to access and available from: https://portals.iucn.org/library/node/49132.

Geodiversity and Target 3 of the new Global Biodiversity Strategy from the Convention on Biological Diversity (CBD) (the 30x30 Target)

Nigel Dudley

WCPA is collaborating with WWF, The Nature Conservancy and UK DEFRA to produce a manual and website aimed at supporting Target 3 of the new Global Biodiversity Strategy from the Convention on Biological Diversity (CBD), which aims to ensure that at least 30% of land, inland waters and marine areas are in protected and conserved areas by 2030. This is a hugely ambitious target which will be a major focus of international conservation efforts for the next eight years. The project includes detailed consultation with many stakeholder groups. A review of evidence has already been completed and is available at: https://www.nature.org/content/dam/tnc/nature/en/documents/TNC_UKDEFRA_30x30_BestPractices_Report.pdf (versions will soon be available in French, Spanish and Portuguese).

Note that since 2008 geodiversity has been explicitly recognised as one of the elements conserved under "nature conservation" in protected areas as defined by IUCN. The CBD has its own definition, with tacit agreement between the institutions that the two are equivalent. But the 30x30 target refers explicitly to "biodiversity". This means in theory that purely geological sites would not fall under the 30x30 target, although in practice many/most also have significant biodiversity value as well and 30x30 is likely to have significant implications for geodiversity conservation. If any members of the Geoheritage Specialist Group have particular issues they want to raise in regard to this work –
for example, tools and processes that should be included in the website – please contact Nigel Dudley at nigel@equilibrumresearch.com.

1st International Geodiversity Day, 6 October 2022

Murray Gray
Queen Mary University of London

Following the establishment of an annual International Geodiversity Day (IGD) by UNESCO on 23 November 2021, the first IGD was held on 6 October 2022. [see *Resolution adopted at the 15th plenary meeting of UNESCO, on 23 November 2021* **International Geodiversity Day** https://unesdoc.unesco.org/ark:/48223/pf0000380399.page=37]. Analysis by Dr Jack Matthews of the Oxford University Natural History Museum shows that 249 events were registered of the IGD website (www.geodiversityday.org) but it is known that many more were held without being registered. 210 (84%) events were open to the public. Non-public events included talks in schools and events organised for members of organisations. 185 (74%) were in person, 41 (16%) were online only, and 23 (9%) were hybrid. Events were registered from 39 unique countries. The country with the most events was India with 52, most being organised by INTACH, the Indian National Trust for Art and Cultural Heritage. Other countries hosting events in double figures were Portugal (30), United Kingdom (29), Spain (26), Romania (21) and Italy (11). The following table shows the full list of events per country.

Country	**Number of events**
India	52
Portugal	30
United Kingdom	29
Spain	26
Romania	21
Italy	11
Canada	6
Brazil, China, Japan	5
Argentina, Colombia, France, Indonesia, Poland, Ukraine	4
Croatia, Czech Republic	3
Belgium, Chile, Costa Rica, Finland, Iceland, Slovakia, Thailand, United States of America	2
Greece, Guatemala, Hungary, Ireland, Kyrgyzstan, Mexico, Myanmar, North Macedonia, New Zealand, Sweden, Turkey, Uruguay, Vietnam	1

While it is known that events were held in Africa, none were registered on the website. Also missing were events from Arab countries and Small Island States, and future effort will be needed to encourage their involvement as they are priority areas for UNESCO. Most events (133) were held on the Day itself, which was a Thursday in 2022, but there was considerable interest in using the week and particularly the weekends around the official Day.

You can read more on the website: http://www.geodiversityday.org

UNESCO Global Geoparks Activities in 2022

Marie-Luise Frey
Welterbe Grube Messel gGmbH

UNESCO Global Geoparks are since 2015 a new UNESCO Programme. The territories working in networks are managed with a holistic concept of protection, education and sustainable development. Their bottom-up approach of combining conservation with sustainable development while involving local communities is becoming increasingly popular (see: https://en.unesco.org/global-geoparks).

UNESCO's Executive Board approved in April 2022 the designation of 8 new UNESCO Global Geoparks, bringing the number of sites participating in the Global Geoparks Network to 177 in 46 countries. Two new countries, Luxembourg and Sweden, joined the Global Network with the designation of their first geoparks. With these 8 new designations, the Network now covers a worldwide surface area of 370,662 km², comparable to the area of Japan. Two of the newly designated UNESCO Global Geoparks are situated in Latin America and six in Europe: Seridó UNESCO Global Geopark (Brazil), South Canysons Pathway (The Caminhos dos Cânions do Sul) UNESCO Global Geopark (Brazil), Salpausselkä UNESCO Global Geopark (Finland), Ries UNESCO Global Geopark (Germany), Kefalonia – Ithaca UNESCO Global Geopark (Greece), Mëllerdall UNESCO Global Geopark (Luxembourg), Buzău Land UNESCO Global Geopark (Romania), Platåbergens UNESCO Global Geopark (Sweden). Owing to COVID-19 restrictions, no new applications from Asia, Africa or the Arab region could be evaluated in 2022. Several projects for the creation of new geoparks in these parts of the world are still under way (see below).

Regional Networks of UNESCO Global Geoparks active in 2022 were: in Europe - European Geoparks Network (EGN), North and Latin America - GeoLAC (Geopark in Latin America and the Caribean), Asia - Asia Pacific Geoparks Network (APGN), and in Africa - African Global Geoparks Network (AGGN).

The members across the Global Geoparks Network celebrated several International Days of the United Nations, for example, Day of Mother Earth in April, Geodiversity Day on 6 October (see: https://globalgeoparksnetwork.org/?pace_1d=7127), International Mountain Day on 5 December, International Day of Georisks and Disaster Prevention on 15 October and the International Mountain Day on 12 December. Numerous working groups are active (e.g. on education, geotourism, georisk/disaster prevention).

Capacity building activities have been realised in all regional global geopark networks. To extend further the 'bottom up' approach of the IGGP (International Geoparks and Geoscience Programme) of UNESCO, there was a focus on Africa's rich geodiversity. Baringo County, an aspiring geopark in Kenya, hosted from 13 to 15 December 2022 UNESCO's first regional workshop on Geoheritage in Africa since the creation of the UNESCO Global Geoparks label in 2015. The workshop attracted 32 representatives from Kenya, Madagascar, Morocco, Namibia, Rwanda, Senegal, South Africa, Tanzania, Uganda and Zambia. All participants were keen to learn more about UNESCO's latest mechanism for international cooperation across

the UNESCO Global Geoparks programme. The regional workshop was largely dedicated to assessing Africa's rich geological heritage, integrating how it could be connected to the continent's natural, cultural and intangible heritage in such a way as to contribute to the region's sustainable development.

From 7 to 9 December 2022, the 2nd part of the 7th UNESCO Global Geoparks Council meeting took place in hybrid form hosted by Satun UGGp (Thailand). UNESCO's Executive Board will decide in April 2023 on the decisions on applications by the UGGp Council to become new members of the UNESCO Global Geoparks Network (https://en.unesco.org/global-geoparks/council).

IUGS First 100 Geosites

During its 60th anniversary celebration, the International Union of Geological Sciences (IUGS) presented the "First 100 IUGS Geological Heritage Sites" at an event in Zumaia, Basque Coast UGGp (Spain), in October 2022. This is the first phase of a project to identify key geological sites for Earth science research from around the world that are iconic, recognized by all the geoscience community for their impact in understanding the Earth and its history. More than 200 specialists from almost 40 nations and ten international organisations are taking part, and the evaluation process and criteria are outlined here: https://www.iugs.org/_files/ugd/f1fc07_af0231893ea04e61986d7aaf92cc085a.pdf?index=true.

Among the 'First 100 IUGS Geological Heritage Sites' are: **left** Hutton's Unconformity at Siccar Point Site of Special Scientific Interest, Scotland, a key locality in the history of geoscience, where James Hutton demonstrated the existence of 'deep time'; and **right** part of the Basque Coast UNESCO Global Geopark, Spain, where The Cretaceous – Paleogene stratigraphic section of Zumaia is exposed.

An IUGS Geological Heritage Site is defined as 'a key place with geological elements and/or processes of scientific international relevance, used as a reference, and/or with a substantial contribution to the development of geological sciences through history'. Details of the sites are available in a published book and online at: https://iugs-geoheritage.org/designations/.

The meeting also adopted the IUGS Zumaia declaration (https://iugs-geoheritage.org/the-iugs-zumaia-declaration/, which includes recognizing the geological heritage as part of the values that humanity must protect for future generations.

The presentation of the "First 100 IUGS Geological Heritage Sites" has been achieved within the context of the International Geoscience Program of UNESCO. It represents an important contribution to this broader recognition initiative that the IUGS, in collaboration with other organizations, shares with the global community of geoscientists and with all people worldwide.

Geoheritage Conservation in Southeast Asia

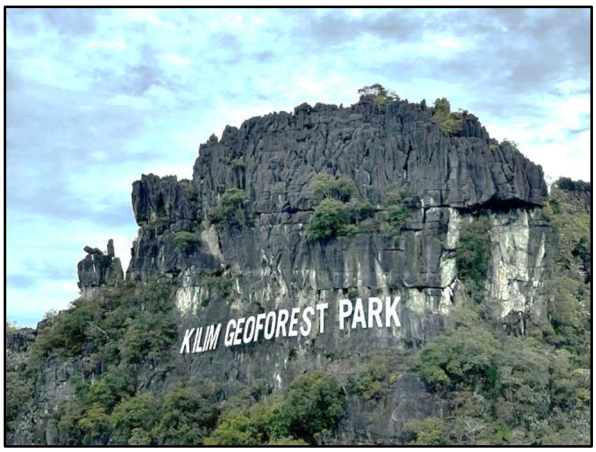
Ibrahim Komoo

The conservation of geoheritage sites, or geosites, in Southeast Asia is generally advancing through the UNESCO Global Geopark development activities. The majority of the countries in the region lack explicit legislation on geoheritage conservation, except for Thailand, which passed the Fossil Protection Act (2008) and succeeded in preserving important geoheritage sites, especially those related to dinosaurs and petrified wood. In other countries, most geoheritage conservation initiatives rely on local community beliefs and traditions, cultural heritage laws, forest conservation laws, ad hoc conservation by state governments employing land management legislation, and conservation based on these laws. The most effective geoheritage conservation in Southeast Asia occurs when a geoheritage is within the Permanent Forest Reserve (PRF), National Park, or State Park. Since 2007, the creation of UNESCO Global Geoparks in the region has made it possible to conserve and develop numerous geosites from a geotourism perspective.

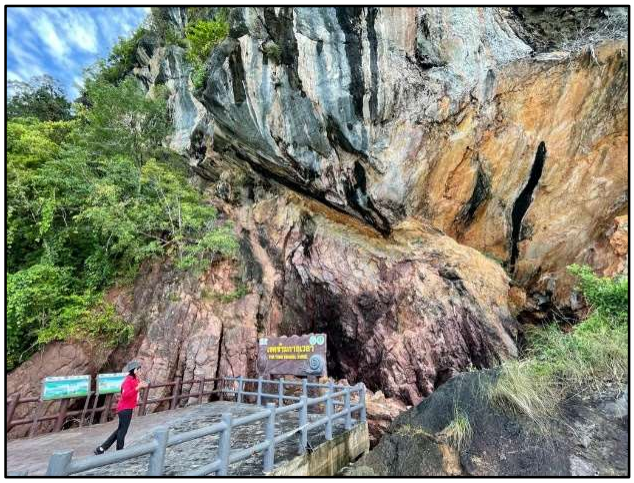
In Malaysia, for example, most of the geoheritage is conserved under the management of permanent forest reserves, national parks, and state parks. Introducing the concept of Geoforest Parks in Langkawi UGGp is the best effort to conserve geoheritage and bioheritage in an integrated manner. Indonesia’s rapid development of geoparks enables the conservation of many geosites under the Presidential Decree (2019), which allocates potential geosites evaluated by the Geological Survey Agency (BGI) to be conserved using provincial government legislation. In Vietnam, geoheritage is conserved under the UNESCO Global Geoparks (UGGp) mechanism, which is managed by the Provincial Government. There are currently 6 UNESCO Global Geoparks in Indonesia, 3 in Vietnam, and one each in Malaysia and Thailand. By mid-2023, at least eight more will be declared in the Southeast Asia region, including one in the Philippines.

The conservation of geosites in the region depends heavily on the need to develop these sites and trails for geotourism. Scientific studies and criteria to determine the importance of value are still in their early stages, and a systematic effort is needed to ensure geosites of high scientific value can be conserved.

Below are some examples of geosites in geoparks in southeast Asia:



Left. The integration of tropical karst landscape with limestone forest and mangrove is conserved under the Geoforest Park. Langkawi UGGp, Malaysia. **Right.** Outstanding karst landscape in aspiring Raja Ampat UGGp is conserved based on landuse management under the provincial government.

Left. Karst landscape in Cao Bang UGGp is conserved based on the collaboration between geopark management and the local community. **Right.** An important geosite displaying the boundary between Paleozoic sandstone and limestone in Satun UGGp, Thailand, is preserved within a National Park.

Geoheritage Activities in the USA in 2022

Tom Casadevall

2022 was an active year for U.S. geoheritage efforts. These included several geoheritage science meetings, field trips, celebration of the IUGS 60th anniversary, International Geodiversity Day, and activities related to the IUCN Geoheritage Specialist Group.

Geoheritage Mapping Workshop, May 2022

A virtual USGS Geoheritage Mapping Workshop was held in May 2022 to solicit input from Federal, Tribal, State, and academic institutions about effective methods to develop a GIS

product and engage stakeholders in the information gathering process. The USGS aims to provide a user-friendly, queryable geospatial product to communicate geoheritage information in a relevant way to formal and informal students at all levels, making geoscience more accessible and inclusive for the public. As a result, the USGS will be leading an effort in coordination with the U.S. National Park Service (NPS) and other Federal agencies, State geological surveys, and academia to develop an initial methodology outlining the standards for geoheritage entity selection based on scientific, educational, cultural, economic and aesthetic values to raise public awareness about the cultural and scientific significance of unique geological sites.

The initial methodology will focus on identifying, compiling, and evaluating national datasets that have geoheritage-like attributes (e.g., NPS National Natural Landmarks and Type Section datasets). The methodology will outline geoheritage entity selection criteria, beta schema and structured vocabulary used to build the GIS layer. The project will refine the methodology based on stakeholder feedback; incorporate regional-, State-, and local-scale datasets over time; and engage in community science practices to connect with under-represented groups ensuring a holistic and credible process for representative data selection.

Geoconservation and Mining Heritage Congress Participation, September 2022

As a follow-up to the recently approved WCC/IUCN Resolution 088 *Conservation of the natural diversity and natural heritage in mining environments* (see item above), a number of IUCN member states have initiated efforts to implement the new resolution. The U.S. Advisory Group initiated discussions with several State and Federal agencies on how mining environments are managed. The focus has been on looking at best practices involving reclamation and restoration of abandoned mine lands. Working in cooperation with colleagues in Spain who originally proposed Resolution 088, efforts are underway within the IUCN Geoheritage Specialist Group to study how best to implement Resolution 088. In late-September the Spanish Society for the Defense of Mining Heritage (SEDPGYM) held the 19th Congress on Mining Heritage at Cuevas de Almanzora, Spain (see item above) and the U.S. (Tom Casadevall) was invited to present a conference talk about current practices of geoconservation and mining heritage in the U.S.

GSA Meeting, October 2022

At the Annual Geological Society of America meeting, held in Denver, Colorado in October 2022, there were several activities related to geoheritage. These included two half-day scientific sessions, two full-day field trips, and a special session on geological sampling. The two science discipline sessions included an all-union Pardee symposium session devoted to geoheritage entitled *Geoheritage: Connecting Our Stories to Earth's History*. The session included 11 invited presentations, including one by Enrique Diaz (Spain) highlighting the methodology of geoheritage inventories, across three sections: Geoheritage International and U.S. Mapping Efforts, Narratives through Nature and Breaking Down Biases, and Geoheritage in Geoscience Education and Community Communication. Due to a large number of abstracts submitted on geoheritage, a second, separate Science Discipline session was organized on Geoheritage topics.

A special town hall meeting on the Culture and Ethics of Geologic Sampling was held at GSA led by U.S. Advisory Group members Marjorie A. Chan (Univ. Utah) and David Mogk (Univ.

Montana), and co-endorsed by the U.S. National Committee on Geological Sciences (USNC-GS), American Geosciences Institute (AGI), Mineralogical Society of America (MSA) and International Association for Promoting Geoethics (IAPG). The town hall meeting builds off a report *Soliciting Community Input on Culture and Ethics of Geologic Sampling* and explored contemporary attitudes and practices of the geoscience community about sampling natural sites, as well as review relevant policies and guidelines that already exist from related professional societies.
https://www.geosociety.org/gsatoday/groundwork/G542GW/GSATG542GW.pdf

Role of the American Geosciences Institute – links to geoheritage education
Since October 1998, the American Geosciences Institute has organized this national and international event to help the public gain a better understanding and appreciation for the Earth sciences and to encourage stewardship of the Earth. This year's 'Earth Science Week' was held from October 9 - 15, 2022, and celebrated the theme '*Earth Science for a Sustainable World*.' The event emphasized the essential role of Earth science in helping people make decisions that maintain and strengthen the planet's ability to support thriving life.

One of the key members of the U.S. Advisory Group on Geoheritage is the American Geosciences Institute (AGI), represented by Ed Robeck. AGI continued to make geoheritage a theme its work in 2022, especially in its Education & Outreach Department. In July, AGI made geoheritage an explicit part of its annual AGI and ExxonMobil Geoscience and STEM Teacher Leadership Academy (TLA), introducing ideas about geoheritage to teachers from 10 states.

Many of AGI's geoheritage-related activities are undertaken by collaborating with and/or encouraging other individuals and organizations. Similarly, in conjunction with the GSA Annual Meeting, AGI worked with representatives from the National Earth Science Teaching Association and the National Association of Geoscience Teachers to provide a virtual geoheritage workshop for teachers that was attended by educators from eight countries. AGI continues to work with these and other organizations to explore, advance, and formalize approaches to geoheritage education.

For more information about the U.S. Advisory Group for Geoheritage and Geoparks, on any of the activities mentioned in this report, please contact Tom Casadevall at tcasadev@gmail.com.

Geotourism Research in South African Protected Areas

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Since geotourism is a concept of growing interest globally, exceptional geoheritage sites have received increased international recognition and interest. They have demonstrated their contribution to sustainable development by reconciling the protection of the geological heritage of international value with local economic activities, mainly through geotourism. Protected areas in South Africa, such as the Kruger National Park (KNP), promote the

interlinkage between their geological, natural, and cultural heritage and raise awareness of natural hazards and climate change. Driven by a bottom-up approach, supported by the commitment of local communities and indigenous peoples, makes them resilient territories, even during the current pandemic. Yet, the concept of geotourism remains largely unknown in Africa, despite the rich and diverse geological features and enormous potential to contribute towards social sustainability. Dr. Khodani Matshusa, a member of the IUCN WCPA Geoheritage Specialist Group, is strongly committed to engaging with the protected areas including national parks and nature reserves in South Africa in a dedicated strategic and transdisciplinary research project to promote geotourism and social sustainability, and to build capacity initiatives, together with local communities and other partners. Further information is available in publications from this work:

Matshusa, K., Leonard, L., Thomas, P. (2021). Challenges of geotourism in South Africa: A case study of the Kruger National Park. *Resources* 10 (11):108, 1-23. https://doi.org/10.3390/resources10110108.

Matshusa, K., Leonard, L., Thomas, P. (2021). The contribution of geotourism to social sustainability: Missed opportunity? *The International Journal of Sustainability in Economic, Social and Cultural Context* 17 (1), 95-118. https://doi.org/10.18848/2325-1115/CGP/v17i01/95-118.

Matshusa, K., Thomas, P., Leonard, L. (2021). A methodology for examining geotourism potential at Kruger National Park. *GeoJournal of Tourism and Geosites*, 34 (1), 209-217. https://doi.org/10.30892/gtg.34128-639.

Matshusa, K., Thomas, P., Leonard, L. (2020). Developing a scale for measuring influential factors towards geotourism. *ACTA Commercii* 20 (1), 1-11. https://doi.org/10.4102/ac.v20i1.861.

Geoheritage in India

Two publications in 2022 highlighted geoheritage in India.

First, a special issue of the quarterly magazine of the Society of Earth Scientists, 'Land, Water & People', Volume 1, Issue 4, on 'Geodiversity and Geoheritage Conservation' was published to coincide with the First International Geodiversity Day. It aimed to raise awareness of geoconservation issues in India and to set them in a wider global context. It can be accessed here: http://earthses.org/?page_id=1096.

Second, the Springer journal, *Geoheritage*, has an online Topical Collection of articles on 'Indian Geoheritage: From the Precambrian to the Present'. It can be accessed here: https://link.springer.com/journal/12371/topicalCollection/AC_2ab2aa3a5b5bc7a13fe1e446231bda6c.

Other Recent Publications of Geoheritage Interest

Earth Heritage Magazine

Issues 57 and 58 of Earth Heritage Magazine were published during 2022. The magazine

includes news and popular articles on geoconservation and is freely available online at: www.earthheritage.org.uk

Forthcoming Meetings

- **European Geosciences Union (EGU) General Assembly, Vienna**, April **23–28, 2023**
  This meeting includes sessions on

  GM 11.1 'Cultural and social relevance of geodiversity and geoheritage'. Further information is available at:
  https://meetingorganizer.copernicus.org/EGU23/session/47054

  GM7.2 'Dynamic geodiversity of critical zones in mountain and polar regions: from landform assessment to scenarios interpretation'. Further information is available at: https://meetingorganizer.copernicus.org/EGU23/session/47052

- **XI International ProGEO Symposium**. The meeting is being organised by the Charnwood Forest Geopark, and will take place in Loughborough, UK, from 9 - 11 October 2023. Further information is available at: https://www.progeo2023.com/

Useful Links

IUCN-WCPA Geoheritage Specialist Group: https://www.iucn.org/commissions/world-commission-protected-areas/our-work/geoheritage

The European Geoparks Network: http://www.europeangeoparks.org/

Asia Pacific Geoparks Network: http://asiapacificgeoparks.org/

Global Network of National Geoparks: http://www.globalgeopark.org/

UNESCO Earth Sciences: http://www.unesco.org/new/en/natural-sciences/environment/earth-sciences/global-geoparks/

ProGEO (The European Association for the Conservation of the Geological Heritage): http://www.progeo.ngo/

International Union of Geological Sciences (IUGS): https://www.iugs.org/commissions

WCPA and GSG Membership Update

Wesley Hill

WCPA asks all of its members to renew during this membership renewal period, 2021-2025. Please check your IUCN WCPA membership status and renew if you have not already done so. Follow these links to check your current membership status and renewal: https://portals.iucn.org/commissions/apply and https://www.iucn.org/commissions/world-commission-protected-areas/get-involved

To join the Geoheritage Specialist Group Member Network, click on the **WCPA Geoheritage, Geoconservation Climate Change, Caves and Karst Network 2021-2025.**

IUCN WCPA Geoheritage Specialist Group

The Geoheritage Specialist Group (GSG) provides specialist advice and guidance on all aspects of geodiversity and geoheritage in relation to the establishment and effective management of protected areas, and to support the integration of geodiversity into all relevant IUCN programmes.

Further information about the GSG is available at: https://www.iucn.org/commissions/world-commission-protected-areas/our-work/geoheritage

GSG Chair: Professor Kyung Sik Woo (happyman369@naver.com)
Secretary General: Wesley Hill (wesleymhill@gmail.com)

To become a member of GSG, geoheritage experts must be members of the WCPA.

GSG also maintains a list of 'advisors' in the wider geoheritage community, who are not WCPA/GSG members. If you would like to be included on this list and to receive details of announcements and copies of the Newsletter, please send an email to Wesley Hill, including your full contact details (address, email, country, and your geoheritage interests).

The GSG Newsletter is compiled by John Gordon. As always, contributions to future Newsletters are welcome from the wider membership on IUCN-related geoconservation activities and issues in protected and conserved areas. Please send contributions to: jgordon0914@gmail.com.