GEOHERITAGE Newsletter

No. 4, January 2020

Lonquimay Volcano, in the Chilean Lake District, is a stratovolvcano located within the Araucarias Biosphere Reserve and the Kütralkura UNESCO Global Geopark, Chile. It lies within the Andean continental arc volcanic province (see the IUCN Volcano Thematic Study on *World Heritage Volcanoes*). The volcano last erupted in December 1988. (Photo: © Thomas Casadevall).

This issue of the IUCN WCPA Geoheritage Specialist Group (GSG) Newsletter reports on activities during 2019. A notable highlight was the publication of the IUCN Volcano Thematic Study on *World Heritage Volcanoes*, while preparation of the *Guidelines on Geoconservation in Protected Areas* in the IUCN Best Practice Protected Area Guidelines Series is nearing completion. A key task during the year has been preparing for the IUCN World Conservation Congress (WCC) in Marseille, France, in June 2020, including the drafting of motions related to geodiversity and geoheritage. One of these is seeking support to develop 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. If approved, this will be a key priority for the GSG. It is vital that members add their support during the online discussions and voting during the period 29 April to 13 May 2020. The Newsletter also includes a report from the International Symposium on 'National Park and Natural Heritage Protection' held in Beijing and attended by several members of the GSG, as well as updates on activities from the Caves and Karst Working Group, part of the GSG, and from the IUGS International Commission on Geoheritage and the U.S. Advisory Group for Geoheritage.

More widely, IUCN has been developing technical guidance on 'other effective area-based conservation measures' (OECMs). These may offer new opportunities for geoconservation; for example, geoheritage features may contribute to evaluating potential OECMs.

As always, contributions to the Newsletter from GSG members are welcome, including short articles, news items and best-practice case studies on geoconservation in protected areas.

John Gordon

Message from the GSG Chair

Kyung Sik Woo

2019 was another challenging year for geoheritage recognition in the world as well as in IUCN, but I think that GSG made quite an achievement in 2019.

I was delighted to see the new IUCN publication, *World Heritage Volcanoes*, by Dr. Tom Casadevall and colleagues. This study was proposed by the World Heritage Committee member to IUCN a few years ago, and it was published with financial support from the Cultural Heritage Administration (CHA), Republic of Korea. CHA is also sponsoring two more publications. Another significant publication, the 'Guidelines on Geoconservation in Protected Areas' in the IUCN Best Practice Protected Area Guideline Series, edited by Roger Crofts, will be out soon in 2020. Many GSG members have been involved, and Roger has made a tremendous effort for this. Also, the IUCN Revised Thematic Study for Criterion (viii) was initiated in 2019. It may be published in 2020 and several GSG members are invited to contribute.

In April, I attended the European Geosciences Union meeting and gave a presentation on the necessity for a new IUCN Programme, 'Key Geoheritage Areas (KGA)'. Several GSG members also attended the meeting. In August, I had a chance to carry out research in Svalbard and I met with Lars Erikstad in Oslo on the way. We had a good discussion on future potential activities on Geoheritage in Nordic countries. Also in August, I was invited to attend the National Park Forum in Xining, China, and made another presentation on KGA. Here I was trying to get support from the Chinese Government delegate and IUCN members in China for this initiative.

In October, several GSG members participated in the International Symposium on 'National Park and Natural Heritage Protection' in Beijing, followed by a fieldtrip to Yuntaishan Global Geopark. We were invited to contribute papers to the *International Journal of Geoheritage and Parks*. The editor of the journal, Dr. Dongying Wei, kindly invited us to attend the meeting and fieldtrip. It was wonderful to see some GSG members and we had a good discussion.

I will attend the International Geological Congress with José Brilha, which will be held in Delhi in March, 2020, and José will make a presentation on KGA. José and I will contribute a session on ‘Geodiversity, Geoheritage and Geoconservation’ as conveners. GSG will be involved in the organization of a workshop during the ProGEO meeting in Segovia, Spain, in June. I am hoping to see many GSG members at this workshop. This will be followed by the IUCN World Conservation Congress in Marseille, France. It was disappointing that the proposals related to geoheritage activities were not accepted, but a motion on geoheritage was submitted by ProGEO. We were not happy that three different motions were merged by IUCN, but still we should do our best for the new IUCN resolution on KGA to be adopted this time. This will influence our goal for a new IUCN Programme on 'Key Geoheritage Areas' at WCC in 2024. I am very confident that this new programme will change geoheritage recognition in the world. Let us continue to do our best to achieve this goal!

Preparations for the IUCN World Conservation Congress (WCC), Marseille, France, 11-19 June 2020

José Brilha

During 2019, GSG members participated in preparations for the next World Conservation Congress[1] that will be held in June 2020 in Marseille, France. All initiatives had the same general common aim: promotion of geodiversity and geoheritage topics inside IUCN.

The first initiative of the year was the IUCN Regional Conservation Forum for Europe, North and Central Asia[2], that took place in Rotterdam, The Netherlands, July 2019, as part of Union-wide preparations for Marseille. Two draft motions were presented: "Conservation of natural diversity and natural heritage in mining areas" and "Geoheritage, protected areas and Key Geoheritage Areas", in addition to the participation in some other parallel events.

Presentation of the draft motion during the IUCN Regional Conservation Forum for Europe, North and Central Asia (Rotterdam, July 2019).

GSG members also contributed to consultation on the IUCN Programme 2021-2024. Several proposals were submitted in order to reinforce the importance of geodiversity and geoheritage in the next 4-years programme. Following the same trend, amendments were suggested for the 2021-2024 Mandate of the World Commission on Protected Areas.

The Marseille 2020 Congress is a hub of public debate, bringing together people from around the world to discuss and develop solutions to the world's most pressing conservation and sustainability challenges. Two GSG activities were proposed to be included in this Forum but unfortunately they were not accepted by the organization.

IUCN members and the IUCN Council submitted more than 200 motions for the IUCN Congress 2020. In the final list of 128 accepted motions, there are two main motions related to geodiversity and geoheritage: Motion No. 89 "Geoheritage and protected areas" which resulted from the merging done by the Motions Working Group of three other motions, and Motion No. 104 "The conservation of natural diversity and the natural heritage in mining environments". Among other requests, Motion No. 89 asks the IUCN Director General and WCPA to "support 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". The Key Geoheritage Areas initiative is one of the main topics included in the GSG action plan for the coming years.

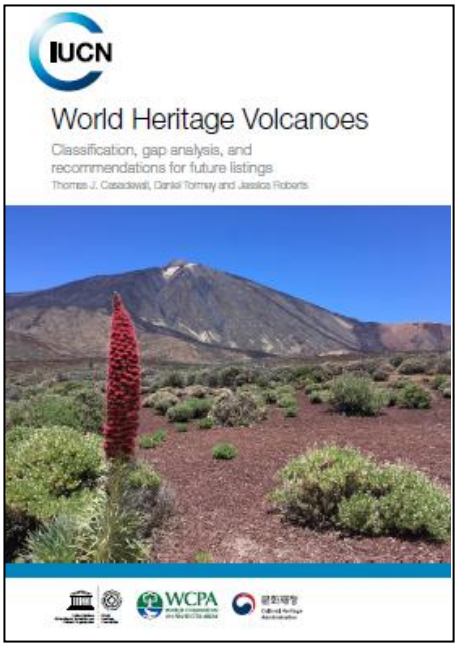
All motions will be discussed online, prior to the Congress, and members can voice their support for motions, express concerns, debate pros and cons and submit amendments. After the online discussion, the electronic vote of motions will take place over a period of two weeks, from 29 April 2020 until 13 May 2020.

GSG expects that the proposals to include geodiversity and geoheritage in the 2020-2024 IUCN Programme and in the WCPA Mandate will be accepted, and that motions 89 and 104 are approved by the IUCN membership.

1- https://www.iucncongress2020.org
2 - https://www.iucn.org/sites/dev/files/content/documents/2019/iucn_rcf_rotterdam_2019_report.pdf

The IUCN Volcano Thematic Study: Publication of "World Heritage Volcanoes"

Thomas Casadevall, Daniel Tormey and Jessica Roberts



Volcanoes are some of the most spectacular natural wonders of the planet. They form many remarkable features of outstanding geoheritage value, demonstrating geological processes fundamental to understanding how the Earth works and linking processes in the Earth's interior with those on its surface. They also support diverse ecosystems and frequently have strong cultural associations and aesthetic values.

At the UNESCO World Heritage Committee meeting in 2013, IUCN was requested: *"to revisit and update its thematic study on World Heritage Volcanoes to clearly articulate a short and appropriately balanced list of the strongest remaining volcanic sites with potential for inscription on the World Heritage List..."* . There were several related key questions: Are the world's most significant and important volcanic landscapes recognized and properly protected? What are the challenges in the management of volcanic world heritage properties in the future? Are the various regions of the globe properly represented in these programs?

The starting point for the new study was the development of a classification system for volcanic landscapes based on plate tectonic setting to provide a conceptual framework to underpin a balanced and representative World Heritage List for volcanic sites. The classification system established a taxonomic basis for classifying different types of volcanic terrains and their heritage value. This then provided the framework for a gap analysis and articulating an appropriately balanced list of the strongest remaining volcanic sites with potential for inscription on the World Heritage List under criterion (viii).

The gap analysis revealed that the current World Heritage List has 80 sites with some volcanic features, but only 23 are listed under criterion (viii) (geological values). The others are listed for cultural (78), biological (67), and aesthetic values (36). In regard to the management of all volcanic World Heritage properties, even if a volcanic property is not listed for criterion (viii), there is the potential that the risk of hazardous conditions (eruptions, gas emissions, hydrothermal activity, landslides, and other volcanic hazards) may not be adequately addressed in the site's management plan. The World Heritage List includes some notably dangerous volcanoes, and the monitoring of volcanic activity and risk contingency planning should be essential parts of the management process in all potentially active volcanic World Heritage properties. In addition, where a site is not listed under criterion (viii), its key volcanic features may not receive adequate emphasis or protection by the managing authority.

The analysis also indicated that there are significant gaps in representation of volcanic sites listed for criterion (viii). The southwestern Pacific island arc settings, with several volcanoes with potential Outstanding Universal Value, are not represented on the List. The Andes of western South
America is the most prominent example of continental arc volcanism, and yet is poorly represented. For divergent margin sites, the mid-Atlantic Ridge (including iconic volcanoes of Iceland), the Great Rift Valley of Africa and the Red Sea Rift are poorly or not represented. Submarine volcanic systems are dominantly rift systems and are not represented. Volcanism in back arc basins is unrepresented, although there are outstanding examples in Argentina and the southwest Pacific. Collision zones are not represented. Ancient volcanic terrains on the World Heritage List contain no continental flood basalts, ring-dike complexes or komatiites, despite the importance of these terrains in remaking continental surfaces, and as components of most mass extinctions on the planet.

Based on the above analysis, and following extensive consultations among the global community of volcano scientists and other experts in volcanology and geoheritage, a limited list of volcanic sites with strong potential for inscription on the World Heritage List was compiled. This is presented by region in two categories: i) iconic sites (18) with clear high potential to meet criterion (viii); and ii) additional sites (17) that may be further considered for the potential to meet criterion (viii), but where justification of the criteria would require further study. The presentation of sites with a focus on criterion (viii), is not exhaustive and has not attempted to analyse whether these suggested locations meet the necessary conditions of integrity or their level of protection and management. Both considerations are elements of Outstanding Universal Value required for the possibility of nomination. Certainly for the additional sites and possibly for the iconic list, State Parties may alternatively consider evaluating the options of nomination as Global Geoparks or Biosphere Reserves in the event they do not fully exhibit OUV, or if these other designations are better

adapted to the goals of the State Party than is World Heritage. In all cases, State Parties are recommended to seek advice from UNESCO and IUCN prior to beginning work on nominations for sites covered in the present study.

The study also provides advice to States Parties on the use of the classification system and features identified in the study to strengthen the nomination of volcanic sites under criterion (viii), including a checklist that can also be used by the reviewers of a nomination. The advice also describes a method for developing a comprehensive global comparative analysis to support a nomination. The global comparative analysis is central to the application and review process in establishing the evidence-based justification for Outstanding Universal Value. Although the scope of the study is the World Heritage List, the analysis in the report also includes properties listed in the UNESCO Global Geoparks Programme and sites listed in the UNESCO Man and the Biosphere Programme (Biosphere Reserves).

Casadevall, T. J., Tormey, D., and Roberts, J. (2019). *World Heritage Volcanoes: Classification, gap analysis, and recommendations for future listings.* Gland, Switzerland: IUCN. viii + 68pp. The report is free to download and is available from: https://portals.iucn.org/library/node/48448

Geoconservation Best Practice Guidelines Update

Roger Crofts

Preparation of the *Guidelines on Geoconservation in Protected Areas* in the IUCN Best Practice Protected Area Guidelines Series continues. The comments of independent reviewers have been taken on board and more work done to make the draft as up to date and relevant as possible for the targeted users. The draft has been signed off by the lead team of Roger Crofts, John Gordon, Murray Gray, Dan Tormey and Graeme Worboys with the help and input of many others. It is now being reviewed by the WCPA Editorial Team, principally the WCPA Chair, Kathy MacKinnon, and the Head of the Global Protected Areas Programme at IUCN, Trevor Sandwith. Their comments are awaited. It is planned to launch the Guidelines at the World Conservation Congress in Marseilles in June 2020.

Linking Geoconservation to the Wider Conservation Agenda

John Gordon and Murray Gray

Linking geoconservation to the wider conservation agenda is one of the tasks in the GSG work programme. The challenge is to identify how we can mainstream geoconservation into wider conservation agendas within IUCN, so that the values and relevance of geodiversity and its synergies with biodiversity are recognised within relevant IUCN programmes, strategies and guidance. Potential links are through greater engagement in areas such as

conserving nature's stage, ecosystem services, climate change, marine conservation, natural solutions to global challenges, cultural heritage, human well-being and connecting people and nature. For example, what does conserving nature's stage mean in practical terms for the design and management of protected area networks, and how can geoconservation contribute to natural solutions? The first step is to prepare an initial scoping paper with horizon scanning to identify priorities and opportunities and to contribute to consultations or IUCN programmes in these areas in the short, medium and long term. Good case studies will be essential. We would welcome offers of contributions and active involvement during 2020 from GSG members and members of other WCPA Specialist Groups and other Commissions.

Other Effective Area-Based Conservation Measures (OECMs) or "conserved areas"

Nigel Dudley

In 2010, Aichi Biodiversity Target 11 from the Convention on Biological Diversity invented a new term and started a decade of debate. The target said: "By 2020, at least 17% of terrestrial and inland water areas and 10% of coastal and marine areas … are conserved through … systems of protected areas ***and other effective area-based conservation measures***…" (my emphasis).

The addition was thrown into the debate at around 3.00 a.m., when most delegates were too tired to care. IUCN and the CBD Secretariat initially argued that an OECM was virtually the same as a protected area and should be treated as such, but this was rejected. IUCN was tasked with the job of defining an "OECM". After much debate, a task force produced draft guidance for the CBD. CBD Signatories finally agreed a definition in 2018 at the 14th Conference of Parties in Egypt:

A geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic, and other locally relevant values.

This covers three cases:

1. **'Primary conservation**' - areas meeting the IUCN definition of a protected area, but where the governance authority (community, indigenous peoples' group, religious group, private landowner or company) does not wish the area to be reported as a protected area.
2. '**Secondary conservation**' - active conservation of an area where biodiversity outcomes are only a *secondary* management objective (e.g. some conservation corridors).
3. '**Ancillary conservation**' - areas delivering *in-situ* conservation as a by-product of management, even though biodiversity conservation is *not* an objective (e.g. some military training grounds).

IUCN is preparing guidelines on managing OECMs, to be published late-2019. Papers about marine conservation, privately protected areas and community conservation are available plus an issue of PARKS journal exploring putative OECMs. BirdLife is developing and field-testing a screening tool.

OECMs are likely to be included in any post-2020 CBD targets and therefore start being listed on the World Database on Protected Areas. Canada has announced the first OECM, a military training area that has high conservation value. More will come.

The implications are being worked out. OECMs could bring important new or existing areas into conservation planning and help prevent them from being lost or degraded. They make bold targets like "half earth" more feasible. But they could also be an excuse for governments to "recognise" relatively worthless areas and act as a perverse incentive preventing new protected areas.

The consequences for geodiversity need to be explored. There could, for example, be opportunities to work with different types of landowners to take care of important geological features, creating extra leverage if these are applying for an OECM. It might also be worth developing brief guidance on the kinds of features to look out for when evaluating potential OECMs.

Report from the Caves and Karst Working Group (CKWG)

John Gunn (Chair) & Baerbel Vogel (Secretary)

As we noted in the last GSG newsletter, there has been some confusion over the CKWG and its role within GSG / WCPA. The bureaucratic wheels move slowly, but CKWG is gradually establishing itself and focussing on two primary goals:

1) revision of IUCN Guidelines for Cave and Karst Protection first published 1997 [this is being co-ordinated by David Gillieson];
2) producing a report on Caves and Karst in international protected areas other than WHS, specifically Global Geoparks, MAB Biosphere Reserves and Ramsar sites [this is being co-ordinated by John Gunn].

David Gillieson has produced a draft list of contents together with additional information, and John Gunn has assembled databases listing Global Geoparks, MAB Biosphere Reserves and Ramsar sites that contain, or are thought to contain, features of cave and / or karst interest. The "and / or" is because some caves in protected areas are not associated with surface karst landforms because they were not formed by dissolution (for example lava caves). Further details of these projects are given in CKWG Newsletter #2 available from Baerbel Vogel.

Membership of CKWG

Anyone who is presently a member of the GSG and who has an interest in Caves and Karst is welcome to join the CKWG - just email Baerbel with your contact details and interests. If you

are reading this but are not presently a member of GSG, then if you wish to become a member of CKWG you must first join GSG. However, we recognise that there are many scientists who have an interest in the conservation and management of caves and karst but may not wish (or be eligible) to become a member of GSG (for example members of the IUCN SSC Cave Invertebrate Specialist Group). For these people we have introduced the category "Supporter of the CKWG". Anyone wishing to be a supporter needs only to send their contact details to Baerbel and we will send you copies of the CKWG Newsletter and other information.

Future Meetings of CKWG

The CKWG is one of the sponsors of UNESCOkarst 2020 (Conservation of Fragile Karst Resources: A Workshop on Sustainability and Community) which is being held at the Mammoth Cave Area Biosphere Reserve, Kentucky, USA from 18-22 May 2020 [see https://unescokarst2020.com/]. This promises to be a very interesting meeting with participation from international groups and organisations that have an interest in cave and karst conservation, and we would encourage members of the CKWG to attend.

ISO Technical Commission on Karst

In 2018, China proposed to the International Standardisation Organisation (ISO) a Technical Commission on Karst. The intention was that this commission would cover standards for everything related to karst, including terminology, sustainable development of karst resources, environmental protection and management of karst environments, investigation and assessment (including modelling methods and mapping of karst systems). Despite some reservations the TC Karst ISO Commission was approved, with China taking the lead role and Austria, Canada, Lithuania, Portugal, Russian Federation and Saudi Arabia claiming to be active. Observing countries are: Argentina, Australia, Bulgaria, Croatia, Czech Republic, France, Germany, India, Indonesia, Iran, Italy, Japan, Latvia, New Zealand, Norway, Poland, Serbia, South Africa, Spain, Switzerland, Thailand and the USA. In the resolutions of the first meeting in September 2019 in China two topics were listed: karst terminology and specification of monitoring technology for karst critical zones. The International Union of Speleology (UIS) has liaison status and future collaboration with IRCK (the International Research Center on Karst at Guilin), IAH (International Association of Hydrogeologists), IUGS (International Union of Geological Sciences), ISCA (International Show Cave Association) and IUCN are mentioned, although at the time of writing it is not clear who in IUCN had been approached. The meeting in China also added speleology and engineering to the remit.

In the light of the ISO initiative, revision of the IUCN guidelines on cave and karst protection, one of the key tasks of the CKWG, will be very important to set efficient standards.

International Year of Caves and Karst (IYCK)

George Veni, President of the International Union of Speleology (UIS), has provided the following information:

"*The UIS has declared 2021 as the IYCK in a major effort to make the world aware of how caves and karst are valuable to all people. To make this possible, the UIS is calling on all of its member countries and other organizations to begin planning a series of public lectures, programs, demonstration of techniques, and others activities for 2021. The IYCK website is now open at http://www.iyck2021.org/. It is designed to teach the public about caves and*

karst, and so it has a great amount of educational information. It also has information on how to become involved in the IYCK."

The GSG is one of the UIS partners, and members of the CKWG are presently considering how we can best mark the year.

Other News from the UIS (provided by George Veni)

The location of the 2021 International Congress of Speleology has changed. A problem occurred with the planned venue, forcing a change to a different nearby location. At this time the details are being developed and will be posted on: https://uis2021.speleos.fr/. The UIS has had a long and excellent relationship with the Federation of Latin American and Caribbean Speleological Associations (FEALC), which has recently been formalized with FEALC becoming a UIS Associated Speleological Organization. Both organizations look forward to a continued long and productive cooperative partnership.

The UIS offers speleological expedition grants and sponsorships to speleological events. For more information go to http://www.uis-speleo.org/documents/administrative_documents/Speleological%20Events%20Support%20Guidelines%20-%20Version%202%20-%20September%202019.pdf

International Symposium on National Park and Natural Heritage Protection, Beijing, 2019

Murray Gray and John Gordon

Seven members of the IUCN-WCPA's Geoheritage Specialist Group (GSG) visited China in October 2019 at the invitation of Professor Dongying Wei of Beijing Normal University and the *International Journal of Geoheritage and Parks*. All seven had accepted invitations to write papers for the journal and all presented papers at an 'International Symposium on National Parks and Natural Heritage Protection'. Kyung-Sik Woo (South Korea), as Chairman of the GSG, presented a keynote address on the topic of 'Key Geoheritage Areas (KGAs)', a priority project of the GSG. Tom Casadevall (USA) spoke on 'Geoconservation programmes in the USA'; Dan Tormey outlined the recently published 'Volcanoes World Heritage Report'; John Gordon (UK) described 'Protected Area management planning'; Murray Gray (UK) spoke on 'Geodiversity, Geoheritage and Geoconservation for Society'; while Vic Semeniuk and Margaret Brocx (Australia) described two geosites in Western Australia. Papers from these presentations are currently in press in the *International Journal of Geoheritage and Parks* (see below).

In China, a major programme is currently underway to identify new National Parks and to review all protected areas with the aim of rationalising the system and improving spatial integration. This will include examining how the country's 270 National and 39 Global Geoparks should fit into the scheme. The national parks have a primary focus on nature protection, whereas geoparks have a broader remit to foster sustainable development

through tourism. These topics were a major theme of the Chinese contributors to the symposium.

Following the symposium, the group travelled 800 km south by bullet train and coach to the UNESCO Global Geopark of Yuntaishan, a mountainous area in Henan Province and twinned with the Grand Canyon National Park. The area was established as a National Scenic Area many years ago and attracts a large and growing number of visitors currently totalling in the region of 5 million per year, paying an entrance fee of ~23 Euros (~25 USD) each. Do the maths to get their annual income. Around 2000 people work for the Park - rangers, drivers, maintenance staff, etc., but no geologists! The group was blown away by the digital information collected, analysed and presented on screen by the park authority as a result of a requirement for visitors to scan their identity cards to gain access to the park. This enables visitor numbers to be monitored hour by hour and resources to be deployed accordingly. In addition, there are over 2000 CCTV cameras in the park with 4 staff employed to constantly scan the images.

The Global Geopark designation obtained in 2004 has added scientific credibility to the already established tourism base, and the group saw many of these tourist facilities and activities during their visit. These included a sound and light show, a cable car trip and a glass walkway along a limestone cliff (left). The thick, Cambrian / Ordovician limestone sequences overlie Precambrian red sandstones, though the contact was not seen on this visit. The group accessed a major trail through Red Rock Canyon with its many waterfalls and walkways cut into the cliffs (right). Several information panels along the way describe the characteristics of the red sandstones. A highlight of the geopark trip was a visit to the large new geological museum whose design is intended to reflect the geological evolution and structure of the park.

During this geopark visit a meeting was held with Professor Wei to discuss possible future collaboration between the GSG and the journal/university. Overall, this was an interesting visit that introduced the geoheritage concept to a prominent, Chinese, nature conservation audience and gave the GSG members much food for thought about geopark funding, management and visitor monitoring.

Geoheritage activities in the USA in 2019

Tom Casadevall

Geoheritage in the United States has a long history stretching back to the designation of our first national park at Yellowstone in 1872. Many of the Nation's 419 National Park sites were established for their geological features. With the global growth and interest in geoheritage, here in the U.S. various groups have contributed to the expanded interest in geoheritage. The National Park Service hosts an extensive web site highlighting America's geoheritage, especially in the national parks: https://www.nps.gov/subjects/geology/americas-geoheritage.htm

For nearly a decade, the Geological Society of America has had a Position Statement on geoheritage: https://www.geosociety.org/gsa/positions/position20.aspx

And in 2016, the U.S. National Academies of Science (NAS) established the U.S. Advisory Group on Geoheritage and Geoparks (www.americasgeoheriage.com). The Group advises the U.S. National Committee to the IUGS on matters related to geoheritage and geoparks. The Advisory Group works with States, universities, and interested communities to promote and develop geoheritage projects and products and represent U.S. interests on the global geoheritage stage.

Membership in the U.S. Advisory Group for Geoheritage and Geoparks includes representatives from U.S. Federal agencies (U.S. Geological Survey, National Park Service, National Academies of Science), the Association of American State Geologists, universities, professional societies (American Geosciences Institute) and the private sector. Several members of the U.S. Advisory Group also participate in the IUCN WCPA Geoheritage Specialist Group.

Key activities for the U.S. Advisory Group for Geoheritage in 2019 included:

- Meeting with Mexican colleagues from the **Mexican Geoheritage and Geoparks group** (SUGEO) and a visit to the Comarca Minera UNESCO Global Geopark in January 2019.
- A discussion session on enhancing geoheritage efforts by the State geological survey agencies, held at the annual meeting of the **Association of American State Geologists** in June 2019 at Butte, Montana.
- In conjunction with the annual meeting of the **Geological Society of America** held in September 2019 in Phoenix, Arizona, the Advisory Group sponsored a two-day short course on Geoheritage led by Professor José Brilha of Portugal. There was also a day-long technical session on Geoheritage with 26 presentations. Abstracts for these presentations are available at: https://www.geosociety.org/GSA/News/pr/2019/19-35.aspx https://www.geosociety.org/GSA/News/pr/2019/19-35.aspx
- Participation in the IUCN working group meeting in Gland, Switzerland on revision of the Geologic Theme report and a visit to the Chablais UNESCO Global Geopark in August 2019.

- Participation in the international meeting on 'National Park and Natural Heritage Protection' held in Beijing, China, in October 2019.

For more information about the U.S. Advisory Group for Geoheritage and Geoparks, please contact Tom Casadevall at tcasadev@gmail.com

Geoheritage in the Asia Pacific Geoparks Network (APGN)

Ibrahim Komoo
Vice Coordinator, APGN

The development of geoheritage and geoconservation in the Asia Pacific region is generally being associated with geoparks. Based on extensive studies of sites and landscapes within aspiring national and global geoparks, geosites are established as new protection or conservation sites. Some of these geosites are consequently developed as geoproducts for geotourism activities. Countries involved in the development of geosites and geoparks are China, Japan, Korea, Indonesia, Vietnam, Malaysia, Thailand, Australia, New Zealand, Myanmar and Philippines.

Some activities related to geoheritage and geopark development are in the form of conferences and training courses. Perhaps the largest gathering of scientists and professionals is the 5th Asia Pacific Geoparks Symposium which was held in Rinjani-Lombok UNESCO Global Geopark, Indonesia (3-7 September 2019). Others include the Regional Geoheritage Conference which was held in Kuching, Malaysia (25-27 September 2019); the International Training Course on UNESCO Global Geoparks in Beijing, China (28 October to 3 November 2019); and the Regional Course on UNESCO Global Geoparks in Langkawi, Malaysia (7-11 October 2019).

Activities of the International Union of Geological Sciences Geoheritage Commission

Benjamin van Wyk de Vries (b.vanwyk@uca.fr)

The full name of this commission is the IUGS International Commission on Geoheritage (https://www.iugs.org/commissions). It was formed in the summer of 2016, and is composed of the merged task forces for Heritage Stones and Geoheritage Sites. The Commission thus has two sub-commissions for 'Stones' (http://globalheritagestone.com/), and for 'Sites and Collections' (https://geoheritage-iugs.mnhn.fr/).

For the IUGS, the Geoheritage Sites sub-commission has an important role, as it is tasked with providing the reviews for international Geological significance for UNESCO Global

Geoparks. The Commission also provides the IUGS with their representative on the UNESCO Global Geopark Council.

This year, for example, there are 23 Aspiring Global Geoparks proposed to UNESCO, and thus the sub-commission has a significant task to provide the necessary coverage of reviewers, to collate the reviews and to give a balanced opinion to the Geopark Council. The annual review process starts in December and continues until April/May. So this is quite an intense time.

Up to this year, and since the start of UNESCO Global Geoparks (2015) this has been overseen by Roland Oberhaensli, former president of the IUGS. Now Roland has passed the job onto the commission, and Benjamin van Wyk de Vries (acting sub-commission secretary) will take the process through 2019/2020.

Such a large and important review task is more than one person can handle, so we are creating a Working Group to deal with the reviews. We envisage a structure with one or two reviewers in chief, and a set of sub editors. The review committee should find reviewers, take in reviews and discuss the final evaluation. Global Geoparks are open and transparent, so all reviews and decisions need to be published (reviewers may be anonymous). The representation on the Global Geopark Council may then be shared (with agreement of the IUGS executive), to ensure availability of a person at all meetings.

It is entirely appropriate that the breadth of the geoscience community is involved in the reviews, so we would like to open up to the Geoheritage Specialist Group members and their colleagues to propose themselves, or others as potential reviewers.

Also, the IUGS Geoheritage Sites and Collections sub-commission seeks to expand its membership, so people wishing to be actively involved are invited to get in contact.

International Journal of Geoheritage and Parks

Dongying Wei

Faculty of Geography, Beijing Normal University, Beijing, China

The *International Journal of Geoheritage and Parks* is a multidisciplinary, open-access, international journal. It is primarily a social sciences journal and publishes original research papers and reviews focused on the management, policies, education, tourism, interpretation, economics, museology, protection, and sustainable development of global geoheritage and parks. The journal aims to promote scholarship and best practices in the science and management of geoheritage and parks, and build dialogue on geoheritage and approaches for the conservation and sustainable development of parks among researchers from different countries. The scope of the journal is broad in both methodological approaches and content, and interdisciplinary or multidisciplinary studies are welcome on geoparks, national parks, World Heritage sites, other protected areas and globally significant

sites recognized for their geological and geographical values. All articles published in the journal are subjected to rigorous peer view, based on initial editor screening and anonymous refereeing by independent expert referees.

Details of the journal are available from:
http://www.keaipublishing.com/en/journals/international-journal-of-geoheritage-and-parks/

Recent publications of geoheritage interest

Proceedings of the IUCN/WCPA GSG Workshop on Global Geoheritage - International Significance and Biodiversity Values

The workshop was organised by the German Federal Agency for Nature Conservation (BfN) in cooperation with the IUCN/WCPA Geoheritage Specialist Group and the German Speleological Federation (VdHK). Two key themes were addressed during the workshop: increasing the currency of geoheritage conservation internationally and developing links between geoconservation and biodiversity conservation. The proceedings were published in Vogel, B., Woo, K.S., Grunewald, R., Crofts, R. & Stolpe, G. (Eds.) (2018). *Global Geoheritage – International Significance and Biodiversity Values*. Proceedings of the Workshop of the IUCN-WCPA Geoheritage Specialist Group and the Federal Agency for Nature Conservation (BfN) at the International Academy for Nature Conservation on the Isle of Vilm, Germany, 4-7 April 2018. *BfN-Skripten* 500. The report is free to access from:
https://www.bfn.de/fileadmin/BfN/service/Dokumente/skripten/Skript500.pdf

Publication of the IUCN Volcano Thematic Study: "World Heritage Volcanoes"

Casadevall, T. J., Tormey, D., and Roberts, J. (2019). *World Heritage Volcanoes: Classification, gap analysis, and recommendations for future listings.* Gland, Switzerland: IUCN. viii + 68pp. The report is free to access from:
https://portals.iucn.org/library/node/48448

Special Issue of the *Spanish Journal of Palaeontology*, July 2019

The Spanish Journal of Palaeontology published a special issue, volume 34, no. 1, dedicated to palaeontological heritage. Many of the articles are in English, and all of them include an abstract in English. Most raise the issue of management and conservation of this type of geological heritage. All the articles can be freely accessed from:
http://sepaleontologia.es/sjp-2019-vol-34-no-1/

Special issue of *Australian Journal of Earth Sciences*

The Australian Journal of Earth Sciences, volume 66, part 6, published a special thematic issue on 'Geoheritage and Geoconservation in Australia'. The contents of the papers spans general principles, legislation, history, Statewide inventories, protocols for geoconservation of type sections outreach, links to building stones and archaeology.
https://www.tandfonline.com/toc/taje20/66/6?nav=tocList

Earth Heritage Magazine

Issues 51 and 52 of Earth Heritage Magazine were published during 2019. The magazine includes news and popular articles on geoconservation and is freely available online at: www.earthheritage.org.uk

Forthcoming meetings of interest

- The 36th International Geological Congress will be held in, Delhi, India, 2-8 March 2010. José Brilha, Kyung Sik Woo and colleagues are convenors of a session on 'Geodiversity, Geoheritage and Geoconservation'. For further details, see: https://www.36igc.org/

- The European Geosciences Union (EGU) General Assembly, Vienna, 3-8 May 2020, includes a session on 'Essential variables influencing geodiversity: contributions to geoheritage in response to global change' (GM12.1). Geodiversity is now recognized as highly relevant to both scientific and management issues related to Earth surface processes and landscape evolution. Identifying Essential Geodiversity Variables (EGVs) as geoindicators is the main task of this session. For further details, see: https://meetingorganizer.copernicus.org/EGU2020/session/37473

- 'Conservation of Fragile Karst Resources: A Workshop on Sustainability and Community' will be held at the Mammoth Cave Area Biosphere Reserve, Kentucky, USA, 18-22 May 2020. For further details, see: https://unescokarst2020.com/

- The X International ProGEO Symposium will be held in Segovia, Spain, 9-12 June 2020. The theme of the meeting is 'Building connections for global geoconservation'. For further details, see: http://www.igme.es/patrimonio/Xprogeo2020/

- The IUCN World Conservation Congress (WCC) will be held at Marseille, France, 11-19 June 2020. For further details, see: https://www.iucncongress2020.org/

- The 10th International Conference of the African Association of Women in Geosciences, 'Earth sciences and sustainable development in Africa', will be held in Luanda, Angola, 27 - 31 July 2020. For further details, see: http://www.igeoscied.org/wp-content/uploads/2018/12/First-Circular-CAAWG10.pdf

- The 9th International Conference on UNESCO Global Geoparks will be held at Jeju UGGp, Republic of Korea, 17-20 September 2020. For further details, see: https://www.jejuggn2020.org/index.php#none

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

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 (wooks@kangwon.ac.kr)
Secretary General: Wesley Hill (wesleymhill@gmail.com)

To become a member of GSG, geoheritage experts must be members of the WCPA. Everyone who wishes to apply for WCPA membership must secure in advance the support in writing of the GSG Chair and/or Roger Crofts as the Deputy Chair responsible for WCPA links.

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. Please send contributions to: jgordon0914@gmail.com