

GEOHERITAGE Newsletter



No. 2, December 2016



Huanjiang Karst, Guangxi Province, China. The geodiversity of the fengcong (cone) karst supports a pristine, subtropical, humid-climate, mixed-forest ecosystem with vertical differentiation of forest types between the depressions and valleys and the tops of the hills. Numerous endemic plant and animal species are present. The karst landscape also has high cultural values. The 1st International Conference on Geoheritage, held in the city of Huanjiang in June 2015, celebrated the inscription of Huanjiang Karst as part of the South China Karst World Heritage Site in 2014 (Photo: John Gordon).

This issue of the Newsletter of the IUCN-WCPA Geoheritage Specialist Group (GSG) reports on activities during 2015 and 2016 and looks forward to future developments. Among the highlights, the GSG helped to organize the 1st International Conference on Geoheritage held in Huanjiang County, Guangxi Province, China, in June 2015, while in September 2016, various Steering Committee members represented the GSG at the IUCN World Conservation Congress (WCC) in Hawai'i (USA), the 35th IUGS International Geological Congress (IGC) in Cape Town (South Africa) and the 7th International Conference on UNESCO Global Geoparks in Torquay (UK). The final declaration from the WCC, the 'Hawai'i Commitments', recognises geodiversity and the value of nature as a whole, while the IUCN Programme 2017-2020 offers opportunities to link geodiversity to the wider nature conservation agenda. In addition, a resolution on moveable geological heritage was approved at the WCC.

The Newsletter also reports on activities among partner organisations, including the Global Geoparks Network, and the establishment of a new IUGS Commission on Geoheritage.

Following publication of a chapter on geoconservation in IUCN's *Protected Area Governance and Management* book (2015), the GSG is now preparing an IUCN Best Practice Guideline on *Geoheritage Conservation in Protected Areas*. The thematic study on *World Heritage Volcanoes* is also being revised.

Palaeontological resources are an important component of geoheritage, and we have a report on recent progress in promoting fossil conservation in the US National Parks.

Contributions to future issues of the Newsletter are welcome, including short articles, news items and best-practice case studies on geoconservation in protected areas.

John Gordon and Wesley Hill

Message from the Chair

Kyung Sik Woo, Chair, IUCN-WCPA Geoheritage Specialist Group

The most significant development for the GSG is that the IUCN-WCPA Caves and Karst Specialist Group (CKSG) was merged with the GSG in 2016. The decision was made by the WCPA Executive Committee. This group wants to remain as a subgroup in GSG and will be led by Jay Anderson.

Let me briefly summarise the main activities that I was involved with this year. I was invited to attend the WCPA Steering Committee meeting which was held in the Czech Republic in May 2016. Even though I am not a current Vice Chair of WCPA, I decided to participate in the meeting to better understand WCPA structure and their present and future activities. During this meeting, the future plans of WCPA were presented and discussed, following the 'Promise of Sidney' from the World Parks Congress. All the working groups (including the GSG) and regional Vice Chairs had the chance to outline their past activities and future plans. Active discussions followed between the different groups in WCPA. I had a chance to talk to all the groups (commissions, specialist groups and task forces) about why geoheritage can play an important role in the conservation of all of nature. Also, I suggested the developing idea of 'Key Geoheritage Sites' that we discussed a little bit last year and received good attention by the WCPA. The basic idea of this project is explained later in this newsletter. Graeme Worboys and Tim Badman also attended the meeting.

I decided to attend the World Conservation Congress (WCC) in Hawai'i and gave up to go to the IGC due to the overlapping schedule because of the importance for GSG representation at the WCC. Collaborating with ProGEO, I was involved in giving the English lecture on recognition of natural caves and their effective management. The educational workshop, 'Learning 5 Geo's' was an excellent program enjoyed by all the participants even though not too many people attended. ProGEO tried make some input to the IUCN resolution to get better status for Geoheritage, but the results were not that satisfactory. However, we learned valuable lessons from this meeting that GSG should prepare a good strategy in advance to get better status in IUCN in the future. Also, one item of good news is that I met Dr. José Brilha, president of ProGEO, at the meeting and we made an agreement that ProGEO and IUCN WCPA will collaborate on geodiversity recognition and geoheritage conservation in protected areas.

In September, I was invited to attend the 2nd Huangshan Dialogue in China which dealt with the management and monitoring of UNESCO-related programs (World Heritage, Man and Biosphere and Global Geoparks) with climate changes.

As reported below by Roger Crofts, we finally got approval from the WCPA Executive Committee to proceed with the production and publication of the *Best Practice Guideline on Geoheritage Conservation in Protected Areas*. One item of good news is that I succeeded in getting sponsorship from the Korean Government (the Cultural Heritage Administration) to IUCN. Tim Badman is now the contact point in IUCN for this activity which will support the publication expenses for the Best Practice Guideline and hopefully the World Heritage

Thematic Study on volcanism and volcanic landforms by Tom Casadevall, and also for the revision study on World Heritage Criterion (viii) which will be led by myself.

At the Huangshan Dialogue meeting in China, I met Elise Belle from the UNEP World Conservation Monitoring Centre (WCMC) and suggested the possibility of enlisting the geoheritage sites of international (or even national) significance in the WCMC database. Of course, we need to find a sponsor to support this plan in the future.

As announced below, we are looking for a host to organise and sponsor 'The 2nd International Conference on Geoheritage'. I am sorry to tell you that Suncheon in Korea showed their intention but withdrew last year. I have also been talking with some colleagues in Hong Kong and in other parts of China as well.

Our dear friend, Graeme Worboys, has been recovering from an operation to remove a cancerous growth in his liver. I would like to ask all of you to wish his good recovery in the near future. If you want to cheer him up, feel free to get in touch with him via his wife (Bev) to her email address (bev.worboys@gmail.com).

The 1st International Conference on Geoheritage, Huanjiang, China, 2015

Wesley Hill, GSG Secretary General

The 1st International Conference on Geoheritage was organized by the GSG in collaboration with the State Engineering Technology Institute for Karst Desertification Control (SETIKDC), the World Natural Heritage Management Bureau of Huanjiang Maonan Autonomous County, and the Geographical Society of Guizhou Province. The Conference, held in Huanjiang County, Guangxi Province, China, in June 2015, focused on geoheritage protection, management and sustainable development in protected areas such as World Heritage Sites, Geoparks and other protected areas. 150 participants representing 11 countries worked to exchange knowledge concerning geoheritage protection activities in the world, to strengthen geoheritage-related activities within IUCN-WCPA, and to discuss and celebrate the geology and geomorphology of the South China Karst World Heritage Site.

Call for Hosting the 2nd International Conference on Geoheritage

The GSG Steering Committee is currently seeking nominations for host countries and partner organizations for the 2nd International Conference on Geoheritage. If you are interested in hosting and helping to organize the 2nd International Conference, please contact the GSG Secretary General, Wesley Hill (wesleyhill@gmail.com).

IUCN World Conservation Congress 2016: One More Step Towards the International Recognition of Geoheritage

José Brilha, President, ProGEO

The World Conservation Congress (WCC), under the theme 'Planet at the crossroads', was held between 1-10 September, 2016, in Honolulu, Hawai'i. The main geo-related activities were promoted by the three IUCN members with interests focused on geodiversity and geoheritage: ProGEO, the Geological Society of Spain and the Spanish Society for the Defense of Geological Heritage and Mining Heritage.

Following the approval of Resolutions WCC 2008 RES 040 and WCC 2012 Res 048, the IUCN Assembly approved a third Resolution addressing geoheritage: WCC-2016-Res-083 - 'Conservation of moveable geological heritage' (<https://portals.iucn.org/library/node/46500>). This new resolution urges the World Commission on Environmental Law and the World Commission on Protected Areas to prepare guidelines on the protection, conservation and management of this part of our geoheritage, in compliance with national and international regulations of its commerce.

An intensive course, 'The 5 new Geos: Geoconservation, Geoheritage, Geodiversity, Geoparks and Geotourism', was organised as one of the activities in the Conservation Campus. The interactive training and capacity-building sessions of the Conservation Campus provided opportunities to further develop skills for conservation practitioners through peer-to-peer learning and academic sessions. The 3-hour geo-course was given in two sessions, one in English and one in Spanish, with the total participation of 30 persons from 10 countries. The GSG Chair, Kyung Sik Woo, contributed as a speaker in the English session. The feedback from participants regarding the overall quality of the course was very good.



Delegates at the WCC (Photo: José Brilha).

One of the key issues in the Congress agenda was the approval of the 2017-2020 IUCN Programme. The programme draft submitted to the Congress has three main areas: 1. Valuing and conserving nature; 2. Promoting and supporting effective and equitable governance of natural resources; and 3. Deploying nature-based solutions to address societal challenges including climate change, food security and economic and social development. During the Congress, several amendments to the draft concerning geodiversity and geoheritage were submitted, particularly in the first area. The final text does not reflect all the submitted amendments, which means that, in future, there needs to be earlier interaction with the Programme Congress Committee in order to include substantive geoconservation actions in the 2021- 2024 IUCN Programme.

Each World Conservation Congress produces a statement that summarizes key issues, aspirations, new ideas or actions emerging from the many activities and deliberations. This

year's Congress approved a final declaration, the 'Hawai'i Commitments' (<https://portals.iucn.org/congress/hawaii-commitments>). Congress delegates participated in the drafting process, and some of the suggested proposals on geoh heritage were included in the final text. This explicitly refers to geodiversity and makes several references to nature conservation and to the importance/value of nature as a whole, which shows that IUCN is following Resolution 048 approved in 2012.

Concerning protected areas, it is worthwhile noting the launch during the Congress of a new IUCN publication 'Managing MIDAs: harmonising the management of Multi-Internationally Designated Areas: Ramsar Sites, World Heritage sites, Biosphere Reserves and UNESCO Global Geoparks' (<https://portals.iucn.org/library/node/46176>). These guidelines address specific issues related to the management of MIDAs, and include recommendations for harmonising the management, systematic conservation and sustainable use of these areas aimed at the local, national and international stakeholders of MIDAs.

The results of this 2016 World Conservation Congress are one more step in the long journey towards an integrated approach to nature conservation that should be implemented by all national and local public administrations.

World Conservation Congress Outcomes: Implications for the GSG Work Programme 2017 - 2020

Kyung Sik Woo

The priority areas in the [2017-2020 IUCN Programme](#) offer opportunities for geoconservation engagement from 'the Promise of Sidney', particularly Areas 1 and 3 - valuing and conserving nature, and deploying nature-based solutions to address societal challenges.

The GSG goals for 2017 – 2020 will focus on the following:

- Publication of the Best Practice Guideline on Geoh heritage Conservation in Protected Areas, and development of a linked programme of outreach to support its implementation.
- Support World Heritage and the new UNESCO Global Geoparks Network Programme in providing geoh heritage inputs.
- Revision of the IUCN Thematic Study on potential World Heritage volcanic sites.
- Revision of 'Geological World Heritage: A Global Framework' (2005) to refine the proposed 13 themes, articulate the threshold of Outstanding Universal Value, and clarify the difference between the criterion (viii) of WH and Geoparks.
- Development and establishment of Key Geoh heritage Sites for expansion of Geoh heritage Protected Areas to achieve Aichi Target 11.

2017 International Year of Sustainable Tourism for Development

Wesley Hill

The United Nations (UN) has declared 2017 as the International Year of Sustainable Tourism for Development. The Global Geoparks Network (GGN) Executive Board in its 27th meeting in November in Beijing, China voted to become a partner of the International Year.

The International Year will use its influence and collective partnerships to create tourism opportunities to promote:

- (1) Inclusive and sustainable economic growth
- (2) Social inclusiveness, employment and poverty reduction
- (3) Resource efficiency, environmental protection and climate change
- (4) Cultural values, diversity and heritage
- (5) Mutual understanding, peace and security.

The World Tourism Organization (UNWTO), the United Nations Specialized Agency for Tourism, has been mandated to facilitate the organization and implementation of the International Year, in collaboration with governments, relevant organizations of the United Nations system, international and regional organizations and other relevant stakeholders.

Click here for the [official website](#) and list of activities.

Geoconservation Best Practice Guideline - appeal for case studies

Roger Crofts, WCPA

Following publication of a chapter on geoconservation in IUCN's *Protected Area Governance and Management* book (<http://press.anu.edu.au/publications/protected-area-governance-and-management/download>), contributors are currently preparing the 'Best Practice Guideline on Geoheritage Conservation in Protected Areas' which will be published in the IUCN Best Practice Protected Areas Guidelines Series. The guideline will be most useful to colleagues in the field if it contains lots of examples from around the world. If you have any case studies or examples of best practice that you would like to share with us, please send them to Roger at roger.dodin@btinternet.com as soon as possible.

Case studies of any of the following topics will be most helpful:

- Site and area selection general aspects.
- Non-statutory effective means of protection.
- Experience with different types of ownership, tenure and governance.
- Staffing and expertise requirements.
- Examples of international approaches to geoconservation: Geoparks, World Heritage Sites and GSSP.
- Local and regional case studies of site management including examples of good

and less good practice and lessons learned.

- Examples of incorporating geodiversity into management plans at site, area and regional scales.
- Examples of operational management issues such as health & safety, scientific research, fossil collecting, mineral prospecting, public access, use of foreign materials.
- Examples of recognising cultural heritage and using traditional knowledge in geoheritage management.
- Examples of monitoring and evaluation of plans and practice.
- Case studies of dealing with threats from industrial development, threats from visitors, threats from collectors.
- Examples of resolving conflicts between biodiversity and cultural heritage with geodiversity.
- Case studies of restoration.
- How to deal with climate change.
- How to deal with the heritage of extractive industry.
- How to communicate relevant science: using advances in communication to advise protected area managers on the relationship between geoheritage conservation and biodiversity conservation.
- Examples of new tools: examples of use and misuse of social media; videos and visitor-generated content to expand the networks; real-time streaming of protected area events, including participation from former visitors (or armchair visitors), etc.
- Use of visitor centres as hubs for protected area exploration.

Revision of the IUCN Volcano Thematic Study

Thomas Casadevall, U.S. Geological Survey, Denver, Colorado, USA

The International Union for the Conservation of Nature (IUCN) is undertaking a revision of its previously published work, the Volcano Thematic Study on World Heritage Volcanoes, which focused solely on World Heritage properties (Wood, C. 2009. World Heritage Volcanoes. Gland, Switzerland: IUCN. 70pp).

Volcanic landscapes are among the most recognizable protected areas of the World Heritage Program, the Global Geopark Network, and the Man in the Biosphere programs. These landscapes are identified for their biological, geological, and cultural values to communities and societies across every continent. Despite global recognition for these landscapes, important questions remain. 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 revision is examining not only World Heritage properties, but includes properties currently in the Man in the Biosphere Program as well as in the Global Geopark Network. Preliminary evaluation of the current lists of properties show that for World Heritage sites, 58 of 1031, (5.8%) have significant volcanic features; for Biosphere Reserves, 57 of 651 (8.7%) have significant volcanic features; and for UNESCO Global Geoparks, 21 of 120 (17.5%), have significant volcanic features.

Revision of 'Geological World Heritage: A Global Framework'

Wesley Hill

This project will revise the previously published report, 'Geological World Heritage: A Global Framework' (2005), to refine as necessary the current 13 themes, articulate the threshold of Outstanding Universal Value, and clarify the difference between sites listed under World Heritage criterion (viii) and UNESCO Global Geoparks. The GSG will gather input from IUCN, IUGS and UNESCO regarding the most useful and important information to acquire in order to update and improve the current desk-top review form and review process.

Key Geoheritage Sites: Development of a New Programme

Kyung Sik Woo

There are many different kinds of protection measures for protected areas in the world. However, most of them are mainly focused on biodiversity values. The only international protection measures for geoheritage are UNESCO World Heritage Sites under criterion (viii) and UNESCO Global Geoparks indirectly by virtue of the geosites included within them.

There are other internationally recognized sites of geoheritage significance, such as GSSPs. However, the protection measures for significant geoheritage sites (both international and national) are very limited. Too little attention is given internationally to protect significant geoheritage sites (tectonic, stratigraphic, palaeoecological & palaeontological, mineralogical & petrological, paleoclimatological and geomorphological sites, etc.). World Heritage Sites are inscribed as 'Representatives of the Best', and the Geosites in Global Geoparks are often limited to sites with geotourism appeal. For example, there is no way to protect the perfect outcrops with complete stratigraphic sequence of any specific Periods (or Stages) based on microfossils because they are not attractive to the general public for tourism even though they may contain significant evolutionary stages in Earth history.

Following the success of the IUCN Red List, IUCN (through WCPA) has recently developed new programmes such as Key Biodiversity Areas and the IUCN Green List, which have been quite successful and attractive to some state parties and stakeholders. Therefore, it is timely for GSG to develop geoheritage inventories to help protect significant geoheritage sites in the world (both at international and national levels). Development of a new programme of

‘Key Geoheritage Sites’ by the GSG through the IUCN-WCPA can serve this mission very effectively for the world in the future.

World Heritage Programme Update

Wesley Hill

The 41st session of the World Heritage Committee will be held in Kraków, Poland, in July 2017. Below are the Natural Sites nominated for consideration during the Committee meeting. Only one site (marked with an asterisk below) has been nominated under the World Heritage Convention Criterion (viii) for outstanding geologic values.

Natural Sites Nominated 2017:

Complexe W-Arly-Pendjari, Benin-Burkina Faso - (ix), (x)

Mole National Park, Ghana - (vii), (ix), (x)

Qinghai Hoh Xil, China - (vii), (x)

Bhitarkanika Conservation Area, India – (vii), (ix), (x)

Primeval Beech Forests, Albania / Austria / Belgium / Bulgaria / Croatia / Italy / Romania / Slovenia / Spain / Ukraine - (ix)

Sila National Park, Italy - (viii), (ix), (x) *

Los Alerces National Park, Argentina - (vii), (x)

For the full list of UNESCO World Heritage Sites, [click here](#).

UNESCO Global Geoparks Update

Kirstin Lemon, British Geological Survey/Geological Survey of Northern Ireland

UNESCO Global Geoparks were formally established in November 2015 after 195 member states of UNESCO ratified their creation during the 38th UNESCO General Conference. As the first new designation at UNESCO in over 40 years, the UNESCO Global Geoparks join the elevated ranks of other recognised labels such as Biosphere Reserves and World Heritage Sites. The creation of the UNESCO Global Geoparks brand is a testament to the recognition by governments from across the world of the importance of managing outstanding geological heritage for sustainable tourism and the significance of conserving and promoting these sites and landscapes in a holistic manner.

The journey of UNESCO Global Geoparks began in 2000, when representatives from four territories in Europe came together to share their common ideals of the protection of geological heritage and the promotion of sustainable tourism. After that, the European Geoparks Network was born with the main objective being to share information and expertise and to define common tools that would help them to achieve their collective goals.



Cuilcagh Mountain, Marble Arch Global Geopark, Ireland (Photo: Marble Arch Global Geopark).



Pilot's Cove melange, Geo Môn Global Geopark, Wales (Photo: Geo Môn Global Geopark).

In 2001, the European Geoparks Network (EGN) signed an official agreement of collaboration with the Division of Earth Sciences at UNESCO. This allowed all European Geoparks to operate under the auspices of UNESCO but not as an official designation. This was followed in 2004, when 17 European and 8 Chinese geoparks came together at UNESCO headquarters in Paris to establish the Global Geoparks Network, with the EGN acting as a regional network within this framework.

With the creation of the UNESCO Global Geoparks label in 2015, all existing Global Geoparks automatically became UNESCO Global Geoparks, with the entire network now made up of 120 Geoparks in 33 different countries and in five continents.

Although the label may be new, the ethos remains the same; to manage areas of international geological significance for protection, education and sustainable development. In addition, each UNESCO Global Geopark has a role to play in using its geological heritage, together with the other aspects of natural and cultural heritage, to increase the awareness of key environmental issues facing society. These include the sustainable use of natural resources, mitigating the effects of climate change and reducing natural disaster-related risks and increasing resilience.

All UNESCO Global Geoparks are established through a bottom-up process that includes all relevant local and regional stakeholders in the area. This not only ensures commitment from the local communities, but has the added benefits of producing strong partnerships that allow for long-term support.



North Pennines Global Geopark, England (Photo: North Pennines Global Geopark).



The cliffs of Eshaness, Global Geopark Shetland (Photo: Global Geopark Shetland).

As before, one of the most important aspects of any UNESCO Global Geopark is to create opportunities for local communities through the promotion of geological heritage. This includes the creation of innovative local businesses, training and employment, all of which are linked to the natural heritage. In doing so, UNESCO Global Geoparks have the dual purpose of helping to generate revenue through tourism and protecting the geological heritage as a result of increased sense of ownership and pride in a region.

With the new designation comes a slightly new organisational structure, with the newly formed UNESCO Global Geoparks Council now responsible for assessing new, and revalidating existing UNESCO Global Geoparks. The Council makes decisions on whether new applications should be forwarded to the Executive Board of UNESCO for endorsement, and also has a key role in advising the Director-General of UNESCO on the strategy, planning and implementation of UNESCO Global Geoparks.

The requirement for endorsement from the Executive Board of UNESCO for new applications has meant that the process to become a UNESCO Global Geopark is now lengthier. This does however have the added benefit of being a much more thorough process which arguably is the price to pay when seeking such a high calibre of designation.

The newly established UNESCO Global Geoparks designation has been 15 years in the making and the original idea of protecting geological heritage and promoting sustainable tourism is still very much at its heart. The many opportunities that UNESCO Global Geoparks bring will be further strengthened with the added support of the Member States that UNESCO brings, helping to establish UNESCO Global Geoparks all around the world. The new designation will help to elevate UNESCO Global Geoparks to even greater heights and at a time when our geology and landscape is coming under increasing pressure, it has never been more imperative to increase the awareness and understanding of geological heritage and the vital role it can play in helping to address some of the key issues facing society today.

Click here for the latest issue of the [GGN Newsletter](#) with important information.

The 7th International Conference on UNESCO Global Geoparks

Wesley Hill

The 7th International Conference on UNESCO Global Geoparks was held between 27-30 September, 2016, in Torquay, English Riviera UNESCO Global Geopark, UK, and was attended by 700 delegates from 63 countries. The conference declaration is available here: http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SC/pdf/The_English_Riviera_Declaration.pdf. The newly selected 2016 UNESCO Global Geoparks will be announced after the UNESCO Executive Board Meeting in April 2017.

Global Geopark Network (GGN) Best Practice Award Winners 2016

The Global Geoparks Network (GGN) Best Practices Award aims to promote, enhance and encourage the development of innovative initiatives in UNESCO Global Geoparks around the globe. The award recognizes pioneering practices and initiatives that contribute to a more effective and dynamic network, set fantastic exemplars for others to follow and emulate, and create greater public recognition of UNESCO Global Geoparks. The prize honors the management and/or a partner of a UNESCO Global Geopark for the pioneering nature and quality of the initiative, encouraging all the GGN members to follow the example. Eight candidate geoparks were proposed for the Best Practice Award. The three Global Geoparks chosen for the award were:

1st GGN Best Practice Award 2016: Lanzarote y Archipiélago Chinijo UNESCO Global Geopark, Spain.

2nd GGN Best Practice Award 2016: Fangshan UNESCO Global Geopark, P.R. China.

3rd GGN Best Practice Award 2016: Dali Mount Cangshan UNESCO Global Geopark, P.R. China.

The 8th International Conference on UNESCO Global Geoparks will be held in the [Adamello-Brenta UNESCO Global Geopark](#) in Trentino, Italy in September 2018.

A new IUGS Commission on Geoheritage

Kevin Page, Secretary General, IUGS International Commission on Geoheritage

The International Commission on Geoheritage (ICG) is a new Scientific Commission within the International Union of Geological Sciences and was formally established at the last International Geological Congress, held in Cape Town, South Africa, between 27 August and 4 September, 2016. The Commission was formed through the incorporation of two pre-existing geological heritage Task Groups within IUGS, the Task Group on Geoheritage (TGG) and the Heritage Stone Task Group (HSTG), the work of which will be developed through two subcommissions, the *Heritage Sites and Collections Subcommission* (HSCS) and the *Heritage Stone Subcommission* (HSS), respectively.

The objectives of the ICG include the development and dissemination of guidelines for good practice in the selection and management of geoheritage sites, institutional collections and culturally significant geological resources such as Heritage Stones. The ICG will endeavour to promote and co-ordinate these activities at the international, national and regional level through research, workshops, conferences and publications, as well as through training and other educational activities. Crucially, the ICG aims to actively collaborate with and seek partnerships with other commissions, organisations and networks at all scales, from local to regional to international, which area active within the field of geoheritage and related disciplines. This will include the IUCN WCPA Geoheritage Specialist Group. Further information on the activities of each subcommission can be found on their developing websites, <http://geoheritage-iugs.mnhn.fr> and <http://globalheritagestone.com/>.

Review of Cave and Karst Protection Guidelines

The Caves and Karst Subgroup within the GSG is in the process of undertaking a review of the IUCN-WCPA 'Guidelines for Cave and Karst Protection' (<https://www.iucn.org/content/guidelines-cave-and-karst-protection-0>). If you wish to contribute or be involved, please send an expression of interest to Mrs Jay Anderson at caveskarst.iucn@gmail.com.

Preserving Fossils in the U.S. National Parks

Vincent L. Santucci, Senior Paleontologist, U.S. National Park Service, Washington DC, USA

On December 7, 2016, the proposed regulations for the Paleontological Resources Preservation Act (2009) were published in the U.S. Federal Register. The law and regulations direct the management of fossils based on “scientific principles and expertise,” and outline procedures “for inventory and monitoring, and public education programs.” The Paleontological Resources Preservation Act was signed into law in March 2009 and is the primary authority for managing fossils on lands administered by five federal land managing agencies in the U.S., including the National Park Service (NPS), Fish and Wildlife Service (FWS), Bureau of Land Management (BLM), Bureau of Reclamation (BOR) and U.S. Forest Service (USFS).

The U.S. National Park Service has undertaken paleontological resource inventories for nearly two decades, confirming and documenting fossils in at least 265 park units. The Yellowstone Paleontological Resource Inventory completed in 1998 served as the model for similar work to be accomplished throughout the National Park Service. The fossil record of the national parks collectively preserves a comprehensive story for the history of life which spans more than a billion years. Fossil vertebrates, invertebrates, plants and trace fossils scientific research. More than 500,000 fossil specimens are maintained in park museum collections or



National Park Service
Paleontology Program Logo
(Photo: Vincent Santucci).

outside museum repositories, including several thousand holotype fossil specimens collected from parks.

Millions of visitors from around the world travel to see the rich fossil record preserved in parks such as Dinosaur National Monument, Petrified Forest National Park, John Day Fossil Beds National Monument, and Badlands National Park. Within the past two years, two new national monuments have been added to the National Park Service which are recognized as significant Ice Age (Pleistocene) fossil localities. Tule Springs Fossil Beds National Monument, Nevada, and Waco Mammoth National Monument, Texas, enable the interpretation of the North American record of ice age fossils such as mammoths, camels and sabre-tooth cats. These parks also present opportunities to study and learn about the Late Pleistocene extinction of large mammals and how this shaped the modern diversity and distribution of animals in North America.



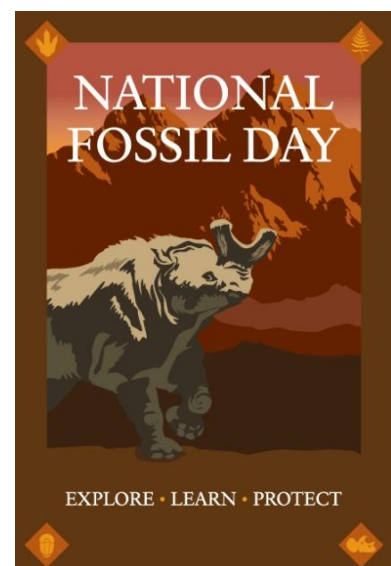
The John Wesley Powell Dinosaur Track Block, Glen Canyon National Recreation Area (Photo: Vincent Santucci).



Waco Mammoth National Monument Area (Photo: Vincent Santucci).

The U.S. National Park Service also preserves examples of fossils which exist in a cultural resource context. Fossils are documented from archaeological sites, preserved within building stone of historic structures and have some historic significance. Ancient projectile points produced from petrified wood or fossils incorporated into early Native American jewellery have been discovered in archaeological sites. Fossils are contained in some of the building stones used in the construction of iconic memorials in the U.S. national capital, such as the Lincoln Memorial, and dinosaur tracks are visible in stone bridge at Gettysburg National Military Park. These fossils preserved within a cultural resource context demonstrate the human dimension of paleontological resources.

In 2010, the National Park Service helped to establish 'National Fossil Day' and a nationwide celebration and partnership to promote the scientific and educational values of fossils. National Fossil Day was established as part of the American Geosciences Institutes 'Earth Science Week' and is scheduled annually on the second Wednesday in each October. The partnership has grown each year and there are currently over 350 National Fossil Day partners each year consisting of museums, professional science organizations, teacher organizations, institutions, universities,



libraries, fossil sites, amateur groups and other categories of partners. Many partners host education and outreach events on National Fossil Day and during Earth Science Week, providing opportunities for the public to engage and learn about and experience fossils in every state across the U.S. The Smithsonian National Museum of Natural History and the National Park Service host the National Fossil Day Celebration in the Nation's Capital to kick-off the national event. Each year an annual National Fossil Day logo is produced to help market the event and to share a new story about another prehistoric lifeform. For more information about National Fossil Day, please visit the website: <http://nature.nps.gov/geology/nationalfossilday/>.



Junior Paleontologist Activity booklet
(Photo: Vincent Santucci).

Recognizing children's strong interest in fossils and dinosaurs, the National Park Service developed an educational activity booklet as part of the Junior Paleontologist Program. The popular program enables children to learn about fossils from the national parks and how to be good stewards to help protect non-renewable fossils found in parks. Once a child completes some activities in the booklet, they are eligible to take the Junior Paleontologist pledge and will be presented with a Junior Paleontologist badge. This program began in 2010 and to date nearly 100,000 Junior Paleontologists have taken the pledge.

How to join the Ge heritage Specialist Group (GSG) as an individual member

Membership of the Group is open to all interested individuals and organisations through active participation in the work of the Group. Please join if you can do one or more of the following:

- (1) Actively contribute to the work of the GSG;
- (2) Provide useful material and case studies of ge heritage conservation in practice;
- (3) Contribute knowledge of the theory and practice of ge heritage conservation within a specialized field;
- (4) Notify the GSG Steering Committee about available funding sources and partnership opportunities to progress ge heritage conservation in protected areas.

The time commitment involved as a member will be on an individual basis when a 'call to participate' is sent to members, and if you can contribute to various actions and projects sent out through the GSG Newsletter.

To join the GSG, please send an email to Wesley Hill including your full contact details (address, email, country, and your ge heritage interest). At the same time, you are also encouraged to join the IUCN WCPA.

Wesley Hill, Secretary General, Ge heritage Specialist Group

Forthcoming meetings of interest:

- IUGS Executive Committee Meeting, 14 – 17 February, Paris, France
- 24th – 25th February 2017: International Conference on Sustainable Tourism Naturtejo UNESCO Global Geopark, Portugal www.naturtejo.com
- The 39th European Geoparks Network (EGN) Meeting will be held from 21-26 March 2017 at the Burren and Cliffs of Moher UNESCO Global Geopark, Ireland.
- The European Geosciences Union (EGU) General Assembly, Vienna, 23-28 April 2017, includes a session on 'Geodiversity and Geoheritage' (GM1.3/EOS19/SSS3.12). For further details, see: <http://meetingorganizer.copernicus.org/EGU2017/session/24116>
- The 14th European Geoparks Conference will be held from 7-9 September 2017 at Ponta Delgada city, San Miguel Island, Azores Archipelago, Portugal. For further details, see: <http://www.egnazores2017.com/>
- The 5th Asia Pacific Geopark Network (APGN) Meeting will be held in Zhijindong Cave, China, 19-23 September 2017, with the theme of 'Networking within UNESCO Global Geoparks'. For further details, see: <http://asiapacificgeoparks.org/?p=786>
- The VIII International ProGEO Symposium on the Conservation of Geological Heritage will be held in Poland, 25-28 June 2018. The event will be a co-organisation with the Faculty of Geology of the University of Warsaw and ProGEO and will be based at the the European Centre for Geological Education in Checiny, about 100 km north of Krakow. The symposium is still in the early stages of preparation, but detailed information will be available soon at www.progeo.ngo.
- The 8th International Conference on UNESCO Global Geoparks will be held in September 2018 at the Adamello- Brenta UNESCO Global Geopark, Trentino, Italy. For further details, see: <http://globalgeoparksnetwork.org/?p=1280>
- Intensive Course on UNESCO Global Geoparks and Geotourism Development – Lesbos Island, Greece, 12 – 22 June 2017
- The VIII International ProGEO Symposium on the Conservation of Geological Heritage will be held in Poland from 25-28 June 2018.

Recent publications

The latest issue of Earth Heritage Magazine, No. 47, which publishes news and popular articles on geoconservation, is available online: www.earthheritage.org.uk

Useful Links

IUCN's World Commission on Protected Areas (WCPA)

<https://www.iucn.org/theme/protected-areas/wcpa>

IUCN-WCPA Geoheritage Specialist Group: <https://www.iucn.org/theme/protected-areas/wcpa/what-we-do/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/>

YES Network <http://www.networkyes.org/>

Natural World Heritage <https://www.iucn.org/theme/world-heritage>

IUCN Programme 2017 – 2020

https://www.iucn.org/sites/dev/files/iucn_programme_2017-2020-final_approved.pdf

IUCN WCPA Geoheritage Specialist Group

The GSG provides specialist advice and guidance on all aspects of geodiversity and geoheritage in relation to the establishment and management of protected areas, to help integrate geodiversity into IUCN's programmes and to promote the links between geodiversity and biodiversity.

Further information about the GSG is available on its website:

<https://www.iucn.org/theme/protected-areas/wcpa/what-we-do/geoheritage>

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Secretary General: Wesley Hill (wesleymhill@gmail.com)

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