

Icelandic Volcanoes

Eruption histories of the volcanoes of Iceland

by:

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Recently a web-site was opened containing a Catalogue of Icelandic Volcanoes (CIV). The Catalogue is an open-access web resource intended to serve as an official source of information about volcanoes in Iceland for the public and decision makers (<http://icelandicvolcanoes.is>). It contains text and graphic information on all active volcanic systems in Iceland, in total 32, as well as real-time data from monitoring systems in a format that enables non-specialists to understand the volcanic activity status.

The building and making of the CIV was a collaboration of the Icelandic Meteorological Office (IMO), the Institute of Earth Sciences at the University of Iceland, and the Civil Protection Department of the National Commissioner of the Iceland Police, with contributions from a large number of specialists in Iceland and elsewhere. The development of used geographic information system (GIS) was in the hands of the company Samsyn (see samsyn.is) and the company Miracle (miracle.is) was in charge of the building of the database. The aim of the project was to collate the current state of knowledge on volcanic systems in Iceland and create a comprehensive catalogue readily available to decision makers, stakeholders and the general public. The building of the CIV facilitates work for volcano monitoring and decision makers. Previously the extensive research on Icelandic volcanism was only accessible in numerous scientific papers and other publications but now part of this information is accessible in the CIV in a reliable, user-friendly manner. Selected key references are given for each volcanic system in a reference chapter (under Catalogue Information – Detailed description – Selected references).

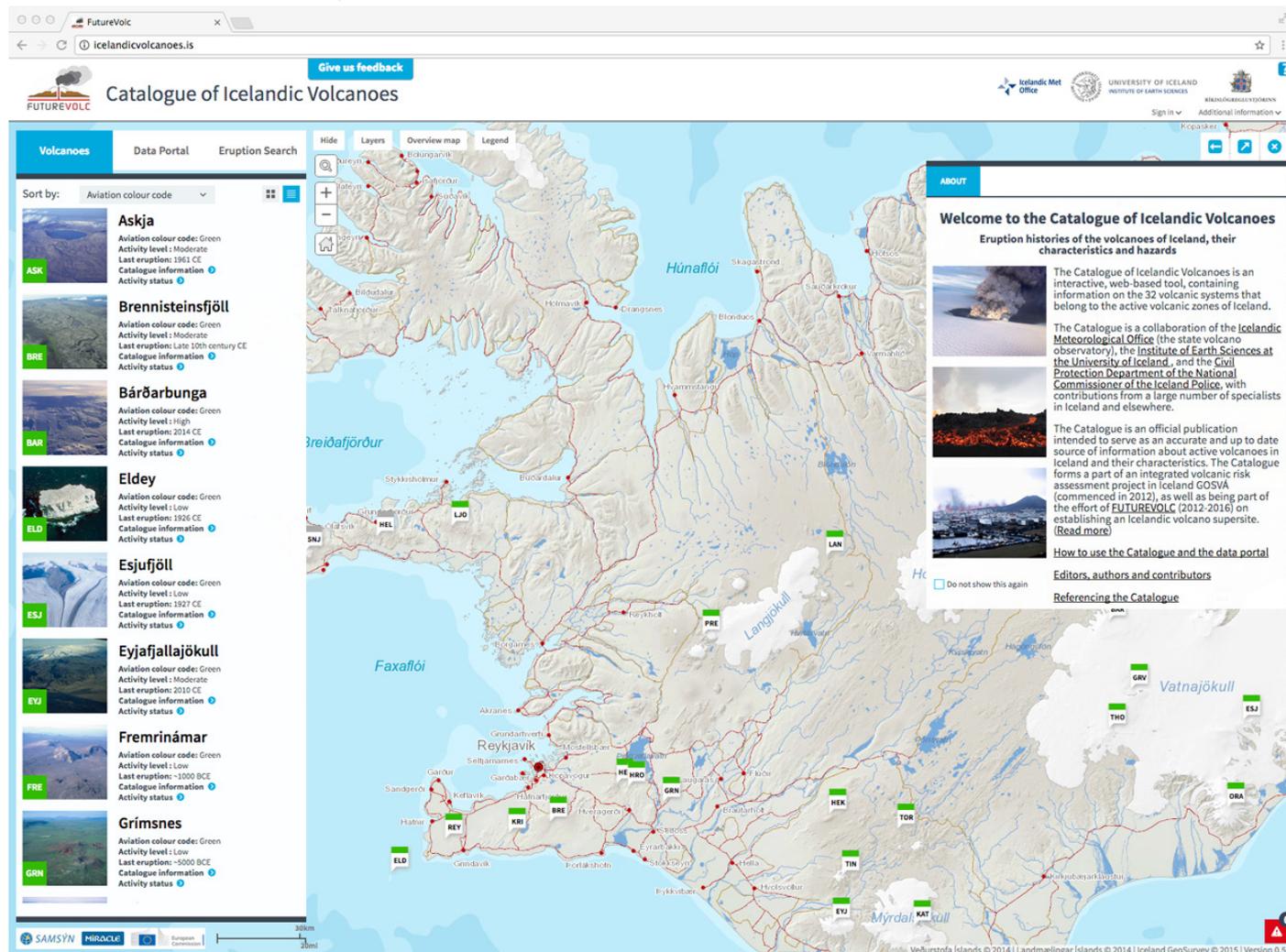


Figure 1 : The opening page of the Catalogue of Icelandic volcanoes (CIV). On the left hand side it is possible to navigate between the three parts of the CIV. „Volcanoes“ is the written information or the catalogue itself. „Data Portal“ gives the possibility to both download and upload volcano data. „Eruption search“ is a search parameter where possible to search for information on individual eruptions.

The work was funded by the International Civil Aviation Organisation (ICAO) through a three-year project that started in 2011 and was then further supported by the Icelandic government and the EU through the FP7 project FUTUREVOLC. CIV also forms a part of an integrated volcanic risk assessment project in Iceland GOSVÁ (commenced in 2012). The website (<http://icelandicvolcanoes.is>) was officially opened in 2016 and will be updated regularly to assure that it contains up to date information on the Icelandic volcanic systems.

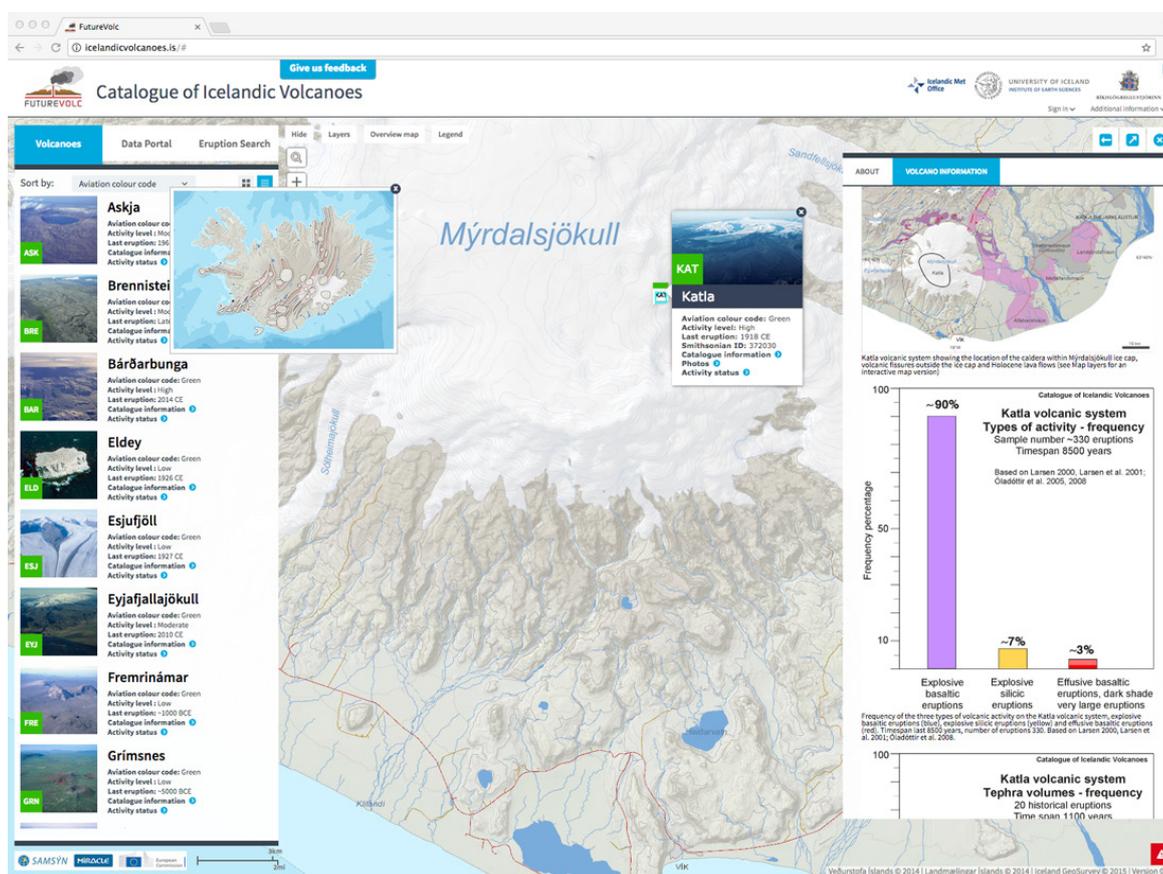
The CIV is divided in three parameters:

(1) The first and main part is the catalogue itself (under Volcanoes). It is built up of chapters with texts and various mapped information for each of the 32 volcanic systems. The contributions can be classified into three types: 1. Text and other material (including maps) on geological aspects and eruption history, constituting the bulk of the information presented in the catalogue (found under Catalogue information). 2. Sub-chapters on current alert level and activity status for each volcanic system, updated automatically with information from the IMO monitoring network (found under Activity status). 3. Sub-chapters on eruption scenarios, based on the eruption history (found under Catalogue information – Detailed description).

(2) The second part is a data portal where it is possible to download and upload data on Icelandic eruptions (under Data Portal). The CIV data portal contains scientific data on all eruptions since Eyjafjallajökull 2010 and is an unprecedented endeavour in making volcanological data open and easy to access. To download data, you must become a user and sign in but both tasks are easily completed on the web-site.

(3) The third part is a search parameter where it is possible to search for individual eruptions within different volcanic systems based on different search parameters (under Eruption Search). Currently the Eruption search contains information on the four most active volcanic systems in Iceland, Bárðarbunga, Grímsvötn, Hekla and Katla but these four systems account for about 80% of eruptions in historical time (since ~870 CE; Thordarson and Larsen 2007). More volcanic system will be added to this part of the CIV during the coming months.

The above information can be found in 32 individual chapters on the 32 active volcanic systems in Iceland, but volcanic activity in Iceland occurs on volcanic systems that usually comprise a central volcano and fissure swarm, and the chapters can either be read directly from the web-page or exported to pdf files. The interactive maps, however, are only accessible on the web. By selection the user can get outlines of i.e. central volcanoes, fissure swarms, eruptive fissures, or look at i.e. tephra and lava distribution from different eruptions. Information regarding the forming eruption is connected to these maps such as tephra grain size distribution and lava age where available.



We encourage people to go to the web-site, <http://icelandicvolcanoes.is>, learn about Icelandic volcanoes and volcanism and look at the many different features available.

A guide to help users how to use the Catalogue and the data portal is available for download (http://icelandicvolcanoes.is/layout/PDF/FutureVolc_Help.pdf)

The Catalogue of Icelandic Volcanoes (CIV) Eruption histories of the volcanoes of Iceland, their characteristics and hazards was prepared by Berggrún Arna Óladóttir (1,2), Evgenia Ilyinskaya (3), Gudrun Larsen (2), Magnus T. Gudmundsson (2), Kristin Vogfjord (1), Emmanuel Pagneux (1), Bjorn Oddsson (4), Sara Barsotti (1), and Sigrun Karlsdóttir (1)

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EGU 2017

An occasion to discuss geoconservation at a worldwide scale

by:

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The 2017 General Assembly of the European Geosciences Union has joined together almost 14500 geoscientists from 107 countries into one meeting covering all disciplines of the Earth, planetary and space sciences. Following similar initiatives that have started some years ago, a session on “Geodiversity and Geoheritage” was co-organized this year by the “Geomorphosites” and “Landform Assessment for Geodiversity” Working Groups of the International Association of Geomorphologists and by ProGEO, the European Association for the Conservation of the Geological Heritage. The new IUGS International Commission on Geoheritage has also participated in the session. The programme of this session included one full-morning with 12 oral presentations and 28 poster presentations during the afternoon. Whereas the oral presentations were devoted to broader approaches and methodologies, poster presentations were focused on interesting case-studies dispersed by almost all continents. It is noteworthy to underline that the vast majority of the works presented in the session reveals a mature approach to different issues involving geodiversity and geoconservation. It is also considered very positive the presence of post-graduation students that are developing master and PhD theses in many universities around the world (53% of all participants in the meeting were early career scientists, under the age of 35 years).



Get ready for the next 2018 EGU meeting, 8-13 April (but of course, do not forget that 2018 is also the year for the next ProGEO International Symposium, 25-28 June in Poland)!

The abstracts of this year's edition and of previous editions can be downloaded at:

2017 edition: <http://meetingorganizer.copernicus.org/EGU2017/orals/24116>

2016 edition: <http://meetingorganizer.copernicus.org/EGU2016/orals/20473>

2015 edition: <http://meetingorganizer.copernicus.org/EGU2015/orals/17788>

2014 edition: <http://meetingorganizer.copernicus.org/EGU2014/orals/14521>

2013 edition: <http://meetingorganizer.copernicus.org/EGU2013/orals/12730>

The IXth International ProGEO Symposium

Chęciny, Poland, 25 - 28th June 2018

by:

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The European Association for the Conservation of the Geological Heritage – ProGEO and the national organizing committee are pleased to invite you to participate in the IXth International ProGEO Symposium that will be held in Chęciny, Poland, from 25th to 28th June 2018.

GENERAL INFORMATION

The symposium will be held at the European Centre for Geological Education (ECEG) of the University of Warsaw, in Chęciny near Kielce (Góry Świętokrzyskie region, Southern Poland). The ECEG venue offers facilities suitable for small and large conferences, poster exhibitions, meetings and events. It has a large conference room for 240 people and guest rooms.

The conference organizers have reserved rooms at the ECEG venue and at the four-star Best West Grand Hotel in Kielce, which is 13 km away from the venue. Daily shuttle buses between Kielce and Chęciny will be arranged by the symposium organizers.

The closest international airports are the Warsaw Chopin Airport (WAW) and the John Paul II International Airport in Kraków-Balice (KRK) located 200 and 100 km, respectively, from Kielce. Transportation from these airports to Kielce can be by public train or bus. A free transfer from the railway station in Kielce to the venue in Chęciny will be arranged by the symposium organizers.



SCIENTIFIC PROGRAMME AND CONFERENCE THEMES

The scientific programme includes three days of oral presentations (plenary sessions), poster sessions and a workshop in the Geopark Kielce. This will include a visit to a temporary exhibition devoted to the protection and promotion of geoheritage in Góry Świętokrzyskie.

The conference themes focus on the management of geoheritage and protected areas and its relationship with broader nature conservation policies, and also on the contribution of geoconservation to the UN sustainable development agenda.

We especially encourage authors to present contributions concerning:

- The promotion of the concept of geodiversity within society;
- The need for comprehensive dialogue between scientists and local communities to achieve the global objectives of geoconservation;
- Geoconservation in terms of global nature conservation strategies;
- Moveable geoheritage (including in museum collections) and its relevance and use in modern science.

ProGEO EVENT

The General Assembly of ProGEO will take place on the 28th June, 2018.

POST-SYMPOSIUM PUBLICATION

A special volume of the journal *Geoheritage* (www.springer.com/12371) will be prepared with contributions selected by the Scientific Committee.

FIELD TRIPS (optional)

Pre-symposium field trip (24 - 25th June) starts in Kraków and ends in Chęciny, with one overnight in Kraków. The route leads through the Kraków Upland, the Carpathian Foredeep and the Miocene Paratethys Basin (Ponidzie region). The excursion themes will include geo- and mining heritage; geology, geomorphology and speleology, geoheritage in urban areas, geological and cultural aspects of Kraków, anthropic pressure in sub-urban areas, gypsum karst topography and its protection, interrelations between biotic and abiotic elements in nature protection areas. This field trip will include: Bochnia Salt Mine (UNESCO World Heritage List) – Historical Route The Old Mountains Expedition showing Miocene (Neogene) salt rocks and salt tectonics; Ojców National Park with its karst topography and cave system; the Bonarka Reserve with the Cretaceous abrasion surface and Neogene caliche crust on the Jurassic limestones exposed; Kraków: Wawel Hill and Dragon Cave – geological and cultural context; Miocene evaporitic series of the Ponidzie region, unique large gypsum crystals, sedimentary processes and structures.

The post-symposium field trip (29 - 30th June) starts and ends in Chęciny with one overnight in the vicinities of Ostrowiec Świętokrzyski. The excursion themes will include geology, mining heritage, geoconservation and geodiversity of the Góry Świętokrzyskie region and its surroundings. The most outstanding geosites of the area will be visited, including for example Krzemionki Opatowskie – Neolithic underground flint mine and reconstructed mining camps (tourist or optional archeological routes available); Łysa Góra Range – Cambrian quartzitic sandstones with a block scree – relict of frost weathering during the Pleistocene; Miedzianka Hill – general features of the tectonic structure of the Góry Świętokrzyskie and post-Variscan hydrothermal mineralization and mining heritage; Kadzielnia Park of the Geopark Kielce – Devonian coral-stromatoporoid bioherms and neptunian dykes; Górnio quarry – Devonian succession of carbonate turbidites; Zachelmie quarry – Epi-Variscan unconformity and the oldest described tetrapod footprints in Middle Devonian dolomites; Mogiłki quarry – Devonian carbonates of the platform slope and the Variscan overfold; Ostrówka quarry – Variscan condensed succession with famous exposures of the Devonian ammonoid-bearing limestone, Mississippian 'Kulm' and Carboniferous limestone facies); Jaworznia quarry – Epi-Variscan unconformity and Lower Triassic fluvial deposits; Tumlin Gród quarry – Lower Triassic aeolian sandstones.

The 1st circular will be disseminated in May 2018. The 2nd circular will be available in October 2017, and also the on-line registration will be opened. Information will be available at the ProGEO website: www.progeo.ngo



Geoheritage and Geotourism – A European Perspective

Book review

by:

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The book «Geoheritage and Geotourism – A European Perspective» edited by Thomas A. Hose has entered the marked, contributing to the growing literature in the centre of ProGEO activities. It is interesting in many ways because it places itself within a cultural and scientific tradition that tells us a lot about geoconservation and geoheritage in a historic and cultural setting. Moreover it places the concept of geotourism in this same setting closely linked to the science of geology in a strict sense, in a wider perspective the history of science in Europe on a general level.

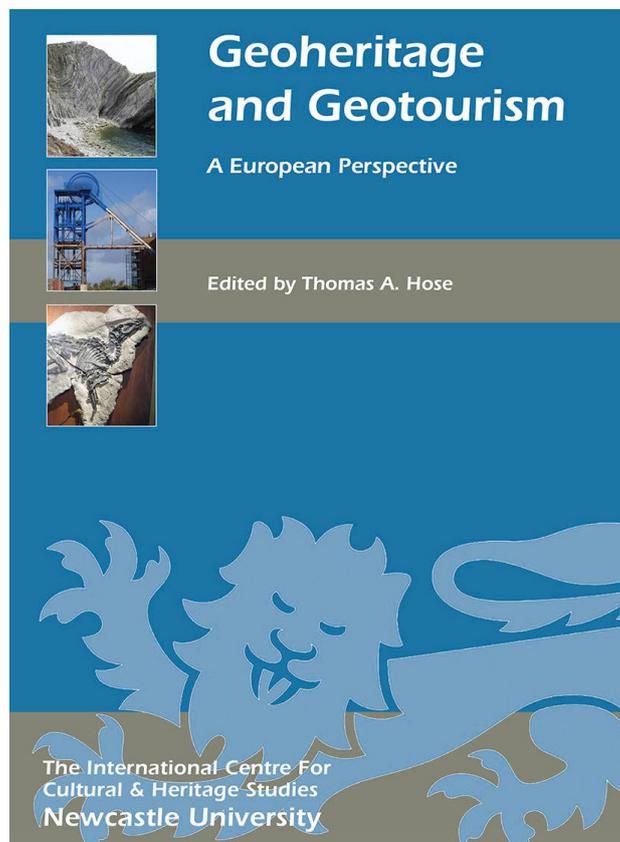
First of all: This book is part of a series of books called “Heritage Matters” from the International Centre For Cultural & Heritage Studies at Newcastle University. The series sees the heritage issues as part of an integrated whole, including both cultural and natural agendas. But the perspective of the geoheritage issues which is the foundation of the book is not only this – a meeting of cultural and geological heritage as such, it also governs the very definition of heritage used in the book. It has the perspective that geoheritage as an emerging science within geology is, as all sciences, principally a cultural phenomenon. It is us – humans – who study, value, enjoy and manage; and has done so in all ages of scientific history. Therefore, the heritage is not only in the landscape on the sites and in the field, it is in museums, in collections in literature as well. At least for me this gives me some understanding of the word first used for geoconservation in ProGEO history – Earth Science Conservation, as it was used in the early days of ProGEO and in UK. It was challenged by many asking ironically: is it the science we should conserve, not the nature? Of course the nature is our prime object, but heritage lies not only there, it lies in all accumulated history of knowledge and experience we have collected through our history both within the geosciences as it does for all scientific and cultural fields.

This introduction in my response to the book may seem abstract and with some distance to within the everyday thinking and paradigm of the practical geoconservatist. The book itself is a collection of perspectives, literature and information that may not be called easy reading, rather a challenge, but never the less a possibility to set things into perspective and thereby actually strengthen the very basis in which we work. It is well worthwhile to read, moreover it is well spent time to give it even more time in contemplating our own understanding of geoheritage and geoconservation in general and especially the link between geoheritage and geotourism.

The subtitle of the book is “A European Perspective” and it is justified reading the book although it must be said that the perspective is rather British in large parts of the book, a fact that in some ways make it even more interesting for the readers outside UK as Britain has a central role in the development of geological sciences as well as in tourism (both general and more specified geotourism) and geoconservation. To set this British perspective into a more wide European perspective is exciting and something I have missed in much literature about geoheritage.

The book consist of 18 chapters, half of them written by Thomas A Hose, but also chapters written by Jonathan Larwood, Djordjije A Vasiljevic, Martin C Munt, Kevin R Crawford, Jhon Conway, Margaret Wood, Volker Wrede, John E Gordon, Emanuel Reynard, Slobodan B Markovic, Nemanja Tomic and Peter Davis. It has two sections, the first representing issues of general interest such as geoheritage and geotourism, Britain and Europe’s geoheritage, geological inquiry in Britain and Europe - a brief history, museums and geoheritage in Britain and Europe, geoheritage for sale: collectors, dealers and auction houses, geoheritage in the field, geoconservation: an introduction to European principles and practices and geotourism in Britain and Europe: historical and modern perspectives. Then it is a general chapter about protecting and promoting the geoheritage of South-Eastern Europe followed by eight chapters presenting case studies from The Isle of Wight in England, The Antrim Coast of Northern Ireland, GeoMôn in Wales, The Ruhrgebiet National geopark in Germany, Andalucia in Spain, Geotourism and geoparks in Scotland, Canton Valais in Switzerland and the Danube region in Serbia.

It is no surprise that already in the preface Thomas A Hose places geotourism as a way to promote and conserve geosites and geomorphosites, promote the use and understanding of Europe’s geoheritage together, providing associated socio-economic and conservation benefits as the initial idea of geotourism. He later in the first chapter uses the opportunity to criticise the redefinition of the term geotourism to what has been known as ecotourism, which may according to Arouca Declaration from the 11th European Geopark Congress may contain geological tourism, but has a much wider scope and definition. When National geographic forwarded this idea moving the prefix “geo” from geology to geography, we were many who disapproved, even myself as a geographer. It certainly seemed unnecessary as ecotourism was established as a term and not good for the close links that should exist between geoheritage and geotourism.



It reminds us that our small victories suddenly can be challenged and that it is constant need for debate on perspectives, practises and definition of terms to secure that our field of geoheritage can move forward. Another such example is the change of term in UK nature conservation practices talking more about wildlife than of nature. This is just the opposite that we work for, now exemplified with the latest three resolutions of IUCN placing geoheritage and geoconservation firmly within the nature conservation community and marking geodiversity as a term on par with biodiversity.

The chapter about European Geoheritage is perhaps a bit to condensed to keep a non-geologist awake through its short, but massive elaboration of Europe's geology and the information given in the following chapters about geological inquiries, museums, geology for sale, geoheritage in the field are also packed with condensed information that may seem like a challenge for a non-english speaking audience. The amount of information and the perspectives are never the less of great interest and all reference of immense usefulness for all who want to dive deeper into these perspectives and how they are linked to our work with geoheritage. All chapters have also a short introduction and a summary that helps those of us who want to get the overall understanding but without time or interest for a deep-dive.

The chapter about geoconservation is of special interest for ProGEO members. The link between British perspectives and practises and a more European viewpoint is interesting and it is nice for us in ProGEO to see that our work over long time have set a footprint in geoconservation development and strategies on our continent, and see that ProGEO aims as formulated in the ProGEO articles and on our website is in good accordance with priorities forwarded in this chapter.

The geotourism chapter outlining history and modern perspectives is also of great interest especially because it widens out the perspectives that dominates today; geoparks, without reducing this new development and its impact on geotourism and geoconservation in any sence. The chapter about geoconservation in South-Eastern Europe is also of interest because it sums up experiences in a very diverse region with a complex history, complex national borders and diverse legislation.

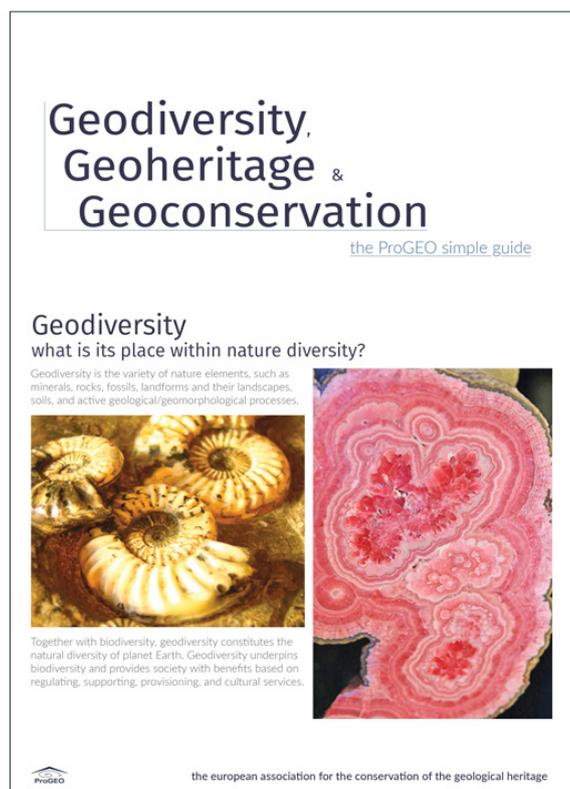
The eight case studies ending the book put all the general content into a practical setting and their distribution from different parts of UK and Europe secures a diversity of practices and perspectives that can be learned from them. The book ends with a short chapter: conclusions, with closing remarks from Peter Davis and Thomas A Hose. One of the important elements of these closing remarks is the emphasis it gives to fieldwork and our ability to study geology and define geoheritage in real nature, not only in the virtual world and in models. This is important both to geotourism and not least for geoconservation strategies. The values of nature must still be in focus and strategies to conserve them strengthened and develop through our work every day.

ProGEO simple guide

a guide to better understand Geodiversity, Geoheritage & Geoconservation

by:

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ProGEO has produced a new leaflet. It's aim is to inform a wider nature conservation community about geoconservation and it is distributed to all IUCN members. The leaflet is available in English, Spanish and French and can be downloaded from our website www.proge.ngo.

From Geoheritage to Geoparks: case studies from Africa and beyond

Book review

by:

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As Ezzoura Errami pointed out “This book is a direct outcome of the First International Conference on Geoparks in Africa and the Middle East, held in 2011 in El Jadida, Morocco”. All the articles contain abstracts in English, French and Arabic respectively. The book is divided into two parts, presenting different issues of geoheritage and geoparks. The first part (history of geoheritage, geoparks and geotourism) consists of three articles. In the first article, the author explains the geoheritage and geopark conditions in Africa and Middle East. First, the African Geoparks Network (AGN), its activities and the national and regional activities in for Morocco, Algeria, Namibia, South Africa, Madagascar, Mozambique, Nigeria Jordan and Yemen. The Geshm Geopark, which is the first national global geopark registered in the Middle East, bears a great effort of the Iranian in the geopark and geoheritage fields but this was not mentioned.

The second article (by Percy Mabvuto Ngwira), explains the roots of geotourism, the geotourism charter of the National Geographic Society and its 11 principles. It seems the author lays great emphasis on the proposed definition of geotourism by the National Geography. Although the title of the article is Geotourism and Geoparks: Africa’s Current Prospects for Sustainable Rural Development and Poverty Alleviation, the examples are related to Kanawinka Geopark in Australia and Lesvos Petrified Forest Geopark in Greece. This article has focused on the aspects of theoretical geotourism and geopark.

The third article (by M. Brocx and V. Semeniuk) focuses on the history of geoheritage and geoconservation in Britain. In line with previous papers, there is a comprehensive and historic look to geoheritage and geoconservation. The authors divided into five periods (phases) of the history of geoconservation of Great Britain, from 1700 to present day.

Part II contains 15 case studies about geoparks, geotourism and geoheritage.

The fourth article (by E. Errami, M. Brocx, V. Semeniuk, and N. Ennih), focuses on the inventory of geological sites of special scientific interest and geological ensembles in Anti-Atlas region in Morocco. Firstly defines the scope of geoheritage, the scales at which geoheritage features can be identified, and levels of significance that can be assigned to such features, and secondly, it identifies geoheritage features from small to large scale that occur as an inter-related suite in a given area and that should be conserved as an ensemble.

The fifth article (by Druguet et al), similar to the previous one, is about geoheritage of Morocco in Western Atlas. The granite landforms of Tafraoute, valley of the Amein, Ait-mansour gorges, Izerribi plain, are described as the outstanding landscapes.

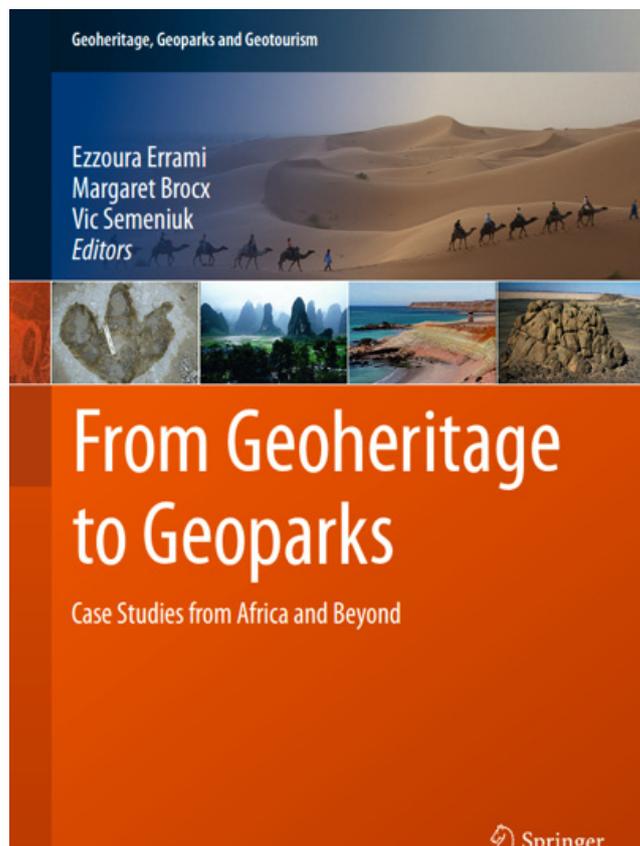
Mining activities have threatened the potentially study area, in addition the lack of protection programs will lead to the destruction of the geosite. The authors believe that this area has the potential to be classified as global geopark.

Geoheritage trails are the subject of the sixth article (by Saddiqi et al.). In the introduction, geology of Morocco is presented but we cannot find any explanation about the types or functions of geoheritage trails. Dakhla–Awsard Geotrail (a trail) with 700 km length connects the Atlantic coast to the Sahara desert. In this roadside trail, 10 important geosites, based on educational and easy access values, are presented. The trail (El Ouatia, Tan-Tan, Mseyed) is divided into two branches: B1 and B2. In the B1 trail, the B1 and the B2 geosites are introduced in Atlantic coastal basin between the El Ouatia and Tan-Tan. The B2 trail passes through the folded belt of Anti-Atlas. In this trail (60km approximately), seven geosites have been identified and introduced.

The seventh article (by Enniouar et al) focuses on the geoheritage role in local socio-economic sustainable development. The authors have divided the Doukkala-Abda geosites into three groups: scientific (late Neoproterozoic rhyolites, Sidi Saïd Mâachou basin, and Karst Landscapes), ecological (Wetlands, Zima Lake) and technical (mining heritage of Doukkala-Abda).

The eighth article (by Abdelmajid Noubhani) under the title Late Cretaceous and Lower Paleogene Moroccan Phosphates: Geotourism Opportunities focuses on the phosphates mining in Morocco. The author believes that by establishing some mining and paleontology phosphate museums, finally a touristic trail and a geopark would form. Therefore the geoconservation and geotourism activities will increase and people will be more familiar with their paleontological heritages.

The ninth article (by Ben Haj Ali et al) examines the geosites at El Kef region, in Tunisia. This is an important area in terms of palaeontology, mineralogy and cultural heritage. Eight geosites have been introduced in this article. The culturally and archeologically important cases are the Neolithic Caves of Sidi Mansour, the Table of Jugurtha and the Oued Mellegue dam. Also the Sections of Hammam Mellegue track as the Global Stratotype Section and Point (GSSP) for the Cretaceous Tertiary boundary.



The eleventh article (by Chabou et al) presents the Dinosaur track sites in Algeria. The authors argue many of these geosites and tracks (about 10 cases) have international importance but unfortunately vandalism, flood and limestone mining, are threatening these sites.

The twelfth article (Dinosaur Footprint Sites in Arhab Area: an Aspiring Geopark in Yemen) focuses on a large number of sites containing dinosaur footprints in Yemen. The sites, with the exception of a simple fence, aren't protected. Local people use limestones as threshing floor, as building stone, as cowsheds, for road or tracks. In addition these sites are threaten by natural processes and hazards (e.g. erosion and floods).

The thirteen article (by Zangmo et al) looks at the landforms of the Manengouba Volcano in Cameroon. The authors debate its tourism potential and examined the impacts of geomorphosites on human activities such as geotourism, farming and hunting in the area. The most important volcanic geosites have been mined because of their cement production.

In the second title of the book "case study from Africa and beyond" the word beyond relates to the fourteenth to eighteenth articles. The fourteen article is about geological heritage of the Apuan Alps Geopark in Italy. History of mining goes back to the sixth century B.C. due to the presence of karst landforms, especially caves. Some geosites such as Corchia Cave have international importance and received 13000 visitors per year. Tourism in the region has a long history, but the new and systematic tourism was formed in the second half of the XIX century. As the authors have argued, this study can be useful for many African countries and African Geopark Network.

The fifteen article (by Z. Zhizhong et al) introduces Geoparks in China by presenting some beautiful and amazing photos. Finally national Geoparks of China are divided into eight groups. A variety of landforms, karst landforms in particular, have had an influential role in shaping China's Geoparks. From the 141 National Geoparks, 27 are related to karst landforms. Despite the significant increase in the number of national Geoparks in China, there are still many problems such as poor management and protection.

The sixteen article (by Chen et al) debates the zoning of China karst geomorphology, based on different criteria. The authors claim that the method used in this article and its results can be useful for other countries.

The seventeen article (by M. Brocx and V. Semeniuk) presents a geoheritage tool-kit to identify inter-related geological features at various scales. The purpose of geoheritage tool-kit is introduced as a systematic approach for important sites inventory. Five steps (geological characteristics, inventory of geoheritage, assessing of geosites for classification, scale of geosites, level of significance) of this six-step method have been reviewed in this article.

The last article in this book is about the geoheritage values at a microscale. This paper is a case study of the Becher Point Cuspate Foreland in Australia - important for stratigraphy, pollen and charophyte record, sponge record and taphonomy and carbonate grain dissolution. According to the wetland sedimentary layers they are part of the geoheritage and scientific and educational values, as geoparks.



Deadline next issue of ProGEO NEWS

June 20th, 2017

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

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

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

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Please send your contributions (unformatted word file). 500 – 2000 words with photographs, maps and figures clearly marked as ProGEO NEWS.

If longer texts are needed, please contact the editor.

ProGEO: European Association for the Conservation of the Geological Heritage.

President: José Brilha ● Executive Secretary: Lars Erikstad ● Treasurer: Sven Lundqvist.

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