ProGEO NEWS

ProGEO 2016 n.4

the european association for the conservation of the geological heritage

Southeastern Europe - regional group

1st annual meeting - 13 to 15 April 2017

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The annual meeting of the ProGEO Southeastern Europe - regional group is planned to be conducted in the General Directorate of MTA Culture Site in Ankara (Turkey) in the frame work of the 70th Geological Congress of Turkey, during 13th and 15th of April, 2017.

The tentative program of the meeting currently includes presentations on geosites, geoheritage, geoparks, geotourism and geoconservation, latest country reports and discussions on these topics, and a field trip to Kızılcahamam - Çamlıdere Geopark area.

Kızılcahamam - Çamlıdere Geopark which is about 70 km at the northwest of Ankara covers an area of ca 2000 km2 in hintherlands of the towns Kızılcahamam, Kazan and Çamlıdere. The main topic of the geopark is volcanism and related geological formations. The area is on a transition zone between the semi-arid central Anatolian plateau and the mountainous and wet northern Anatolia; therefore, a rich fauna and flora have been formed in a sharp morphology. The Soğuksu National Park has been founded 1959 in order to conserve the special ecology. Moreover, the region has been of interest since ancient times and it was used by Hittites, Phrygians, Galatians, Romans and Turks.

Many tumuli found in the district are relicts of these ancient civilizations. Kızılcahamam - Çamlıdere Geopark project includes some vulnerable geosites of fish, leaf and insect fossils, a petrified fossil forest in addition to multi-layered basalt columns, travertines, erosional features (fairy chimneys, rock bride, twin turtles, etc) and a four-storey underground city.

The geopark can be visited either as three geotours or four georoutes from south to north. In this fieldtrip only five of the twenty-three geosites will be examined. The field trip will involve up to half-hour long walks.

The International Commission on Geoheritage

a new global partner within the International Union of Geological Sciences

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The International Commission on Geoheritage – or ICG – was formally established at the 35th International Geological Congress (IGC), held in Cape Town, South Africa, at the end of August 2016.

Its origins, however, go back much further, to the 33th IGC held in Oslo, Norway, in 2008, which saw the establishment of two thematic working groups within the International Union of Geological Sciences (or IUGS) - the global scientific union representing and promoting Geosciences (www.iugs.org). From these origins, the Heritage Stone Task Group (HSTG) and the Geoheritage Task Group (GTG) have worked towards establishing Geological Heritage, in its broadest interpretation, as an activity and discipline fundamental to realising the aims, objectives and ambitions of IUGS.

Crucially, the process of identifying and safeguarding Geoheritage is fundamental to society's interaction with the geological sciences, as it concerns all aspects of geological materials and processes, both in a natural and a cultural context and their intrinsic importance for a great range of human activities, including research, education, outreach, cultural value, sustainable development and as part of a shared natural and cultural heritage to be safeguarded for future generations (Pereira and Page 2016).

One of the key issues in the congress's agenda was the approval of the 2017-2020 IUCN Programme. The programme draft was submitted to the congress with three main areas: 1. Valuing and conserving nature; 2. Promoting and supporting effective and equitable governance of natural resources; 3. Deploying nature based solutions to address societal challenges including climate change, food security and economic and social development. During the congress, ProGEO has submitted several amendments to this draft, particularly in what concerns the first area where geodiversity and geoheritage considerations where necessary. In spite of the final text of the programme is not yet available, the IUCN Assembly has partially approved our amendments. In the future, it would be convenient to start earlier the interaction with the Programme Congress Committee in order to include substantive geoconservation actions in the 2021-2024 IUCN's programme.

Figure 1 : Cape Town 2016 – the venue for the 35th International Geological Congress (IGC) – showing the Lower Palaeozoic sandstones of the Table Mountain Group. Note World Heritage 'Fynbos' vegetation in the foreground, with origins in the Late Cretaceous, but now separated from related floras in Australia and South America by continental drift - an ecological heritage with geoheritage story to tell…

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 has approved a final declaration called "Hawai'i Commitments" (https://portals.iucn.org/congress/hawaii-commitments). Congress participants have participated in the drafting process of the Hawai'i Commitments and some of the ProGEO proposals were included in the final text. The text explicitly refers geodiversity and makes several references to nature conservation and to the importance/value of nature as a whole, which shows that IUCN is following the resolution approved by our 2012 motion.

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

Heritage Stone Task Group (HSTG)

An initial achievement of the HSTG - already at the 2008 meeting - was the establishment of the concept of Global Heritage Stone Resources (GHSR), as a way of raising awareness of natural stones as a cultural and historical resource. This initiative established a formal method for selecting and designating important natural stone types, including unworked in-situ resources, with an established high-level of cultural and architectural recognition, including internationally (Cooper et al. 2013). The Task Group has also been very active in establishing thematic meetings and sessions at international meetings, including several IGCs and EGU (European Geological Union) meetings (http://globalheritagestone.com/).

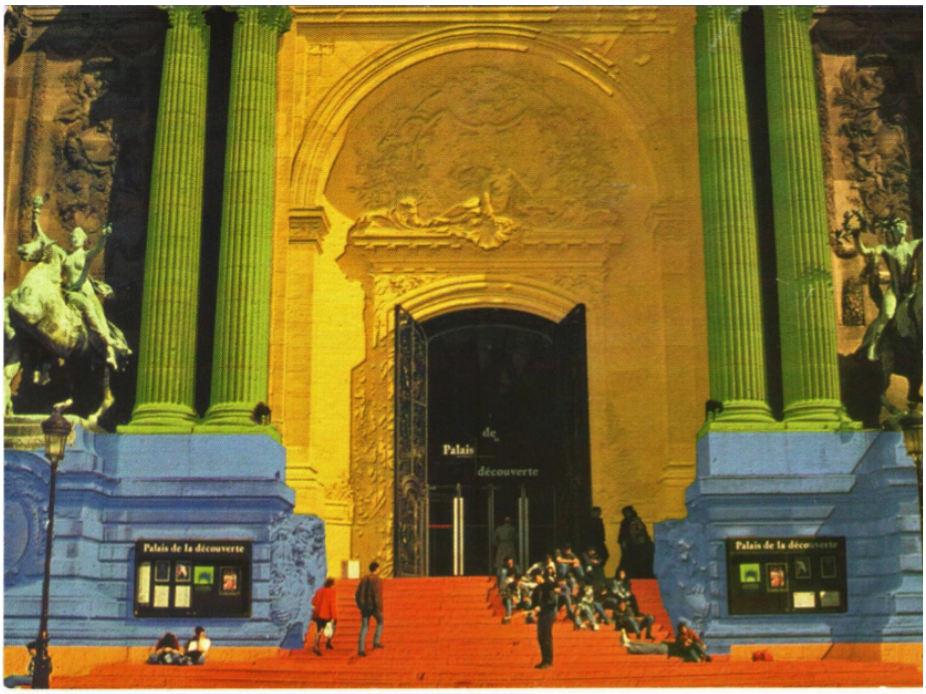

Figure 2 : The use of Heritage Stones or Geoheritage in a cultural context: The entrance to the Palais de la Découverte, Paris – each colour indicates a different heritage stone from Paris and adjacent areas, including: reddish-orange (stairs) = Upper Eocene lacustrine limestone; orange = fossiliferous limestone, Middle Jurassic; yellow = Middle Eocene (Lutetian) miliolid limestone; blue = crinoidic limestone, Upper Jurassic; green = oolotic limestone , Middle Jurassic limestones (modified from De Wever et al. 2016).

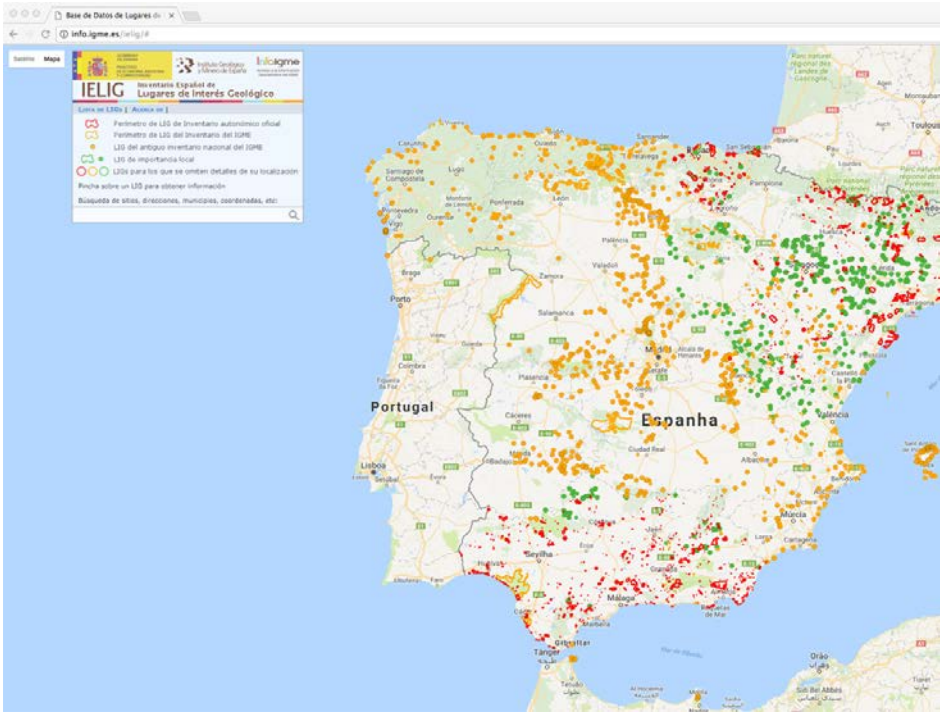

Figure 3 : Screen shot from the Heritage Sites and Collections Subcommission's website (http://info.igme.es/ielig/): the Spanish national inventory of Geosites.

Geoheritage Task Group (GTG)

The Geoheritage Task Group (GTG) mission included developing partnerships with the many global programmes dealing with recognition, conservation, education and protection of geological heritage. Crucially, these aims included establishing the Task Group as a body within IUGS which could assist with the identification and promotion of conserved Geosites, especially of international importance, and including 'Geoparks' (in the broadest sense), World Heritage sites and other globally significant sites with recognised geological value. The achievements of the GTG is well displayed on its website (http://geoheritage-iugs.mnhn.fr) which includes a Global Geosites inventory (i.e. continuing the process described by Wimbledon et al 2000) with 327 site files covering 71 countries, including 72 Global Stratotype Sections and Points (GSSPs) across 18 countries, as well as national inventories for 19 countries area also included as well as geoheritage-relevant legislation for 60 countries (Figure 3 shows a representative screen shot from this database) (see also Cornée et al. 2016).

The establishment of the International Commission on Geoheritage (ICG)

As the links between geological materials in a cultural context - instance as building stones - and in-situ in their original natural location - for instance in a quarry - and the aims of both Task Groups include the conservation of such materials in their original natural context, it was only logical to establish a permanent link between the task groups (see also De Wever et al. 2016). The first steps in this process were taken at the annual meeting of the IUGS Executive Committee, held in Kunming, China, in January 2016, where a proposal was made to merge both task groups into a new IUGS commission dedicated to Geoheritage (Pereira and Page 2016).

At the end of August 2016, this proposal was formally accepted by IUGS's Executive at the IGC in Cape Town, and a Commission on Geoheritage became a reality. The former task groups which had worked so hard towards this achievement were incorporated into the Commission as two subcommissions, specifically the Heritage Sites and Collections Subcommission (HSCS) and the Heritage Stones Subcommission (HSS) – both retaining and developing their original websites. The initial set-up Executive for the ICG includes Björn Schouenborg (CBI Betonginstitutet, Sweden) as Chair with Kevin Page (Plymouth University, UK) as Secretary-General; Patrick De Wever (Muséum National Histoire Naturelle, Paris) as Chair of the HCSC and Kevin Page as Secretary; and Björn Schouenborg as Chair of the HSS, with Lola Pereira (University of Salamanca, Spain as Secretary. The Commission and Subcommissions are in the process of confirming appropriate organisational structures, as well as approval and electoral processes for the executives and boards which will oversee their activities.

Crucially, the establishment of the ICG and its component Subcommissions will enable the IUGS to take a true leadership role in this rapidly developing field, including providing a much needed umbrella for the development of geoheritage-related principles, practice and standards globally. In addition, within IUGS itself, the Commission can provide a source of expertise for requests for advice from both external organisations and programmes, such as UNESCO (including for the Global Geoparks Programme and World Heritage nominations) and the International Union for the Conservation of Nature (IUCN), as well as in connection with issues related to protection of key sites which support scientific methodologies, such as the establishment of GSSPs (Global Stratotype Section and Points) for all subdivisions at the level of Stage and above within a standard global geological time scale (core work of IUGS's International Commission on Stratigraphy – see www.stratigraphy.org).

The new Commission and future activities

As with other IUGS Commissions and Subcommissions, it is proposed that much of the actual and envisaged work of the Subcommissions could be carried out by thematic working groups or appropriate board members within each Subcommission. The establishment of such groups and boards would be subject to approval by the respective Subcommission, to which they would report annually, and hence, via the Commission, to IUGS.

The initial challenge for the Commission and Subcommissions, however, is to establish formal links and partnerships with other organisations and programmes working in the broad field of Geodiversity and Geoheritage and its links to culture and the built environment.

Figure 4 : Migmatites in the Precambrian Malmesbury Group on the shore at Sea Point near Cape Town – made famous by a visit by Charles Darwin in 1836 – and revisited 180 years later on the occasion of the Young Earth Scientists excursion of the 35th IGC on Saturday 3rd September 2016. A geoheritage with strong cultural connection…

Organisations such as ProGEO, Géopatimonie Africaine, ICGP, IUCN, UNESCO, including the Global Geoparks Programme, as well as other groups in Africa, North and South America, Australasia and elsewhere will be fundamental to this development of a truly globally-relevant organisation.

Both Subcommissions websites (http://globalheritagestone.com/ and http://geoheritage-iugs.mnhn.fr/) will allow the dissemination of news and information about such activities, as well as formal publication of key advances and policies through a range of international journals and other publications, including Episodes (http://www.episodes.org/) and Geoheritage (www.springer.com/12371).

But the challenge is now on to ensure that the new Commission builds on the progress of both the Heritage Stone and Geoheritage task groups, through fully developing all these links and ambitions - and that we really do begin to influence global policy and practice through our new discipline of geoheritage, which provides the strongest of connections between society and the geosciences!

Acknowledgments

The ICG acknowledges the continuing support of the IUGS for its activities. International Geoscience Program (IGCP) 637 project is also acknowledged for partially funding some of the Heritage Stone meetings. Springer-Verlag is gratefully thanked for helping make KNP's attendance at the 35th IGC possible.

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Koman in Albania, a regional structural geosite

a typical example of the integration of cultural heritage with natural heritage

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In a geoheritage setting the Koman area represents a regional geological site. It is surprising that in this part of the Drini River, with a narrow and deep canyonand rocky walls on both sides our ancestors, the Ilyrians, prefered to built their ancient settlement in this difficult, but attractive area. The question is: What attracted them? Climate conditions were favorable, economy was based mainly in animal husbandry and hunting. Maybe they were attracted by aesthetic views of rocky forms and colors? It is believed that the idea of freedom, to be free between these severe and nice natural landscapes may be one important answer.

The Komani area as natural heritage

The Komani outcrops are known, mapped, and identified as geological phenomena by geologists. They were determined as sites of geological values and aesthetic views in the study of "Geological Sites of Albania", compiled by ProGEO Albania and Geological Survey of Albania. The Komani geological site was included in "The First Inventory of Geological Sites of Albania". It was presented in the 32nd International Geological Congress in Florence Italy in the sympsium "Geology-marker of cultural and geological heritage: geosites under threat-ProGEO".

The list of the "Regional Geological Sites of Albania" including the Koman geosite was presented to the XX Congress of the Carpathian-Balkan Geological Association, held in Tirana. The Komani regional geosite was the last stop of the field trip of the SE-European regional group meeting, held in Tirana [1].

Figure 1 : Gigantic foldings are seen from from long distances, from Puka City.

The Komani regional geosite is located next to the contact of the Cukali tectonic zone with the Mirdita Ophiolite zone (figure 1). This contact is linked with the regional, seismotectonic fault from Shkodra to Peja (Scutari-Pec Fault). This deep fault divided Dinaride north from Albanides-Helenides south. The Shkoder-Peja fault was discovered by Farenc Nopscha in 1910, and it is supposed to go far northeast up to the Carpathian Arc (Kimmerian phase of folding). By the action of compression, on both sides of the Shkoder-Peja fault, huge foldings in the Cukali Zone north (Komani geosite), and the Kabashi ophiolite massif south, were originated. Regenerations of this deep fault, during past geological periods have added carbonates and flysch fof the Cukali zone and the Kabashi ultramafic massif rocks to the foldings.

The outcrops of the Komani regional geosite are located around the Komani Hydroelectric Power Station Dam, on both slopes of Drini River. Before it was a deep narrow canyon but is now transformed into an artificial lake with rocky walls with a lot of folded strata of different colors and many high rocky cliffs on both sides.

[1] This Meeting was held just 10 years after the Bansko (Bulgaria), where the Declaration of the Foundation of the first ProGEO working Group: "WG-1 SE European countries" was signed. Members of WG 1 met in Tirana to celebrate its Tenth Anniversary. The state of art in geoconservation and reflections on the main achievements and challenges in each country over this decade were highlighted with clear messages demonstrated by the high quality of the oral presentations by national representatives of Balkan countries. At the same time a lot of poster presentations were shown. Five days field trip was done to the most beautiful geosites and landscapes of Albania. Conclusions and perspectives were included in "Durres Declaration". The book of "Proceedings" was published, where a short history of ProGEO WG-1 SE Europe, was included, written by Afat Serjani.

The Komani site is formed in both carbonate and flysch formations The carbonate section is constituted by thin to medium bedded rocks of Upper Jurassic, Cretaceous and Paleogene limestones of the Cukali Zone. On the northen slopes there are huge folds, visible from far away (see figure 1). On both sides of the dam, clay limestone of different colors outcrop: brown, dark cherry color, black, green, light grey colors. Clay-limestone beds are folded intensively, sometimes forming mosaic views. Folds are of different geometric forms (figure 2) and different sizes. A lot of the folds also include the Maastrichtian-Eocene.

The folds with their different colors and sizes, often in mosaics, constitute a natural phenomenon of rare beauty and of scientific, didactic and geotourist value.

Figure 2 : Regular geometrical form of foldings

In the carbonate formations many karst caves have formed. One of them (figure 3), situated in the northen wall, above the artificial lake level, is used as a religious object and attracts a lot of visitors. Many of these religious visitors ''leave their hearts'' on the limestone wall. The natural heritage of Komani also includes biodiversity. On both sides three clear belts of trees (oak, beech, and coniferus) are seen. On the upper levels there are alpine pastures. Wild animals are also present.

- The cultural heritage of Komani (''Komani Culture'').

A lot of archeological works are done in the Komani area both by foreign and Albanian archeologists. Archeologist Etleva Nallbani has worked hard for the protection of the Komani archeological site during the last years. Several publications about the Komani archeologial site has been published. Especially important are dthe iscovering of the Ilyrian-Albanian continuation, which belong to the late antique epoch up to the Middle Ages. The ''Komani Culture'' is evaluated by researchers as a connecting bridge beetween two epochs: From late antique to early medieval. Found objects argue an Ilyrian origin in this land. A treasure of seven silver coins was found last years. A miliaresion of Mishel III (842-867) are evaluated as the most rare finnding.

It is important to notice that in the middle reaches of Drini River, from Komani up to Fierza there are also other important archeological and historic sites such as in: Nikaj-Mertur, Lower Curraj, Mulaj, Upper Curraj. There are old Ilyrian-Dardan remains, belonging between Bronze and Iron Epoch (about 3000 BP), which were found for the first time in 1908 by the geologist Farenc Nopsca.

Figure 3 : On the righ Rocky Wall in Komani, there is formed a Karst Cave used as religious object

- Recent human heritage in the Komani Site

In aspect of the human heritage Koman astonishes with its big hydroelectric dam 131m high, which was built by Albanian engeeners and workers during the socialist system. The power station produces 1 900 GWh electric power every year and together with Vau Dejes and Fierza power stations they constitute the ''Drini Cascade'' which is very important for Albanian Economy. Undoubtetly a major encrochment on the Drini natural river system these dams and power systems also constitute a human heritage of the 20th Century integrated with the cultural and natural heritage of this area.

- Some conclusions about the complex values of the Komani Site

Firstly, the Komani Area has important values of cultural heritage, both archeological and historical. Komani and old findings of archeological, historic, and religious character are attracting Albanian and foreign researches, amateurs, and tourists to the site. Secondly, Komani as regional geological site has geoscientific interest and special aesthetic natural values, attracting geoscientist's, student's and pupil's groups, visitors and amateours of nature, and thus working as an attracting tourist and geotourist place.

Thirtly, it must be noted that the touristic potential is even larger. If the traveller to Komani should continue by ferry boat up to Fierza, it would be a truly amazing trip for a geoscientist, and especialy for geologists.

Komani Area with integration of natural and cultural heritage it is one of the most important objects in didactical aspect for pupils, students and their teachers in Albania of an international quality.

on-line geosites
Poland

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Poland is a Central European country stretching between the Baltic in the north and the Sudetes and Carpathian Mountains in the south, mostly in the basins of the Vistula and Odra rivers. All structural stages, beginning with Precambrian, through Caledonian and Variscan to the Alpine stage, occur in Poland (Żelazniewicz and Żaba, 2008). Most of them are under the cover of Quaternary sediments (Marks et al., 2016).

Basic digital data and information on Poland's geology are available from the Central Geological Database (CBDG) http://baza.pgi.gov.pl/. The Database is maintained and developed by Polish Geological Institute - National Research Institute (PGI-NRI). The Project is financed by the National Fund for Environment Protection and Water Management.

The Polish Central Register of Geosites, one of the CBDG Portal's sites, is available at (http://geoportal.pgi.gov.pl/portal/page/portal/geostanowiska/). It is a popular science on-line database maintained and managed by Polish Geological Institute – NRI for the Ministry of the Environment and financed by the National Fund for Environment Protection and Water Management. The CRGP is a repository of information about Poland's most valuable non-animated nature stands – the so-called geosites – i.e. geological sites that are important for presentation and conservation of geodiversity in Poland. The PGI-NRI launched the project in 2008. The Internet service and its search engine have been made available to the users in 2010. Currently, phase three of the project, to be completed by 2018, is underway.

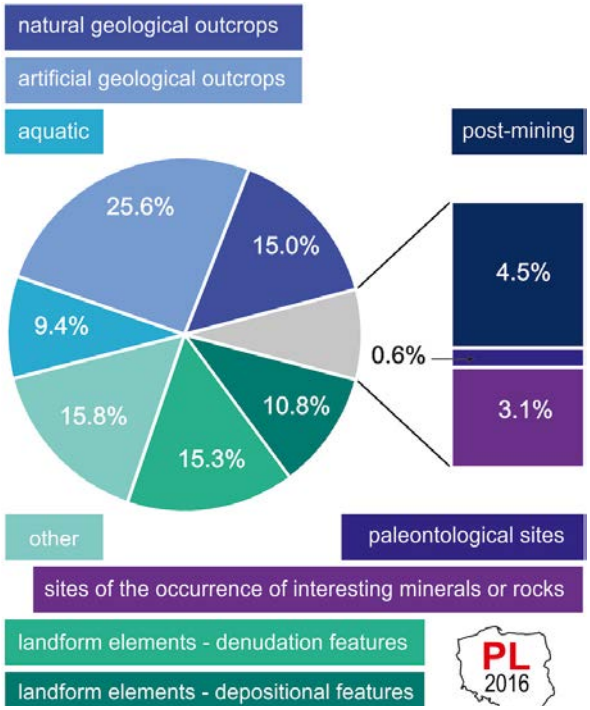

Figure 1 : Types of Polish geosites by Polish Central Register of Geosites. Data source: Central Geological Database, http://baza.pgi.gov.pl/

Database contents are accessed with a CBDG map (http://bazagis.pgi.gov.pl/website/cbdg_en/viewer.htm) and mobile GeoLOG (http://m.bazagis.pgi.gov.pl/cbdg/#/landing) applications. Spatial data (EPSG 2180) can be accessed by WMS and uploading WFS services (http://geoportal.pgi.gov.pl/portal/page/portal/PIGMainExtranet/serwisy_gis), as well as in the ESRI Shapefile (.shp) format (http://dm.pgi.gov.pl/dm/DownloadManager_v1.aspx?lang=en).

So far, the shapefile documenting the Register status as of 2012-09-26 and 2016-09-15 have been published. The files contain spatial and descriptive data from the Geosite Data Sheets (e.g. sheet number, site name, site type - see figure 1), coordinates according to EPSG2180 and EPSG4326 systems and respective administrative units (commune, poviat and voivodship).

Full text of the Sheet (in the Polish language only) is available from the CRGP browser where the sites can be searched by different features (http://geostanowiska.pgi.gov.pl/gsapp_v2/). Details of particular geosites are displayed on 8 successive screens and include: general information (site name, type, administrative units, physiographic region, location, geographic coordinates; physical features of the site; existing status (site protection, accessibility, rank, touristic, educational and scientific merits); geology overview; graphic documents (photographs, sketches, cross-sections); sheet development details (author, updates); literature and a map (site location - GPS coordinates).

Specific site in formation can be also downloaded (and printed). As of October 2012, there were 1673 geosites entered to the Polish Central Register of Geosites. Four years later there were as much as 3593 of them (figure 2).

The Lesser Poland (Małopolskie) Voivodship is the leader in terms of geological and geomorphological sites entered to the Register (468), while Opole, the smallest Polish voivodship contributed only 45 sites. A lot of geosites have been reported from South Poland (Świętokrzyskie – 369, Podkarpackie – 367, Lublin – 354, Lower Silesia – 329 and Silesia – 272 sites) and from North Poland (West Pomerania – 387 and Pomerania – 292 sites).

The former region is located in the belt of uplands, Fore-Carpathian Basins and mountains (the Sudetes and Carpathians), while the latter is a belt of young-glacial lowlands bordering on the Baltic Sea (within the range of the final Vistulian Glaciation stages). Both regions are characterised by the occurrence of exposed local and/or post-glacial rocks of various age (https://www.pgi.gov.pl/kartografia-lewe-kopalnia/3650-mapy-geologiczne-on-line) and by highly diversified landforms (Warowna et al. 2013; Rdzany 2014).

This is the reason behind a high concentration of natural and post-mining tourist attractions of international and national importance in these voivodships (http://pdf.polska.travel/docs/en/hit/Hity_en.pdf , accessed in November 2016). Some of them have been entered to the UNESCO lists (World Heritage sites, Biosphere Reserves) and to the European Route of Industrial Heritage – ERIH. A majority of existing or planned geoparks is located there, too (http://geoturystyka.blogspot.com/search/label/geoparki).

The Polish Central Register of Geosites is updated and supplemented on a regular basis. Currently, the Register counts over 3700 sites (accessed in November 2016), of which 125 are of international and 557 of national importance. Database entries are predominantly geological, geomorphological, aquatic, paleontological, mineralogical and post-mining sites of regional and local importance (1717 and 1322, respectively).

CRGP is the largest Polish database of geosites but not the only one Internet service with information about non-animated nature site. The CBDG Portal of PGI-NRI includes the Jaskinie Polski (Polish Caves) website (http://geoportal.pgi.gov.pl/portal/page/portal/jaskinie_polski).

The database contains standardised location, geological, biological, historical data, plans and cross-sections of 4150 sites. It is verified and updated on an ongoing basis with new data from exploratory and study projects (Grodzicki and Machalska 2011). Also this database offers spatial files for downloading in the WMS, WFS and .shp formats. The Krakow-based Institute of Nature Conservation of the Polish Academy of Sciences) launched its Database of Polish Representative Geosites (http://www.iop.krakow.pl/geosites) in 2006. The Database is part of IUGS Global GEOSITES Project, as carried out by ProGEO. This non-updates base contains 175 geosites across Poland, including 96 sites that are protected by the law (documentation sites, nature landmarks, nature reserves) (Alexandrowicz, 2006; 2012).

Current lists of Polish protected natural sites, (WFS, WMS and shapefiles) are available s at the General Directorate for Environmental Protection website (www.gdos.gov.pl/dane-i-metadane).

Finally, the most interesting sites and protected areas by the law are presented in the Catalogue of geotourist sites, which is printed and digitally available (Słomka et al., 2006). The Catalogue covers 100 documentation sites and 150 nature reserves and nature landmarks (Słomka, 2012). The Catalogues were ordered by the Minister of the Environment and financed by the National Fund for Environment Protection and Water Management. Access to information about geodiversity in the region is important for both central and local governments, as well as for all those who are involved in geological education, geotourism and all aspects of spatial management.

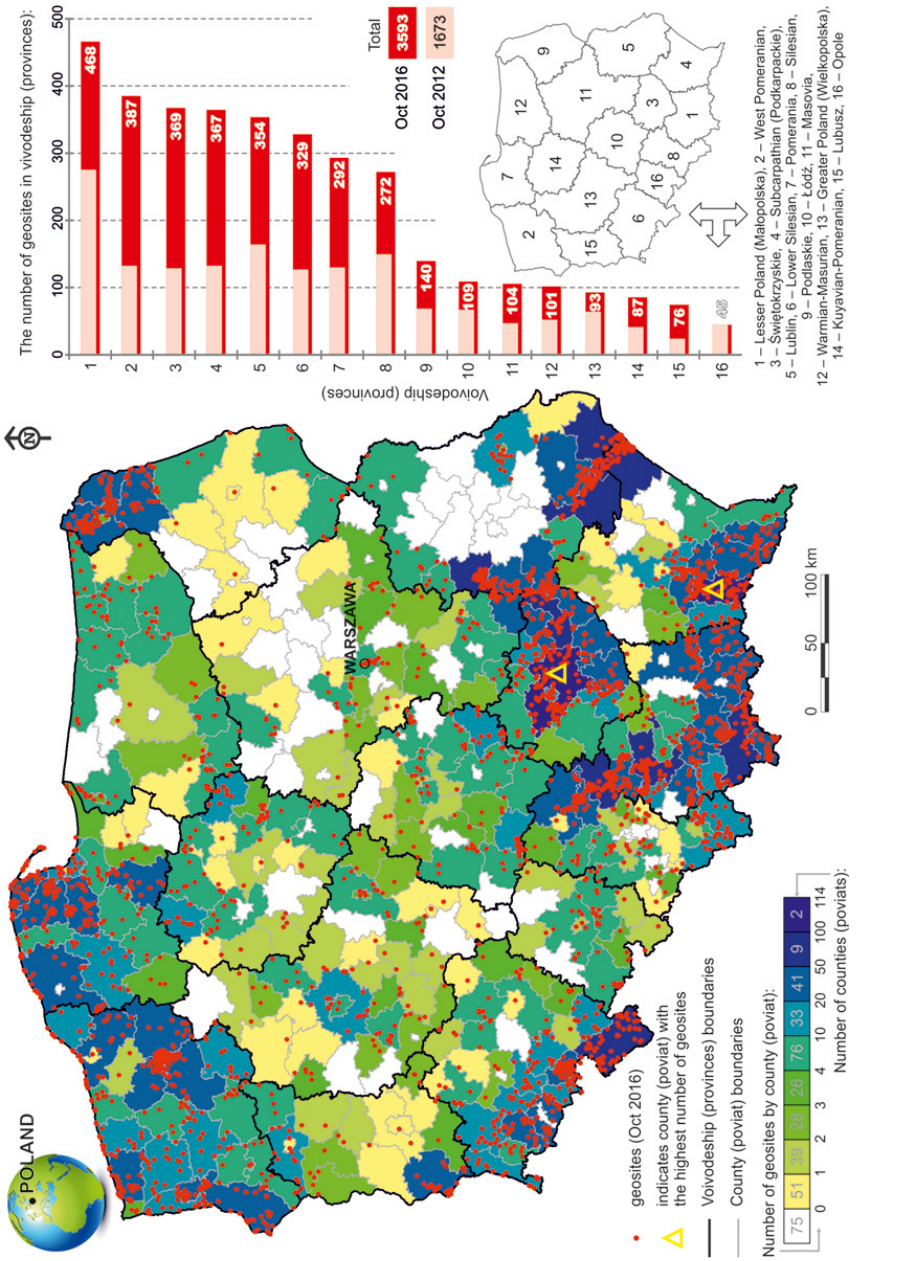

Figure 2 : Geosites in Poland by Polish Central Register of Geosites. Geosites – Central Geological Database, http://baza.pgi.gov.pl/ ; Administrative boundaries – Central Geodetic Documentation Centre, http://www.codgik.gov.pl/

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VIII International ProGEO Symposium

Poland from 25-28 June 2018

by:
ProGEO - [progeo@progeo.ngo]

The VIII International ProGEO Symposium on the Conservation of Geological Heritage will be held in Poland from 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 on the facilities of the European Centre for Geological Education in Checiny, about 100 km north of Krakow.

The symposium is still in the first stages of preparation but detailed information will be available soon at www.progeo.ngo and in the next ProGEO NEWS.

Check your calendar!

Deadline next issue of ProGEO NEWS

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april 18

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ProGEO NEWS issued 4 times a year with information about ProGEO and its activities.
Editor: Lars Erikstad • lars.erikstad@nina.no • + 47 91 66 11 22 (phone)
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Membership subscription: € 50 (including GEOHERITAGE journal), 25/yr.(without GEOHERITAGE journal). Institutional subscription: €185/yr.

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ProGEO NEWS produced with support from the Norwegian directorate for Nature Management