

Tourism inspired by geological features

# Guidance for Geotourism



**MAGDALENA SIDORCZUK**

Polish Geological Institute  
 msid@pgi.gov.pl  
 Dr. Magdalena Sidorczuk directed the Postgraduate Course in Geotourism at the University of Warsaw for three years; she currently manages the Geodiversity Conservation and Geotourism Program section at the Polish Geological Institute



**MONIKA KRZECZYŃSKA**

Polish Geological Institute  
 mkrz@pgi.gov.pl  
 Monika Krzeczyńska works in educating young people and popularizing knowledge of the abiotic environment at the Geological Museum of the Polish Geological Institute

**Geological information of the right type and in the right place can help boost public awareness of and appreciation for the geological diversity around us**

When we admire various landscapes as we travel around Poland or across the globe, they seem to be a constant, enduring, unchanging element of our planet. It is easy to form this impression, since our human time scale is incomparably small in comparison with the geological scale, which operates across millions of years rather than our own decades or centuries.

But we do not need a time machine to take a journey into the past, even the very distant past stretching back tens or hundreds of millions of years: we simply need to take up geotourism. Hiking in safety along the slopes of ancient volcanoes, peering into their depths, or visiting deposits which formed millions of years ago in oceans that are now long gone, we can appreciate the effects of major geological processes. There is now a new branch of tourism available to those most inquisitive people who wish to discover and understand the natural world

around them: geotourism. It presents abiotic nature in all its diversity, as well as geological processes that are observable in the present (such as waterfalls or karst springs) and those that exist in the fossil record. Poland has a very varied geomorphology: our exceptional coast shows the effects of various coastline-shaping processes, our lakelands have classic late glacial landscape features, our lowlands are crisscrossed with a network of ancient valleys and riverbeds, we have stunning uplands of various origins, and of course impressive mountains. The type and age of rocks that make up our country's landscape is also extremely varied. An excellent example is the Holy Cross Mountains, one of the most geologically-interesting ranges in Europe: it features ancient Precambrian rocks alongside much younger ones dating back to the last ice age, as well as a wide range rocks formed during the Paleozoic, Mesozoic, and Cenozoic.

**Geopark certification**

Geoparks are a new tourism phenomenon in Poland, Europe and across the globe. The first were formed in the early 21st century; today, the Global Geoparks Network (GGN) overseen by UNESCO includes over 80 geoparks from 27 countries,

UNESCO certificate awarded to the Muskau Arch Geopark



Keith Stewart/bugs@smithnews.info



Andrzej Szymkowiak

mainly in Europe and Asia. Certification by the Network stresses the value of the natural environment in a particular area, and guarantees major promotion across the globe. The main purpose of these geoparks is to preserve and promote public awareness of geological heritage and aspects relating to the exploitation of natural resources, such as ancient mining artifacts. Geoparks feature rocks with a significant scientific, educational, or esthetic value, and surface features that include important stratigraphic, lithological, tectonic, or karst sequences, or those containing fossils or major mineral deposits. Geoparks can be assigned rankings on the national, European and global scale. In Poland, the concept of national geoparks only appeared around 2 years ago, inspired by the growing global geotourism trend. The national geopark certificates do not carry any legal or material obligations, nor do they signify GGN membership; instead they are a distinction awarded to certain regions with outstanding natural features and good organizational and management infrastructure. Although assigning a given region national geopark status does not constitute any legal protection of the environment, such certification from the Polish Ministry of the Environment

is valuable as it ensures the region receives promotion, which in turn leads to increased local tourism. In Poland, three regions have been awarded national geopark status to date: the Muskau Arch, on the border with Germany (in 2009), St. Anne's Mountain in the Silesian Highlands (in 2010), and the Karkonosze National Park (in 2010). Preparations are underway to create more geoparks, including the Małopolska Gap of the Vistula River, the Moryń Geopark on the Polish-German border, and the Kamienna Valley Geopark on the northern side of the Holy Cross Mountains.

### Geotourism information

Poland's landscape has long featured numerous tourist routes. Trails leading to geological sites bearing witness to the geological history of our lands are still relatively rare, although they are becoming more common. Like geoparks themselves, such geotourism trails are a direct form of raising public awareness about a given region's geological diversity. They are created around geological sites: natural outcrops, quarries, and specific landscape formations that come together to form a logical, easily-accessible trail. When laying out geotourism routes, special consideration should be given to

**Along the geotourism trail in Olsztyn near Częstochowa**

## Tourism inspired by geological features

the substantive value of the information that can be offered, the accessibility of the sites, and particularly to their attractiveness to tourists and educational value. The infrastructure of such trails should include accessible and secure information points with information boards, viewpoints, trail markings, and rest stations. Route descriptions are frequently presented as folders or leaflets available at tourist information points. Trails can serve as starting points for or components of larger expeditions.

There is another category of geotourism sites called "geosites," which are individual geological features of scientific, educational, and esthetic value to tourism. Locations to be designated as geosites are suggested by scientific or environmental institutions, which initiate their creation together with local authorities.

One interesting way to promote awareness of the natural value of selected geosites in Poland involves erecting illustrated educational geotourism signboards. They function as stand-alone objects situated in interesting and geologically distinct areas. Such signboards are an accessible and attractive way of drawing attention to geological formations and natural processes which have created the existing landscape, and are supported by the Ministry of the

Environment - anyone can apply to erect one for their region or local object of interest. The only condition is that the information signboard must be positioned in a way that is generally accessible.

Another valuable source of information on geotourism is provided by various publications available from tourist information points, kiosks, bookshops, and online. They include geotourism maps, guidebooks describing geology-themed trips, as well as geotourism portals and virtual routes which can be viewed online. However, getting hold of them can be a bit of a challenge, as it takes some understanding of the topic.

Maps are one of the most effective means of conveying geotourism information. Geotourism maps come in a variety of formats, although they should all include topographic references such as waterways, hypsometry (elevation information), and most of all information regarding the geological formations present in the given area. Frequently such maps are overlaid over a background taken from aerial photographs in their original or processed forms, known as orthophotomaps, or from visually impressive digital terrain models that make the imagery more three-dimensional.

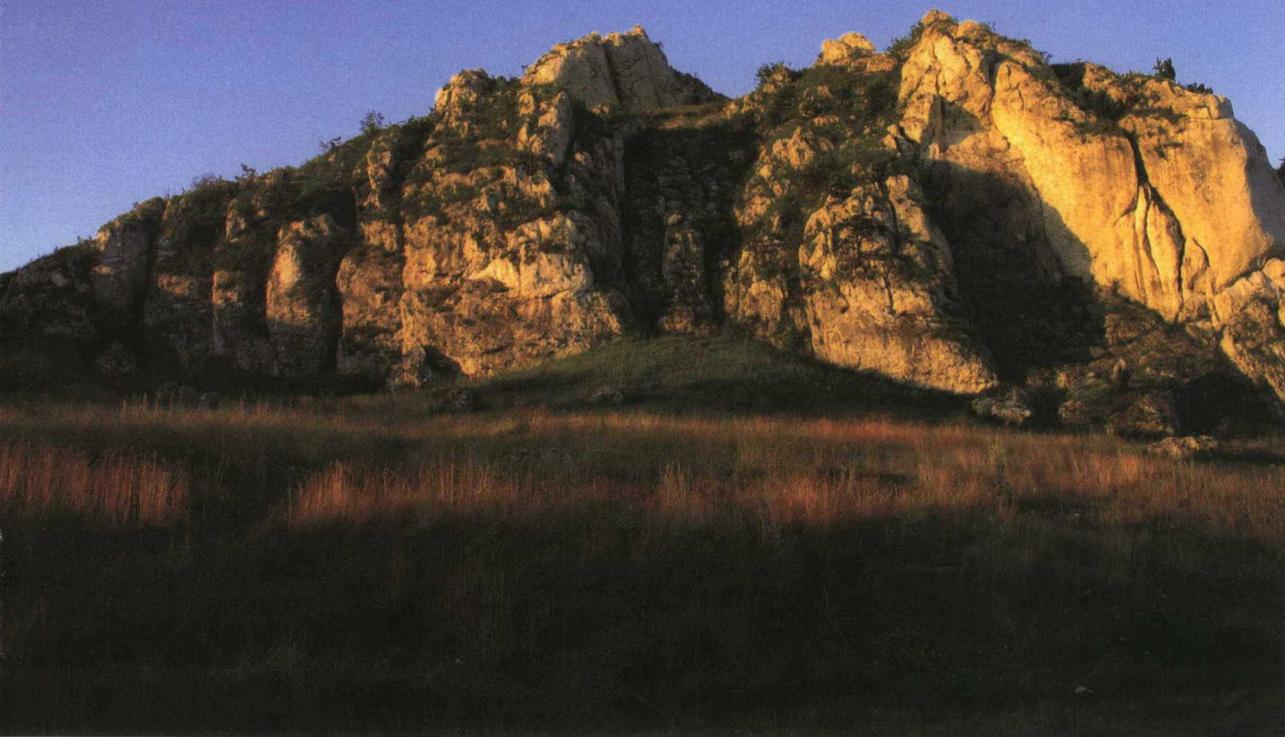
Such geotourism maps, such as the recently published series for five national parks in Poland, generally offer a very detailed and reliable source of geological information for tourists. They present the geological structure of the region and allow users to prepare their own routes and select points of interest along the way. As well as geological points of interest, the maps feature interesting historical sites, natural, geographical, archaeological, and ethnographic features, tourist trails, and educational paths. The maps allow tourists to tailor their routes to their individual requirements, interests and abilities.

Since the rise of the Internet, geotourism-related information has become increasingly available online. Internet portals are being created by scientists and amateur fans alike, and feature beautifully illustrated trip reports and information on places of interest with any relevant geotourism information. Virtual geotourism routes are also becoming increasingly popular - these are applications allowing virtual tourists to "travel" between

**Information signboard  
along the Kielniki  
Quarry geological  
route, describing the  
geological history  
of limestone rocks  
dating back 150  
million years**



Marek Lewandowski



Agnieszka Krawczyk

**Limestone rocks  
formed of Jurassic  
sponge bioherms  
near the Kielniki  
Quarry**

subsequent points depicted as interactive panoramas. Such routes are helpful when planning and preparing for making a trip in real life, but they are equally useful to individuals who cannot actually plan to visit the region for whatever reason. Additionally, when placed on websites promoting various regions, virtual routes can act as an effective encouragement to visit.

### Geofuture

Due to its special combination of merits, geotourism is becoming an increasingly popular pastime, as well as providing a purpose for educational, sports, or research trips. Scientists appreciate efforts made by various circles to protect geosites, in particular those of outstanding research value. Tourists tend to select destinations based on their esthetic value or allow them to practice specialized forms of tourism, such as rock climbing or caving, while teachers take their students on sightseeing trips where they can discover the history of our ancestors as well as our planet's geological history. Geotourism is also slowly becoming a significant economic sector. The JuraParks in Bałtów, Krasiejów and Solec Kujawski are a good example of how geotourism sites can become important tourist destinations. Parks featuring life-sized replica dinosaurs with detailed descriptions of their lives and

environment, displayed in natural surroundings, draw in hundreds of thousands of tourists every year (for example, the JuraPark in Bałtów received 300,000 visitors in 2010). JuraParks and similar locations provide employment for local populations (Krasiejów has over 100 employees), as well as creating opportunities for the development of accompanying infrastructure (such as transport, accommodation, gastronomy, souvenirs, etc.), which can provide a major source of income.

A comprehensive network of interlinked geotourism sites existing in an area, supported by high-quality, relevant and attractive publications and websites, has a positive effect on increasing society's awareness, draws attention to Poland's geodiversity, and supports environmental protection, as well as contributing to economic growth during times of austerity.

And so, see you out there on the geological trail! ■

#### Further reading:

- Grabowski J. (ed.). (2011). Geoturystyka w Polsce - zbiór artykułów [Geotourism in Poland - Collection of Articles]. *Przegląd Geologiczny*, 59, 271-359.
- Słomka T., Kicińska-Świdorska A., Doktor M. & Joniec A. (2006). *Katalog obiektów geoturystycznych w Polsce* [Katalog of Geotourism Sites in Poland]. Kraków: AGH.
- Geological/geotourism maps: <http://www.pgi.gov.pl/pl/wydawnictwa-geologiczne-pig-pib/atlas-y-i-mapy/geologiczno-turystyczne>.