

# Discover the Fascinating World of Geoparks

The brilliant idea of “geo-park” is perspicuous to any nature lover and travel freak. Nonetheless it became concrete only late and under unusual circumstances, when two geoscientists from Europe (French Guy Martini and Greek Nicolas Zouros) had met in China in 1997 during a meeting on geological heritage. Many a good idea has been conceived in China, where foreigners sometimes more easily discover diamonds in the haystack. In this case the valuable findings were unique natural sceneries in one single huge country, where wantonly negligent destruction of mankind’s living space most amazingly contrasts with preserved nature reserves and tourism highlights.

In Europe geoparks were then firstly established by applying for funds at Brussels with some work at a regional level, as seen for the Réserve Géologique de **Haute Provence** (France), and finding partners in the European Union to share three common goals: (1) to preserve geological heritage, (2) to enhance the public to understand earth science, and (3) to promote sustainable economic development on a regional level. Comparable regions, joining the Alpine Provence, were **Lesvos Island (Greece)**, **Maestrazgo / Terruel (Spain)**, and **Vulkaneifel (Germany)**.



Just one year later, in 1998, a UNESCO Geopark programme was established. The framework of International Network of Geoparks (INoG) required (1) management plans for supporting sustainable socio-economic development (with agritourism and geotourism as most potential actors), (2) methods for conserving and enhancing geological heritage, means for teaching geoscientific disciplines and environmental issues, and (3) joint-proposals from public authorities, local communities and private actors willing to integrate Earth Heritage Conservation into sustainable development.

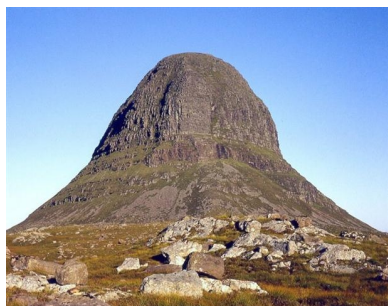
## European Geopark Network Established

By 2000, a convention on Lesvos Island followed to create a European Geopark Network substantiating the original three goals. Firstly, to exchange ideas and cooperate with all actors of different geoparks. Secondly, to use the different geological histories and national mentalities of each nation state, and to work towards the sustainable development of landscape resources for future generations. And thirdly, to use the European Geopark Network as an instrument for the building of a sustainable European Community of Regions – a program strongly supported by the EU-program Interreg III C South for sharing experience and best practices in geological monuments management and developing

geotourism in Europe.

Ten years later, in 2010, more people have become aware, how beautiful landscapes and sceneries might look like, no matter if these are awe inspiring mountains, spellbound lakes or queer rock formations. Thereby one has not to travel around the globe or dive into the Grand Canyon, since European countries and regions also hide many a unique geological heritage. But not all of them have reached the world platform, or at least have been attached as marginal national geopark into a larger world-class geopark unit. One example is the 14 million year old Ries basin. The world's best researched meteorite crater, with its focus of the fully preserved walled town of medieval Noerdlingen, is now an exclusive part of the Swabian Alb Geopark.

Landscapes are anything else than “boring” or “dead”. They speak thousands of languages telling us their history written in stone. As demonstrated on the following examples, a geopark becomes a challenging target, where time-honored monuments of long earth history are greeting and consolidating Europe's multi-various and multi-cultural regions.



### **North West Highlands Geopark**

The North West Highlands of Scotland (UK) may beat the Grand Canyon as a window of Earth's history. They are the key area of earth sciences calling geoscientists from all over the world. In 19th century, the highly complex Moine Thrust Zone with its enigmatic rocks in the wild, boggy Scottish country was recognized as one of the most important structures of the 400 million year old Caledonian Mountain belt. The once high mountains were the first in Europe to be formed by early Paleozoic sea deposits (ca. 600 ~ 390 million years ago) at the beginning of evolution. The mineral-rich mountains once had stretched all over Ireland, Wales and western Scandinavia, being flattened to the present highlands and finally polished by the ice of the last ice age (ca. – 700.000 ~ 12.000 years).

What fascinates is not only the attachment of this mysterious mountain belt onto Europe at times, when the ancient continent was still isolated from the ancient Asian continent, while connected with ancient northern America. It is furthermore the 3000 million year old Lewisian Gneiss Complex containing some of the oldest rocks and embedding the Caledonian mountains. This gneiss belt appears now in the typical rugged 'cnoc-and-lochan' (“hill and lake”) landscape.

If visitors won't see “Nessie” in the world's most famous loch, they might probably recognize instead

some 'insel-bergs' shaped in the red Torridonian sandstone on top of the Lewisian Gneiss, dating back to the so far oldest known ice age (pre-Cambrian: ca 1000 million years ago).



### **Haute-Provence (France) and Swabian Alb**

Want to find a Nessie elsewhere? Then just move from the world's oldest preserved geo-heritage to the Alpine Provence in southeastern France, where 300 million years of history are demonstrated in Europe's largest geological open-air museum (2000 km<sup>2</sup>) with fascinating rock formations and fossil sites. Near Digne a huge rock shelf is covered with more than 1550 ammonites on a 320 m<sup>2</sup> large limestone wall. The 21 km long spectacular Verdon gorge opens with awe inspiring views on the calcareous highlands, where Ichthyosaurs are telling about the times of the early Jurassic Sea (some -150 million yrs). These 18 m long gigantic "fish-lizards" were a combination of fish and reptiles, viviparous predators that paralleled the dinosaurs on land and pterosaurs in the air. They equally constitute the main paleontological treasure in southwest Germany's Swabian Alb Geopark (Holzmaden), a carstic landscape with caves, volcanic fillings and historic Celtic settlement sites where Europe's earliest iron-brass smelting took place.

### **Hateg Country Dinosaur Geopark (Romania)**

More about the enchanted giant reptiles, which were extinct some 65 million years ago at the end of Mesozoic times, Hateg Country Dinosaur Geopark may offer. Located in a fertile basin of central Romania and framed by 2000 m high Carpathian Mountains, glacial lakes, gorges, caves and alpine forests, this ancient center of Roman settlement is now a 1000 km<sup>2</sup> large geopark around Hateg town. Its remarkable heritage offers "dwarf dinosaurs" from the end of Cretaceous period (-65 million years).

Skeletal remains, next to fishes and mammals, are found in fossil fluvial and lake deposits, amongst them dinosaur eggs and hatchlings. Another highlight is the huge pterosaur "Hatzegopteryx", which once was one of the largest flying animals ever existing. Dracula, the flying dragon with a wing span of 12 m? For all these giants their end might have come with volcano eruptions, which have remarkably shaped the landscape with rocks-tuffs, lavas and volcanic bombs.

## The Petrified Forest on Lesvos Island

Lesvos (Lesbos) island has been better known for its number of famous people since ancient times, including Sappho, the unduly referred 7th/6th cent. BC poetess to “Lesbian women”. More substance is given by the unique Petrified Forest (national monument since 1985) that had existed some 15 – 20 million years ago. When intense volcanism had shattered the Aegean region during the Miocene period, volcanic products (andesites, tuffs, ashes etc) buried the dense vegetation and made it fossilize.

Today outcrops of tree fossils of rare scientific value are seen as silicified remnants of that sub-tropical forest. Roots and branches, once alive, are standing upright or lying on the ground in a multitude of colors, providing considerable information about Europe’s late Tertiary paleoflora and epic climate.



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